State-led Economic Transformation in Rwanda 2000-2019

An Evaluation of the Role of Policy in Coffee-processing, Tourism, Food Crops, and Manufacturing

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Final Version: February 2023

(Originally Submitted: September 2022)

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Acknowledgements

First of all, I would like to thank my supervisor Mushtaq Khan for his supervision and for providing me with helpful feedback, especially in my initial years as a PhD candidate. I also extend my thanks to Hannah Bargawi, who supported me several times throughout the years, including reading and feedbacking my work and connecting me with important sources. Furthermore, I acknowledge Antonio Andreoni's and Jonathan Di John's role as second and third supervisor in the upgrading process and later on. David Booth and Benjamin Chemouni have been excellent examiners, who provided thorough and helpful feedback that made the thesis better in some key respects.

I would like to extend a big thank you to the SOAS community in general and my fellow PhD candidates in the economics department at SOAS in particular, with whom I shared the joys and struggles of several years of intensive PhD research. I would like to especially mention Julia, Hamisu, and Julian, who were excellent sparring partners.

During my fieldwork in Rwanda, there were many people who supported me. I would like to thank Manuel Erzuah for helping me with the first steps to receive a research permit and his useful information later on, and Louise Kanyonga for being my official contact person at the affiliated government organisation required for receiving domestic research clearance as well as her continued support. Moreover, Germaine Mukansoro was an excellent research assistant and translator for my trips to two coffee-growing districts, whose dedication helped me to engage more thoroughly with interview partners and thereby significantly increased the quality of collected evidence. Additionally, I would like to thank all interview partners, who committed their time to answer my questions and were generous in explaining their jobs and various aspects of their respective sectors in detail. In the coffee sector, Alexis Nkurunziza was especially kind and helpful. I would also like to thank Martin, Darshit, Lloyd, Bart, Ronald, Sam, and Lucia for meeting me more than once and providing particularly helpful insights. Regarding my time in and my research on Rwanda, I would finally also like to thank the Rwandan government in general. Throughout the thesis, I do not stint on criticising and dissecting many policies and actions, which is why I use this opportunity here to acknowledge and give my thanks for the enormous efforts made by many organisations, leaders, managers, and civil servants in providing massive amounts of qualitative and quantitative data to the public. It would be easy for them to simply keep this data restricted. Without these efforts much of my analysis would not have been possible.

Finally and most importantly, I would like to thank my parents Markus and Helga, my siblings Marcel and Kerstin, my friends, especially Jan and Christian, and most of all my partner Lena, for their unconditional and continuous support over the last very demanding years. I would not have made it without you.

Abstract

Less than thirty years after civil war and genocide, the government of post-conflict Rwanda has achieved a remarkable level of state-building and economic growth. This thesis uses a political settlements framework to make sense of the country's recent development trajectory. Rwanda's political economy is characterized by a dominant ruling party whose leadership pursues a full-fledged capitalist transformation of society to cement its legitimacy, while also distrusting its domestic firms in a capitalist sector that is extraordinarily small and weak and exhibits low capabilities. In addition, there is substantial political repression to keep political control maximal. Shaped by these characteristics, an elaborate governance system of performance contracts (*imihigo*) has evolved, resembling results-based frameworks. This institutionalised construct compels all public sector employees to put in very high efforts to reach their respective annual targets. But the system is also overly rigid, focuses too strongly on directly measurable indicators, leads to uncritical acceptance of crude top-down decisions, and creates perverse incentives for data tweaking. Using 139 interviews from ten months of fieldwork and other qualitative and quantitative evidence, the thesis presents case studies of four economic sectors: coffee-processing, tourism, food crops, and manufacturing. The results reveal nuanced industry trajectories and varied sector performance, ranging from impressive (partial) transformational success in coffee-processing and the hospitality sector to disappointing (preliminary) failure in agriculture and manufacturing. Connecting the country's political economy with the respective industry paths, the thesis concludes that the Rwandan government succeeded with its economic development strategy in sectors where its control-maximising governance system was sufficient to enforce transformational change, while it failed in more complex sectors, where experimental tinkering and learning from failure were crucial to eventually getting things right. This perspective is useful for thinking about necessary governance reforms to overcome current structural weaknesses. Finally, the merits and limits of political settlements theory for explaining varied economic sector performance are discussed.

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List of Acronyms

Acronym	Meaning
AGOA	African Growth and Opportunity Act
ANP	Akagera National Park
AR	Annual Report
BDF	Business Development Fund
BLJSRR	Backward-looking Joint Sector Review Reports
BNR	Rwanda National Bank
BRD	Rwanda Development Bank
CA	Crop Assessment
CAADP	Comprehensive Africa Agriculture Development Programme
CBC	Coffee Business Center
CEPAR	Coffee Exporters & Processors Association of Rwanda
CIP	Crop Intensification Programme
CPC	Community Processing Centre
CtG	Cherry-to-Green
CtP	Cherry-to-Parchment
CVL	Crystal Ventures Limited
CWS	Coffee Washing Station
DCP	Doyelcy Capital Partners
DMA	Destination Management Area
DMRS	Domestic Market Recapturing Strategy
DRC	Democratic Republic of Congo
EDPRS	Economic Development and Poverty Reduction Strategy
EICV	Integrated Household Living Conditions Survey
ESID	Effective States and Inclusive Development
FAO	Food and Agriculture Organization
FAOSTAT	Food and Agriculture Organization Corporate Statistical Database
FDI	Foreign Direct Investment
FIRE	Finance, Insurance, and Real Estate
FOB	Free on Board
FOT	Free on Truck
FTE	Full-time Equivalent
FWC	Fully-washed Coffee
GDP	Gross Domestic Product
GMNP	Gishwati Mukura National Park
GNI	Gross National Income
ICO	International Coffee Organization
ICT	Information and Communication Technology
IMF	International Monetary Fund
KCC	Kigali Convention Centre
LUC	Land Use Consolidation
MICE	Meetings, Incentives, Conferences, and Events
MINAGRI	Ministry of Agriculture and Animal Husbandry
MINECOFIN	Ministry of Economic Planning and Finance
MINICOM	Ministry of Trade and Commerce
MoU	Memorandum of Understanding
MTC	Muraho Trading Company
MW	Megawatt
NAEB	National Agricultural and Export Development Board
NAS	National Agricultural Survey
NCD	New Century Development
NES	National Export Strategy
NGO	Non-governmental Organisation
NIRDA	National Industrial Research and Development Agency
NISR	National Institute for Statistics in Rwanda

NNP	Nyungwe National Park
NST	National Strategy for Transformation
OC	Organisational Capability
OEC	Observatory of Economic Complexity
OTF	On the Frontier
PEARL	Partnership for Enhancing Agriculture in Rwanda through Linkages
PPC	Pretoria Portland Cement
PRSP	Poverty Reduction Strategy Paper
PSG	Paris Saint Germain
PST	Political Settlements Theory
PSTA	Strategic Plan for the Transformation of Agriculture
RAB	Rwanda Agriculture Board
RCA	Rwanda Cooperative Agency
RCB	Rwanda Convention Bureau
RDB	Rwanda Development Board
RDF	Rwanda Defence Force
RHG	Rwanda Hotel Group
RIG	Rwanda Investment Group
RNC	Rwanda National Congress
RPF	Rwandan Patriotic Front
RRA	Rwanda Revenue Authority
RTC	Rwanda Trading Center
Rwashoscco	Rwanda Small Holder Specialty Coffee Company
RWF	Rwandan Franc
SACCO	Savings and Credit Cooperative
SAS	Seasonal Agricultural Survey
SMEs	Small and Medium Enterprises
SEZ	Special Economic Zone
SWC	Semi-washed Coffee
TC	Technological Capability
TPS	Tourism Promotion Services
TSA	Tourism Satellite Account
TVET	Technical and Vocational Education
USAID	United States Agency for International Development
USD	US Dollars
VNP	Virunga National Park

Chapter 1: Introduction

Nobel prize winner Robert Lucas is known to have written that the persistent gap between poor and rich countries is the most intriguing economic puzzle (The Economist 2018). And indeed, one of the most fundamental questions to be asked in economics is how a poor country can become rich (Reinert 2007; Temple 1999; Whitfield 2012). Finding answers to this primal question has been the original motivator of this thesis.

How can this complex puzzle be approached and tackled? Certainly, an adequate theoretical framework of social and economic change in combination with empirical evidence is needed. In more practical terms –especially for writing a PhD thesis– it makes sense to conduct a country case study, in which a specific theory is used to generate research questions and propositions, which are then explored with the collected evidence of both successful and failed development during a particular period. Subsequently, the research findings can be used to examine the robustness and usefulness of the theoretical framework, and help to expand and improve upon it. Such an exercise can contribute to the larger debate in a meaningful way. The empirical case selected for this work is the economic development of 21st century Rwanda.[1] Before considering the framework to be used, this small and remarkable East African nation is introduced.

In many respects, Rwanda is a fascinating country. Having suffered from one of the worst eruptions of violence and mass murder during the Genocide against the Tutsi in 1994, it emerged as an unlikely member of the most successful and promising developers in Africa. Over the last twenty years, its Gross Domestic Product (GDP) has more than quadrupled, life expectancy increased by sixteen years, poverty declined by almost 20%, and Rwanda is now considered one of the safest, least corrupt, and environmentally most advanced countries in Africa. Moreover, its parliament has the highest rate of female representatives in the world, it is the country with the best track record of fulfilling its Millennium Development Goals, and it is repeatedly praised for its commitment to achieve ethnic reconciliation. The long-time president Paul Kagame is considered to be a visionary and pragmatic leader, responsible for ending the genocide, restoring stability and dignity in Rwanda, and steering the country's sustained path of economic catch-up (e.g. Kinzer 2008; Crisafulli and Redmond 2012).

At the same time there is sharp criticism of the status of human rights and political freedom in the country. An increasing number of diaspora oppositionists, international human rights groups, and academics are pointing to unscrupulous political persecution, non-existent press freedom, a strong and allegedly tightening government control of all aspects of public life, and a lack of transparency regarding the utilisation of donor and state funds. Many of these voices claim that the Rwandan development miracle is actually a mirage and that livelihoods for most citizens have not improved. They predict the

[1] I chose Rwanda out of a deep personal connection to this country. Therefore, I see the study of its development as an end in itself, not as mere expediency.

political system is likely to collapse due to enduring ethnic oppression, lacking democratic participation, increasing social instability, and eventual economic failure (e.g. Himbara 2017; HRW 2017).

There are many nuances to both perspectives, as well as some middle ground perceptions, but it can be said that most viewpoints are characterised by narratives either praising or condemning the Rwandan government. The relative abundance of media attention and scholarship has created a lot of 'noise' and the dichotomy in opinions and conclusions can be counterproductive when trying to disentangle the interdependent processes taking place in a given country. Anecdotal evidence and micro-level studies, while often very valuable, cannot help in clarifying fundamental questions on the nature of the Rwandan state and the economic trajectory of the country. Instead, a holistic approach based on an appropriate theory and the assessment of varied empirical evidence may shed light on large societal processes shaping Rwanda's path. As an initial approximation, it makes sense to follow two prominent approaches of how to understand, measure, and evaluate development, applied in the following two sections: diving into the myriad of development indicators and assessing political rights.

1.1 Socio-economic Development in Post-genocide Rwanda

A good analytical starting point is Rwanda's remarkable socio-economic performance over the last twenty years. From 1999 to 2019, GDP grew on average by 7.8% per annum (p.a.), and GDP per capita (p.c.) increased by 5.1% per year.[2] This made Rwanda the third highest performer in both categories within Africa.[3] However, it started at a very low base. It was listed as the seventh poorest country in Africa in 2000 and could improve this position by ten ranks until 2018.[4] Its nominal GDP p.c. in 2019 amounted to 774 US-Dollars (USD), putting Rwanda in the group of the twenty poorest countries worldwide.[5] Thus, Rwanda is classified as a 'Least Developed Country' by the United Nations (UNCTAD 2019). According to official Rwandan and World Bank data, its high growth rates resulted in a significant decrease in poverty. The population share living below the national poverty line of 0.65 USD/day decreased from 57% in 2005 to 38% in 2016. Using the international extreme poverty line of 1.90 USD/day leads to a decrease from 68% to 56.5% in the same time frame.[6] Inequality also decreased (Gini coefficient of 52 in 2005 to 43.7 in 2016), even though Rwanda remains the most unequal country in East Africa. Furthermore, macroeconomic stability has been achieved in recent years, exemplified by

[2] Data was taken from the Rwandan National Accounts published by the National Institute of Statistics Rwanda (NISR 2020). If not stated otherwise, the following statistics in this section are taken from World Bank open data (World Bank 2021).

[3] Equatorial Guinea ranked first, but this was driven by exceptionally high (oil-impelled) growth rates in the first decade, followed by negative rates in the 2010s. Therefore, Rwanda even ranked second in the last ten years. Ethiopia outperformed Rwanda in both decades and indicators.

[4] Here, recent data is compared with values from 2000, as it is assumed that much of the losses in socio-economic conditions due to the Rwandan civil war (1990-1994) had been re-gained around that year. For example, life expectancy peaked in 1984 with 51.9 years and declined from there (first for war-unrelated reasons) to an all-time low of 26.2 years in 1993. In 2000, it had reached 48.6 years again (similar to 1987) and in 2003 it superseded the previous maximum of 1984.

[5] This is equally true for GDP p.c. measured in international dollars (i.e. purchasing power parity).

[6] More recent numbers do not exist because the large Rwandan living conditions survey that measures poverty could not be carried out as planned due to Covid-19. However, the reported trends have been shown to be highly dubious at best (Desiere 2017; Wilson and Blood 2019).

a moderate inflation rate averaging below 4% from 2013 to 2019 as well as a continuous and deliberate moderate depreciation of the Rwandan Franc against the US dollar (BNR 2020).

A common indicator to capture socio-economic progress is the human development index. It contains a measure on life expectancy (i.e. health), years of schooling (i.e. education), and gross national income (GNI, i.e. standard of living). Rwanda's relative performance improved a lot. From being ranked 37th (out of 48) in Africa in 2000, the country rose in ranks to 25th (out of 53) in 2018. This performance was strongly driven by Rwanda's immense improvement in life expectancy, where it was ranked 11th within Africa in 2018. In contrast, regarding education and income, it still ranked low (36th in mean years of schooling and 35th in GNI). While Rwanda's development was still categorised as 'low' in 2019, its value of 0.543 was only slightly below the 'medium development' threshold of 0.55 (UNDP 2021).

There is a multitude of additional indicators trying to capture certain aspects of socio-economic levels and trends. Rwanda appears to be doing especially well in health indicators. Besides the life expectancy improvement, also infant and maternal mortality have declined amazingly. While in 2000, 108 of 1,000 new-born children died before their first birthday in Rwanda (186th of 193 countries), this was reduced to 27 (135th of 193 countries), which was a better outcome than the average of middle-income countries. Similarly, the number of mothers dying during or up to 42 days after pregnancy fell from 1,558 of 100,000 in 2000 to 253 in 2015. A de-facto compulsory community-based health insurance (*mutuelles de santé*) was introduced in the early 2000s, letting the share of insured citizens skyrocket from 8% in 2006 to over 80% in 2016 (Chemouni 2018). Rwanda is still doing rather badly regarding its literacy rate. The share of adults being considered literate increased from 65% in 2000 to merely 68% in 2012. In contrast, financial inclusion grew from 21% in 2008 to 68% in 2016 (FinScope 2016).

A further category of development indicators concern governance. Rwanda also excels in this domain. In the six categories of the World Bank's governance indicators, Rwanda improved its total and inter-African rank substantially. In five of them, Rwanda was ranked in the top eight out of 54 African countries in 2018. This is particularly remarkable as in 2000, the country was close to the bottom or in the medium range in all indicators (table 1a). In the Corruption Perception Index of Transparency International (2020), Rwanda ranked 13th of 44 African countries in 2005 (the earliest available year) and 4th of 54 in 2019 (table 1b). Moreover, in the World Bank's Doing Business ranking, Rwanda rose

a)	World Bank Governance Indicators (within Africa)					
	Voice & Accountability	**Political Stability & No Violence**	**Government Effectiveness**	**Regulatory Quality**	**Rule of Law**	**Control of Corruption**
2000	48th (of 53)	45th (of 53)	25th (of 53)	39th (of 53)	39th (of 53)	24th (of 53)
2018	38th (of 54)	8th (of 54)	6th (of 54)	4th (of 54)	6th (of 54)	4th (of 54)

b)	Corruption Perception Index	
	Africa	**Globally**
2005	13th (of 44)	83rd (of 159)
2019	4th (of 54)	51st (of 180)

c)	Doing Business Indicators	
	Africa	**Globally**
2006	25th (of 41)	139th (of 155)
2020	2nd (of 54)	38th (of 190)

Table 1: Rwanda's Rank Performance in Various Governance Indicators
Source: World Bank open data, Transparency International (2020)

from 25th position in Africa (out of 41) in 2006 to 2nd place (out of 54) in 2020. Even more spectacularly, it rose from 139th (out of 155) in 2006 globally to 38th (out of 190) in 2020 in this metric (table 1c).

A common debate both with regard to Rwanda and more generally, though, is about the aptness of these indicators in assessing the development path of a particular country. Two issues are considered problematic by critics. First, the accuracy and truthfulness of reported and calculated numbers (that is, data reliability) often have to be taken with a grain of salt and can occasionally be deeply misleading (Jerven 2013). Second, it can be questioned whether the indicators measure the right thing (that is, data validity), i.e. whether good performance in these numbers equals actual progress. At this point, the underlying concept or model of development becomes relevant. Measuring development by the outcome indicators illustrated above and designing activities to be executed and goals to be pursued to boost a country's performance along these lines is the dominant approach of the international development community, most clearly manifested in the Sustainable Development Goals. However, it is argued below and in chapter 2 that the basic model of socio-economic development used in this indicator-driven approach is not in line with historical evidence about how poor countries have caught up with richer economies and evolved into wealthy nations.

1.2 Political Development in Post-genocide Rwanda

According to the democracy index of the Economist Intelligence Unit (2019), the Republic of Rwanda belongs in the category of authoritarian regimes. The vast majority of scholars agree (e.g. Purdeková 2011b; Reyntjens 2013; Straus and Waldorf 2011). The rebels-turned-rulers of the Rwandan Patriotic Front (RPF) led by commander-in-chief and President Paul Kagame won the civil war against the former Rwandan government of President Juvenal Habyarimana (1973-April 1994) and the intermediary *genocidaire* administration (April-July 1994) and have ruled the country ever since. While more or less democratic elections take place regularly on local and national levels, the presidential elections of 2003, 2010, and 2017 are known to not have been free and fair, with official results of at least 93% of the votes in favour of Kagame (Reyntjens 2013, 2018a). While there are several political parties represented in parliament and the formal system of power-sharing is quite elaborate (Golooba-Mutebi and Booth 2013), there is little doubt that the RPF has marginalized all political opposition in the country and now holds quasi-absolute political power (Reyntjens 2013).

Political space is closely managed, there is almost no independent civil society in the country, and virtually all aspects of public life are governed by the Rwandan state (Beswick 2010; Reyntjens 2011). While this high level of social control goes back to pre-colonial times (Prunier 1997:3) and has been a central element of former Rwandan governments as well (Reyntjens 2018b), the RPF has driven levels of political surveillance and control to unprecedented heights. Some researchers use the concept of high-modernist social engineering to describe political governance in the country (Ansoms and Cioffo 2016; Hasselskog 2015; Huggins 2013; Newbury 2011). To achieve these levels of authority and compliance, the ruling party has not shied away from applying violence and disregarding international notions of human rights in various ways (Jones 2014; Prunier 2009; Reyntjens 2013). Furthermore, the state tightly manages flows of information in the country by controlling the press, constantly communicating to the population through various channels, and imposing particular narratives about Rwandan history and present on a huge number of citizens in various compulsory training programmes (Fisher 2015; Hintjens 2008; Ingelaere 2014). While there is no Weberian rule of law in Rwanda, governance does occur in much more formal ways than in economically comparable countries. Rather than constantly circumventing formal laws by creating informal institutions and rent flows, the government very often changes the formal institutions such that they are in accordance with its intended alterations (known as institutional congruence), a practice that is possible due to its very high enforcement power (Goodfellow 2014).[7]

Examining and interpreting political developments in any country is a crucially important task, both as an end in itself and for uncovering nuisances and thriving towards a more just and participatory system. However, in some models of economic transformation, explicitly or implicitly held by academics and non-academics alike, participatory democratic political governance is understood to be a causal precursor of successful economic development (Cheeseman 2020; Straus and Waldorf 2011). Two prominent concepts of this kind are usually named if an underlying model of economic development is mentioned. These are first, the development theory of Acemoglu and Robinson (2012) positing that only inclusive political institutions (such as democracy) can lead to inclusive economic institutions (such as secure property rights) and therefore broad wealth in the long term, and second, the capabilities approach of Sen (1999) and Nussbaum (2011) seeing the well-being freedom of individuals as the measure of all things in development. Academic works that make use of these theories to evaluate Rwanda's overall economic trajectory and come to negative conclusions are, among others, Ansoms et al. (2018), Ayittey (2017), and Gökgür (2012). But this underlying model of economic development is not properly rooted in historical evidence of incidences of successful economic transformation (Khan 2012b). This assertion will be revisited and discussed in more depth in chapter 2.

1.3 State-building and Economic Transformation in Post-genocide Rwanda

Escaping pervasive poverty cannot be accomplished by striving to improve carefully designed indicators or pursuing participatory governance *ex-ante*. Instead, it requires a country to structurally transform its economy by "moving it away from being a set of assets based on primary products exploited by unskilled labor toward an economy built on knowledge-based assets exploited by skilled labor" (Amsden 2001, in: Whitfield et al. 2015:4). This transformation is characterised by decades-long (per capita) output and productivity growth, particularly an explosion of agricultural productivity as well as the emergence, professionalisation, and continuous upgrading of various tradable industrial and service sectors (i.e. the productive structure of an economy). For a poor country to actually achieve this and catch up with more

[7] This form of governance may be called 'rule *by* law' (Khan 2018a:648) and refers to a situation, where the rulers and certain elite circles are not subject to law enforcement but the country and its population are largely governed by it.

advanced ones, concerted state action in the form of industrial policy is paramount (Chang 2002a; Evans 1995; Harrison 2020; Khan 2009b; Reinert 2007; Rodrik 2004; Whitfield 2012). This requires a decently functioning state. Given the weak constitution of many states among today's poor countries, state-building becomes a crucial and continuous task for them. In practice, state capacities are often not raised across the board but only within a few key state organisations that then become pockets of effectiveness or efficiency (Roll 2014; Whitfield et al. 2015).

Rwanda's transformative performance described above attests that the country's state –in contrast to many others in Africa– has been highly effective in many areas (Jones 2014), in the sense that the stated objectives of the government are actually realised in their intended way (Goodfellow 2012:46). From re-establishing the monopoly of violence and maintaining general peace and stability over organising community-based genocide crime tribunals (*gacaca*) and re-building a functioning bureaucracy to designing and implementing economic recovery and growth plans, Rwanda's accomplishments merely twenty-five years after total devastation demonstrate how well once far-fetched objectives were translated into realisation.

Concerning economic change, it becomes quickly apparent that the Rwandan government's strategies to newly create some sectors and to fundamentally transform others have so far succeeded in some areas and have failed in others.[8] For example, while the whole sub-sector of domestic coffee-processing has been created from scratch leading to significant increases in export revenues in that industry, the annual volume of harvested coffee cherries has almost stagnated over the last twenty years despite massive efforts to multiply it. Similarly, the Rwandan government has failed to raise its food production volume at a rate necessary to eradicate food insecurity and localised hunger for good. And whereas Rwanda has become a well-running high-end eco- as well as conference tourism destination, it has failed to raise the productivity and competitiveness of most of its manufacturing firms. These examples obviously stem from very different economic activities and comparing them as done above appears to be crude. And indeed, making sense of these opposites and other observable phenomena requires an in-depth political economy analysis of 21st century Rwanda, which is conducted over the course of this thesis.

1.4 Research Questions

Rwanda's varied sector performance begs the question why transformation outcomes have differed so much –not necessarily in patterns to be expected from looking at other countries' development– and which factors can explain these discrepancies. This leads to the overall research question of the thesis.

Overall Research Question:
Why did the Rwandan government succeed in developing some sectors (coffee-processing and tourism), while it has failed to create and transform others (food crops agriculture and manufacturing)?

[8] Some of these successes and failures may be categorised as partial or preliminary, as in many successful cases future developments may lead to stagnation, while several initial failures may yet be turned into success stories later on.

Answering this question requires to understand Rwanda's post-genocide political economy that both created the conditions for some remarkable success stories and made the country susceptible to development policy failure. Hence, based on basic political economy theory, four simple propositions using generic terminology are formulated.

Propositions:

1. The Rwandan government had both the political will for transformative economic development and the political power to effectively implement its policies.
2. The Rwandan government felt compelled to maximize its political control over the country's society at any point in time.
3. The Rwandan government built up a fairly effective state and governance system, in which a meritocratic bureaucracy was adequately controlled by performance contracts.
4. The Rwandan governance system exhibited significant structural weaknesses that impeded its ability to handle complex processes of advanced industrial policy.

These propositions need to be scrutinised and in particular, substantial evidence showing them to be correct needs to be presented. If assuming them to be true for the moment, they immediately raise a few subsequent questions. How and why did the Rwandan government's political will for transformative economic development as well as its political power to effectively implement its development policies come about? How and why did the government's need for maximal political control emerge? How did the Rwandan governance system's general structure and relative effectiveness work in detail, and how did it evolve? What were the governance system's weaknesses, how and why did they arise, and how do they disturb advanced development? These questions concern Rwanda's politics as a whole, and together with the propositions themselves, they are assessed and then answered in chapter 3, mostly by drawing on and newly piecing together existing literature.

Next, the four industries mentioned in the overall research question are analysed on their own behalf in distinct sector case studies presented in chapters 4-7. It is evident that each economic sector's trajectory was shaped by a multitude of structural factors as well as intentions and actions of many actors. Identifying the respective most important variables regarding sector performance is a key goal of each case study chapter, which is expressed in the secondary research question.

Secondary Research Question: What were the salient factors that led to successful or failed economic outcomes in the Rwandan coffee-processing, tourism, food crops, and manufacturing sectors?

However, there are also some striking similarities and differences to be found across these sectors. Therefore, finally connecting the findings about the Rwandan government's political will, political power, need for political control, and governance system with each sector's salient factors allows to answer the overall research question in chapter 8.

1.5 Definition of Key Terms and Analytical Framework

Answering the research questions requires the definition of the two key terms of political power and political will used in the first proposition as well as a proper analytical framework to make sense of complex reality, both of which are sketched in the following and elaborated in detail in chapter 2. Political power is defined as the relative holding power of political and economic organisations in conflicts over rents and resources. It arises from particular groups' existing material wealth and effective rights over rent flows as well as their organisational capacities to mobilize and coordinate supporters (Khan 2010:1). From the perspective of a ruling elite that pursues economic development, its political power boils down to how well it can construct a ruling coalition with allies to remain in government vis-à-vis oppositional groups and to what degree it can enforce policies against resisting factions from various interest groups including the capitalist sector, farmers, workers, the landed and urban petty elite, and rising middle classes, some of which will constitute the lower-level factions within its ruling coalition (Khan 2010). The power distribution and resulting conflicts as well as the government's effectiveness may vary strongly across economic sectors.

Political willingness (for transformative economic development) is defined as the degree to which the ruling elite's (implicit) political survival strategy entails economic transformation at its core. Compulsions by history and other exogenous conditions set agency constraints for various ruling elite strategies for political survival. These constraints may be very narrow or quite broad. The looser these constraints, the more do ideology and ideas play a role in how to use the available agency space (see section 1.7 for a discussion). In the case of rather loose structural constraints, political will can be understood in the direct sense of personal preferences and ideological convictions of political leaders. However, in reality, strong agency constraints almost always exist in developing countries and beyond, as the ruling elite may have to fight strong oppositional forces, distribute rents and benefits in a smart way to keep its ruling coalition together, engage in constant competitive clientelism with one or more politically roughly equally powerful parties, accumulate resources and capabilities to counter an external threat, and/or deliver development and social goods to the population to acquire legitimacy. If a country's particular historical trajectory has led to a configuration of power and capabilities across political and economic organisations that makes it the best political survival strategy for the ruling elite to acquire political legitimacy by accomplishing socio-economic development, it is very likely that the ruling elite feels compelled to pursue exactly this type of development. In other words, its political willingness for transformative economic development is very high.

The analytical framework of this thesis (strongly simplified in figure 1) is based on key propositions of Political Settlements Theory (Khan 2009a, 2009b, 2010). A political settlement in a given society is defined as the interplay of the configuration of organisational power and its institutional system (Khan 2010). It is posited that the political settlement of a country sets limits on the ruling elite's political survival strategy and the state's governance system, the consequential (sectoral) industrial policy practices, and the resulting (varied sectoral) economic growth outcomes, though within these constraints, policymakers and leaders may have substantial space to experiment and learn. More specifically, the historical trajectory of a country determines the distribution of power and capabilities between and among various political and economic organisations and the simultaneously evolving institutional setting. The decisive consequence of the prevailing political settlement is that it determines the political power of the ruling elite and sets its agency space for devising its political survival strategy, which includes the governance system for policy implementation. The ruling elite's rationale entails varying degrees of political willingness for economic transformation but it usually includes some form of economic growth ambitions. The pursuit of certain industrial policies can be roughly conceptualised as the government taking overall decisions and the bureaucracy implementing these strategies, which leads to firms (and farms) making varied learning efforts to improve their productivity. The industrial policy processes result in a particular economic growth outcome that may vary strongly across sectors, depending among others on the political power of the business sector and other powerful groups. Finally, there are certain exogenous conditions that affect these processes and outcomes. The economic outcomes then have repercussions on the evolution of the constantly changing political settlement.

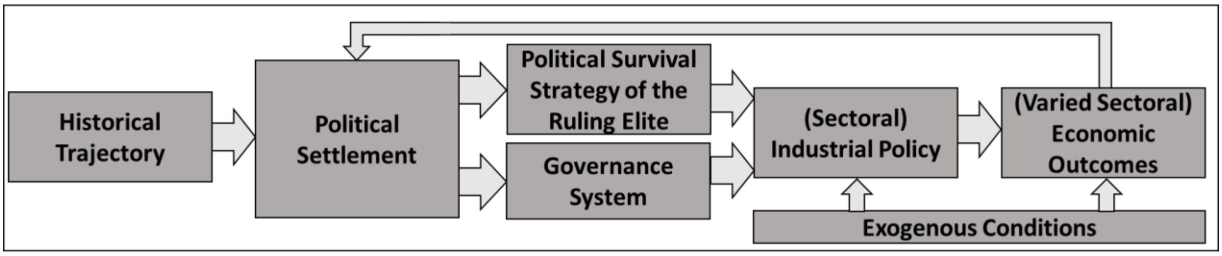

Figure 1: Simplified Analytical Framework of the PhD Thesis
Source: Author's Own Illustration

1.6 Summary of the Argument

Varied sector transformation outcomes in post-2000 Rwanda can be largely explained by the interdependence of the country's evolving political settlement, the ruling elite's political survival strategy and its resulting governance system, some exogenous conditions, and some idiosyncrasies of each economic sector. The particular manifestations of these elements are outlined in the following.

Political settlement

Post-2000 Rwanda's political settlement arose from the country's particular historical trajectory of civil war, genocide, and post-war reconstruction. Following Khan's (2010:65) typology, the country's power configuration of political organisations is categorised as 'potentially developmental': the ruling coalition has a long-time horizon as excluded factions are quite weak (horizontal power distribution) and the ruling elite exhibits high enforcement power within the ruling coalition since its lower factions are weak as well (vertical power distribution). Applying Khan's (2010:71) second typology, the power of the ruling elite vis-à-vis the capitalist sector is very strong, resulting in these firms being easy to discipline by the state. The economic organisations' capabilities are quite meagre, meaning that only simple technologies can be adopted in the foreseeable future. As a direct consequence of Rwanda's contemporary power configuration, the state's intention and capability to centralize rents is very high.

The Rwandan state is strongly controlled by the inner circle of the RPF revolving around President Kagame. The ruling party is financially independent and does therefore not rely on funding from external patron-client networks or kickback payments. The almost total control of the strong and omnipresent army and police and continuously increasing infrastructural power allows the enforcement of virtually all policies with little resistance from the handful of rather powerless organisations outside of the government's grasp. At the same time, the ruling elite perceives its legitimacy to be questioned and therefore feels very vulnerable. The profound alienation between the majority of traditional rural Hutu peasants and the immigrant 'modern' Tutsi ruling elite, which appears insurmountable in the short and medium run, poses a fundamental long-term threat to the latter's political survival. In particular, the lack of trust towards many businesses, unless they are fiercely loyal to the ruling party, constrains the emergence of broad-based firm capabilities.

Political survival strategy of the ruling elite

As a result, the political survival strategy of the ruling elite consists of two short-term and two long-term lines of action. In the short term, first, massive repression and in-depth surveillance is employed, which serves to exert direct control based on the application of force and intelligence work. Second, and quite differently, a broad provision of social services is rolled out with the goal to improve livelihoods as direct appeasement towards the general population to maintain political stability. Together, this dual approach can be understood as maximizing political control. In the long term, the ruling elite focuses on two distinct but interconnected transformative efforts. First, via its control of the state apparatus, it conducts high-modernist social engineering to reconfigure society and build infrastructure for a transition from governing by force to ruling through infrastructural power. Second, economic transformation is pursued in the sense of building up new economic industries from scratch as well as aiming to fully transform well-established sectors, both with the intent to create a competitive, knowledge-based economy. This serves the purposes of generating financial resources to make the ruling elite and entire country more independent from aid and external pressure and to finance infrastructure and social services as means to maximise political stability. In combination, the long-term strategy consists of effecting a large-scale societal transformation towards an urban, 'modern', capitalist, and wealthy society that ultimately erases the socio-ethnic alienation between ruling elite and general population and thus overcomes the government's legitimacy concerns. Evidence for the serious undertaking of all four action lines abounds.

Governance system

Based on the ruling party's historical trajectory as a well-organised rebel force and complying with its need for maximal political control, a top-down military-style 'command-and-obedience' governance mode has evolved in post-genocide Rwanda. This governance mode has been institutionalised in a governance system that entails at its core *imihigo* performance contracts and governs Rwanda's newly built up civil government and meritocratic bureaucracy. Rwanda's development policies are implemented through this institutional arrangement, in which civil servants from central government ministers down to local government employees as well as top managers of state-owned businesses are monitored and evaluated based on the degree of fulfilment of annual development targets. This governance system has considerable strengths, as it created a proper monitoring and evaluation system to begin with that generates data and processes for policy learning, and because it was effective in compelling high efforts in many areas leading to measurable success and partially even spectacular performance. At the same time, however, the institutional setting exhibits major weaknesses, some of which are driven by the ruling elite's particular governance mode. First, the rigidity of pre-defined goals from the top means that public officials often pursue the achievement of quantified *imihigo* targets without critical reflection. Therefore, the system sometimes lacks the crucial space for experimentation as well as proper policy learning and adaptation. Second, results-based approaches such as the *imihigo* system usually focus on directly observable and measurable objectives on the output level rather than harder to grasp but actually desired outcomes. Hence, it is difficult to govern more complex industrial policies and development goals via this system. Third, the pressure to accomplish targets and outperform other districts or ministries provides a considerable incentive to tweak the numbers wherever necessary and possible, which has become a systemic problem. The entire governance system is buttressed by the universal awareness of the government's regular, unscrupulous application of violence to deal with any problem.

Exogenous conditions

The most salient exogenous conditions faced by Rwanda turn out to be quite adverse to economic transformation. These include Rwanda's landlockedness, its location in a poor and politically insecure region, its lack of natural resources, and global demand and price volatility of its most important export goods and services. More general conditions applying to all late developers are the enormous efficiency gains in all manufacturing sectors realised by China and some other Asian countries and the almost complete integration of worldwide production into global value chains, both of which have severely narrowed potential development pathways for any poor country.

Sectoral industrial policies and growth outcomes

The industrial policy practices pursued by the Rwandan government and their respective growth outcomes are described for the four studied sectors of coffee-processing, tourism and hotels, food crops, and manufacturing.

<u>Coffee-processing:</u> Based on decades-long experience in coffee cultivation, the Rwandan government engaged in industrial policy to build a modern domestic coffee-processing sector from scratch by supporting and steering the construction of over 300 wet mills (also known as coffee washing stations, CWSs), which professionally process coffee cherries immediately after harvest and thereby strongly increase the quality and value of coffee beans. Policy measures included the mobilisation of donors, domestic entrepreneurs, government-affiliated firms, and foreign investors to construct CWSs, their

spatial coordination, dissolving the buying networks of wholesale traders, compelling coffee farmers to sell and deliver their harvest to the new mills, organising targeted international branding campaigns, and acquiring sales markets and courting direct buyers. As a result, total coffee export revenues increased substantially and remained stable when global coffee prices fell, as the Rwandan price for high-quality coffee had been decoupled from that of ordinary coffees. Subsequent policies of CWS zoning led to wet mills becoming de-facto monopsonies, which decreased competitive pressure. Stagnant coffee cultivation volume remains the sector's bottleneck for further growth. A key exogenous factor was the immense engagement of American donors that brought in the required expertise (as well as significant funds and crucial buyer contacts). It is hard to imagine how the sector would have acquired the necessary technical know-how in a short time period without this external intervention. Furthermore, the Rwandan government's policy success can be understood as harvesting low-hanging fruits of rather simple but still labourious industrial policy implementation, which succeeded in generating the necessary incentives and compulsions for farmers, traders, processors, and exporters because the whole endeavour was comparatively less complex than transforming other sectors. It was enforceable in a top-down manner, as resisting factions and vested interests were few and weak.

<u>Tourism and Hotels:</u> Concentrating on high-end eco- as well as conference tourism as a potential growth engine was initially based on Rwanda's natural endowments (mountain gorillas and geographic location in the centre of Africa) and recently created features as a by-product of state-building and power consolidation that were also forthcoming for tourism (good reputation, high security, and cleanliness). The government implemented a plethora of necessary measures: reviving the three ailing national parks including infrastructure, accommodation, ranger trainings, wildlife management, and conservation efforts; resurrecting, heavily subsidizing, and continuously expanding the national airline carrier RwandAir; constructing the state-of-the-art Kigali Convention Centre; running a vast and expensive promotion campaign ('Visit Rwanda'); and prioritising the rapid expansion and professionalisation of the country's dusty hospitality sector. The latter was revived by direct government investment in two rundown luxury hotels as well as domestic entrepreneurs upgrading their long-standing medium or upper-level hotels. In a next step, the government pooled private and public resources to construct five- and four-star luxury hotels, which were operated and branded by globally renowned hospitality chains (Marriott and Radisson) that were attracted by active government promotion. Simultaneously, many medium-size domestic investors saw profit opportunities and built more hotels. The resulting oversupply of hotel rooms led to harsh competition, which forced hotels to strongly improve their quality and performance as well as reduce their prices. Several hotels had to close down. The required workforce was successively built up by the creation of vocational tourism schools and donor-funded skill-building programmes. Consequently, tourist arrivals and tourism revenues increased strongly and the sector contributed a significant share to the country's overall growth. Further investments and policy measures are constantly being devised and implemented, but their increasing sophistication and coordination requirements, the need for a strong, diversified private sector as well as recent global shocks make the

sector's future path uncertain. The most important success factor has been the Rwandan government's willingness and ability to make risky, large-scale investments into luxury tourism infrastructure. Additionally, international connections of the ruling elite were deployed to attract foreign investment and know-how, while the government also effectively implemented all other 'basic' policy measures listed above. These basics could be achieved by top-down command governance, as only a small number of public and private organisations were required for take-off. Most of the tourism sector was created from scratch and hence, vested interests were not strong and could be managed adequately. Once cascading investments were unlocked, competitive market forces coerced hotels into improving their service quality and productivity.

Food Crops: Modernising the subsistence agriculture sector was an early key priority of the government. When initial measures were not effective, a massive Green Revolution project (Crop Intensification Programme 2008-2020) was initiated that aimed to completely transform traditional, small-scale food crop farming by determining six priority crops that were assigned to certain regions based on agro-climatic conditions, consolidating land use, and distributing heavily subsidized mineral fertiliser in large amounts. This was accompanied by a country-wide land titling programme, the expansion of agricultural extension services, the establishment of crop- and locality-specific cooperatives, extensive terracing, and irrigation and mechanization projects. The implementation was governed by ambitious district performance contracts. National statistics show that the programme's success was strongly limited and that production levels and yields grew moderately at best. The modernisation of intensive peasant agriculture in a land-scarce, overpopulated, mountainous, soil-depleted terrain exhibiting micro-climates, where farmers till several tiny parcels, was a highly complex endeavour that would have required iterative tinkering and proper feedback loops between the various policy and implementation actors. In fact, the imposition of hardly achievable productivity goals led to number tweaking in performance reporting instead of compelling farmers and agronomists to put in maximum efforts to pursue these goals. The government commanded general and oversimplified solutions in a top-down governance system and attempted to force them through against massive covert peasant resistance without listening to valid concerns about productivity effects and this led to policy failure.

Manufacturing: The government deliberately neglected manufacturing until at least 2011, as it deemed its chances to become competitive very low due to strongly adverse external circumstances, such as its landlockedness. Its highly negative trade balance and the need to create a large number of off-farm jobs led to rethinking and targeted support for a handful of low-technology manufacturing products such as garments, construction materials, and processed agricultural goods. These efforts are still in their initial phase, and accelerated growth or the emergence of product-specific sub-sectors has not yet occurred. Various horizontal measures, i.e. the construction of a special economic zone (SEZ), negotiations with neighbouring countries to reduce tariff and non-tariff barriers to trade, and the improvement of infrastructure and other measures to reduce transport costs have been implemented. While it is too early for conclusions about the performance of many initiatives, there are company- and product-specific case studies that highlight both occasional wins and the general extraordinary difficulty of making progress in this domain. First, after several failed attempts by the government to professionalise its potential national champion in fully-integrated domestic cement production, the company was sold to and management was taken over by a South African cement manufacturer, which succeeded in ramping up production levels and recapturing a large share of the domestic market. Second, garments production was initially kickstarted by attracting Chinese foreign direct investment (FDI) via large subsidies and relying on access to preferential trade agreements, but scaling-up was aborted due to the realisation that market disadvantages were too high. Third, a handful of agro-processing plants were constructed and operated as public-private partnerships under government leadership, but failed to raise their extremely low capacity utilization rates and had to close down or were sold at very low prices. To sum up, an individual company with comparatively easy access to all raw materials was much easier to elevate by foreign investment and expertise than incrementally creating a multipolar ecosystem of dozens or hundreds of producers along different stages of the respective value chain with proper backward and forward linkages or helping domestic firms to enter individual nodes of established and highly competitive global production networks. Apart from overcoming very adverse market conditions, building up a competitive manufacturing product sector in Rwanda would require sophisticated industrial policy that includes bureaucratic discretion and embedded autonomy, trial-and-error policy experimentation, and supporting entrepreneurs where necessary while simultaneously compelling them to put in high efforts to improve their productivity. So far, these efforts could not be observed and it is hard to imagine that the Rwandan governance system would allow these conditions needed for a thriving manufacturing sector to emerge.

Explaining Rwanda's varied economic sector performance

Rwanda's so far largely successful overall country-wide policy performance regarding state-building, socio-economic progress, and economic growth can be explained by the almost unique political situation that evolved from the apocalyptic world of genocidal Rwanda. Regarding economic growth and transformation, the pervasive systemic vulnerability of the new ruling elite gave it the political will to relentlessly pursue economic development, while it simultaneously acquired the political power to build up a fairly effective state and governance system, make the required investments, and implement the necessary profound changes in rent allocation mechanisms due to favourable political conditions, impressive skills, and the unscrupulous application of violence.

Diving into empirical findings of sector-specific developments, the successful economic performance of coffee-processing may be boiled down to 'creation by foreign (donor) expertise', of course enabled and exacerbated by various government policies, which together provided the needed amounts of investment and know-how. The emergence of tourism as one of the largest growth engines may be stylised as 'creation by (massive) investment', directly provided, domestically raised, and attracted from abroad by the ruling party. The required know-how in the hotel sector was partially brought in by foreign operators and partially acquired domestically along the way, the latter fostered by competitive market forces. In the food crops sector, an approach of ‘transformation by force’ was employed, which so far failed across the board because the intricate knowledge of both how to raise yields and how to administer change in the agricultural domain was missing and neglected by the government. In manufacturing, the strategy of ‘creation by FDI’ succeeded in cement, as there was only a single, fully-integrated company that needed to be made competitive, which could sell all its output domestically, while it failed in garments because a larger number of firms was needed and overall market conditions for exporting were too adverse.[9] Finally, in agro-processing (other than coffee- and tea-processing), the government’s initial take was ‘creation by domestic investment’, which failed due to a lack of sophistication.

Initially failed sector creation and transformation demonstrates the limits of the current approach and system exacerbated by adverse exogenous conditions. Most notably, the top-down commanding governance mode led to a performance contract system with significant structural weaknesses that proved inappropriate for transforming the traditional peasantry’s way of engaging in agricultural production as well as building up competitive manufacturing industries made up of many firms. Moreover, so far successful sectors such as coffee-processing and tourism may soon become too complex to be further directed by the existing unidirectional policy-making system. Therefore, a structural reform of the country’s governance system, which includes more bureaucratic discretion and the space for critically reflecting on and adapting policy targets, indicators and perhaps even entire strategic priorities, is needed in the near future. However, this may be hard to realize because the government’s fundamental vulnerability (perceived and actual legitimacy problems) compels it to impose maximal political control on every organisation, both on the bureaucracy, which is thus prevented from engaging in autonomous, adaptive policy-making, and on the private sector, which is hence stifled from sparking its innovative forces and acquiring broad-based firm capabilities. Therefore, the Rwandan government’s need for maximal political control clashes with and supersedes the requirements for an adjusted governance system that allows to devise more complex industrial policies, for sectors such as agriculture and manufacturing, and this makes transformative, long-term, state-led economic development in Rwanda very hard to accomplish.

1.7 Methodology

This section first presents four general premises that underlie the reasoning in the thesis. Second, it describes the specific research strategy employed in this work. Third, it portrays the conducted fieldwork and evidence collection. Fourth, it reflects on fieldwork challenges, researcher positionality, ethics, and the normative dimension of the research.

Premises

Despite examining only one country, this thesis is based on the logic of the comparative historical approach. It is posited that in order to imagine potential pathways of Rwanda towards broad-based

[9] It would be fallacious to conclude from these two examples that Rwanda should concentrate on import substitution and neglect export orientation (see chapter 7).

wealth, it is necessary to look at the history of other countries, both the ones that have become rich and those that have failed to do so. There are two arguments for making use of this approach. For one, history is the "only laboratory available to economists" (Reinert 2007:17)[10], providing the required variance between country cases to identify salient patterns and make meaningful deductions. Second, the contemporary approach of academic and public debate on any issue related to material conditions of people in poor countries is based on "the comparison of relative progress […] between countries across time" as well as the study of "what worked in some countries in the past and what that means for the future in other countries" (Harrison 2020:5–6). Harrison argues that critics aiming to abandon any notion of development in this sense need to come up with an alternative "meta-narrative" (Harrison 2020:6). To sum up, comparing the development of countries across time by analysing historical case studies is the best available approach to make sense of the causal mechanisms determining how poor countries can massively and permanently improve the livelihoods of their population.

For applying the comparative historic approach, a conceptualisation of the nature of historical change is needed. Hence, a premise of this thesis is the notion that history usually moves in evolutionary paths with constant incremental change (path dependence). However, from time to time critical junctures open up, during which individual agency is likely to upset these evolving paths in fundamental ways, leading to political ruptures and new trajectories. This conceptualisation of historical change stems from historical institutionalism (Capoccia and Kelemen 2007; Mahoney 2000).[11]

The thesis follows Khan's (2018b) conceptualisation of agency as the interaction between many different groups that do align in networks but have to be self-sustainable on their own. In contrast to an alternative understanding, where elite groups (and possibly others) deliberately shape the overall societal structure by exerting agency and forming agreements/pacts (Kelsall 2018b), Khan's understanding of structure and agency considers the myriad of interactions to be too complex for any individual group or network to deliberately bring about an order. Rather, a large number of factions try to gain access to rents (and possibly exert influence in ideological, non-material ways) by mobilizing supporters, engaging in networks, lobbying for changes in formal institutions, potentially bribing officials to circumvent policies, possibly threatening or applying violence, etc. Their actual power and capabilities determine what they can achieve. Constant agency by leaders and factions thus leads to incremental change (along and within the boundaries of an overall evolutionary political settlement path) and sometimes networks may try to disrupt the social order, potentially exacerbated by external events. These processes describe how social change within a political settlements framework happens and how resource allocation and power distribution tend to align over time. In this understanding, there is little space for settlement- and rent distribution-defining agreements among elites. Similarly, the complexity

[10] This notion refers to the large questions at hand. The scope of experimental economics using actual laboratories is very different. Also randomized controlled trials, often examining phenomena around poverty reduction and development, are explicitly concerned with microeconomic problems.

[11] See Reyntjens (2020) for a recent application of this concept to the African Great Lakes region including Rwanda.

of constant, often opportunistic network-building and -reformation renders individual powerful organisations quite impotent regarding deliberate and controlled disruption. This is why actors may each achieve something different from what they planned because the responses of all other actors are difficult or even impossible to predict.

A further theoretical orientation is a qualified form of historical materialism, assigning material determinants, such as access to resources and rents, a primary role in shaping the path and outcomes of history and social change in favour of non-material ideas and ideology. This premise is implicit in Khan's political settlements theory: in clientelist societies, individuals are organised in factions, which again are organised in hierarchical patron-client networks. For their survival, they need to pursue control over sufficient amounts of material resources, and they do so by exerting their power and capabilities to get hold of rent flows. Ideas and ideology often only play an instrumental role in mobilizing supporters, winning normative arguments, creating legitimacy, and, if possible, even re-shaping society in the form of social engineering, but always with the ultimate goal of accessing resources. However, ideas may sometimes constrain the choices of leaders because in order to mobilize people they have to align their demands and aspirations with pre-existing beliefs and experiences. This is another aspect of path dependence. The system of ideas and ideologies in a society therefore matters, even if leaders often use ideologies in instrumental ways (see for example Gray 2018).[12]

Research Strategy

This thesis' logic of enquiry follows the pragmatic approach, where the choice of methodology is in service of answering the research questions presented above. These research questions warrant the use of case studies as appropriate research method, as they ask 'why' and 'how' questions and concern contemporary phenomena (i.e. very recent historical paths that are still evolving) over which researchers do not have any control (Yin 2018). As case study research may be layered, this thesis conducts an overall country case study and four subordinate sector case studies. Defining a case as a "spatially and temporally delimited phenomenon of theoretical significance" (Gerring 2017:27), the country case study explores the topic of late economic transformation in a politically dominant settlement by examining Rwanda's economic development during the time period 2000-2019. The sector case studies analyse governmental productive sector policy efforts and their effects on sectoral economic growth and transformation in coffee-processing, tourism, food crops, and manufacturing over the same time period. Selecting Rwanda is justified on two grounds: empirically, because Rwanda is a hotly debated case of rapid current development in a group of least developed countries that are often considered to have no

[12] Khan's work has been criticised because of its strong focus on material conditions and its alleged neglect of the history-shaping effects of ideas. Some scholars working with the elite-pact definition of political settlements have proposed extensions to the original framework to incorporate non-material ideas (Hickey 2013; Lavers 2018). These concepts have been applied to various country and sector case studies, including several in Rwanda: social protection (Lavers 2016), health (Chemouni 2018), gender (Burnet and Kanakuze 2018), and overall Rwandan political ideology (Chemouni and Mugiraneza 2020). While a conceptualisation of the interdependence of ideas and (material) interests would certainly provide an even more nuanced picture of Rwanda's economic development, the scope of this thesis largely remains with what is understood as Khan's qualified materialism. It turns out that regarding industrial policy and economic transformation, this more parsimonious approach is very conducive in explaining outcomes, while it may be too reductionist for understanding the manifestation of social policies.

chance of escaping structural poverty, and pragmatically, since I was already fairly familiar with the country (see below).

The four economic sectors to assess were selected in an explorative and iterative way. Before the beginning of fieldwork, Rwanda's economic structure was analysed and sub-sectors with high current shares in the economy as well as high growth rates were identified. Simultaneously, as historical cases of latecomer development have all been based on rapid industrialisation, the manufacturing and agro-processing sector came into focus. Early on, the coffee sector was picked as a historically important export sector, which had gone through a downfall and then a presumably successful turnaround based on domestic value addition. Despite significant academic research already conducted on it, key questions had been left unanswered, and thus, coffee became the first designated sector case study. Second, tourism was found to be a major current growth engine that spearheaded the Rwandan government's vision of a service sector-driven economic transformation. Having received comparatively less scholarly attention so far, it invited for a thorough analysis of the causes of its performance. Both sectors were intensively studied during fieldwork. Third, Rwanda's tiny and comparably less dynamic manufacturing sector was of particular interest, first, due to the sector's structural importance in theories of successful catching-up, second, because some promising nascent developments were observable, and third, as the studying of a less successful sector promised to harbour important contrasting findings. During fieldwork, an initial sole focus on the construction materials sub-sector was abandoned quickly, as it appeared less auspicious. Instead, a more general focus on industrial and investment policy was pursued. This proved less successful than hoped concerning the collection of detailed product-specific manufacturing sector evidence, which is why this case study became the last empirical chapter of the thesis and is substantially shorter. Finally, the food crop sector was only added as a substantial case study much later on and it was consequently not studied during fieldwork. When skimming original data sources on Rwanda's agricultural production statistics, it became quickly clear that –in contrast to a broad consensus in academia and international organisations– the country's agrarian transformation had been a massive (preliminary) failure. Luckily, statistical and other evidence from publically available datasets and government reports was sufficient to conduct a full-fledged sector case study with hardly any interview evidence. Even more, this serendipitous find prompted a partial restructuring of the overall and secondary research questions, the propositions, and the overall argument as now presented in the thesis.

Each sector case study constitutes a proper political economy analysis on its own. The respective chapters first introduce the economic and technical mechanisms of each sector as well as its history before 2000 when relevant. They then present the government's main strategies and policies for economic transformation as well as their implementation, examine the actual outcomes, and evaluate the degree of policy success or failure in the sense of translating government goals and intentions into reality. Finally, a sector-specific conclusion is drawn that also briefly considers future prospects of the particular industry as well as the implications of the findings for the overall argument of the thesis. Each chapter makes use of qualitative and quantitative, primary and secondary data, even though the ratios differ widely.

The analyses conducted in the empirical part of the thesis have only been possible because the Rwandan government, notwithstanding its secretiveness and at times deception, provides enormous amounts of quantitative data as well as qualitative information in English to the public via various channels, which is mostly of sufficient or good quality and has been improving over time. Given the unstructured nature of both the collected primary as well as publicly available secondary evidence stemming from a large number of different sources, data evaluation could also only be done in an unstructured way. That is, while quantitative datasets were assessed with proper methods of descriptive statistics, primary interview evidence was evaluated by simply browsing through the notes taken. Also, the compilation and triangulation of evidence from all data sources was conducted in a discretionary way, giving rise to Khan's notion that, ultimately, political settlement and industrial policy analysis is an art (Khan 2018a:640).

Fieldwork and Data Collection

Besides making extensive use of secondary sources, such as academic literature, reports of the Rwandan government and international organisations as well as statistics and datasets, qualitative primary data was collected during ten months of fieldwork in Rwanda in January-August and October-November 2019. Virtually all information was gathered in one-to-one semi-structured interviews, with only occasional instances where a group of people was present simultaneously. The majority of interviews took place in the capital Kigali, as most stakeholders were based there. Two one-week trips to major coffee-growing districts were conducted, first to Huye district in Southern province and then to Gakenke district in Northern province. For these two trips, a Rwandan research assistant was hired, who translated, provided further explanations during interviews, and organised logistics in the rural settings.

A formal research permit was obtained from the Rwandan National Council for Science and Technology. An application could be submitted online in advance and the prepared permit could be collected from the council's office within the first week in the country. For the second part of fieldwork (October-November), an extension had to be requested and was granted without complications. A key requirement for being issued a research permit was the affiliation with a government or approved research entity in Rwanda. The Rwanda Development Board (RDB) was contacted via an expatriate acquaintance and the formal affiliation form was filled out by the agency. Louise Kanyonga, Department Head of Strategy and Competitiveness at RDB, signed the form and became the point of contact. As I had already lived and worked in Rwanda for two years between August 2014 and March 2017, I knew the country and especially life in Kigali well. This considerably shortened the time of settling in and eased the handling of bureaucratic issues, such as obtaining a research visa (distinct from the research permit) from the General Directorate of Immigration and Emigration.

Without notable local contacts in the relevant domains of coffee, tourism, and manufacturing, and due to other initial difficulties, the first weeks were rather unproductive regarding the conduction of actual interviews. After eventually meeting with Kanyonga and talking to people at public events, some pathways opened up to get in contact with relevant government representatives. Since RDB is the government entity responsible for tourism, arranging a few meetings with tourism representatives was possible. Over the first few months, the snowballing technique was used to get in touch with further stakeholders, mostly Rwandans working in government ministries and agencies and expatriates working for international organisations. After several weeks of gathering general information about the relevant economic sectors and areas and talking to many people in an exploratory approach, a more specific interview plan was drafted.

Participating in the 17th African Fine Coffee Conference & Exhibition that was held in Rwanda in mid-February 2019 allowed me to meet key stakeholders of the coffee sector in person and to arrange meetings. From then on, a couple of interviews could be held with representatives from the National Agriculture and Export Development Board (NAEB), which is in charge of the coffee sector. An interview guide for coffee-exporting companies was designed and at the end of the first research stay, five firms were interviewed. This was continued upon return in October. Additionally, two one-week trips to major coffee-growing districts were conducted in these final two months. First, Huye district in the Southern province was visited. Interviews were conducted with district government representatives, sector agronomists, wet mill owners and managers, representatives of cooperatives as well as a few farmers. The second trip to Gakenke district in the Northern province was conducted in the same way. In Kigali, a large number of senior managers of coffee exporters were interviewed.

To better understand the hotel sector, a structured survey was created and all hotels in the capital Kigali which had been given a three-, four- or five-star rating by the Department of Tourism Regulation at RDB were identified. The reception desks of these hotels were called and asked for the telephone number of the general manager, which was usually provided. Then, the general manager was called and a personal meeting was arranged. Some managers could not be reached on repeated attempts and others referred to a senior employee with whom a meeting was then organised. A meeting was refused in a small number of instances and a few others stalled proper phone calls or meetings in a way that was effectively a rejection to be interviewed. In the end, 19 out of 30 relevant hotels could be surveyed. Hotels of all three different star categories as well as both foreign- and domestic-owned hotels were included. As most managers provided time slots of a maximum of one hour or less, the original survey could not be conducted in full and therefore, the meetings turned out to be of a rather semi-structured nature. Nevertheless, it was still possible to extract reasonable amounts of relevant information.

The manufacturing sector was not examined with the same intensity as coffee-processing and tourism during fieldwork, which is why representatives of actual manufacturing firms were not approached. Instead, almost all interviews regarding manufacturing and industrial policy have been conducted with government employees, donor representatives, and consultants, both Rwandans and expatriates.

Information on the perception of investors, entrepreneurs, and firm managers had to be taken from secondary evidence. As outlined above, agriculture, more specifically food crops, was not examined during the original fieldwork. The respective case study therefore relies almost exclusively on ample statistical evidence and reports as well as a very small number of interviews, mostly conducted via telephone and email after leaving Rwanda.

In total, 128 people were interviewed in 139 meetings. Most of them were individual interviews and 15 people were met more than once. 74 interviews can be placed in the coffee sector, 33 in the tourism sector, 6 in agriculture, and 26 in manufacturing.[13]

Fieldwork Challenges

Two particular aspects need to be clarified about conducting interviews in Rwanda. First, it is generally recognised that human capital and skills are still rather low, especially in mid-level positions, given the young age of the Rwandan bureaucracy after its complete destruction in the civil war and genocide and their aftermath. The same applies for the private sector and non-governmental organisations (NGOs). As a result, there were often significant communication problems. A key aspect was the language. Besides the native tongue Kinyarwanda, which is spoken by virtually every citizen, Rwanda switched its working language from French to English after the genocide.[14] Many older civil servants struggled to learn the new language and were more comfortable with French. Thus, in the interviews it was offered that interviewees answer questions in French. However, even younger employees did not speak English fluently (nor French) and therefore had problems to express themselves. This deficiency is believed to have two main causes; first, almost all daily communication happens in Kinyarwanda, therefore there is little need and practice for many people to speak English, and second, English lessons in schools and universities are known to be of very poor quality, as teachers do not master the language themselves. It could regularly be observed that questions were not properly understood and/or given answers were quite generic and expressed in simple words.[15] Furthermore, during the district trips, the research assistant reported that many interview partners struggled to understand questions properly, even when posed in Kinyarwanda and explained thoroughly. These issues complicated evidence gathering.

The second particularity about doing qualitative research in Rwanda is the secretive culture resulting from a strongly authoritarian surveillance state and a historically high degree of political and social control. This phenomenon is widely acknowledged by Rwanda researchers. René Lemarchand described Rwanda as "a cultural environment in which concealing or distorting the truth are traditionally regarded as both a virtue and an art" (Lemarchand 1970, in: Jones 2014:12). Jones remarks that "the reputation

[13] See Appendix 1 for a full anonymised list.

[14] This was to distance oneself from the former coloniser (Belgium) as well as the French government, which had supported the former *genocidaire* government. However, in practical terms this was also because most members of the ruling elite, including the President, had lived in Ugandan exile and therefore spoke English.

[15] Using a translator for these interviews was not an option, as interview partners felt that they were fluent in English and would consider it an insult to having a translator.

of the RPF for secretiveness, rumour-mongering, and conspiracy is well deserved" (Jones 2014:46). Prunier concluded that "Kigali politics are only slightly more transparent than Pyongyang's" (Prunier 2009:302). As a result, it is common among Rwanda scholars to not record interviews, as people would often be uncomfortable with this and be even more restrained in making certain statements. However, even in non-recorded interviews conducted in privacy, few Rwandan interviewees would speak freely. It could be noticed that many stuck to official narratives and, if raising criticism or voicing an own opinion, this was done very cautiously. Rwandans openly speaking their mind were rare. Several critical thoughts and insights beyond the official view were provided by well-informed expatriates. It is evident that an expectation to be trusted with confidential or controversial information as a foreign researcher would be entirely misplaced. However, it is well known that civil servants and private sector employees in other African countries (e.g. Nigeria or Uganda) speak very openly about problems, weaknesses, and failures, and point towards occasions of informal networks, corruption, or the circumvention of formal structures or rules by government entities or companies. This was virtually absent in all interviews with Rwandan citizens and created a barrier to gathering meaningful evidence.

Researcher Positionality

It is important to acknowledge that it is the researcher and not the interview partners who needs to be seen as the cause of any problem arising from the two fieldwork challenges described above. As a guest in a foreign country, it is a privilege for the researcher if interview partners are willing to participate in a meeting in general and to provide information in a language different than their native tongue in particular. Also, if some interview partners appear to understand questions in a different way than the researcher, it is obviously the latter's task to adapt to his respondents' perspective (and not the other way round). The existence of several communication barriers, that is language, cultural and societal environment, lived realities, worldview, gender, ethnical and class differences need to be accepted and appropriately dealt with by the researcher. Existing power structures need to be properly understood by the researcher and his behaviour needs to be adjusted responsibly – especially if he is a white European male (as in the present case).

Ethics

Fieldwork and the conduction of all interviews was carried out in full compliance with the SOAS Research Ethics Policy. Most importantly, all interviewees were properly informed about the research endeavour, their rights and how the evidence they were providing would be handled and anonymised. Thus, they were able to give their informed consent and all of them did so. Almost all interviewees were categorised as 'not vulnerable', as they were senior- or medium-level government representatives, urban business employees, independent entrepreneurs or researchers. A few interviewees in rural areas that provided evidence during the two weeks of fieldtrips into coffee-growing areas can be classified as being vulnerable. In these cases, a Rwandan research assistant and translator was present who explained all issues regarding consent in the respondents' native tongue. While all data was anonymised, no sensitive information was revealed during these interviews, therefore creating no risks for the interviewees. Several interview partners requested access to research results and provided their email address for this purpose. Drafts of the respective chapters have been sent to them.

Normative Dimension

Doing research in a developing country with an authoritarian regime can be seen as implicitly endorsing its political system, especially if the research output does not condemn all known right violations. An even trickier issue is the development of a normative standpoint regarding the complicated question whether and how an autocratic government committing human rights violations and simultaneously bringing about effective development is to be morally assessed. It is without doubt that many practices of the Rwandan government in the past and present go against most understandings of human rights. Dealing properly with this topic would require adopting and then applying a philosophical human rights concept. This is largely omitted in this thesis, simply due to limited space. However, engaging with this intricate topic shows that conceptualising human rights as individual moral claim rights is irreconcilable with Rwandan practice. However, both a consequentialist and a realist human rights concept make more sense in the context of developing countries without being apologetic about any rights violation (Harrison 2020). In this thesis, the normative dimension of development is left out, meaning that at no point the question is asked what the Rwandan government *ought to* have done or do in the future from a moral point of view, but it is always analysed *what* was done, *why* it was done, and what the *consequences* of these acts were from a developmental perspective.

1.8 Structure of the Thesis

The remainder of the thesis is structured as follows. Chapter 2 elaborates the analytical framework of the thesis. It starts with a brief introduction of Khan's Political Settlements Theory, as the framework is strongly based on it (2.1). Then, its premises and building blocks are described and explained in full detail (2.2), before its causal mechanisms are elicited (2.3).

Chapter 3 conducts a political economy analysis of post-2000 Rwanda, making use of the framework developed in chapter 2. After a condensed illustration of the country's historical trajectory (3.1), the political settlement of post-2000 Rwanda is described (3.2). This is followed by the portrayal of the ruling elite's political survival strategy (3.3) and its governance system (3.4). Next, the types, relative power and activities of Rwanda's economic organisations (3.5) and the changing composition and value creation of its economic sectors and sub-sectors as well as trade flows over time (3.6) are depicted. Then, the country's adverse exogenous conditions (3.7) and its concrete overall development strategy and actually achieved outcomes are sketched (3.8), before a chapter conclusion is drawn (3.9).

The following four chapters provide empirical case studies of four Rwandan economic sectors. Chapter 4 studies coffee-processing. It starts with a brief overview of the basics and mechanics of Rwandan coffee cultivation and -processing (4.1) and the depiction of the sector's historical development until the beginning of domestic value addition through wet mill processing in 2001 (4.2). Then, government and donor interventions in the processing node of the coffee value chain from 2000 to 2019 are illustrated in detail (4.3), complemented by depicting the upstream activity of coffee cultivation (4.4), the recently established zoning policy (4.5), and the downstream node of coffee exporting as well as further value addition (4.6). Finally, a sector case study conclusion is drawn (4.7).

Chapter 5 examines the country's hospitality industry. It starts with a brief depiction of Rwanda's endowments that make it a promising tourism destination (5.1) and then presents the key economic developments in terms of tourist arrivals, revenues, and employment that have been achieved in recent years (5.2). Next, it explores the post-2000 Rwandan government's tourism development policy and practice (5.3). Subsequently, the evolution of the country's hotel sector as a key part of the tourism industry is examined in detail (5.4). Finally, a sector case study conclusion is drawn (5.5).

Chapter 6 analyses Rwanda's food crop sector. It starts with an outline of the Rwandan government's strategic approach to agricultural transformation (6.1). Then, the country's agricultural statistics system is delineated (6.2). Next, Rwandan agricultural production and yield data from 2005 to 2018 from various sources is dissected (6.3). Section 6.4 discusses potential causes of stagnating food crop production, section 6.5 debates political economy explanations for the revealed data patterns of systematic overestimation, and section 6.6 illustrates the acquisition and maintenance of Rwanda's false reputation of agricultural success. Finally, a sector case study conclusion is drawn (6.7).

Chapter 7 assesses some developments in the manufacturing sector. First, a brief quantitative overview of the evolution of Rwanda's manufacturing industry and its sub-sectors is provided (7.1). Then, the country's industrial policies over time are depicted (7.2). Next, three cases of successful and failed manufacturing policy practices are sketched (7.3). Finally, a sector case study conclusion is drawn (7.4).

Chapter 8 finally synthesises the results from all previous chapters and concludes. It starts with a recapturing of the intellectual history of academic research into post-genocide Rwanda's political economy of development and the placement of this thesis into the literature (8.1). It then answers the overall as well as the secondary research question (8.2). Next, a short reflection on the analytical framework's merits and limits is provided (8.3). Finally, a brief outlook into Rwanda's potential future is made (8.4).

Chapter 2: Analytical Framework

The appraisal of a developing country's transition towards a prosperous and inclusive society depends on the particular concept of development that is deployed in the analysis. This thesis' analytical framework already sketched in chapter 1 and to be elaborated throughout this chapter is strongly based on Mushtaq Khan's Political Settlements Theory (PST) and its development understanding as well as other scholars using PST, mostly Whitfield et al. (2015). Therefore, it makes sense to first introduce Khan's work and its offspring in general and briefly locate it within the literature on economic development (2.1). Then, the premises and building blocks of my analytical framework are described and explained in full detail (2.2) and its causal mechanisms are elicited (2.3).

2.1 Political Settlements Theory: Introduction and Classification within the Literature

Political Settlements Theory, as developed and refined by Mushtaq Khan (1995, 2000a, 2000b, 2005, 2009a, 2009b, 2010, 2013a, 2013b, 2018a, 2018b), is a powerful framework to structure and analyse the complex and abstract processes of economic development in developing countries. More specifically, its purpose is to explain which institutions and policies lead to sustained economic growth and industrial development in specific political contexts and why. As any political economy theory of economic transformation, it aims to identify regularities in a large number of individual development trajectories that allow to elicit causal patterns of developmental success and failure. At its core lies the hypothesis that "the distribution of power across organizations [is] usually the most important determinant of the path of institutional change, and the effectiveness of particular institutions" (Khan 2018a:638).

PST is eclectic and was elaborated over time, which is why the whole opus is spread over several papers, journal articles, monographies, and book chapters. It originated in Khan's PhD thesis (Khan 1989) and a critique of the shortcomings of New Institutional Economics (NIE) to properly explain how institutions drive economic change (Khan 1995). In a sense, most of Khan's numerous publications deal with PST and focus on different aspects of social reality in developing countries. This brief overview is not a proper historiography of the theory, but merely lists the more influential works that, taken together, provide a comprehensive illustration of PST. Two book chapters in 2000 (Khan 2000a, 2000b) revolve around rents and rent-seeking as the central mechanisms that propel clientelist societies in developing countries whose particular characteristics depend on a country's power configuration. The historical background of capitalist transformation is best described in Khan (2005). A commissioned paper series on 'Governance for Growth' captures the essence of key components of economic transformation: the necessary changes in rights structures (2009a), the logic of firm learning (2009b), and the power configuration in society (2010). Two further book chapters (Khan 2013a, 2013b) deliver pragmatic insights how industrial policy can look like in countries with sub-optimal political settlements, i.e. those where East Asian type industrial policies are unlikely to be enforceable. Finally, two recent articles (Khan 2018a, 2018b) provide a synthesis and clarification of some PST aspects as well as an advanced understanding of the theory's intricacies. Geographically, Khan's work has focused on Asia, and his empirical case studies have examined Bangladesh, various states of India, Malaysia, Nepal, Pakistan, Palestine, South Korea, Taiwan, Thailand, Vietnam as well as Tanzania.

There is one methodological fallacy that needs to be avoided when using Khan's political settlements theory. Nobel laureate Oliver Williamson argued that differential outcomes can *ex-post* always be explained by the fact that the prevailing party had more power than the losing one (Williamson 1985:33–34). While he was arguing from a transaction cost economics point of view analysing advanced economy markets in a neoclassical framework, the general notion is applicable in the context of development as well. In this case, power as an explanatory variable may become tautological and non-falsifiable. Thus, there is indeed a danger of circular reasoning in the application of PST, if the analytical determination of the power configuration in a country is not separated from analysing policy outcomes (Khan 2021). An example for such fallacious logic would be first to postulate that clientelist structures in a country lead to public procurement orders being assigned to the firm with the best political network, second to record which organisation won the bid, and third to argue that this company secured the order because it had the largest political power. Khan's original approach avoids this problem by deriving organisational power structures from detailed historical analyses first, and then analysing policy design and implementation outcomes given the previously defined political settlement (Khan 2021). This method of circumventing any potential tautology problems is also used in the thesis at hand.[16] In general, PST's main hypothesis –that the distribution of power is a key variable in determining the effectiveness and performance of institutions and policies– is refutable and would be falsified if the same institutions and policies would perform identically or very similarly across widely differing political settlements.

Khan's PST can be understood as one of several critiques of both NIE including its recent econometrics-based offspring (e.g. Acemoglu, Johnson, and Robinson 2001, 2002; Menard and Shirley 2005; North 1990; North and Thomas 1973) and even more narrowly economistic development approaches emerging from neoclassical economics (e.g. World Bank 1993) and new political economy (e.g. Bhagwati 1982; Krueger 1974). The works of Khan and colleagues varied widely and both critiqued and built on each other. A holistic overview cannot be provided here[17], but a brief introduction of one particularly prominent approach as well as listing a few other important ones helps to place Khan's contribution within the wider field.

Perhaps the most influential NIE critique is developmental state theory (DST), which emerged as a school of thought to explain the enormous success of state-led industrial policy in Japan over the five middle decades of the 20th century (Johnson 1982) as well as South Korea's and Taiwan's different yet also clearly state-induced transformations from poor agricultural to rich industrial and then post-industrial states within a few decades (e.g. Amsden 1989; Haggard 1990; Wade 1990). Within DST, Fine (2013) distinguishes between a political school that focuses on "the nature of the state itself and

[16] Two other methods are using external expert assessments and assessing revealed power structures in micro-transactions (Khan 2021), which were both not feasible in the present context.

[17] For such analyses see for example Khan (1995, 2012a), Whitfield et al. (2015), and Gray (2016).

whether it has the potential […] and the independence […] to adopt the necessary developmental policies" and an economic school, which exclusively aims to "identify [these] appropriate policies" (p.4). To elaborate, the political conditions of a developmental state are characterised by *embedded autonomy* (Evans 1995), which can be understood as the state being autarkic from particular special interests of powerful groups in society but at the same time very much ingrained in societal relations, especially the private sector (Fine 2013). Leftwich (1995) defined the developmental state as exhibiting six major components: autonomy, an able bureaucracy, effective industrial policy, a committed ruling elite, a weak society, and some degree of repression. Economically (i.e. regarding the mechanics of industrial policy), the state corrects market imperfections by exploiting positive and wiping out negative externalities, by providing subsidies and other rents to certain industries and individual firms and withdrawing them, if effort and performance are not forthcoming or strategic priorities change. A further role of the state can be seen in acquiring and allocating investments and, to varying degrees, investing in and even running companies itself (Woo 1999). However, a convincing model of the historical and political causal and systemic relations was missing. Additionally, DST was strongly criticised by other Northeast Asia scholars that had detailed knowledge about the actual political conditions and processes occurring in these countries (Cheng (1990), Moon and Prasad (1994), and many others, in: Whitfield et al. 2015:8). Those authors demonstrated that also these Northeast Asian 'model states' in fact did have "contending factions within and among the executive, bureaucratic agencies, and the ruling party" (Whitfield et al. 2015:8). In particular, empirical evidence showed that the state (ruling elites and bureaucrats) were not isolated from special interests of societal groups and that political corruption was wide-spread. Moreover, industrial policy was not first designed and then stoically and effectively implemented by using clear-sighted planning; rather, various approaches were pragmatically tried out, and then improved upon by experimentation, trial-and-error, and learning-by-doing (Whitfield et al. 2015:9). As these features precisely constituted those neopatrimonial features that were seen as the reasons for development failure in other regions (particularly in Africa), the puzzle of the marvellous economic catch-up of South Korea and Taiwan was not solved. Simply stating that the degree of neopatrimonialism was sufficiently weaker (but still clearly present and powerful) in successfully transforming states than in developmentally failing countries was not convincing and also very hard to measure. Rather, a different theory better capturing the described empirical evidence and eliciting what political differences exactly *were* responsible for the very varied development outcomes was needed. This is what PST does provide by seeing the historically determined configuration of power between and among political and economic organizations and their respective capabilities as the decisive force that shapes the political survival strategy of ruling elites determining which politics and policies they pursue as well as their ability to actually implement and enforce them.

Then, there are several other scholars who have conducted important work and came up with their own frameworks to make sense of latecomer development in Asia and what that meant for economic catch-up in Africa. There is the work of Richard Doner, Bryan Ritchie and Dan Salter arguing that Northeast

Asian countries developed because they faced three systemic vulnerability conditions, while at least one of them was missing in Southeast Asian countries that accomplished only medium-level development (Doner, Ritchie, and Slater 2005). Furthermore, Ha-Joon Chang with his work on South Korea's economic transformation as well as on the history and nature of industrial policy more generally has both shaped development thought and popularised the notion of strong state involvement in economic development as the historical norm (Chang 1993, 1996, 2002b). Coming from a more orthodox perspective, Justin Lin, the World Bank's chief economist from 2008-2012, has shaped his own economic theory of New Structural Economics, in which he combines neoclassical, new institutional, and parts of Marxian economics to explain how developing countries can achieve sustained growth based on making use of their comparative advantages (Lin 2012). Finally, a further interesting contribution comes from Douglass North, John Wallis and Barry Weingast (North et al. 2013; North, Wallis, and Weingast 2009). Having been one of the most influential thinkers of NIE, North's understanding of developmental processes throughout his life has gone through significant changes, which led him further and further away from neoclassical economics (Gray 2016; Ménard and Shirley 2014). In his late contributions, he and his co-authors bring forward a new framework starting with societies' need to control violence and set up a social order. These efforts, they suggest, have historically led to one single and quite uniform societal organisation system, a limited access order. Only in the last one or two centuries did a few now rich countries manage to transform this social reproduction model into an open access order. While sometimes, PST and access order theory have been use synonymously (World Bank 2017), there remain important and partially fundamental differences between the two approaches that are neatly assessed in Gray (2016). Given North's standing and influence on both academia and development cooperation practice, these deviations from much of his earlier works is remarkable and may lead to further fruitful debate between more heterodox and more orthodox development theories.[18]

In recent years, PST has been applied frequently to various developing countries, especially African ones, and slightly or majorly differing frameworks have been developed by several authors to deal with particular country situations or to include additional variables deemed missing or undervalued in the original framework by these scholars. Two particularly important ones shall be outlined here. First, probably the most comprehensive utilization of Khan's PST to analyse recent African development is Whitfield, Therkildsen, Buur and Kjær's book *The Politics of African Industrial Policy* (Whitfield et al. 2015), in which the authors conduct a very conducive recapitulation of Khan's work in detail, place it in context of the broader development literature, expand it, and then apply it to eight sector case studies in four African countries (Ghana, Mozambique, Uganda, and Tanzania). The authors stay very close to the original framework but add a few components, such as making the political survival strategy of the

[18] As already noted above, these brief paragraphs cannot do justice to the seminal work of many scholars that critiqued NIE and the good governance approach, contributed to immense progress in understanding development over the past decades, and often fertilised each other in productive ways, such as, additionally to the ones listed above, the work of Kunal Sen, Robert Bates, and Yuen Yuen Ang.

ruling elite more explicit, connecting the political settlement with conditions of successful industrial policy coming from parts of developmental state theory, and incorporating the 21st century evolution of global economic structures. Also, their near-complete review of Khan's theory elicits a deeper understanding of the complexity of latecomer development, which is why this source is referenced regularly throughout the thesis.

Second, probably the most impactful adaptation of Khan's framework comes from the *Effective States and Inclusive Development (ESID)* research consortium at the University of Manchester. A recent academic debate between Khan (Khan 2018a, 2018b) and Kelsall (2018b, 2018a) highlights both their common ground and differences, of which the latter appear to originate in different definitions of political settlements as structural power configurations versus agency-based elite agreements and the theoretical orientation of qualified historic materialism (i.e. whether ideas are pursued genuinely on their own or are only used as vehicles to secure access to resources and rents). The alternative political settlement definition that ultimately leads to a distinct typology in Kelsall's work is elaborated in Kelsall and vom Hau (2020). The inclusion of ideas into the interest-centred political settlement framework has been pursued by Hickey (2013) and Lavers (2018). The ESID framework has been applied to socio-economic dimensions beyond industrial policy, mainly social protection, health, education, and gender. The research consortium has also developed a new method to determine countries' political settlement configurations *ex-ante* to avoid any circularity problems. They have conducted a comprehensive expert survey covering over 200 variables in 42 countries from 1946 to 2018 (Schulz and Kelsall 2021). This allows them to pursue econometric and other quantitative analyses. While the ESID framework is not discussed here in detail or contrasted with Khan's PST, some of its concepts are used throughout this thesis whenever they provide further insights.

2.2 Premises and Building Blocks of the Analytical Framework

The purpose of the analytical framework developed in this chapter is to structure the complex processes of economic development and political and social change. While it may be used to understand these phenomena in any developing country, in this work it serves to make sense of Rwanda's evolution, in particular to interpret the findings obtained by historical and political science as well as those of other political economy analyses. In subsequent empirical chapters, the framework may provide a general orientation, but there the collected evidence is used to explain the varied sector development policy outcomes regarding economic growth and transformation. These results can then be used to test whether the framework's postulates stand up against the empirical evidence. As any reasoning is based on a set of premises, it is helpful to make at least the most salient ones explicit. Chapter 1 already contained four general premises of the PhD thesis that are inherent to PST: the validity of comparative historical research, history as a combination of critical junctures and path dependence, the mode of interaction between structure and agency, and a qualified version of historical materialism. There are four further key tenets in this analytical framework related to the nature of development that are adopted from PST. They concern first, the nature and origin of capitalism as a system of market compulsions having evolved from a particular societal power configuration, second, political survival as the primary motive of ruling elites, third, economic value creation occurring mainly through production, and fourth, humans and organisations being 'satisficers' rather than maximisers (table 2a). All four will be elaborated in the course of this section.

A proper political economy approach requires to incorporate historical, political, and social conditions and processes to make sense of economic matters. Thus, before industrial policy processes and their economic outcomes can be analysed, several interrelated aspects of social reality need to be grasped first. To that end, the analytical framework at hand is structured into eight building blocks to organise its complex contents, most of which originate in Khan's PST (table 2b). These can be classified in three categories: two building blocks describing the general frame and background of the theory (capitalist transformation and the legacy of colonialism), three further ones illuminating the *politics* of industrial policy (the clientelist social order in contemporary developing countries, the configuration of political and economic power and capabilities in interaction with its institutions, and the political survival strategy and governance mode of the ruling elite), and finally three more parts capturing the *mechanics* of industrial policy (the (macro-)economics of production transformation, the (micro-) economics of firm learning, and the industrial policy appropriate to a country's particular situation). This section will describe the elements of the analytical framework by moving along these eight building blocks, discussing the development-specific key premises along the way.

a) Key Premises			b) Building Blocks		
1)	Comparative historical approach	Theo-retical	1)	Capitalist transformation	Historical Frame
2)	History as critical junctures and path dependence		2)	Colonial legacy	
3)	Mode of interaction between structure and agency		3)	Clientelist social orders	Politics of Industrial Policy
4)	Qualified historical materialism		4)	Power configuration	
5)	Nature and origin of capitalism	Develop-ment	5)	Political survival strategy and governance mode of ruling elite	
6)	Political survival as key motivator of ruling elites		6)	Production transformation	Mechanics of Industrial Policy
7)	Economic value is created primarily through production		7)	Firm learning	
8)	Humans and organizations are 'satisficers', not maximisers		8)	Industrial policy	

Table 2: Key Premises and Building Blocks of the Analytical Framework
Source: Author's Illustration, based on Khan (2000a, 2000b, 2005, 2009b, 2010, 2018a, 2018b) and Whitfield et al. (2015)

1) Historical Trajectory of Advanced Countries: Disruptive and Completed Capitalist Transformation

The default state of both ancient and modern human civilizations is poverty (Reinert 2007). Today's rich countries are all governed by the economic system labelled capitalism (Milanovic 2019). These two general observations are causally connected: the emergence of capitalism is responsible for the unprecedented rise of living standards in the last two centuries across the globe and the existence of wealthy countries with no absolute poverty and a broad middle class (Harrison 2020). If one wants to know how a poor country such as Rwanda can become rich, it is necessary to understand how capitalist transformation processes are taking place in today's developing countries. Even more, the gradual transition from a non-capitalist into a capitalist social order is a conducive way of conceptualising sustained economic development (Khan 2005).[19] Therefore, it is crucial to understand the nature of

[19] These statements might appear particularly controversial, as capitalism is commonly associated with alarmingly rising inequality in many advanced countries, unchecked climate change, and much ostensible and actual worsening of living

capitalism, its mechanisms that led to enormous levels of wealth often allocated at least to some degree across the wider population over the medium term, and the historic processes of capitalist transformation (i.e. the gradual emergence of capitalism) in different countries and time periods. Contrasting two competing understandings based on different readings of historical processes helps to display the particularities of the definition used in PST and the framework at hand.

According to classical political economy and new institutional economics, capitalism emerged as an incremental commercialisation of societies, characterised by surging trade, the extension of markets and loosening of its constraints, technological innovation, urbanisation, the enlightenment, and the decline of feudalism in general. One of Adam Smith's central arguments was that "trade enables an increasing division of labour, which in turn leads to the discovery of more efficient production processes" (Booth 2021:226). North and Thomas (1973) argue that the evolution of an efficient system of property rights was key to the rise of the Western world. This model is based on an understanding of humans as naturally inclined to seek personal gain, such that entrepreneurship and a market-oriented society are in line with human nature itself. Thus, the rise of capitalism was much more an *expansion* of this natural trend, once feudalism and other restrictions were attenuating, and not a *transformation*. This reading of history is known as 'commercialisation model' (Wood 2002).[20] Capitalism, in this view, can be defined as a market system coordinating all economic activities of private for-profit firms that control the production and allocation of most goods and services (Chandler 1990; Friedman 1962; Williamson 1985).

Originating in Marx' critique of Smith's classical political economy, many contemporary political economists and other social scientists hold the view that capitalism emerged as *one specific mode of production* in a fundamental, century-long, highly disruptive, and deeply contested transformation of societal organisation. Robert Heilbroner described how European societies were run by command and tradition in the Middle Ages and how profit-seeking (let alone profit-maximising) rationales were absent in the vast majority of the population, being even considered perverse (Heilbroner 1999:13–21). Even profit-making in the early age of imperialism was limited to trade and did not entail production (Booth 2021). In Europe, this social order was completely overthrown and substituted by capitalism over the course of several hundred years in what can be called a capitalist transformation. The change was so fundamental and has led to a new paradigm that is so pervasive that basic principles of modernity, such as that the value of any good can be expressed relative to the value of another one via money and prices, are considered 'natural' and universal, while they are actually a modern invention. According to this reading of history, capitalism originated in a particular distribution of power between landlords, tenant farmers, and peasants that allowed a specific type of 'primitive accumulation' in 16th century England

conditions in poor countries. Despite these trends, the following depiction of the essence of capitalism demonstrates that the claim about the causal connection of capitalist transformation and high living standards made above is reasonable to maintain.

[20] Historical evidence shows it to be implausible. A major argument against the commercialisation hypothesis is that it cannot explain why capitalism did not emerge in highly commercialised economic hubs, such as the Italian city states, 17th century Netherlands or economically advanced areas in Asia, but instead occurred in backward and peripheral England (Wood 2002). Also, there exist detailed records on how the transformation process was heavily contested by peasants, guilds, aristocrats, and the state alike, which does not fit the narrative of unfettering the chains of feudalism (Heilbroner 1999).

to occur (Brenner 1976; Wood 2002), known as the 'Brenner thesis'.[21] Also in Germany and the United States, the origin of their respective (and very different) paths to capitalism lay in agriculture (Byres 1996). This is why this perspective is labelled 'agrarian model' (Wood 2002). The historical capitalist transformation in Europe can be conceptualised as consisting of three intertwined processes: the expropriation of a large share of the peasant population (known as enclosures in England) and the subsequent creation of a propertyless class that had to earn a living by engaging in wage labour instead of subsistence agriculture (the so-called social transformation); primitive accumulation of assets by newly emerging capitalists through non-market mechanisms such as a change of the property rights system; and crucially, the compulsion of these capitalists to put these assets to productive use, to reinvest profits and raise productivity in order to survive fierce competition (Khan 2005). Expressed differently, the three basic production factors in economics –land, labour and capital– were commodified (Heilbroner 1999). This reading of history fits well with the concept of critical junctures and path dependence borrowed from historical institutionalism and it is the one incorporated in PST and this framework.

From this description arises a specific definition of capitalism. Capitalism is characterised as determining the allocation and utilisation of the production factors land, labour, and capital through the market mechanism. Land and capital are defined by formal and secure property rights and can be bought and sold in the market. Most people in society do not dispose of sufficient property (in the form of land or capital) to maintain their living, hence they are compelled to sell their labour in the market. Land, but especially capital, is put to effective use, profits are reinvested, and output and productivity are constantly increased, leading to continuous economic growth (Heilbroner 1999).[22] Furthermore, the capitalist system is governed by compulsions forcing capitalists and workers to increase their productivity as opposed to merely by incentives and opportunities being seized by entrepreneurs. This notion is consistent with Joseph Schumpeter's concept of innovation and creative destruction (Schumpeter 1942). Firms can earn high profits from temporary monopolies created by innovation, but "falling profits from increased competition create an incessant drive to increase productivity and to find new combinations of products and processes" (Whitfield et al. 2015:46). Understanding 'the market' as providing opportunities versus generating compulsions is a key differing premise of mainstream and some heterodox interpretations of economic history and social reality. This difference is connected to a second premise on the nature of human beings and the economic organisations they form: whether they are seen as (utility/profit) maximisers or 'satisficers' (satisfy + suffice), the latter being a concept developed by Herbert Simon describing how most humans use heuristic decision-making to choose an option that adequately fulfils their needs (Simon 1956). If most humans were indeed natural utility maximisers and companies were profit maximisers, behavioural incentives and market opportunities

[21] As recently argued by Booth (2021:242), this fundamental finding of neo-Marxist research based on extensive historical evidence is not compromised by the problematic teleology of this field.

[22] Many scholars have argued that capitalism is also inherently prone to severe crises, which seems plausible given historical and recent evidence. However, this unfortunate systemic feature is not discussed here.

would be sufficient to ensure very high efforts. However, if most people and organisations satisfice, they do not put in more efforts than needed to end up with an adequate result except when compelled by external forces. In traditional societies, these compulsions came from social norms and feudal command, in practised communism they were created by the state, and in capitalism, market forces coerce all actors to put in high efforts to sustain themselves. Thus, if creating a wealthy society is a goal to be pursued, of these three options to create compulsion mechanisms, despite its inherent contradictions, capitalism has turned out to be the most effective and sustainable. While this transitory process entailed centuries of misery for the majority of the population in Europe, is has eventually resulted in unprecedented wealth and living standards even for below-median households (Khan 2005).

2) Historical Trajectory of Developing Countries: Clientelist Social Order as Colonial Legacy

While the capitalist transition is largely completed in advanced countries, it is still under way in all developing countries; and in many African countries, including Rwanda, it is still in the initial phase. Large shares of citizens are still mainly or partly engaged in subsistence agriculture, land is often designated by hybrid and contested property rights, and various forms of primitive accumulation by the government, foreign companies, and domestic entrepreneurs are in progress (Whitfield et al. 2015:14–16). At the moment, competitiveness and productivity of most African firms are low, which is indicated by the lack of a considerable number of large transnational African corporations. It can be concluded from the illustrations above that advanced countries became rich by going through and completing successful capitalist transformations. Therefore, economic catching-up of developing countries can be equated with the enlargement and professionalisation of their capitalist sectors. It needs to be emphasised that the actual processes of capitalist transformation in contemporary developing countries cannot take place in the same way they did in Europe but that the transition has to occur in more humane ways and adapted to the circumstances of the 21st century.[23] Before turning to the consequences for policy-making, it needs to be understood how societies in developing countries work, as they are neither capitalist nor feudalist or traditional anymore. Rather, in the context of their pre-colonial origins, their colonial past, and their independence and post-independence struggles (that is their historical trajectory), most of them have become entrenched in neopatrimonial clientelism.

A critical juncture of most non-European countries was the colonial era. The trajectory and legacy of colonial rule in particular countries was vastly diverse and occurred over several centuries (from the early 16th century in the Americas until well into the second half of the 20th century for some African colonies).[24] A prominent distinction in the literature concerns settler and non-settler colonies. The former include the 'neo-Europes' Canada, USA, Australia and New Zealand. The latter constitutes the rest of

[23] However, acknowledging that capitalist transformation usually includes the restructuring of rights and "the allocation of suffering" is important (Harrison 2017:880). The tension between the logic of development as capitalist transformation and the liberal understanding of human rights as individual moral claim rights is a normative challenge that cannot be fully resolved (Harrison 2020).

[24] In the following, only the effects on political and economic development paths will be portrayed. The atrocities committed, the impact of imported diseases, and the enormous multidimensional suffering caused will not be described here.

the world, including most of Asia, Latin America, and the African continent. It is without doubt that the settler colonies turned into highly prosperous nations, while until a couple of decades ago all non-settler colonies as well as more generally almost all countries besides the "West" were not doing well economically. There is no consensus, however, about the causes of this trajectory. Acemoglu, Johnson and Robinson (2001, 2002) argue that inclusive political institutions and secure property rights enabled the prosperity of, for instance, the United States (and of Europe more generally), while Glaeser et al. (2004) bring forward a theory of human capital trumping institutions and being the fundamental cause of growth. Others think that "geography is destiny" (Morris 2022).

When understanding the evolutionary paths of developing countries as processes of capitalist transformation, a very different image emerges. After century-long struggles, the capitalist transition in Western Europe was largely complete and more or less stable and democratic Weberian rule-of-law countries with formalised property rights and market economies had formed. This process, however, was neither voluntary nor inevitable. In the settler colonies, such a transition also took place, but in very different ways. In a comparatively short period of time, the indigenous population was marginalised (due to imported diseases and massive violence), all existing non-capitalist, unproductive property rights (e.g. traditional and customary land rights) were destroyed, and new capitalist, productive property rights as well as other 'inclusive' political and economic institutions (though limited to parts of male white settlers) were created. The transition towards a capitalist system was hence comparatively short and very disruptive and violent (Khan 2012a).

In European non-settler colonies, capitalist transformations were not pursued. Before the arrival of colonialists, most of the to-be-conquered societies were organised via traditional patrimonialism, either in quite centralised or rather dispersed ways. The foremost 'divide and rule' strategy of European imperialism resulted in a (very lop-sided) coalition of the colonialists and selected local elites, which allowed the economic exploitation of the colonies (also known as indirect rule). Instead of destroying existing institutions and rights, colonial rulers reorganised them to varying degrees but ultimately cemented them. At the same time, they introduced various measures of modernization, such as the construction of infrastructure, the imposition of their legal, tax and education system, and the creation of for-profit firms that evolved into a small capitalist sector. This led to a hybrid social order, where the logic of personalized, traditional power structures remained intact and continued to influence benefit allocation in informal ways, while simultaneously a modern state was built up that was supposed to operate similarly to Weberian states in wealthy Western democracies. The combination of these two contradictory features is known as neopatrimonialism. Khan describes them as clientelist social orders, in which formal institutions, including those that govern benefit allocation, are not aligned with the distribution of power across various organisations in society, and this misfit requires the informal re-allocation of rents to powerful groups to maintain political stability (Khan 2010:53–58).

In contrast, in countries colonised by Japan (mostly Korea and Taiwan), a different power structure emerged and this had a huge impact on further development. South Korea and Taiwan belong to the

Northeast Asian 'dragon states', which developed rapidly from the 1960s and as of today are among the world's wealthiest nations. Kohli (2004) argued that the legacy of Japanese colonial rule played a major role in enabling this transformation. Regarding the dismantling of non-capitalist and unproductive power structures and traditional institutional systems of benefit allocation, Japanese imperialism was more destructive than the European one in Africa, as instead of cooperating with local elites and the middle classes, those were diminished, leaving a very different, and as it turned out, much more development-conducive power structure behind. In a nutshell, Japan intended to create industrialised capitalist states in their colonies via direct rule, while European colonialists in Africa did not.

The characterisations above have important implications for today. First, the different transition paths to capitalism that took place in now advanced countries are not feasible for contemporary developing countries. Neither the century-long tumultuous evolution of Western Europe nor the disruptive and violent transition in the neo-Europes or Japanese colonies is feasible or desirable. Other more appropriate, less costly, and less violent solutions need to be found. Second, all countries that are rich as of today did not develop by first introducing a rule-of-law or secure property rights and then experiencing high sustained growth, but instead were set on a path of capitalist development and incrementally designed a more formalised society along the way. Third, the power structure of each country is inherited from its past and not deliberately changeable by anyone in the short run. Elites do decide about which policies to follow, but they cannot do so freely. Instead they are strongly constrained by what is feasible given the societal structure and power configuration in which they operate (Khan 2018a:6–9; Whitfield et al. 2015:95–96).

3) Neopatrimonial Clientelism, Corruption, and Rents

In the early 21st century, the social order of most African countries[25] has remained essentially neopatrimonial in nature, even after very diverse political developments, i.e. partially very disruptive independence and post-independence struggles, civil wars, coup d'états, the implementation of socialism, violent and manipulated or peaceful and fair elections, etc., have taken place over the last decades. In economic terms, many developing countries conducted industrialisation attempts including import substitution and export orientation strategies that largely failed, and subsequently suffered from debt crises, structural adjustment programs, premature deindustrialisation, and often misguided development cooperation efforts (Chang 2002b; Khan 2012a; Reinert 2007; Rodrik 2016). Their capitalist sectors might have grown and acquired more technological capabilities over time, but usually remain marginal. Their continued clientelist configuration entails many informal, chaotic, and contested processes of benefit allocation, corruption, conflicts over rights, primitive accumulation, rent-seeking, and rent-capturing. This means that the analysis of developing countries' formal institutions and organisations is not sufficient to understand their functioning. Informal organisations, most importantly

[25] As already indicated above, the focus is put on Africa because the thesis' case study is about Rwanda and the author is most familiar with the African continent, which is already almost too complex and diverse for the generalisations made here.

patron-client networks, and informal institutions, such as various semi-legal or illicit rent transfers, are omnipresent. Similarly, examining only formal economic activity is inadequate, as a significant share of overall value-addition is comes from unregistered firms. As a consequence, institutions, organisations, and the overall societal dynamics in developing countries operate rigorously differently than their counterparts in advanced countries.

The reason for the tenacity of this kind of societal order lies in the limited economic wealth that is produced in these countries. As the tax base is low, the official state budget is insufficient to provide and enforce a general rule-of-law. This also means that the benefit allocation to organisations and individuals cannot take place in a rule-following, universal, and impersonal way (including the provision of social services), as the available funds are insufficient. Even more, powerful organisations do not want a general rule-of-law, as a clientelist organisation of society is more profitable to them. However, many states did adopt formal rules (laws and policies) that theoretically regulate benefit allocation in an impersonal and standardised way (differentiating them from traditional patrimonial societies). Yet, if resources were actually distributed in this way, it would be out of line with the existing power structure and lead to conflict induced by unsatisfied powerful organisations and factions. Instead, formal rules are structurally violated and many resources and rents are informally allocated, which is however in line with the actual configuration of power in these societies (making them neopatrimonial).

The structural necessity of rule violations explains the pervasiveness of systemic corruption in developing countries. Therefore, political corruption in developing countries is very different from corrupt politicians or bureaucrats in advanced countries. In capitalist countries, powerful economic organisations are interested in a well-working rule-of-law state and business environment, as they are only able to do complex contracting and successful business in a climate of secure rights, credible commitment, and trust. Thus, most companies can make more profits by following the rules and legally operating in the marketplace. They are interested in the identification and punishment of rule violations, including by public officials, and engage in horizontal checking of other organisations to put pressure on them to comply with rules or to pursue legal remedies if they fail to do so.[26] In developing countries, however, a large share of individuals and organisations engage in different types of rule violations, including corruption, collusion, and illicit behaviour, since the informal allocation of benefits is the pervasive modus operandi and many actors cannot navigate social reality without breaking the rules (Khan 1998). In line with this, much of illicit benefit allocation is not secretive but instead very well known to most citizens. Regarding policy implications, there is substantial empirical evidence suggesting that due to political corruption being a structural feature of societies in developing countries, broad-based good governance reforms as well as different targeted, yet conventional, interventions are

[26] This is a very stylised description of business operation in advanced countries. Multiple prominent occasions of structural fraud and rule-breaking by well-known companies and entire industries in the distant and recent past are well known. This indicates that also in ‘advanced’ economies, rule-breaking can pay off even in the long-term. However, this does not weaken the argument made here, which is that political corruption determines the majority of rent flows in developing countries, while this is not the case in advanced countries.

not successful in significantly reducing corruption, and that the adherence to a rule-of-law develops only incrementally in unison with economic development (Johnsøn, Taxell, and Zaum 2012; Khan 2007; Khan, Andreoni, and Roy 2016). Therefore, only when economic transactions become sufficiently sophisticated requiring complex contracting between many powerful organisations in impersonal ways, a general rule-of-law is desired, implementable, and affordable (Khan 2018a).

Understanding the nature and functioning of rents is very instructive to comprehend the operation mode of societies in developing countries. PST argues that different kinds of rents are pervasive in all societies. Defined as excess income over market outcomes, they exist in the form of monopoly, natural resource, Schumpeterian innovation, learning, and transfer rents (Khan 2000a). Rent-seeking behaviour by organisations will lead to the creation, maintenance, reallocation or destruction of rents (Khan 2000b). Rent-seeking is ubiquitous in advanced countries as well, in the form of lobbying and other mostly legal measures. In developing countries, rent-seeking often occurs additionally in semi-legal or illegal ways in the form of various types of corruption. While rent-seeking behaviour and the rent itself constitute, by definition, a social cost, their net effect depends on the social benefit or cost of the rent outcome (figure 2). This overall effect of a rent can vary widely, from large total social costs (for example, if learning rents are paid to unproductive firms that do not engage in learning but instead capture the rent and remain unproductive) to extremely high benefits (for instance, the creation of a large competitive domestic industrial sector, if learning rents do lead to a productivity explosion in some firms).

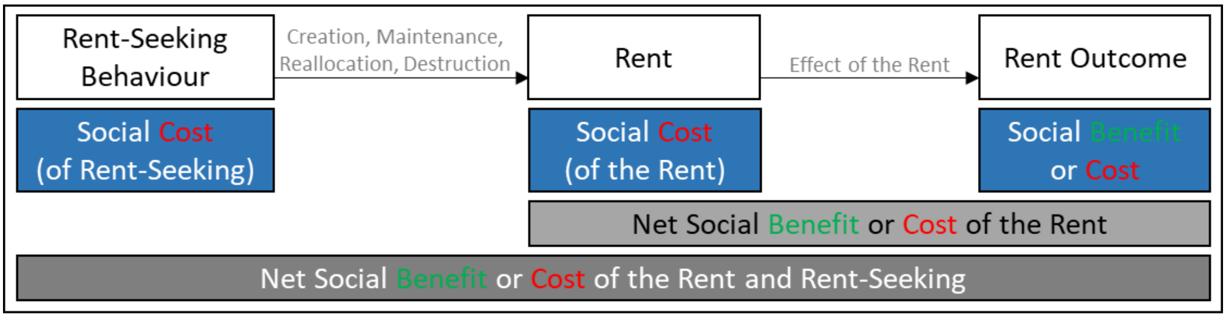

Figure 2: Social Benefits and Costs of Rent and Rent-Seeking
Source: own illustration, adapted from Khan (2000b:3)

The allocation of these rents to powerful factions in a developing country usually happens in informal ways through patron-client networks, which can be described as informal pyramidal networks engaged in systemic political corruption (Khan 2010:48–58). Depending on the particular configuration of power in a country, the ruling coalition has more or less power to centralise rent flows and manage the allocation of rents to various groups via the state apparatus. Rent centralization power is a key variable determining the effectiveness of productive sector policy implementation. Both the general ability of the state to control rents and the particularities of how that power is applied are a direct consequence of the political settlement existing in a country.

4) Configuration of Organisational Power and Capabilities (Political Settlements Proper)

The abstract notion of power in a society can be captured by the concept of a political settlement in a narrower sense (political settlements proper) within overall PST. A political settlement can be defined as a "combination of power and institutions that is mutually compatible and also sustainable in terms of economic and political viability" (Khan 2010:4). It usually refers to a particular country as the unit of enquiry but can equally be used to analyse an economic sector or a region. Mutual compatibility refers to the factual power distribution being broadly in line with the institutional structure determining the allocation of benefits. If this is the case, a stable society without significant outbreaks of violence can emerge for as long as these conditions hold. Economic viability requires the existence of sufficient economic resources and a certain level of economic growth to ensure the reproduction of this society. Political viability means that, as the power distribution between various factions in a society shifts over time, these groups continue to receive a share of the distributed benefits that is broadly in line with their evolved share of power. If groups feel structurally neglected and perceive their power to be larger than the share of resources allocated to them, they might decide to not accept the power-benefit 'equilibrium' anymore and engage in conflict. Thus, additional to the definition of institutions as rules that constrain human and organisational behaviour (North 1990), PST stresses that the connection between institutions and organisations goes both ways, that is all organisations continuously attempt to change institutions to their advantage, those with the greatest power eventually prevail, and therefore, stable societies are characterised by an equilibrium of organisations and resource-allocating institutions.[27] This notion makes institutions an endogenous part of a society and demonstrates why institution-building has to be conducted with the organisational power configuration in mind. The specific analytical problem determines which organisations are relevant to examine.

Power can be narrowed down to the concept of holding power, i.e. the capacity of an organisation to endure in potential conflicts (Knight 1992). This power is determined by the economic means and income of a faction, its capacity to mobilise supporters, inflict harm on rivalling groups, and absorb pain incurred by actions of rival organisations. These factions are usually organised in patron-client networks built around identity politics (e.g. religion, ethnicity, tribe, region, caste, political ideology, etc.), as the emotional identification with a common core engenders mobilising power. However, these networks are often opportunistic and loyalties can change rapidly and across these identifiers (Khan 2010:24–26).

Two matrices in Khan's major work on political settlements in a narrower sense help to conceptualise and structure them as dynamic quasi-equilibria between competing powerful organisations in a country (Khan 2010). The first matrix describes the interplay of power relations between and among political organisations and the second one depicts the political power and capabilities of economic organisations.

[27] This does not mean that the institutional setting in a society always fits organisational power or that the introduction of a new institution significantly shifting resource allocation is necessarily a reflection of the beneficiary's increasing power. Incremental changes spurred by organisational agency take place all the time. The rough alignment of power and benefits is only valid in the medium and long term.

Each matrix has two variables with dichotomous manifestations and all combinations constitute a different type of political settlement, with some of them being more likely than others to occur in reality. The typology can only serve as a device to conceptualise very complex phenomena, as the deployed variables represent only some parts of reality, are constantly in flux, and are continuous in nature, meaning that a political settlement might feature characteristics of both manifestations of one variable and therefore would be most accurately described as hybrid. This abstract illustration demonstrates that defining a political settlement requires deep knowledge about the history and contemporary politics of a country and ultimately remains an art (Khan 2018a). With these limitations in mind, the two matrices and the resulting political settlement typologies are delineated.

The first matrix models the power configuration of political organisations (figure 3). One variable represents the *distribution of horizontal power between groups of political organisations*, which can be divided in the ruling coalition and various oppositional factions. The relative power of the ruling coalition vis-à-vis all oppositional groups that are, by definition, excluded from the current government, as well as the particular political system in place, in which the ruling parties emerged (i.e. the institutional setting), determines the rulers' time horizon. If excluded factions are strong and it is realistic to expect the government to be ousted, the ruling coalition will not be interested in devising long-term growth strategies. Rather, they might be keen on capturing resources in their brief interval in power as well as deploying various repressive strategies to increase their chances of remaining in the ruling position after all. Only if excluded factions are comparably weak, the government feels less vulnerable and acquires a longer time horizon and a greater interest in long-term growth. Whitfield et al. (2015) label this variable the ruling elite's *degree of vulnerability*.

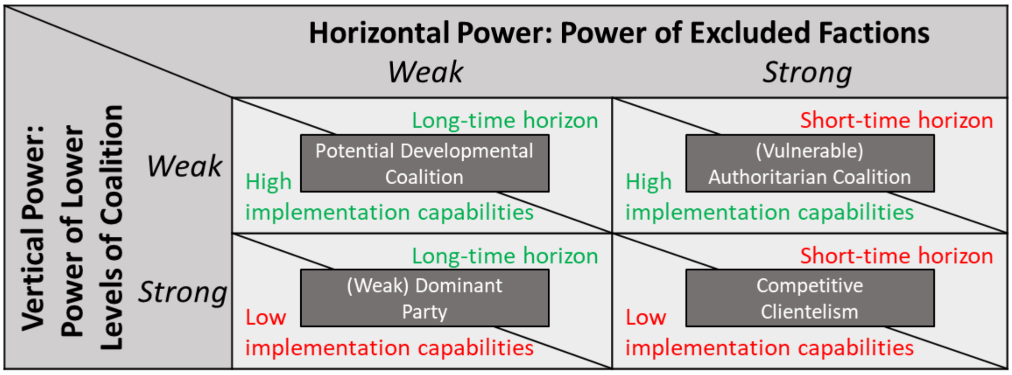

Figure 3: Distribution of Power and the Structure of the Ruling Coalition
Source: adapted from Khan (2010:65)

The second variable constitutes the *distribution of vertical power between higher and lower levels within the ruling coalition*. The ruling coalition can be understood as a multi-level pyramid of patron-client networks. The higher levels are labelled ruling elite, which, depending on the country, can be made up of military generals, political entrepreneurs that have become populist strongmen, the heads of democratic parties and social movements, clerics, etc., and their respective inner circles. Lower-levels factions of the ruling coalition can be so-called intermediate classes (i.e. the urban educated and/or the petty landed elite), locally powerful leaders or business people, civil society or religious leaders, or any group with any holding power based on money, public authority or being able to mobilise loyal followers. Many of these factions are an informal part of the ruling coalition by supporting or tolerating it in exchange for the provision of material benefits allocated via patron-client networks. The weaker lower levels of the ruling coalition are, the less the government's actions (whatever they may be) are contested, resulting in higher implementation capabilities, as the power and/or number of mid-level players that have to be placated to maintain their support by assigning benefits to them is smaller. This is why Whitfield et al. (2015) name this variable the *degree of contestation* faced by the ruling elite. Over the last decades, lower-level factions in many post-colonial developing countries have been quite strong vis-à-vis a rather weak state (Khan 2004; Migdal 1989).

Combining the effects of these two variables leads to four political settlement typologies. If both excluded factions and lower levels are weak, a *potential development coalition* exists (such as South Korea and Taiwan in the 1960s). In this situation, the ruling elite faces no immediate threat *and* can enforce development policies. Whether this leads to *actual* development, depends on long-term elite vulnerability and the configuration of economic organisations (see below). If lower levels of the ruling coalition are weak but there is at least one strong excluded coalition, this leads to a *(vulnerable) authoritarian coalition* (for example in the form of a military dictatorship such as in contemporary Egypt). This type of political settlement is characterised by the exclusion of a powerful and often large share of the population, which either cannot be included in the ruling coalition due to ideological or other fundamental differences and thus has to be repressed or which does not need to be included as the (military) power of the ruling coalition makes exclusionary politics the dominant strategy. However, as long as the excluded factions are not diminished or co-opted, they continue to threaten the rulers, which keeps the latter's time horizon short and makes them focus on repressive tactics rather than economic growth. This type of authoritarian regime can be more or less vulnerable, which can change over time.

If, on the contrary, excluded coalitions are weak but lower levels of the ruling coalition are strong, for instance, if most of the powerful factions in a country have been incorporated in the ruling coalition, a *(weak) dominant party* settlement exists (e.g. South Africa until recently). In this social order, many different factions have to be assuaged by assigning benefits and rents to them, leading to a high level of political corruption and low assertiveness to enforce unpopular yet necessary reforms. While the rulers' time horizon is long and they are interested in bringing about economic growth to generate sufficient resources for distribution, they often need to allocate rents to balance the demands of powerful allies lower down the coalition pyramid. Since their power to enforce policies that would reconfigure unproductive institutional structures is limited, the outcome is often the maintenance of an undynamic system that may include an occasional exchange at the top. Finally, it may be the case that both excluded factions *and* lower levels of the ruling coalition are strong, a situation often found in developing country democracies (for instance in contemporary Kenya or Ghana). If a current ruling coalition has to assign large shares of benefits to its supporters and there is at least one other powerful political organisation, the government is unlikely to remain in power for long. This is because the opposition can enlist various mid- and lower-level organisations by promising them more benefits than they are getting currently. If a democratic institutional setting exists or evolves that enables a peaceful power transfer, this can lead to the regular exchange of ruling parties, which all canvass for the votes of various groups and classes, giving rise to this typology's name *competitive clientelism*. Alternatively, the ruling coalition might be able to incorporate more and more factions (including high-level political entrepreneurs of the opposition) into their coalition, changing the political settlement to a (weak) dominant party type. A third option is that the ruling coalition decides to try to remain in power by applying violence and other authoritarian measures, which aim to weaken their political enemies and likely lead to the loss of support of loosely connected lower levels. If this attempt succeeds, the political settlement will morph into a (vulnerable) authoritarian coalition; if not, political instability will be the likely result.

The second matrix displays the political power of economic organisations in society on the vertical axis and their capabilities on the horizontal axis (figure 4). The first variable describes to which degree firms are networked with political and state organisations. If firms are politically connected, they are hard to discipline. The disciplining of firms refers to the state conducting classic industrial policy of providing temporary subsidies to currently unproductive economic organisations (which are supposed to use these benefits to engage in learning and increase their competitiveness) and having the power to withdraw these rents if results are not forthcoming. If firms are networked, they have influence over powerful political entrepreneurs, government officials, bureaucrats and party leaders, by providing kickbacks to them, and these political actors will ensure that subsidy rent flows continue by preventing the policy support to be withdrawn. As a result, these firms regularly capture industrial policy rents. Only if the political and administrative leaders driving industrial policy are politically more powerful than the firms, it is likely that the latter will be effectively disciplined by the state, including the enforcement of subsidy withdrawal from weak performers. This is the primary reason why the same industrial policies that were tremendously successful in South Korea failed in many other countries, including Pakistan (Khan 1999). In most developing countries, clientelist networks pervade the entire society, which includes close firm-state connections. Thus, the strong political power of a small or medium number of economic organisations is the norm. Only in particular circumstances is the emerging capitalist sector not closely networked within the political sphere. This can be the case if large parts of the business class are ethnically different (e.g. Chinese business people in Malaysia and to a much smaller degree South Asians in East Africa) or if there has been a critical juncture disrupting the evolution of clientelism (e.g. the already mentioned legacy of Japanese colonialism in Korea and Taiwan or the immigration of a new ruling elite, such as in European settler colonies).

The second variable, i.e. the level of existing capabilities within firms, is straightforward and determines the degree of sophistication of technologies these companies are able to adopt. Low-capability firms can only learn and adopt simple technologies, while high-capability firms can be supported to acquire advanced technologies. Industrialisation efforts by the Japanese meant that a comparably high level of firm capabilities already existed in their former colonies. Some other Asian countries, in which moderately functioning states and capitalist accumulation has existed for some time, avail of moderate capabilities, while most firms in most African countries exhibit only low capabilities.

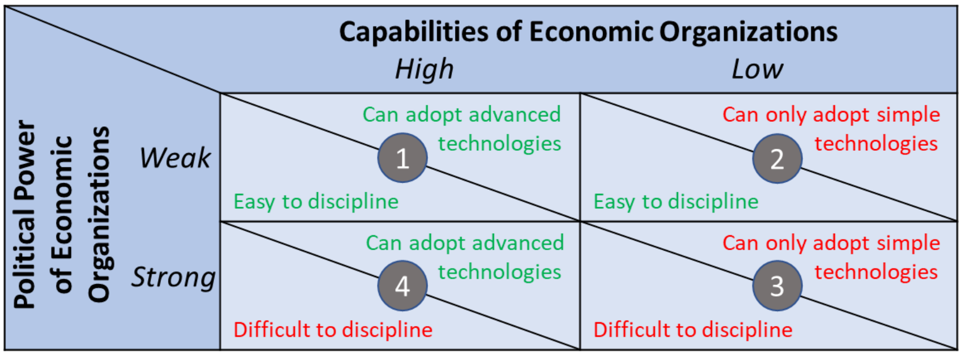

Figure 4: Power and Capabilities of Economic Organisations
Source: adapted from Khan (2010:71)

The combination of these two variables leads to four political economy situations, which do not have their own labels. The actual overall outcome regarding the evolution of economic organisations depends on the *combined effects* of their power and capabilities configuration (matrix 2) *and* the power configuration of political organisations (matrix 1). Thus, the rare situation of high-capability firms that are not politically connected (1) can –in combination with a potentially developmental coalition– lead to effective industrial policy and rapid development, such as in 1960s South Korea and Taiwan. If, however, the time horizon of the ruling coalition is short, it is possible that firms are exploited or expropriated and therefore cannot develop properly (Thailand in the 2000s). In the also rare situation of politically unconnected firms with only low capabilities (2), a developmental coalition should be able to conduct classic industrial policy to drive early accumulation and incrementally build up low-value productive sectors based on simple technology, but developing medium- to high-value industries will be costly and take a lot of time, as the competitiveness gap towards global or even regional standards will be huge (potentially post-2000 Rwanda, to be assessed). If, in this capitalist sector scenario, the ruling coalition has a short or medium-term time horizon or is obliged to distribute available resources to various interest groups instead of using them to finance firm learning, successful industrial policy, while theoretically enforceable on the unconnected firms, is unlikely to emerge (e.g. South Asians in East Africa).

If firms exhibit strong political power but low capabilities (3), they can only adopt simple technologies and are hard to discipline. They may engage in (predatory) capitalist accumulation and speculative investments and are possibly aided by political entrepreneurs, but traditional industrial policy is very likely to fail. These firms will collect rents without putting much effort in raising their capabilities and productivity and the state will be unable to withdraw them. If these firms, however, are exposed to some degree of market competition (i.e. a compulsion mechanism different from state power), productive low-technology companies can evolve, as long as the political power configuration is sufficiently forthcoming (contemporary Bangladesh and many parts of contemporary India). Finally, if politically connected firms already have high capabilities (4), the state’s ability to lead further industrial development is limited, as these firms are hard to discipline, but they might advance to entering high-value activities on their own, if they are subjected to competitive forces in global markets. In these situations, new capitalist firms are unlikely to emerge, as the gap to existing ones is already huge and those make sure that they keep their privileges through political means. This configuration can arise usually only after firms had some decades to build up their capabilities in some kind of stable political settlement (such as in 1980s-1990s Thailand, and advanced parts of contemporary India).

In the ESID framework, the two main dimensions of the political settlement to be analysed are its political configuration and its social foundation (Kelsall and vom Hau 2020). The former depicts the cohesion of political power in society, i.e. how much it is concentrated around the top leadership. It can range from concentrated (power vested in one key leader and their inner circle) to dispersed (several powerful centres in society). If power is concentrated, the ruling coalition has resolved internal disputes, bridged social and ethnic cleavages, and has allocated authority among coalition partners. As a result, decision-making procedures are coherent, intra-elite conflict is low, and implementation power is high. If power is dispersed, the opposite is true, and even basic policies are constantly renegotiated among the ruling coalition, and between the ruling elite and political counter-elites, powerful other groups and lower-level factions (Kelsall and vom Hau 2020). The similarity of this understanding to Khan's first matrix is evident. However, one component that is not explicit in Khan's typology is inner-ruling elite cohesion, i.e. whether the higher levels of the ruling coalition are well-organised and clearly hierarchised or not.[28] The degree of elite infighting is an important dimension of the political power configuration to consider. The social foundation is constituted of those powerful groups that are part of a political settlement agreement, that is the ruling elite plus co-opted factions. All other powerful groups (i.e. those that have disruptive potential) are repressed. This variable's spectrum ranges from narrow (few groups are co-opted, as there exists only a handful of powerful groups in a particular society and/or other groups can be successfully repressed) to broad (where a large number of powerful, socially and/or geographically diverse groups needs to be co-opted and appeased by the ruling elite). An additional dimension is the social foundation's depth, i.e. how much it ranges across various economic strata. It is important to not conflate the ruling coalition (whose elites form the government and hold the majority of offices) with the social foundation, which can include political counter elites and their lower-level allies that wish to form the government in the future but have for the moment accepted the current political configuration. The social foundation can instead be understood as the groups in society to which policy (devised by the ruling elite) must respond (Kelsall and vom Hau 2020).

To sum up, the distribution of power and capabilities across political and economic organisations in a country resulting from its historical trajectory shapes the options and choices of the ruling coalition regarding policy-making and implementation towards productive sectors, and this in turn determines the

[28] Technically, the degree of elite cohesion is captured in Khan's understanding of agency as the interaction between many different groups that do align in networks but have to be self-sustainable on their own (Khan 2018b).

likelihood of successful economic development. Thus, the multiple dimensions of the power configuration in society results in complex, non-linear conditions for policy success (Khan 2010:128).

5) Political Survival Strategy and Governance Mode of the Ruling Elite

A key premise of the analytical framework is that ruling elites are foremost motivated by their need to survive politically, i.e. to stay in power (Whitfield et al. 2015:11–14). To that end, leaving cognitive errors and ideological policy-making aside, ruling elites build ruling coalitions that consist of various factions in society supporting them. These factions need to be satisfied by allocating economic resources, rents, and benefits to them. The particular power configuration in a society, as conceptualised in the previous section, shapes the characteristics and extent of this resource allocation, while the availability of resources determines the relative ease or difficulty to satisfy the demands of all ruling coalition partners as well as those of other relevant factions.

This logic is captured well in the systemic vulnerability hypothesis developed by Doner, Ritchie, and Slater (2005). They postulated that the existence of three 'systemic vulnerability' conditions –broad coalitions, external security threats, and a lack of natural resources– in Northeast Asian countries were sufficient to enable their rapid and sustained catching-up with developed countries. They argued that the lack of one or more of these conditions in Southeast Asia (more precisely, Indonesia, Malaysia, the Philippines, and Thailand) prevented these countries to develop rapidly. In particular, a country that does not avail of (many) natural resources, faces an existential military threat, and whose domestic politics is characterised by a broad coalition of various societal factions, is forced to develop, as the ruling elite has to spend large amounts simultaneously on national defence and on satisfying the demands of its large political base and other conditional supporters, and it cannot use abundant natural resources to do so. The only available solution to stay in power is to generate new resources from rapid economic growth.

While this logic is quite compelling, it has two important limitations. First, a simple dichotomy of broad and narrow coalitions is unhelpful, as this variable is more complex in reality. In particular, a configuration of political power referred to as a 'broad coalition' might mean that the demand for immediate resource distribution is so high that there are simply no resources left to invest in industrial policy and other development strategies. As a consequence, exceptionally broad coalitions or those with powerful lower levels might impede development. In turn, a rather narrow coalition can be conducive for development (as sufficient resources remain available to invest in industrial policy and other development strategies), as long as the ruling elite feels compelled to pursue development in the first place, potentially because there is a long-term threat of being forced out of power eventually if the country does not develop. Second, even if all three systemic vulnerability conditions are fulfilled and a ruling elite is forced to relentlessly pursue economic development, this merely means that it has the political *will* (de-facto imposed on it by these conditions), but not necessarily the political *power* to actually implement these policies successfully. It may well be the case that a ruling elite's imposed political will to transform the country is maximal, but its rent centralization power is too weak, its developmental rents are captured by well-connected groups, and as a consequence, it is forced out of political power.

Additionally, the third systemic vulnerability condition needs to be adapted, as the fundamental external threat that originally referred to military insurgence or even destruction in the wake of the Cold War ceased to exist for most countries. Rather, any fundamental, perceived or actual, internal or external threat to the political and often even physical survival of the ruling elite needs to be present. A salient example is if the ruling elite consists of immigrants and/or (ethnic) minorities (such as in diverse ways and to different degrees in Ethiopia, Israel, Taiwan, and Rwanda), who perceive their political legitimacy to be severely limited and therefore aim to fundamentally transform their society (Harrison 2020). If slightly adjusted, the systemic vulnerability conditions provide an excellent framework to assess a ruling elite’s political will to pursue economic transformation, which in many cases can be seen as a necessary but never sufficient ingredient of holistic development.

The original purpose of Khan’s framework was to assess why various industrial policies were implemented successfully or unsuccessfully in different countries and economic sectors. It is thus less concerned with political will and does not consider the ruling elite's survival strategy explicitly. Instead it asserts that all political leaders are interested in economic growth ceteris paribus, and that they will pursue it, as long as their time horizon is sufficiently long term. Thus, as soon as oppositional groups are sufficiently weak meaning that the current ruling coalition is somewhat stable, economic growth is one of their goals and some kind of industrial policy will be conducted. Its success does then depend less on systemic vulnerability conditions or the ruling elite’s political will, but simply on its rent centralization power, i.e. whether they can enforce their rent allocation intentions. This again depends of course on the power of lower-level networks and factions, especially the business sector and its allies. However, there is a difference between trying to create moderate to high levels of economic growth and relentlessly pursuing a fundamental economic and social transformation to escape actual or perceived long-term threats. To analytically differentiate between these motivations, the adapted systemic vulnerability hypothesis and the political survival strategy of the ruling elite approach provide a helpful additional perspective and they are therefore included in the framework at hand.

Furthermore, a direct consequence of the ruling elite’s political survival strategy is its governance mode. It is defined as the *practice* how ruling elites build and enhance the state as well as how they govern and control the system of institutions constructed and adapted over time that constitutes the state. Also here, individual agency by political leaders as well as ideologies of the ruling elite may play an important role but at the same time a government’s governance mode is strongly shaped by the country’s particular historical trajectory both through its impact on the prevailing power configuration that may dictate the need for a certain approach, and via its influence on the ruling elite’s self-concept, identity, and psyche. For instance, two different but often interdependent factors, the population density of a country over time and the type of colonialization it had to endure, may have led to particular degrees of state centralization and social control as well as a certain power distribution across a smaller or larger number of political factions, and these factors provide the contemporary government with more or less enforcement power and therefore constrained options how to build and operate its institutions and state organisations. Furthermore, paradigmatic events may form or alter the self-understanding of political factions, one of which becomes the new ruling elite, and this identity may become so strong that it again constrains the way in which it conducts its ruling operations. Clear-cut polar examples of governance modes would be commands from the top and obedience by everyone below, as practiced by militaries, and direct democracy, egalitarian discussions, compromising, and consensus decisions. In reality, countries will exhibit hybrid and several overlapping governance modes.

6) Economics of Production (Macro- and Meso-Level)

The structure and dynamics of production are key in creating added value.[29] This view is in sharp contrast to prominent theories putting trade in the centre of development (North 1990; Ricardo 2001; Smith 2005). Andreoni and Chang (2017:181) understand economic development as production transformation and Whitfield ascertains that “[e]conomic development cannot be separated from production and more specifically from what a country produces and how it is produced.” (2012:240). Historically, as a reaction to England’s industrialisation (i.e. production transformation), those countries that traded (following the comparative advantage logic) remained poor, while countries that emulated England in transforming their production (i.e. industrialising) became rich as well (Reinert 2007).

Sustained economic development is characterised by productivity growth. The gains in productivity are eventually transferred to a broad base of the population in the form of higher wages and thus lead to rising living standards.[30] Productivity growth is structurally higher in industrial activities than in agriculture due to structural differences in underlying physical processes (Whitfield 2012:240–41). As already pointed out by John Stuart Mill in 1848, agriculture exhibits diminishing returns to scale, as fertile land is cultivated first, and after high-quality soil is exhausted, more labour and capital is needed to produce the same amount of output on less productive land (Heilbroner 1999:73). Manufacturing, by its nature, was and largely still is characterised by increasing returns to scale, as continuous technological and managerial progress meant that more and higher-value output could be produced with less labour and capital (Toner 1999).[31] However, technological progress can initially raise agricultural

[29] The following depiction is a synthesis of Toner (1999), Whitfield (2012), Whitfield et al. (2015:45–48), and Andreoni and Chang (2017). All these works build on the scholarship of Albert Hirschman and Nicholas Kaldor. Toner (1999) is additionally based on Allyn Young, Paul Rosenstein-Rodan and Gunnar Myrdal, while Andreoni and Chang build on Alice Amsden. Whitfield (2012) and Whitfield et al. (2015) are strongly based on Erik Reinert’s and Joseph Schumpeter’s work. While there are several subtle differences in reasoning and prioritisation, the overall argument in these and the foundational research they source from is sufficiently similar for the present purpose and revolves around productivity growth, increasing returns, and the specific characteristics of manufacturing.

[30] The processes of converting efficiency growth in production into wage rises are complex (and a separate topic), but they appear to be likely, as they have happened on a large scale in the aftermath of industrialisation processes in all advanced countries. They are not to be confounded with the fallacious logic of ‘trickle down’ economics.

[31] Increasing returns as source of productivity growth in manufacturing can be of several different types: economies of the plant and firm, static and dynamic economies (the latter includes learning by doing), Marshallian increasing returns from division of labour within an industry, and Youngian increasing returns from division of labour within an economy (Toner 1999).

productivity manifold and this is what happened in virtually all industrialised countries and has to occur in all developing countries as well. The growth of agricultural productivity leads to the release of a large share of the population from subsistence agriculture and creates a large labour force, which is compelled to engage in wage employment. The availability of industrial jobs, spurred by active industrial policy, is crucial to prevent the emergence of a precariat. Thus, "building up capabilities in manufacturing and improving the productivity of agriculture are the keys to wealth creation and long-term sustained poverty reduction." (Whitfield 2012:239).

It needs to be acknowledged that the global landscape has changed in fundamental ways over the last decades, such that the dichotomy of manufacturing and agriculture and their historically associated features illustrated above do not necessarily hold anymore. Even more, Whitfield and co-authors point out that

> "it was not agriculture and manufacturing per se that mattered, but rather that the agriculture sector was characterized by low entry barriers, increasing competition, and diminishing returns; whereas the manufacturing sector was characterized by higher barriers to entry, less competition, and increasing returns. Countries became wealthy by specializing in economic activities that embodied increasing returns, technological change, and synergies with other industries in the economy" (2015:48).

The dispersion of manufacturing processes in global production networks in the 21st century has led to higher competition, lower barriers to entry and smaller productivity growth potential, at least in lower value-added manufacturing activities, which are those that could be adopted more easily by least developed countries. Simultaneously, increasing sophistication in agribusiness has blurred the line between the agricultural and industrial sector (agro-processing being a hybrid form) and in some agricultural sub-sectors, technology- and branding-driven product sophistication have created high entry barriers, less competition, and higher profits. This means that generalist industrialisation efforts are misplaced, but a more nuanced development strategy is needed (Whitfield et al. 2015:4–5). Whitfield and colleagues characterise economic transformation as entailing "several separate but interacting and interconnected processes: agricultural change, export diversification, building technological capabilities among firms and farms, industrial deepening, and industrial upgrading" (Whitfield et al. 2015:5).

Furthermore, some parts of the service sector may serve as vehicles of sustained economic growth. There are, however, two structural problems with banking on services to lead a country out of poverty. First, services can absorb much smaller numbers of workers than manufacturing, thus the equivalent of the traditional process of labour released from agriculture moving in masses to factories might not work for the service sector. Second, factory workers need specific low to moderate skills than can be usually acquired in straightforward ways (i.e. learning by doing), while service sector employees need comparatively higher skills that are often harder to train, as immediate, unambiguous feedback is often not forthcoming.[32] However, some scholars consider some tradable services (i.e. those that can be sold

[32] If a factory worker makes a mistake, the result is usually instantly visible for them and their superior, and the right way of doing things can be demonstrated on the spot. A service employee (e.g. in a restaurant, in tourism, in an insurance) can make costly mistakes that take months to be revealed or might even never be discovered, such as treating important customers unprofessionally, making an accounting error, etc.

outside of the domestic market, such as outsourced business processes and tourist services) as a potential avenue of development, especially given the meagre outlook of succeeding in manufacturing because production increasingly takes place in well-organised, highly efficient and hard-to-enter global value chains (Ghani and O'Connell 2016; Stiglitz 2021). Finally, it is also important to distinguish between 'basic' (health, education, etc.) and 'modern' (tourism, finance, etc.) types of service activity, as the former are usually understood as a necessary factor in developing a general workforce, while the latter might serve as growth engines that substitute for industrial development (Behuria and Goodfellow 2019).

The fact that economic development might be achieved by various economic activities –high-value agro-processing, traditional manufacturing, and tradable services– has led to the more general term *productive sector policies* instead of the technically more limited term *industrial policy*.[33] Independent of the terminology, the decisive aspect of these policies is that they lead to the emergence or transformation of production processes; from traditional, unproductive, stagnant ways to modern, productive, growth-enhancing (i.e. capitalist) practices.

7) Economics of Firm Learning (Micro-Level)

While the economics of production describes macro- and meso-level mechanisms, it is equally paramount to understand the micro-level of economic transformation, i.e. the inner working mechanisms of firms, captured in the concept of firm learning. Firm learning can be defined as the acquisition of certain firm capabilities, which are often conceptualised as technological capabilities (TCs) or organisational capabilities (OCs). Firm learning needs to be distinguished from innovation, the latter usually referring to companies in developed countries and the former applying to enterprises in developing countries, which aim to catch up with more advanced markets and firms by acquiring already existing technology and knowledge, and the ability to make use of it. It is useful to distinguish between skills to refer to individuals, and capabilities to refer to organisations (e.g. a state agency, a private sector firm, or an NGO).

A large part of the knowledge contained in (organisations') capabilities is tacit, i.e. not codifiable, (Polanyi 1966) and therefore hard to acquire. Thus, building capabilities can only be achieved by experimentation and learning-by-doing. Furthermore, organisational knowledge can be conceptualised as being embedded and manifested in routines, which are a company's 'way of doing things' (Nelson and Winter 1982:117). Lall's (1992) concept of technological capabilities, adapted to export-oriented manufacturing firms operating in global value chains by Whitfield et al. (2020), represents a set of functions and operations a firm needs to be able to *do* properly in order to be competitive. This is why it makes sense to describe technological capabilities as *execution* capabilities. The complementary

[33] The term *industrial policy* suffers from a bad reputation due to failed industrialisation attempts and it does not capture the improved understanding of looking beyond the traditional economic activity classification of agriculture, industry, and services. However, it is widely in use and has had a recent comeback. This thesis uses the terms *industrial policy* and *productive sector policy* as synonyms.

concept of *organisational capabilities* as understood by Dutrénit (2004) and Khan (2019) describes a firm's processes of *organising* the various processes of execution. More specifically,

> "[t]he tacit knowledge required is not just about how to operate particular machines and processes, but how to operate these at a very high rate, to match the rates of different machines so that throughput is maximized, to set up the organizational structures to coordinate and link together different parts of the operation from purchasing inputs to marketing, including communicating with trading partners, responding to feedback, improving store keeping and so on, till an appropriate throughput of inputs and outputs is achieved" (Khan 2009b:12).

These organisational capabilities are the crucial ones that are highly context-specific and are often the binding constraint for low-capability firms in developing countries. It is therefore their acquisition that is key for raising competitiveness and productivity. Also the bureaucrats responsible for sector-specific industrial policy need a certain level of understanding of firm-internal learning processes, as otherwise properly targeted support schemes, effective monitoring, and appropriate withdrawal criteria cannot be designed and analysing the on-going processes of firm learning and evaluating the progress made is not possible.[34]

8) Industrial Policy

Given the clientelist operation mode of developing countries and the economic nature of sustained development as production transformation, the decisive question is how decades-long productivity growth in the form of fostering capitalist and production transformation can be realised in the 21st century. As exuberant historical evidence has shown, free markets and *laissez-faire* policy cannot lead least and less developed countries out of structural poverty (Chang 2002b; Reinert 2007). However, simple industrial policy in the form of traditional import-substituting or export-oriented industrialisation is also not a universal tool for development, as the high number of failed infant industry promotion programmes has shown (Aiginger and Rodrik 2020; Irwin 2021; Pack and Saggi 2006). A large amount of scholarship has discussed the tremendous success stories of Northeast Asian development (e.g. Amsden (1989) for South Korea and Wade (1990) for Taiwan), constituting the developmental state literature. The failed emulation of these dragon states' supposedly decisive institutions and policies for successful catching-up by many other governments across the world showed that there are no generalisable blueprints for development –neither those elicited by the developmental state literature nor those prescribed by liberal economists (Khan and Blankenburg 2009). Instead, industrial policy needs to build up productive sectors by adopting those measures that are feasible within a developing country's political settlement. This is why the development trajectories of South and Southeast Asian countries are more instructive when considering the challenges of most African countries, as their respective political settlements share more features with each other, while those of Northeast Asian countries were quite unique due to the particular legacy of Japanese colonialism as argued above.

[34] This sub-section has been substantially shortened due to limited space and merely serves as a summary. Designing successful industrial policy requires a deep understanding of learning processes on firm level. However, this thesis largely operates on country- and sector-level and analyses development processes of the recent past (rather than providing specific policy advice). Therefore, it is justified to shift this otherwise crucial aspect of sustained development to the background.

In order for a country to experience sustained high-growth rates, a large and diversified capitalist sector needs to emerge, which creates the economic wealth that is the prerequisite for permanent and broadly distributed living standards improvements. To that end, a country's firms need to learn how to use new technologies and become globally or at least regionally competitive in sectors that generate a certain value-added beyond traditional agriculture and lowest- and low-tech industries, i.e. they need to acquire relevant technological and organisational capabilities (Khan 2009b). This type of learning requires the acquisition of tacit knowledge, which again requires learning-by-doing and, thus, time. In these periods of learning, however, firms make losses, as they cannot yet operate on a globally or regionally competitive level. Capital markets fail to provide the funds to bridge those periods of loss-making, as investors cannot rely on a credible risk- and return-sharing mechanism between them and the firms. Additionally, a further reason for firms not to engage in this type of learning effort is the missing possibility to fully benefit from the fruits of achieved learning, as trained employees might leave the company and the tacit knowledge of entrepreneurial and technological capabilities cannot be protected through any legal rights (Khan 2009b:22–34). The existence of these externalities due to market failures requires government intervention in the form of industrial policy.[35]

Now, a government can analyse the status quo of its economic sectors and firms and decide to follow a specific growth-promoting development strategy by supporting certain industries and companies for a limited time period by providing them with subsidies. In practice, this process usually takes place in a pragmatic trial-and-error approach, characterised by tinkering and experimentation. While several problems can occur, the single most important one is the challenge of how to sustain high efforts of companies to actually improve their productivity and become competitive. As described above, this strategy worked very well in Northeast Asia but failed in many other countries where unproductive firms captured these learning rents without becoming more productive (Khan 1999). Governments were simply not able to withdraw and reallocate funding as these firms were politically well connected. Hence, sustained efforts by firms to actually build up more advanced capabilities and increase their competitiveness and productivity are key, but compelling these firms to do so is highly dependent on the particular political situation in a given industry and country. This is why the macro-level analysis of the political settlement proper, including the second matrix depicting power relations between political and economic organisations both in general and regarding a particular industry, is paramount. Additionally, devising proper industrial policy requires the micro-level analysis of the internal structure of targeted firms as outlined in the previous section. The actual industrial policy then revolves around the design of financing instruments and the setup of policy-implementing governance agencies. As a result, firm effort (to improve productivity) can be conceptualised as a function of four factors: the political settlement, firm structure, financing instruments, and governance agencies (Khan 2009b).[36]

[35] Policies regarding the management of property rights transitions to allow necessary, yet often controversial, primitive accumulation is a complex but distinct topic not discussed here (see Khan (2009a) for such an analysis).

[36] Note the fundamental difference to standard economic theory arguing that in well-developed markets, profit opportunities are sufficient to instil continuous high efforts in firms. This discrepancy is based partially on the structural distinctiveness of

Regarding *financial instruments*, there are many different possible arrangements, which all "implicitly define rules of contribution and reward and therefore the incentives and responsibilities of the different participants in the learning process" (Khan 2009b:40). If the state or alternatively an industrial or development bank (often owned by the state) provides the funds for the period until the break-even point is reached, it can bring forward tax breaks, low-interest credit, subsidised inputs, utilities or infrastructure, export subsidies, protection of domestic markets, and other instruments that are available in the policy space given national law and international trade agreements (all constituting learning rents). It is crucial that these financing instruments are designed in such a way that they create strong compulsions for rapid productivity growth, which can usually be achieved by incrementally reducing state support in a pre-determined and transparent way. For this, however, enforcement capabilities of the state are crucial, which are connected to the configuration of policy-implementing *governance agencies*. State-owned or -affiliated banks issuing loans as well as government agencies giving out subsidies need to have the capability to monitor performance, decide on credible actions, and withdraw support in case of non-compliance. The power of the responsible organisation strongly depends on the support from the ruling coalition, highlighting the importance of the *political settlement*. If the degree of contestation in the ruling coalition is high (i.e. lower-level factions are strong) and firms are politically well connected, implementation capabilities of the ruling coalition are weak and the withdrawal of subsidies might be impossible. The most able firms, and thus the ones theoretically most capable of rapidly becoming productive, are also often the ones politically well connected. Hence, in formulating industrial policy and deciding on which sectors to promote, this trade-off needs to be taken into consideration. This link points to the last variable, the *firm structure*. Here, both the internal organisation of each firm (micro-level) and the structure of the relevant market (meso-level) are relevant.[37]

Furthermore, an analytical distinction between *ex-ante* and *ex-post* rents helps to conceptualise different industrial policy approaches. If the political settlement is rather adverse and rents are likely to be captured by unproductive firms, the strategy described above of government agencies providing learning rents *ex-ante* and credibly threatening to withdraw them might not be feasible. An alternative strategy is to initiate mutually beneficial cooperation between nascent domestic firms and more advanced foreign companies in a specific sector. If sufficiently high *ex-post* rents exist, both parties can hugely profit from such opportunities. Khan (2013b:22–28) describes two tremendously successful cases: the Bangladeshi garments industry and the Indian automobile industry. In both cases, specific public rents in combination with private engagement by advanced firms were key. In the Bangladeshi case, the Multi-Fibre-Agreement, a US policy limiting the import of textiles and garments from particular countries, led the South Korean firm Daewoo to cooperate with the nascent and unproductive Bangladeshi garments firm

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fully capitalist markets in advanced economies and highly patchy ones in developing countries and partially on the premise that most humans and organisations are not maximisers but satisficers.

[37] The focus in the analysis here is put on the relationship and interaction between the government and individual firms. A further important part of more advanced industrial policy is the fostering of backward and forward linkages within value chains to create spill-over effects. However, in an early stage of industrialisation, these linkages are often still very weak. Their analysis is beyond the scope of the thesis.

Desh. First, the former could sell their textiles as inputs to the latter, but second and more importantly, they trained Bangladeshi entrepreneurs in setting up efficient garment manufacturing firms in exchange for royalties of the latter's later exports to the US. The scheme led to an explosion in garments production and productivity in Bangladesh, which is now the second-largest apparel exporting country in the world. In the Indian case, the Japanese company Suzuki was promised access to the large and highly-protected Indian car market, if technology was transferred and the competitiveness of the domestic car supplier sector was increased. This scheme led to exponential growth of the Indian car and car supplier industry, which had existed in an unproductive state for many years before.

It needs to be acknowledged that serendipity was part of the enormous success of these two cases and an exact emulation would probably not be possible. However, understanding these cases helps to comprehend how successful industrial policy in adverse political settlements can work. A critical feature in both cases was the credibility that the agreements would be upheld, as political leaders were involved in and committed to the schemes due to political pressure. These considerations show the magnitude of the problem of compelling companies to sustain high levels of effort to eventually become competitive. It also becomes clear that the state typically needs to be the driver of this trajectory as the environment is too adverse and market failures are too vast for non-interventionist development to take place. Furthermore, the uniqueness of each country situation and the necessity to carefully study and understand it in order to design impactful strategies is emphasised. To sum up, successful industrial policy is about providing the necessary support (e.g. in the form of financing or subsidies) and compulsion (in the form of sanctioning and support withdrawal) to firms such that they actually put in the efforts and acquire the necessary capabilities for sustained productivity growth.

2.3 Causal Mechanisms of the Analytical Framework

A simplified visualisation and description of the analytical framework was already provided in chapter 1. After having discussed the key premises and building blocks, it is now possible to consider the elements and causal connections of the full analytical framework (figure 5).

Historical Trajectory

The historical trajectory of a country is the analytical starting point of the framework because first, the comparison of countries' historical paths is a useful methodological approach (premise 1), second, history is understood to progress through critical junctures and path dependency making it highly relevant to understand the present (premise 2), and third, defining a country's political settlement needs to be done in an initial, separate analytical process *only* looking at history to avoid circular argumentation. The analysis of the historical trajectory makes use of the conceptualisation of capitalist transformation in advanced countries (building block 1) and the lasting legacy of colonialization in developing countries (building block 2). The general clientelist nature of developing country societies (building block 3) and the particular political settlement (building block 4) are direct consequences of these historical processes.

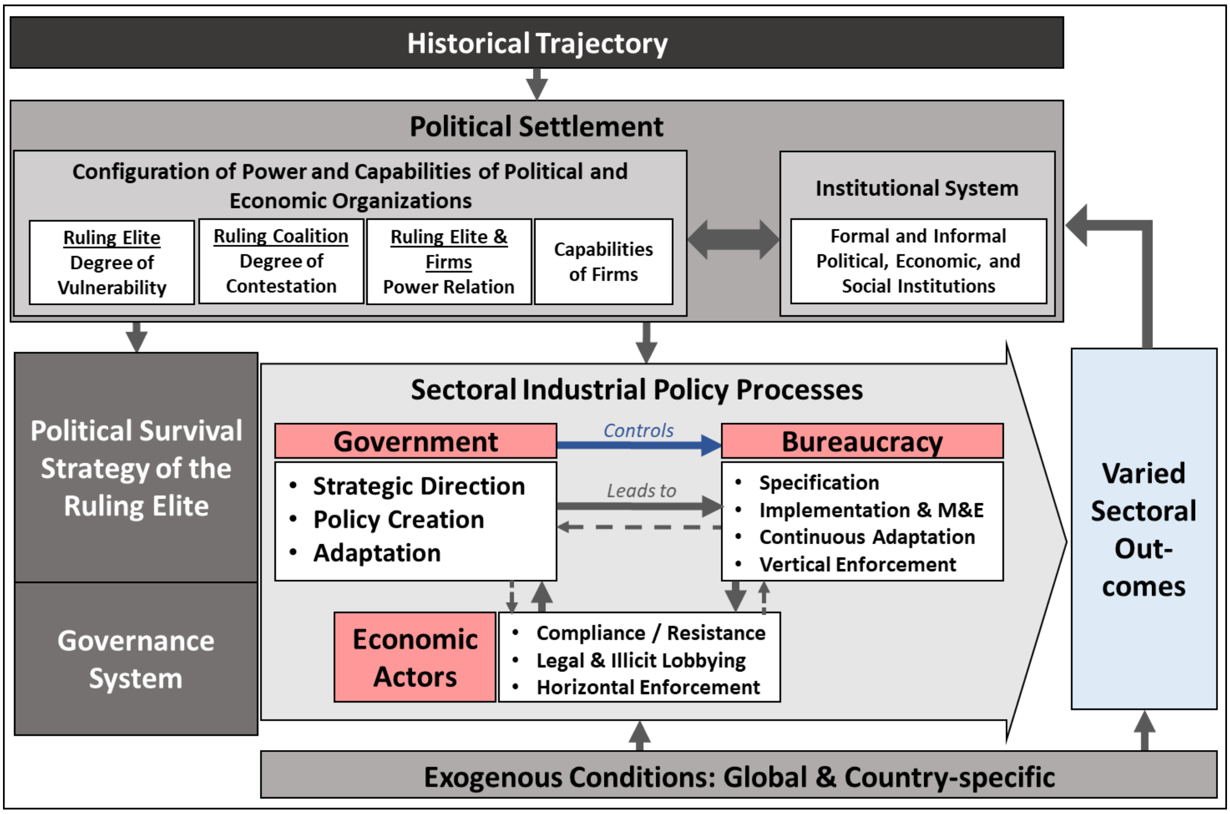

Figure 5: Analytical Framework of the PhD Thesis
Source: own illustration

Political Settlement

The political settlement is defined as the interaction of the power and capabilities configuration of political and economic organisations with the institutional setting in a country. Khan's (2010) two matrices containing four variables have been partially renamed by Whitfield et al. (2015) as the ruling elite's degree of vulnerability, the ruling coalition's degree of contestation, the power relation between the ruling elite and firms, and the capabilities of these firms. The effectiveness of the ruling elite to translate policy intentions into reality is significantly determined by their rent centralization power: the weaker lower levels of the ruling coalition and the less networked economic organisations, the more control over rents does the ruling elite have. Its ability to decide about the creation, allocation, change and withdrawal of rents heavily influences the design and outcomes of industrial policy. The institutional setting concerns political, economic, and social, formal and informal institutions.

Political Survival Strategy of the Ruling Elite

Based on the assumption that the ruling elite is foremost motivated by its own political survival (premise 7) and that this survival is primarily ensured by securing access to material resources (premise 4), this elite chooses a particular strategy to maximise the likelihood to remain in power (building block 5), and implements it by using a particular governance mode. Its agency, however, is strongly constrained by both a few salient exogenous conditions and the actions of a myriad of political, economic, and social organisations in society (premise 3), whose outcomes are shaped (but not determined) by their relative share of power. Finally, the ruling elite implements its survival strategy via the institutional and governance system already in place. Its power and capabilities determine the degree to which it can shape and alter this system and the state organisations that implement policies through this system (i.e. the bureaucracy).

Mechanisms of Industrial Policy Processes

This framework focuses on the sectoral industrial policies resulting from the ruling elite's actions. Regarding these processes, there are three main players to consider: the government, the bureaucracy, and economic actors. The government is simply defined as the top public executive organs (i.e. the President/Prime Minister and the heads of ministries, public sector agencies, and local government organs). The ruling coalition currently in power usually staffs all of these posts with its higher levels, i.e. the ruling elite. Thus, the terms government and ruling elite are used interchangeably in this thesis. The ruling elite is in command to direct government action in the form of, among many others, industrial policy. The bureaucracy are medium- and lower-level civil servants employed by all government organisations. They are responsible for implementing the government's decisions and can be staffed by professionally trained and largely non-political clerks and/or by political allies and clients of the ruling elite. The state is defined as 'comprising "the continuous administrative, legal, bureaucratic and coercive systems" in a particular polity that aim to structure relationships between civil society and public authority' (Goodfellow 2012:44, citing Stepan 1978: xii). The government constitutes the executive branch of the state and controls large parts of the state apparatus to a larger or smaller degree (Goodfellow 2012), including those that steer industrial policy. The legislative and judiciary branches of the state may or may not operate independently of the government. Finally, economic actors are the main target group of industrial policy measures. In agriculture, they are farms (ranging from large capitalist plantations to individual peasants), but in all other sectors, they are usually for-profit firms or occasionally cooperatives. Both firms and farms are directly engaged in *economic production*. They may produce very diverse goods (e.g. food, steel, computers, buildings) and services (e.g. finance, tourist experiences, legal advice, coding) but their value creation comes from *producing*, not trading (building block 6, premise 7).[38] While the term private sector often does not fit perfectly, as in many developing countries important firms are state-owned or -affiliated, it will be used as a synonym. Furthermore, individuals may be part of more than one organisational type, for example, if ruling elite members are also firm owners.

Sectoral industrial policy processes consist of the actions of the government, the bureaucracy, and economic actors that entail designing, adapting, implementing, monitoring and evaluating, enforcing, and complying with or resisting against industrial policies (building block 8). The government – compelled by its political survival strategy arising from the configuration of organisational power and capabilities in society– decides about the strategic direction of sectoral industrial policy. This entails the general decision to focus on natural resource exploitation, agriculture, manufacturing and/or services,

[38] Firms that engage in mining of natural resources constitute a separate case, which is omitted here.

trade and/or production, and then within these broad economic sectors, which specific industries, sub-sectors, and products to target. The best option can be evident, e.g. selling off mining licences to multinational companies and privately pocketing the money in case of a very short time horizon or relentlessly pursuing industrial transformation when all other political survival avenues are closed. It can also be unclear, e.g. when time horizons are long and economic growth is desired but exogenous conditions are adverse for virtually all economic activities. Once strategic decisions are taken, more or less structured and cascading development strategies and policies are formulated. These can be, for instance, policies to build up necessary infrastructure to develop or upgrade certain sectors, to develop a skilled workforce or to provide various forms of subsidies and financing instruments to firms.

In parallel, there is an on-going process of state-building, meaning that the government constantly reconfigures the state's administrative structures, i.e. its governance agencies and bureaucracy. State bureaucrats are tasked with specifying, i.e. operationalising, and then implementing policies. This entails the design of action plans and budgets, which are again approved by the higher governmental levels. They also monitor to which degree the planned actions were conducted and the available financial resources were used appropriately. Ideally, they first design and then apply a framework to evaluate the impact of the conducted measures and they feed the collected information back to the higher levels of government. For example, a policy to construct a special economic zone to attract foreign and domestic investment would be operationalised by defining specific measures, such as finding and making available appropriate land, constructing the necessary infrastructure, creating attractive subsidy regimes, promoting the project to promising potential investors, etc. Timelines, responsible persons, and budgets would be assigned to each task, and these tasks would be sequenced properly.

The purpose of industrial policy is to incentivise or compel economic organisations to put in high efforts in firm learning with the goal of raising their productivity and achieving competitiveness (building block 7). If conditional learning rents are provided to firms, they may or may not comply with these conditions. If various forms of subsidies are provided to firms *ex-ante*, they may collect these rents without attempting to solve their managerial and technical deficiencies. Whether firms comply with or resist industrial policy measures depends on their rationale how to make decent profits in the easiest way possible (premise 8). This may be by actually engaging in learning-by-doing to achieve competitiveness and earn profits in capitalist markets or by collecting as much rent flows as possible in protected markets and investing in rent-seeking to ensure the continued access to these rents. If impact evaluations by the bureaucracy find that policy measures were not effective, financial support might be withdrawn by the government. In that case, firms would use their political connections to engage in (legal) lobbying via formal industry organisations or (illegal) bribery via informal clientelist networks to prevent rent withdrawal. The success likelihood of these actions depends on the configuration of relative organisational power of political and economic organisations. If they succeed, these rents have been captured and the ruling elite, which would like to reallocate these rents, is unable to do so.

Therefore, one critical aspect of industrial policy is its enforcement. Withdrawing subsidies is only the last and most severe step in the enforcement process. Other components are the regular monitoring of detailed provisions stipulated in often complex subsidy arrangements, such as local content rules, loan interest and principal (re)payments, hiring and training employees, following environmental regulations, etc., by the bureaucracy, which, in case of violations, documents and reports them, and applies penalties, payment reductions, or pay-out delays. The capabilities of the bureaucracy to aptly monitor firm behaviour needs to be built up incrementally. The actual power to properly conduct regular auditing depends on government support and their interest and power vis-à-vis economic actors. These processes constitute vertical enforcement from regulating agencies down towards economic actors. Additionally, there may be horizontal enforcement among firms, such that mutual monitoring takes place (via industry organisations and in informal ways) and rule violators are reported to the government. This will only happen if it is in the interest of firms that everyone complies with the rules, which tends to be the case only if they avail of a certain level of capabilities and productivity and need reliable regulations to conduct complex contracting. In an environment where everyone violates some rules and relies on informal ways of influencing rent flows as the dominant strategy of doing business, horizontal enforcement will not emerge.

There are two types of policy adaptation to be examined. First, there are strategic or tactical changes coming from the government. They may arise because external circumstances or internal preferences on the strategic direction of industrial policy have changed, firms or industries have lobbied successfully for a general reorientation, or feedback from impact evaluations has found that a large-scale realignment is necessary. Second, there is the continuous adaptation of policy details that can often be effected instantly by the discretion of bureaucrats arising from advanced knowledge of firm needs or new market developments. Successful industrial policy often hinges on the design of ostensible trivialities that help firms to solve specific problems and overcome particular bottlenecks. Like entrepreneurship itself, industrial policy design contains trial-and-error, tinkering and experimentation. It is an incremental discovery process requiring creativity and out-of-the-box thinking.

Determinants of Industrial Policy Performance

While this part of the framework is mainly used to describe *what* happens in industrial policy processes based on empirical observations, the reasons *why* these processes and their outcomes manifest in the way they do, are also crucial to understand. They depend on the triangle interaction between the government, the bureaucracy, and the private sector, and on a more granular level, their many, often heterogenous, parts. The actors' particular relations are shaped by the components of the overall political economy as well as some exogenous conditions. Academic research has invested much effort in determining which three-way relations lead to successful industrial policy. Whitfield et al. (2015) found that three conditions must be fulfilled. First, there have to be mutual interests and dependency between the ruling elite and economic organisations, i.e. they must need each other, and their relative power must be sufficiently balanced to avoid the one exploiting the other. Second, there need to be pockets of efficiency in the bureaucracy, i.e. certain government agencies having both the capabilities and power to fulfil their tasks effectively. The capabilities entail the knowledge of firm operations that allows them to design proper policies. The power comes from the ruling elite that shields the bureaucracy from particularistic demands. If both is the case, the state is characterised as exhibiting *embedded autonomy* (Evans 1995). And third, there needs to be learning for productivity, which is characterised by rents being designed to motivate firms to put in high efforts (and not for them to just collect rents induced by their successful lobbying), by bureaucrats knowing how these rents need to be allocated effectively, and the government ensuring the proper enforcement of these rules. Whitfield et al. (2015) then go on to connect these findings of developmental state theory and other research on the mechanics of successful industrial policy with Khan's PST (i.e. the *politics* of successful industrial policy). In their elaborated political settlements theory, they posit that lower vulnerability of and lower contestation within the ruling coalition leads to the emergence of pockets of efficiency, while lower contestation within the ruling coalition coupled with higher political influence of economic actors leads to mutual interests, and lower political influence of economic organisations in combination with higher technological capabilities leads to learning for productivity (Whitfield et al. 2015:104).[39]

To synthesise, the optimal level of control and discretion between the upper levels of government and the mid- and lower levels of the bureaucracy is a complex and contentious topic. If the government does not allow bureaucrats a certain level of discretion, they cannot use their expert knowledge and deeper understanding of the reality on the ground to adjust policies as necessary but if the government does not exert sufficient control, this may lead to collusion, inefficiency and/or low levels of effort. Also the relations between firms and the government as well as between firms and bureaucrats is complex, as both close state-business collaboration is necessary for successful industrial policy and is often detrimental to it, as close connections will lead to continuous rent flows to these firms, even if their effort is not forthcoming. Therefore, deciphering exactly how these triangle relations look like in each country and sector is key in understanding varied sectoral development outcomes.

Exogenous Conditions

Additionally, there are various global and country-specific exogenous conditions beyond a country's political economy that shape development policy processes and influence their outcomes. Both rather static characteristics and dynamic developments on a global scale can be distinguished into economic, political, and other factors. Global supply and demand in general (i.e. economic and trade cycles) and their effect on world prices for various import and export goods can support or deter the emergence or upgrading of specific economic sectors in developing countries (especially those which have small domestic markets and are price takers). Furthermore, the increasingly sophisticated organisation of value

[39] In this logic, economic actors need to be politically *strong* for the 'mutual interests' condition to work and politically *weak* for the functioning of the 'learning for productivity' condition. The fact that both cannot be the case simultaneously shows how difficult successful industrial policy is to achieve, and that even this elaborated concept cannot be applied generically but requires in-depth analysis.

chains in global production networks impedes the entry of entire industries of a developing country into the world market. Moreover, the efficiency gains in manufacturing made by China make it significantly harder for poor countries to attract foreign low-technology firms to shift production to their territories, as even lowest wages are not enough to compensate for the significantly superior productivity. Trade laws and regulations may play a role as well. Global political factors include the benevolence or neglect of regions and countries regarding trade, economic cooperation or donor support for geostrategic or other reasons. Finally, other factors include external shocks such as the Covid-19 pandemic and gradually worsening climate change. When thinking through all listed factors, it is easily imaginable how each one could alter the design and implementation of sectoral development policy processes as well as actual sector transformation outcomes.

There are also country-specific exogenous conditions that shape policy processes and sector outcomes beyond the particular political economy of a country. These are, for instance, landlockedness, the regional political and economic situation, geographical terrain, the availability of natural resources, and other endowments. Landlockedness is a severe constraint for affected countries, as the largest share of trade occurs via ports and the sea. This individual factor alone can lead to the abandonment of industrialisation efforts. Historically, landlocked countries and regions usually only industrialised when their neighbours had already gained certain wealth levels. The general political and economic situation in a country's geographic region are important factors as well. Less developed Asian countries (e.g. Cambodia and Laos) have recently been able to grow rapidly, as their region is immensely dynamic and there are no massive structural factors impeding their progress. However, African countries that are comparatively poorer than their neighbours often cannot catch up, as, ceteris paribus, even the regional frontrunners are undynamic and not transforming. Certain geographic features, such as extremely mountainous terrain, may seriously impede agricultural mechanization and modernization efforts despite well-implemented agrarian policies. If a country has abundant natural resources (such as minerals, precious stones, or oil), this can have diverse effects on development policies and their outcomes, the direction of which is determined by their overall political economy. For example, mineral-rich Congo and diamond-rich Sierra Leone endured decades of violent internal conflicts, as the state was not able to centralise control over the enormous resource rents (among other reasons). As a result, productive sector policies did not evolve. However, Botswana, which avails of large diamond deposits and is seen as a democratic paragon by some, was able to centralise rent flows and qualifies as a permanently peaceful country, though it is still poor. It can be argued that the availability of abundant resources takes any pressure from the ruling elites to develop productive sectors. In Nigeria, oil has led to unprecedented levels of highly complex corruption networks, while the same commodity has enabled an exclusionary form of rapid development and wealth creation in some Arabic countries. All these examples are different manifestations of the 'resource curse'. Finally, also other endowments can play a role, such as (near-)unique tourist attractions with high or rising global demand, around which a tourism industry may be built. Thus, if country-specific exogenous conditions are too adverse, even adequately designed and properly implemented development strategies that take these adverse factors into account may fail to achieve transformative outcomes.

Feedback Effects of Economic Outcomes on the Political Settlement

Finally, varied economic sector outcomes again influence the further incremental evolution of the political settlement, suggesting a circular dynamic. In other words, after analytically determining the political settlement and its consequences at a fitting but ultimately arbitrary historical starting point, the incremental and at times abrupt changes occurring in the country's overall political economy are then explained largely *endogenously* by the analytical framework (bar large external shocks).

Chapter 3: The Political Economy of Post-2000 Rwanda

Rwanda is a small, landlocked East African country in the African Great Lakes region, bordering Uganda to the North, Tanzania to the East, Burundi to the South, and the Democratic Republic of Congo (DRC) to the West. In 2019, it had 12.4 million inhabitants on an area of 26,338 km², making it the most densely populated country in continental Africa (471 people/km²). Since the administrative reform of 2005, it is structured in five provinces, 30 districts, 416 sectors, 2,148 cells, and 14,837 villages (RoR 2021a; see also figure 6).

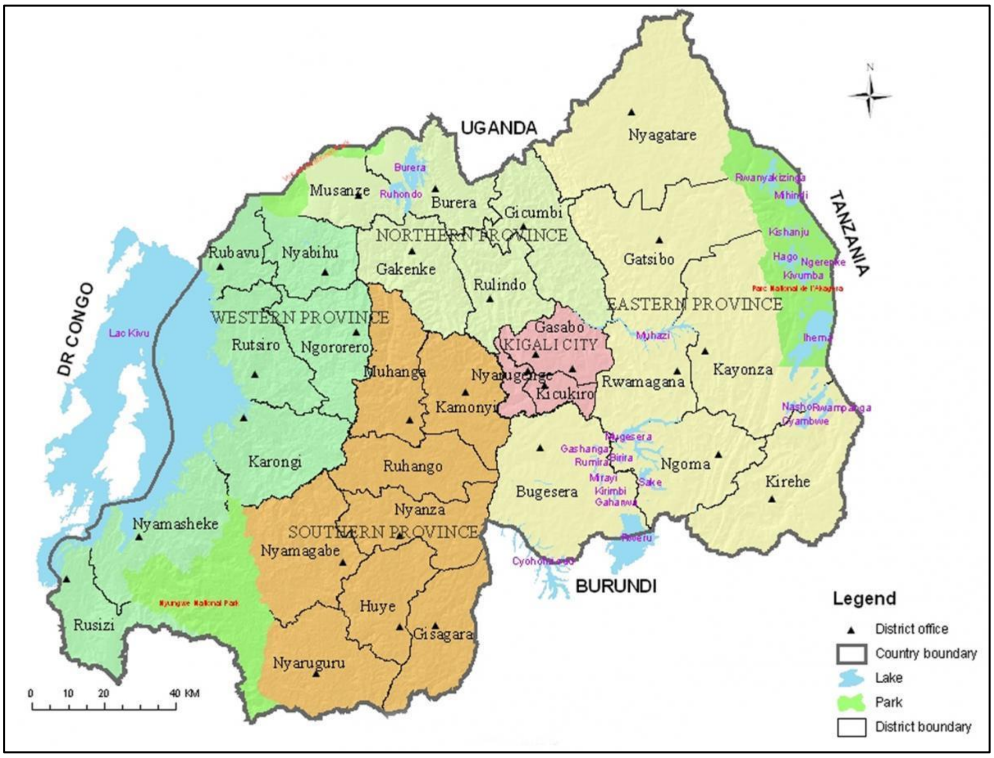

Figure 6: Administrative Map of Rwanda
Source: Newebcreations (2021)

This chapter provides an analysis of the political economy of post-2000 Rwanda, making use of the framework developed in chapter 2. It starts with a short history of Rwanda up until the end of the 20th century with a special focus on the years after the genocide in 1994 (3.1). This history has had a profound impact on subsequent developments in Rwanda. Then, the political settlement of post-2000 Rwanda is analysed (3.2). Next, the political survival strategy of the ruling elite resulting from the particular political settlement is elaborated (3.3). In order to assess the implementation of this macro-strategy, state-building efforts and their outcomes, in particular the setting up of an effective governance system to enforce policy implementation, are traced (3.4). A central aspect to understand Rwanda's development trajectory is the structure and evolution of the country's economic organisations and economic activities. This is why firstly, the types, relative power, and activities of Rwanda's economic organisations (3.5) and secondly, the changing composition and value creation of its economic sectors and sub-sectors as well as trade flows over time (3.6) are portrayed. As exogenous conditions do play an important role for the actual development trajectory of any country and as they are particularly adverse (and thus relevant) for Rwanda, they are illustrated next (3.7). Then, the concrete overall economic development strategy of Rwanda is depicted and actually achieved outcomes are sketched (3.8). Finally, a chapter conclusion is drawn (3.9).

3.1 Brief History of Rwanda

Having been rather centralised by the late 19th century under the reign of the Tutsi King Kigeli IV Rwabugiri, Rwanda was colonised by Germany in the 1890s and jurisdiction was transferred to Belgium in 1916 (Prunier 1997:23–26).[40] The colonialists found a complex, multidimensional patron-client structure constituted of Tutsi cattle-herders (14% of the population) largely dominating over Hutu agriculturalists (85%) and a small, marginalised group of Twa forest dwellers and servants (1%). The emergence and evolution of the categories of Tutsi and Hutu is complicated and riddled with misinformation. While ethnicity was at the origin of these two groups and continued to play a significant role, they transformed into social 'classes' in pre-colonial times that were somewhat permeable.[41] Additionally, intermarriages further blurred ethnic lines. Nevertheless, the Germans established a system of indirect rule cooperating with the existing Tutsi ruling elite and thus strengthened the latter's position. Later on, the Belgians cemented ethnic Tutsi/Hutu distinctions based on then-dominant Western obsession about racially determined hierarchies by establishing an identity card system settling and documenting every Rwandan citizen's ethnicity, a development that proved to be deadly for many Tutsi during the genocide. Even more, by organising and controlling the education system, the two colonising countries imposed their understanding of Tutsi racial supremacy and Hutu subservience in the minds of two generations of Rwandans, leaving them with a Tutsi superiority and a Hutu inferiority complex that is thought to have substantially contributed to the eventual eruption of mass violence (Prunier 1997:9,38-39), thus being a sad example of 'successful' social engineering.

During the 1950s, a Hutu counter-elite emerged, and it superseded the rebellious and independence-pursuing Tutsi elite as the 'rulers' under colonial supervision in the so-called 1959 Hutu revolution, which was rather an exchange of henchmen by the Belgians. It was accompanied by pogroms against Tutsi throughout the country in 1959 and 1963/64 that led to a large exodus of Tutsi refugees into neighbouring countries and the emergence of a significant Rwandan Tutsi diaspora (Prunier 1997:49–51). Rwanda officially remained under Belgian rule until 1962 when Hutu Grégoire Kayibanda became the first President of the newly established Republic of Rwanda. The twelve years of the first Rwandan Republic under Kayibanda were shaped by authoritarianism, abject poverty, regional sectarianism, and

[40] This section leans heavily on Gérard Prunier's *The Rwanda Crisis: History of a Genocide* (1997), which is based on a very large number of sources. His self-attested pro-RPF stance in this book (Prunier 1997:356–57, 2009:355–57) has been taken into account. Further insightful sources on (various intervals of) Rwanda's history are for instance Newbury (1988), Uvin (1998), Jefremovas (1997), Des Forges (2011), Verwimp (2013), Golooba-Mutebi (2013), and Reyntjens (2018b). Furthermore, it needs to be noted that there is no space here to depict the complexities and intricacies of Rwandan history properly. Thus, the paragraphs provided can only be understood as a summary of outcomes and do not do justice to the complex processes of social change.

[41] Forms of patron-client relations between a Tutsi and a Hutu in pre-colonial Rwanda could lead to the latter receiving a cow and being allowed to keep some of the offspring, potentially leading to their eventual 'tutsification'. Similarly, impoverished Tutsi could become 'hutuised' (Prunier 1997:13–14).

a Hutu supremacy ideology (Prunier 1997:57–61). In 1973, following escalating tensions between Northern and Southern factions, Kayibanda was ousted in a bloodless *coup d'état* and died in 1976 as a political prisoner.

He was replaced by coup leader Juvenal Habyarimana who governed the Second Rwandan Republic and remained President until his assassination in April 1994. Habyarimana's rule was considered to be a regional paragon by contemporaries; regarding political actions and up to 1988, Prunier considers it "one of the least bad in Africa" (Prunier 1997:83). There was on-going discrimination of Tutsi, who were barred from the public sector and the military, but there was also peace and stability in contrast to the violent periods during the change from Tutsi rule to Hutu reign in the wake of the independence struggle as well as in the Kayibanda years. On the one hand, there was de jure one-party rule from 1974 to 1990 (with a fig-leaf parliament established in 1981 and a Presidential election result of 99.98% in 1988), totalitarian state penetration of society with extremely high levels of political control and surveillance, and de-facto forced labour. On the other hand, there was discernible economic progress: Rwanda rose in the ranks of being the third-poorest country in 1962 to becoming the eighteenth poorest one in 1987; there was substantial structural transformation from an 80% agricultural share in the economy in 1962 to 48% in 1986 (and an accompanying rise of the industrial sector from 8% to 21% and services from 12% to 31%); and health and education were improving significantly as well. At the same time, aid dependency was continuously increasing through the years, reaching 22% of the gross national product in 1991 (Prunier 1997:74–83). However, Habyarimana's reign slided into substantial crisis in the late 1980s (i.e. even before the civil war began in late 1990), which can be traced back to economic decline precipitated by falling world commodity prices and resulting political turmoil characterised by increasingly violent elite in-fighting. Adding ever mounting demographic pressures, grievances of the population rose and Habyarimana was eventually forced to share power first with recently established domestic (Hutu) opposition parties and then with the Tutsi diaspora (see below). In the months before civil war broke out in October 1990, the Rwandan government was in a state of severe political and economic distress (Prunier 1997:84–90).

In parallel to the Habyarimana reign of the 1980s, Tutsi refugees in Uganda –who had become the target of political repression after living there for some decades– politically organised into the Rwandan Patriotic Front and sought repatriation, by force if necessary. They had gained battlefield experience in the guerilla force of Ugandan rebel-turned-President Yoweri Museveni and held high positions in the country's military, including access to weapons and logistics. In October 1990, they deserted the Ugandan army and invaded Rwanda. After initial success, their progress halted and RPF leader Fred Rwigyema was killed by one of his own men (Prunier 2009:13–14). His last remaining deputy, Paul Kagame, hurried back from military training in the US to take over the all but beaten remnants of the armed rebels, retreated to the harsh but safe Virunga mountains and engaged in months and years of guerilla attacks interspersed with high-level peace negotiations with the Habyarimana regime. As a result of the constant threats to regime survival coupled with declining material conditions, political forces within Rwanda turned ever more extremist, and, when in early April 1994 President Habyarimana was assassinated as his plane was shot down upon arrival in Kigali, genocidal killings of Tutsi by Hutu extremists started within hours (Prunier 1997:229).

The Genocide against the Tutsi ravaged for 100 days (early April to mid-July 1994) and led to the death of more than 600,000 Tutsi as well as a large number of Hutu (Verpoorten 2020).[42] It ended with the military victory of the RPF that led to a refugee exodus of an estimated 2.1 million Hutu into then-Zaire, coordinated by the *genocidaire* government (Prunier 2009:5). Another million Rwandans was internally displaced, leaving only 45% of the pre-war population in their homes, while roughly 700,000 diaspora Tutsi were in the process of returning to their country (Prunier 2009:5). Additionally to this human upheaval, most of the country's infrastructure and physical capital had been destroyed, and the former government had taken all US dollar reserves with them. Even more dramatically, any social fabric and norms had been shattered. As a result, the new RPF-led government that was inaugurated in mid-July 1994 faced the seemingly insurmountable challenge of rebuilding an entire country from scratch, while the former government reorganised in the refugee camps across the border and prepared for attack. Prunier uses examples of the fate of eight people and families to show how "the complexity of the genocide in Rwanda created an almost insane world" (Prunier 2009:1): living in Rwanda in the second half of 1994 meant to be exposed to a combination of anarchy and chaos, immense suffering and despair, psychological trauma and capriciousness, continuing killings and raids, and widespread, often arbitrary denunciations that led to a rapidly rising and unmanageable number of guilty and innocent prisoners.

In hindsight, it is common knowledge that the new regime was able to overcome this most dire situation and re-established a functioning state and an orderly society beyond all expectations. How was this possible? The approach of how the RPF succeeded is both impressive in its efficacy and horrifying in its brutality. As a result of its history as a guerilla movement with Ugandan roots and the leadership's war experience, the only tool for establishing and maintaining control they knew first-hand was the continued application of (extreme) violence. Even more, this approach had worked before when they succeeded in both toppling the Ugandan government in 1986 as part of Museveni's guerilla force and defeating the Rwandan army in 1994 (Prunier 2009:13,22), and it later worked again when the Rwandan *genocidaire* army in the Congo was largely eliminated, huge Zaire was conquered, and Mobutu was ousted. It is therefore not surprising that both the immediate establishment of the monopoly on the use of force and the stipulation of broader political control within the first post-genocide years were characterised by the liberal application of violence against any actual, potential or perceived threat as

[42] The number of total deaths in general and Tutsi murders in particular in the wake of the Rwandan civil war, genocide, and its aftermath is disputed and estimates remain uncertain. While partisan claims in the public domain range from 200,000 (BBC 2014) to 1.07 million Tutsi deaths (CNLG 2021), Verpoorten (2020:99) arrives at a robust interval of 562,000-662,000 Tutsi killed during the genocide and 150,000-250,000 survivors within Rwanda. Her calculations estimating the number of additionally killed Rwandans during the civil war and genocide, the insurgency and counter-insurgency in 1995-98 in both Rwanda and DRC, and in the context of mass killings perpetrated by the Rwandan Patriotic Army in 1994-95, yield a number of 542,000 Rwandan excess deaths including those resulting from diseases and deprivation as a consequence of the conflict. However, her sensitivity analysis produces a range of 212,000-1,300,000, demonstrating the huge uncertainty regarding this number.

well as completely arbitrarily (Jones 2014:103–5; Prunier 1997:359–62, 2009:16–24; Reyntjens 2013:4,10,98-109). In other words, given the situation at hand, the RPF did what it thought it had to do, i.e. executing a "policy of political control through terror" (Prunier 2009:20), to consolidate its still fickle grasp over the country (Prunier 1997:366, 2009:15,20; Reyntjens 2013:1,6). This included permitting large-scale revenge killings, killing civilians in retribution for insurgency raids from *genocidaires* into North-western Rwanda, the coercive disbanding of internal refugee camps including the April 1995 Kibeho slaughter of 4,000 internally displaced persons in full view of international witnesses, generalized arbitrary detentions, and systematic blocking of judiciary processing of suspects leading to insane conditions in prisons resulting in many deaths (Jones 2014; Prunier 1997, 2009; Reyntjens 2013). During the civil war, genocide, and its aftermath, the governance mode employed by the RPF to get their decisions implemented was a typical military top-down chain of command.

Regarding formal politics, the government was set up in a way seemingly compliant with the spirit of the 1993 Arusha agreement, comprising several domestic opposition parties. However, scholars agree that from the outset, the RPF was not interested in any form of power-sharing and thus continuously worked to increase its control over the country (Jones 2014:92–97; Prunier 1997:367–68; Reyntjens 2013:1–25).[43] The RPF managed to take all important decisions by a mixture of using informal channels of power and tweaking constitutional and political processes in smart ways. Given their very small social foundation and power base, their political and physical survival could only be ensured by seizing a maximum of political control. During the first couple of years of the new government, all independent-minded politicians of other parties within the ruling coalition were ousted or sidelined. Then, also RPF members perceived to be insufficiently loyal or compliant or too powerful and dangerous were marginalised or eliminated. This is exemplified by the fact that in March 2000, Kagame was the only cabinet member who had not been exchanged (Reyntjens 2013:15). Furthermore, in 2013 the last 'historicals', i.e. RPF fighters of the first hour, had been dropped from positions of power (Kagire 2013 in: Behuria 2015a:421,444). Naturally, also these measures were executed in a top-down command-and-obedience style. The exchange of people regarding important official posts also meant a "Tutsification" and "RPF-ization" of the public sector (Prunier 1997:370; Reyntjens 2013:18–21). While there were some initial problems to receive aid from multinational organisations and bilateral partners, in general the international community was quickly willing to provide generous budget support propelled by a 'genocide guilt complex', skilfully used by the RPF.[44]

[43] One prominent scholar, Frederick Golooba-Mutebi, disagrees with this conclusion and has published several papers describing alleged power sharing mechanisms and decision-making as a consensus-driven discussion culture in post-genocide Rwanda in detail (Golooba-Mutebi 2008, 2013; Golooba-Mutebi and Booth 2013). The latter is documented to having been reality in pre-invasion RPF years (Prunier 1997). His arguments and way of describing political processes is at times highly doubtful and adverse to the substantial empirical evidence brought forward by academic historians and political scientists.

[44] While post-genocide Rwanda's relations with the outside world are an exciting topic, they are almost completely excluded in this chapter and for most parts of the thesis. Literature on various topics of Rwanda's foreign affairs can be found as follows: a generalist discussion (Jones 2014, ch.5; Reyntjens 2013, ch.5), the RPF's approach towards foreign policy (Beloff 2020), the role of aid and Rwanda's relations with the 'international development community' (Beswick 2007; Hayman 2006; Zorbas 2011), and relations with international media after the genocide (Pottier 2002).

Beyond establishing direct coercive control of Rwandan territory, the most severe challenge to the RPF amounting to a fundamental threat was the re-formation of the army and militia of the *genocidaire* government a few kilometres across the border in massive refugee camps in Eastern Zaire. These forces launched regular insurgencies into North-western Rwanda, partially supported by the local population, and thus destabilised the region. In late 1996, the RPF top leadership (i.e. new Rwandan Vice President, Minister of Defence, and real power holder Paul Kagame) decided to cross the border, forcefully repatriate the refugees, and fight the former government's forces, in what came to be known as the counter-insurgency. This mission was successful as it led to the return of over 800,000 Rwandan (Hutu) refugees, while at the same time, over 200,000 Hutu civilians are thought to have died from both massacres and the exertions of the war (Prunier 2009).[45] However, in alliance with Ugandan forces and counting on the support of several other African nations, the Rwandan army then conquered the whole of Zaire, toppled ailing long-term dictator Mobutu Sese Seko and installed allied rebel Laurent-Désiré Kabila as president of the renamed Democratic Republic of Congo. The origin, nature and sequence of this First Congo War (October 1996 - May 1997) as well as Rwanda's forceful engagement in the Second Congo War (August 1998 - July 2003) are highly complex, but the country's motives were foremost security and secondly access to mineral resources (Prunier 2009). While the Eastern DRC, in particular the North and South Kivu regions bordering Rwanda, is still politically unstable and characterised by violence and misery today, Rwanda's plans did work out for the most parts, even though the RPF made several miscalculations and errors. After all, the former Rwandan government's army and militia were all but annihilated and the last remnants do not pose a real threat to the regime anymore. Also, while there are no reliable estimates, siphoning off large amounts of minerals and precious metals has been highly profitable and the nature of the looting was such that the gains mostly went into the regime's (and not individuals') coffers (Booth and Golooba-Mutebi 2011). An additional benefit was the continued occupation of the large army for several years after taking power. Looking at the costs from a pure power perspective shows that the RPF did lose a lot of its political capital (although it did not lead to economic sanctions), as its ruthlessness and many incidents of mass killings of civilians became public knowledge. Secondly, as a result of the war chaos, the Rwandan-Ugandan relations considerably soured and reached a new low point in the late 2010s, which does have severe economic effects. Acknowledging that there are many other dimensions to the historic processes that had to be omitted, it is now time to describe and assess the emerging post-2000 political settlement.

3.2 The Political Settlement of Post-2000 Rwanda

The cleansing of non-loyal individuals in the party, military, government, public sector in general, civil society, and private sector within Rwanda as well as the annihilation of the fundamental threat emanating from the DRC –irrespective of their brutality– had been quite effective. Thus, around the year 2000, the power of the inner circle of the RPF headed by Paul Kagame had been consolidated to an unprecedented

[45] These numbers are not reliable, and the chaotic situation renders a proper accounting virtually impossible, as also indicated by Verpoorten's (2020) analysis summarised above.

level. These transition years led to an increasingly long-term horizon for the ruling elite, which switched from fighting immediate threats of regime survival to power consolidation and then to formulating and implementing long-term development strategies. This transformation is denoted by a sequence of events: Kagame's ascension to the Presidency in April 2000, the publication of the government's flagship development agenda Vision 2020 in July 2000, the official end of the transitional post-war period marked by the introduction of a new constitution in May 2003 and a formal Presidential election in August 2003 that confirmed Kagame in his office, as well as the official end of the Second Congo War in July 2003.

However, the politics of power consolidation continued in subsequent years, partially through violent action but increasingly via other means. These were, among others, the manipulation of election results (Reyntjens 2013, 2018b)[46], the installation of a tight and effective surveillance apparatus reaching far down the rural hills (Purdeková 2011b), and various forms of 'high-modernist social engineering': re-education/indoctrination measures (Thomson 2011), villagization (Newbury 2011), agricultural reforms (Ansoms 2009; Huggins 2017a), and the roll-out of social and health services (Chemouni 2018; Lavers 2016). The incremental switch from pure coercive means of subjugation towards those relying on state penetration of the society can be conceptualised by Michael Mann's (1984) notions of despotic and infrastructural power (Mann and Berry 2016). However, both the ultimate goal of maximising political control and the governance mode of a military-style command structure remained unaltered.

Regarding formal political organisations and institutions, all ruling coalitions since the inauguration of the post-genocide government in July 1994 (known as the 'Government of National Unity') contained several parties alongside the RPF. The prime minister position as well as several ministerial posts were always held by members of other parties, and even currently, the RPF holds less than 50% of parliamentary seats. These and some other facts have made Rwanda's political system appear relatively democratic to many outside observers. However, in reality this supposed dispersion of power is an illusion and de-facto power fully resides within the inner circle of the RPF (Jones 2014; Longman 2011; Prunier 1997, 2009; Reyntjens 2004, 2013). Two examples should help to make this point. First, in 2020 the RPF held 36 out of 80 seats in the lower chamber of parliament and its four coalition parties each held one, giving this ruling coalition the smallest absolute majority possible. However, the five opposition parties jointly only held 13 seats, while the remaining 27 were staffed by 24 women, 2 youths, and one disabled person elected by particular councils (RoR 2021b). This peculiar setup has two politically beneficial effects: first, it leads to the highest share of women in any parliament worldwide, having earned Rwanda appreciation from the international community and some scholars (Burnet and

[46] Regarding the Presidency, according to official results, Kagame had been elected with 95.1% of the vote in 2003 and was re-elected in 2010 with 93.1% of the vote. Under the then-existing constitution, he was not allowed to run again but an according referendum for constitutional change was held in 2015, which the electorate accepted by 98.3%. In 2017, Kagame was elected President for a third time with a record share of 98.8%. Under the new constitution, he currently serves a transitional seven-year term until 2024 and is then eligible for two more five-year terms, allowing him to officially stay in power until 2034 (when he will be 77 years old). Reyntjens (2013, 2018b) meticulously shows how the Presidential election results have been engineered by the RPF.

Kanakuze 2018), and second it results in a very large de-facto RPF majority, as the three election councils are virtually fully controlled by them (Reyntjens 2019). The second example concerns the ministerial setup. In December 2020, 14 of the 19 ministers were RPF members, four had no party affiliation and one was from a coalition party. Additionally, the prime minister also had no party affiliation. Furthermore, 12 were Tutsi (all of them former refugees) and 8 Hutu. However, every non-RPF minister had an RPF permanent secretary and all but one Hutu ministers had a Tutsi permanent secretary (Reyntjens 2021). This shadowing construct has been used since the beginning of RPF rule, most prominently illustrated by Kagame being Vice President until 2000 and Pasteur Bizimungu, a Hutu, formally being President.

The inner circle within the RPF holding real power consists almost entirely of Tutsi having grown up as refugees in Uganda and having been part of the armed struggle in 1990-1994, additionally connected via kinship ties (Jones 2014). In recent years, generational change has commenced to take place within the Rwandan government, where younger and formally highly-educated officials have risen in ranks and started to fill ministerial and other high leadership positions. These RPF cadres are known to be highly loyal to Kagame (Chemouni 2021). The actual structure of the higher levels of Rwanda's state apparatus can be illustrated as a simple hierarchy with the Presidency on top and all other relevant organisations situated below (figure 7). The Presidency directly and almost fully controls the military and the executive branch of the state (i.e. both the central and the local government and bureaucracy). It also has a considerable degree of control over the legislative and commercial enterprises (the latter to be discussed below). The influence of the Presidency on the judiciary is a contested topic, controversially discussed in academia and international media, but it is omitted here. The ruling elite, by definition, includes the Presidency and the leadership of each of the other organisations. The ruling party, i.e. the RPF, entails almost the entirety of all relevant organisations.

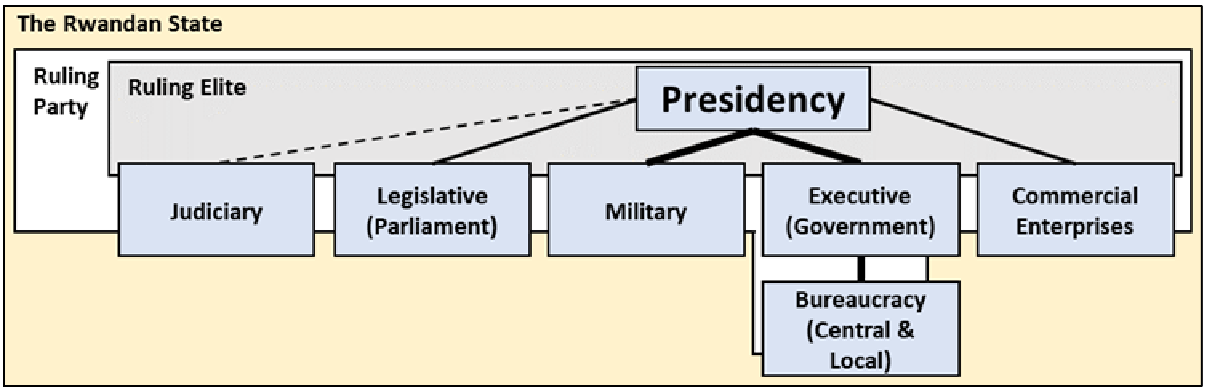

Figure 7: Simplified Organigram of the post-2000 Rwandan State
Source: Own illustration

Regarding the horizontal distribution of political power in Khan's (2010) political settlements framework, it is evident that the political opposition is exceptionally weak (Chemouni 2019). This is the result of the RPF's previously described successful efforts to eliminate all political power not vested in its own inner circle. There are a few types of remaining Rwandan political organisations: 'cooperative' opposition parties (those officially registered and holding a few parliamentary seats), 'uncooperative', i.e. real, opposition parties (without official registration and constantly being harassed), various exiled opposition groups (most notably the Rwandan National Congress (RNC)), and the last remnants of the *genocidaire* army and militia in Eastern DRC (Jones 2014). None of them have any significant political, economic or military power and as of now, there is no conceivable path for any of them (or even an ally of several) to actual political power. The most severe political threat comes from high-profile defectors of the regime, which have remained rather frequent over the years, and consist largely of 'Ugandan' RPF Tutsi. It is them who formed the RNC and published the notorious 'Rwanda Briefing' (Nyamwasa et al. 2010) that accused the Rwandan regime of massive violence and economic crimes from an inside perspective.[47] While some authors have interpreted several high-level defections as signs of a crumbling regime or diminishing elite cohesion, the RPF government with President Kagame as the undisputed leader appears to be as strong as ever in 2022. It seems that defecting ruling elite members, even those from the inner circle, are unable to take any power with them (Jones 2014). These incidents do, however, demonstrate that there are elite frictions and that the ruling elite should not be considered as one unitary bloc (Behuria 2015a, 2016a). While it has not been the case so far, observers consider a fundamental split within the inner circles of the RPF as the only conceivable trajectory how the ruling elite's power could crumble over the medium term.[48] As of now, all factions excluded from political power in Rwanda are very weak, which has led to the time horizon of the ruling elite becoming more and more long-term.

Concerning the vertical distribution of power, lower-levels of the ruling coalition are very weak in comparison to higher levels. While the 2005 administrative reform has introduced thirty districts that are the key layer responsible for rural policy implementation and has thus ostensibly led to decentralisation (supported by international development projects), in reality this must be rather seen as effective state penetration of rural areas and an increase in infrastructural power (Chemouni 2014, 2017a; Mann and Berry 2016). Any local government (and for that matter, RPF) official, be it on provincial, district, sector, cell or village level hardly holds any political or discretionary power but is rather ordered to implement strategies and directives designed by the central government, tightly monitored and held accountable by performance contracts (see section 3.4). Regular reshuffles, 'resignations' of entire district governments, and embezzlement indictments demonstrate that political power is almost entirely held by the centre. Traditional power structures, e.g. local chiefs holding some discretionary power outside of the state, hardly exist, as the civil war and genocide wiped away most of the people holding personal power, creating a vacuum that was filled by the RPF and subsequently by formal state organisations. Furthermore, a tight and well-organised intelligence network as well as the strong, country-wide presence of the police and the military ensure low crime rates and constant political surveillance and control (Purdeková 2011b, 2013).

[47] One of the four authors, RNC main figure and former RPF inner circle member Patrick Karegeya, has since been assassinated in South Africa, while another, Kayumba Nyamwasa, has survived such an attempt (Wrong 2021).

[48] This reasoning omits a scenario of President Kagame passing away or becoming unfit to rule, for which there appears to be no appraisal of possible consequences, demonstrating how personalised (i.e. non-institutionalised) power still is in Rwanda and how fickle the political situation may become overnight.

Virtually all non-state organisations and factions have been crushed or co-opted since the beginning of the RPF reign in mid-1994. This has been possible as a consequence of Rwanda's general historical trajectory of high social control and the recent political rupture of civil war and genocide. While there are occasional quarrels with religious groups, especially the once-almighty Catholic Church (Longman 2010), faith leaders have understood that they lost the battle against RPF hegemony and thus adhere to the party line (Beloff 2015). Most businesspeople decided to cooperate with the political leadership while a few others have been expropriated and/or exiled (see section 3.6). As is the case for any government that emerged from a military victory, current and former powerful military leaders posed a significant potential source of unrest. However, smart solutions were found for them, by appointing some of them as high civil servants, by positioning others in military-affiliated companies (Behuria 2016a), and also by continuously deploying the army (in the Congo Wars, in UN missions, and most recently in bilateral military support in Mozambique). Finally, the growing urban elite, while remaining short of becoming a class-conscious *bourgeoisie*, does require some benefit allocation and material appeasement. Goodfellow (2012) identified loopholes and deliberately unenforced components in real estate tax laws that massively benefitted urban landlords. It can be concluded that there are no factions organised as groups within Rwanda that hold any relevant power to challenge RPF rule or even demand a significant allocation of benefits. Old faction remnants still existing after the genocide were largely destroyed and new ones are effectively hindered from forming. Powerful individuals are either part of the higher levels of the ruling elite or co-opted (or were fought and defeated). Whenever any diffuse and unorganised 'group' of citizens arises, it is subdued with ease.

As a consequence, the enforcement power of the state regarding the implementation of virtually any strategy, policy or directive, no matter how unpopular and directly harmful to any group of the population, is very high.[49] Examples of enforced legislation abound: banning plastic bags, thatched roofs, and being barefooted, forced villagization, land use consolidation, regional monocropping and prohibited intercropping, participation in re-education camps, closure of worship places for violating health or noise pollution standards, business taxation, and most recently tough Covid-19 inner-country travel bans and social distancing measures. There have been occasional failed attempts, such as the 2006 banning of motorcycle taxis in Kigali, which, after a few days of suspension, where allowed back on the streets (Rollason 2017). However, this was not about successful lobbying of organised interest groups, but due to the pragmatic insight that urban transport and daily life did not work without them.

Turning to Khan's second matrix, the political power of the nascent capitalist sector (as that of any faction) is very weak as well. There are three types of actors in this sphere. First, there is a rather small number of private businesspeople, who are loyal to the regime, which usually means that they can continue to operate in many economic sectors and earn profits, as long as they neither act too strongly against the economic interests of the state nor defy other orders of the government, such as investing in

[49] There will be some qualification to this very strong statement but it is maintained that it is valid in the direct sense.

certain sectors and contributing to particular national projects and funds. Additionally, the state has channelled their financial power and increased their supervision by establishing ‘private’ business groups (e.g. Rwanda Investment Group), in which the biggest entrepreneurs come together with parastatals to invest in strategic sectors (Golooba-Mutebi and Booth 2018). Secondly, the largest part of the economy and of Rwandan businesses *is* the state/ruling elite via its enormous business conglomerates (Crystal Ventures Limited (CVL), Horizon, etc.) owned by or affiliated with the ruling party, military or government and ultimately controlled by the Presidency. In this construct, political power is unidirectional (down from the Presidency) and the enormous rents earned by these enterprises are managed centrally (Behuria 2016a; Booth and Golooba-Mutebi 2011). Third, a growing share of business activity comes from international investors, who have been actively recruited and supported by the ruling elite and who obviously hold no domestic political power (see section 3.6 for a discussion of the economic dimensions of this tripartite capital ownership structure). Unsurprisingly, there is no evidence (beyond crude internet rumours) about the extent of kickback payments from the business sector to the ruling party. Overall, the technological capabilities of Rwandan companies remain quite low, resulting in low productivity and competitiveness (Gathani and Stoelinga 2013; Golooba-Mutebi and Booth 2018). The prevailing power distribution between the government and economic organisations means that domestic firms (both government-affiliated and private) can be easily disciplined and that, theoretically, a top-down industrial policy focusing on low-to medium-technology sectors would be feasible. Eliciting to which degree this is actually the case is one of the goals in chapters 4-7 of this thesis.

Following the ample evidence presented in this assessment, the social foundation (Kelsall and vom Hau 2020) of the RPF can only be described as very narrow.[50] The on-going alienation between the immigrant, urban, ‘modern’, anglophone, Tutsi ruling elite and the largely rural, ‘traditional’, francophone (or native Kinyarwanda-speaking) Hutu peasantry is profound, and initially, little effort had been made by the RPF to win over the masses (Prunier 1997:370). The degree to which more than twenty-five years of ‘re-education’ (Nzahabwanayo, Horsthemke, and Mathebula 2017; Thomson 2011) aided by rapid demographic change (in 2018, 59% of the Rwandan population was born after 1994) has led to real ‘ethnic amnesia’ and a broadening of the RPF’s social base remains unknown (Bentrovato 2015), but it is doubtful that, given the persisting prevalence of abject mass poverty, rising inequality, and high levels of repression and unresolved issues of justice, there has been a significant shift towards real support for the ruling elite among the general population (Chakravarty 2014).

In the political settlement definition used here, the existing institutional setting plays an important role, as it interacts with the organisational power configuration and thus constrains the action of the ruling

[50] ESID’s survey of three experts led to the characterisation of post-genocide Rwanda as having a broad social foundation (Chinsinga et al. 2022), which is at odds with the appraisal of the large majority of scholars, all presenting detailed empirical evidence. However, leaving out expert 1, whose interpretations of Rwandan social reality can only be described as dubious, leads to classifying Rwanda as having a narrow social foundation, even though the resulting value of adding up the opinions of expert 2 and 3 is very much on the edge of the narrow/broad dichotomy (Kelsall 2022).

coalition and other political and economic organisations. However, in the present special case, this variable plays a secondary role, simply because the devastation of the civil war and the genocide was so large that many institutions –to be understood as the formal and informal rules that govern society– simply did not exist or apply anymore. This allowed the RPF to recreate them from scratch or import them from its own inner mechanisms. The institutions the RPF did create in Rwanda from 1994 onwards, and especially those governing the state apparatus, are very important in understanding economic outcomes, and they are assessed in section 3.4.

Applying Doner et al.'s (2005) systemic vulnerability concept to Rwanda provides further insights. The country does avail of little natural resources (cassiterite, tungsten, and tin in small amounts being the only available minerals). While it exported large amounts of minerals and precious metals illicitly obtained from neighbouring DRC during the Congo Wars and still continues to do so today albeit on a much smaller scale (Cuvelier and Marysse 2003; Himbara 2020), access to these resources is uncertain and amounts are small even in comparison to Rwanda's still tiny economy (mining accounted for 1.4% of Rwanda's GDP). The second type of resource to consider are aid payments, which are quite but not exceptionally high for Rwanda on an absolute and per capita basis and are fuelled by multidimensional donor rationales that are more complex than a genocide guilt complex or aid effectiveness considerations (Desrosiers and Swedlund 2019). However, this income is uncertain, as the example of reduced aid as a consequence of Rwanda's support of rebel groups in 2012 shows, and the continued dependence on international aid is deeply disliked by the Rwandan government on principal as it goes against their desire to be self-reliant (Behuria 2016b). To sum up, the first vulnerability condition of scarce/unsecure resources is fulfilled for Rwanda.

In a direct sense, the second condition of a broad ruling coalition with a large social foundation that continuously demands significant pay-offs for their continued support does not apply to contemporary Rwanda, as it was argued above that the RPF's social foundation is very narrow. However, the logic behind this systemic condition compelling governments to develop is that they need large amounts of resources to acquiesce their power base, either in the form of costly clientelist rent allocation or sometimes by providing broad-based social services. And it is well-established that the Rwandan state *is* rolling out and continuously expanding the provision of social goods such as universal health care, education, and access to finance (Chemouni 2018; FinScope 2016; Williams 2017). One argument in favour of the Rwandan government's social foundation to be broad would be to infer it from this broad-based social service provision. Why, after all, would the Rwandan government provide these services to hapless peasants, if it did not consider them in some sense to be part of their power base? The answer can be found when considering the adapted third systemic vulnerability condition of a fundamental long-term threat to the ruling elite's political survival. As reasoned above, the ruling elite perceives its legitimacy to be continuously threatened due to the seemingly insurmountable alienation between the small RPF ruling elite and the large majority of the general Rwandan population. Therefore, the third vulnerability condition of a profound long-term threat for the ruling elite does exist in Rwanda, and one way of dealing with it is the broad-based provision of social services even though the recipients are not part of its social foundation[51] (see the next section for a proper explanation of the ruling elite's actions).

Additionally, the lasting legacy of the genocide in the nation's as well as the elite's collective psyche is particularly hard to grasp. Scholars who engage with this topic state that other academics as well as foreign policy makers constantly underestimate the defining impact that living through and surviving a genocide has had on everyone involved.[52] For the purpose of this analysis, the degree to which the elite's mindset is shaped by the genocide is particularly important. It seems plausible that the pursuit of maximal political control is severely exacerbated by a psychological desire to prevent even the slightest indication of a renewed mobilisation towards genocidal ideas. The Rwandan government's zealous fight against any form of genocidal ideology, notwithstanding its political exploitation of the term to discredit any legitimate critique, needs to be seen in this light. As a consequence, the level of trust within Rwandan society and in particular from the ruling elite towards the general population and all other factions including the business sector is extremely low.

The important concept of elite vulnerability and how it applies to the RPF needs to be assessed in more detail. As the analysis of Rwanda's horizontal distribution of power revealed, oppositional forces are exceptionally weak and therefore, according to Khan's (2010) first matrix, the political settlement is not characterised as a vulnerable authoritarian coalition, which represses large shares of the population. In Whitfield et al.'s (2015) terms, the ruling elite's degree of vulnerability is low. However, as established above, the ruling elite in post-2000 Rwanda perceives itself to be severely vulnerable due to the country's societal configuration. This apparent contradiction showcases the limitation of Khan's deliberately reductionist typology of the organisational political power configuration, which can only serve to gain an initial overview of the political settlement anyway and does not substitute for a more profound analysis. However, the implications of both the political settlement and the systemic vulnerability analysis can easily be reconciled. While the opposition *is* exceptionally weak (and the social foundation *is* very narrow) for the foreseeable future –because of, among others, the very effective repressive measures applied by the government (which in this respect resembles an authoritarian coalition)– the perceived long-term threat of missing legitimacy among the general population makes the elite *also* exceptionally vulnerable in the long run. This particular situation leads to a complex political survival strategy of the ruling elite, which is portrayed next.

To synthesise this section, as a result of the historical trajectory of the genocide and its aftermath, the then-new Rwandan ruling elite felt compelled to strive for absolute political control and power. After several years of uncertainty and post-war struggle marked by the application of extreme violence that

[51] Ultimately, determining the size and composition of a government's social foundation is a definitional question. If including any group to which the ruling elite's policy-making has to respond (Kelsall and vom Hau 2020), it may indeed be argued that the majority of Hutu peasants is part of the RPF's social foundation, which would classify the Rwandan regime as inclusive. However, using this logic would make almost every government 'inclusive', as in one way or another all political leaders take into account and devise measures to deal with any large group in their country.

[52] Informal conversation with an international Rwanda scholar.

included the marginalisation of all oppositional groups by 2000, the RPF had acquired a long-run time horizon. The system of tight political control combined with the installed administrative structure it put in place has given it very high enforcement power. In conjunction, the manifestation of these two power dimensions makes post-genocide Rwanda a potentially developmental political settlement. Its economic organisations are politically weak and thus easy to discipline, while they currently exhibit rather low technological capabilities. This situation, in theory, allows the Rwandan government to design and properly implement industrial policy. At the same time, the regime is based on a small social foundation, avails of only scarce and volatile natural and aid resources, and faces a fundamental long-term threat emanating from the continued estrangement between rulers and ruled, which means that trust within Rwandan society is very low.

3.3 Political Survival Strategy of the Ruling Elite

The political survival strategy of the Rwandan ruling elite arising from the country's socio-political conditions is a multidimensional, elaborate, and fragile balancing act. The overall dual goal can be described as maximising political control at each point in time, while pursuing a fundamental transformation of the country's society and economy to escape systemic vulnerability in the long term (Chemouni 2019, 2021; Mann and Berry 2016). Due to the lack of robust social fabric between the RPF and Rwanda's non-elite citizens (both Hutu and Tutsi), the ruling elite saw total political control as their only short-term survival option. This obstructed any alternative strategy of building real trust, the initiation of power sharing or participatory governance. As a result, the RPF's only option to broaden its social foundation and eliminate the looming long-term threat of perceived illegitimacy, is to fundamentally transform the country and its citizens into a society, where old ethnic and social categories do not exist anymore (or at least cease to have much meaning). This is only feasible if the conditions that made the eruption of violence in the wake of the genocide and its aftermath possible in the first place are eliminated. These include ever rising land scarcity and demographic pressures, economic deprivation and mass poverty, and ethnic hatred and social inequality arising from and fuelled by the first two conditions as well as colonial and post-colonial indoctrination. Overcoming these conditions requires a full-fledged capitalist transformation, of which sustained economic growth is a central part. Hence, Rwanda's recent historical trajectory drove its ruling elite to acquire a very strong political will to develop (Mann and Berry 2016).

In practice, the strategy can be conceptualised by four interlocking action lines with multiple purposes and varying time frames. First, there is massive surveillance and political repression in the short (and medium) term, initially deemed necessary to re-establish political order and later considered essential to maintain stability and secure the government's on-going survival. Beloff (2018) describes it as a doctrine of prioritising state security. Police state-like surveillance, very limited freedom of the press, large-scale human rights violations, mass indoctrination measures, and harassment and assassination of political opponents both at home and abroad are all well-documented political routines (Purdeková 2011b; Reyntjens 2013; Wrong 2021).

Second, and seemingly completely at odds with the first endeavour, there is the genuinely broad-based and indiscriminate provision of social services and goods (Chemouni 2018; Lavers 2016; Williams 2017).[53] While this is also often implemented in an authoritarian fashion (for example, with the compulsory roll-out of health insurance), the construction, staffing, and operation of rural health centres, schools, and microfinance cooperatives as well as specific support measures for the poorest do have the clear aim to improve social conditions and livelihoods of the general population. These massive investments have several parallel functions. The first one is the immediate short-term mitigation of grievances of the poor, mostly rural population by raising living standards. Second, the erection of state infrastructure aims at making the countryside 'legible' over the medium term, that is allowing further state penetration of society by increasing the regime's infrastructural power (Mann and Berry 2016; Straus and Waldorf 2011). And thirdly, there is the thought that a certain degree of health and education builds the human capital in society that is a necessary requirement for sustained economic development in the long term (RoR 2012:10).

The third and fourth component concern a long-term social and economic transformation of the country, which are particularly closely connected. Whereas the time horizon of political repression is entirely short-term and that of social services provision is mixed, the eventual temporal expansion of the ruling elite's mindset made it develop a long-term vision for the country, discernible in the early post-genocide years but made explicit in the government's country transformation strategy *Vision 2020* that was launched in 2000 (RoR 2000). This holistic and fundamental modernization project aims to radically transform Rwanda from a least developed to a middle-income country, which includes both a societal and an economic transformation. In Rwanda studies (and beyond), two alternative concepts are used to describe these two components: high-modernist social engineering (which focuses on social transformation) and capitalist transformation (which centres the economy but studies both). A brief illustration and contrasting of the two approaches follows.

In academic literature, Rwanda's transformative efforts are often described as "political, economic, and social engineering [with] high-modernist ambitions and tactics" (Straus and Waldorf 2011:4), based on James Scott's seminal book *Seeing like a State* (1998). Scott found that states featuring four particular conditions embarked on these fundamental transformation trajectories and all failed spectacularly (for example collectivisation in the Soviet Union and villagization in Tanzania). Catharine Newbury summarises these conditions and concludes that all of them apply to post-genocide Rwanda. They are first, a "bureaucratic state concerned with the administrative ordering of state and society, and attempting to make the social landscape legible", second a "'high modernist' ideology involving uncritical belief in the possibilities for the comprehensive planning of human settlement and production", third, the "presence of an authoritarian state willing to use the full weight of its coercive power to bring these designs into being", and fourth "a civil society that lacks the capacity to resist these

[53] Rural Hutu occasionally remark in fieldwork interviews that they are surprised to experience social service provision to be truly universal and not organised in a clientelist fashion (informal conversation with an international Rwanda scholar).

plans" (Newbury 2011:225). Considering the description of the political economy of post-genocide Rwanda in this chapter so far, there is little doubt that these four conditions are indeed fully present in contemporary Rwanda. Straus and Waldorf (2011:8–10) identify four domains, in which the Rwandan state engages in this high-modernist social engineering: behaviour and culture (for example, by imposing an ideology of national unity and reconciliation, elimination of ethnic labels, and conducting mandatory re-education camps), geographical space and territory (urban: Kigali Master Plan; rural: villagization programme; in general: ubiquitous administrative reform), the economy (agricultural transformation from smallholder peasantry to agribusiness; leapfrogging towards service economy), and politics (expansion of the ruling party's political monopoly). Other authors detail and almost always heavily criticise particular facets of this high-impact government endeavour (Ansoms 2009, 2010; Gaynor 2014; Huggins 2013, 2014; Purdeková 2011a). While the prism of social engineering is very helpful for understanding and contextualising government actions and motivations as well as broader political processes, this framing (or at least the interpretation by most authors applying it) pre-empts the eventual analytical conclusion, that is permanently increased misery and full-scale disaster. Laitin (1999) rightly criticised that the evidence Scott provided for his argument against high-modernist ideology was very selective and that there were many cases of successful 'modernization', such as the Green Revolution in parts of Asia, though admittedly the Rwandan transformation project is significantly more elaborate. Nevertheless, any argument that social engineering cannot work *ipso facto* is not valid.

Harrison (2020) utilises the concept of capitalist transformation (as introduced in chapter 2) by asserting that all genuine development is *capitalist* development and that this always includes massive social engineering. While he contends that it often fails, almost all wealthy countries as of today are the result of successful social engineering. In fact, *Vision 2020* as well as other development strategies of the Rwandan government can be read as plans for subjecting the country to a profound capitalist transformation (Harrison 2016, 2017). In practice, the implementation measures often take the form of various social engineering efforts (which is why the analyses making use of this concept are so useful). However, only by adding the central aspects of capitalist economic transformation –i.e. the concentration of capital by primitive accumulation, the compulsion of people to pursue wage labour, and the compulsion of capitalists to improve productivity, etc.– does it become possible to properly understand the nature of economic transformation processes. One decisive conceptual difference to social engineering is that the outcome is considered to be completely open *ex-ante*. Capitalist transformation allows for a successful outcome of a wealthy and potentially democratic society, even though the odds may be small and success would be partially or even largely based on rights-denying processes (Harrison 2020). To sum up, while regarding daily political actions, the Rwandan ruling elite feels the need to keep a maximum of political control at all times[54], in the long term, it is driven to pursue

[54] Whether the Rwandan ruling elite's perception of its own political position is more or less correct or whether it is losing its touch with reality over time and may even become paranoid, is a different question that is beyond the scope of this analysis.

a full-scale capitalist transformation that completely changes social relations and economic structures, and may –if successful– create a wealthy and 'modern' society.

3.4 Governance System

The implementation of this political survival strategy required a capable and effective state, which meant that Rwanda had to engage in thorough and continuous state-building, ostensibly re-starting from almost zero. It also required the creation of a governance system that would make Rwanda's bureaucracy more and more effective over time, while at the same time prevent the loss of political control.

State-Building

Based on the meagre remnants of what was left of the Rwandan state in July 1994, the new government worked relentlessly to reconstruct ministries and other state organisations, while many completely new agencies were created from scratch. Over the years, a general construct of lean ministries devising policies and overseeing semi-autonomous agencies responsible for implementation evolved in Rwanda (Chemouni 2017b:13). The general incremental professionalisation of various government entities was a complex task that could hardly rely on blueprints from the literature or other countries, as the idiosyncratic organisational and institutional structure of Rwanda (as of any country) required tailored solutions. Behuria and Chemouni painstakingly track and describe how the most performant state organisations –the Ministry of Economic Planning and Finance (MINEOCFIN), the Rwanda Revenue Authority (RRA), and the National Bank of Rwanda (BNR)– were each rebuilt after the genocide and restructured and reformed several times up to the present (Behuria 2020b; Chemouni 2019, 2020). State capacity was also fundamentally enhanced by administrative and decentralization reforms that led to deep state penetration of the countryside (Chemouni 2014, 2017a). Furthermore, continuous public sector reform in several domains was enacted in Rwanda throughout the years. Chemouni (2017b) delivers a holistic account of how the Rwandan government reformed both formal frameworks and actual state practice in the five areas of government coordination, public finance management (looking at its two components budgeting and procurement), civil service recruitment, auditing, and anti-corruption. Considering the details of these reforms, the enormous efforts and seriousness of the government to increase state capacity and build a modern, professional, meritocratic, rule-following, i.e. Weberian, state stands out. In several areas, rather simple formal frameworks were introduced within a few years after the genocide, often followed by more sophisticated laws some years later. In most cases, legal requirements were implemented swiftly and actual practices changed accordingly. This led to considerable and visible progress in the five domains listed above, for example, via the introduction of merit-based recruitment with very transparent and detailed processes that were actually applied to a large degree, the streamlining of public procurement procedures that prioritised transparency and impartiality at the cost of economic efficiency, the powers given to the auditor general and the parliament's public account committee that scrutinised the former's reports and genuinely grilled high-level civil servants on their shortcomings, and the quite effective fight against corruption with an ombudsman office that was successively given investigative and then prosecution powers (Chemouni 2017b:9–22). Nepotism, small-scale corruption, and other manifestations of clientelism were visibly reduced. However, some clientelist features including political corruption and regular embezzlement cases remained (Gökgür 2012; Ndereyehe 2020). While personal enrichment within the inner circles of the ruling elite is impossible to research, it is evident that corruption was fiercely fought on every other level (including that committed by senior politicians).

For the purposes of this thesis, the reforms and improvements regarding the processes of setting overall and more specific development goals, breaking them down to ministries, agencies, and districts, especially translating them into annual action plans and quantified objectives connected to actual budgets, and finally monitoring the outcomes and adjusting original plans are the most relevant ones to be studied in detail. Original developmental long-term planning was initiated in regular strategic meetings in the Presidential office in 1998-1999 (still under President Bizimungu), which resulted in Vision 2020 that became the most important symbolic document for Rwanda’s self-determination when it was published in 2000 under President Kagame (RoR 2000). However, it were the donor-imposed Poverty Reduction Strategy Paper (PRSP) 2002-2005 and its two successors Economic Development and Poverty Reduction Strategy (EDPRS) 2008-2012 and EDPRS II 2013-2018 that actually propelled the majority of policy-making.[55] Since then, a highly elaborate web of development strategies evolved in the country, which is now constituted of numerous sector- and purpose-specific policy documents that are theoretically all embedded within a clear five-tier hierarchy (figure 8).[56] On the top (tier 1), there is Vision 2020, which was revised in 2012 (RoR 2012). Since 2021, the successor Vision 2050 is the overall guiding document (RoR 2020e).[57] The main implementation strategies (tier 2) for the overarching vision were PRSP and EDPRS I and II, as well as the National Strategy for Transformation (NST) 2017-2024. Situated under these generalist implementation plans are numerous economic and

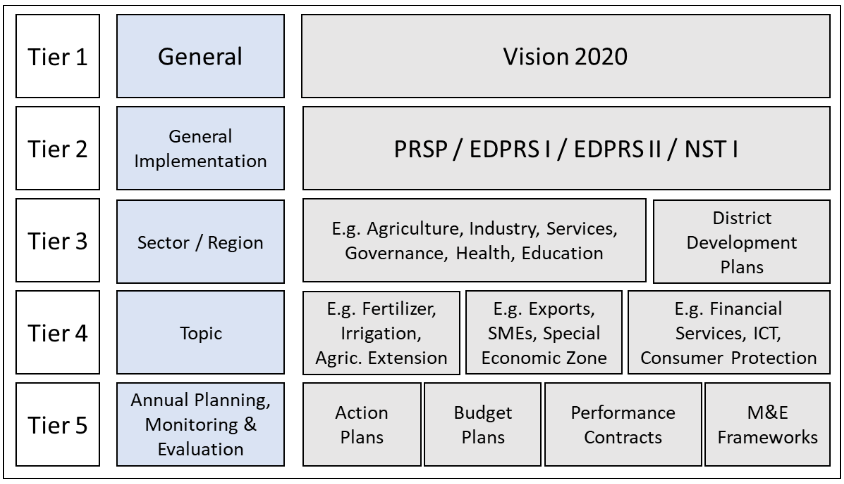

Figure 8: Rwanda's Hierarchy of Development Strategies
Source: own illustration

[55] This important aspect was pointed out by Benjamin Chemouni.

[56] This five-level logic is not official. It is suggested as a useful way of understanding the complex strategy conglomerate.

[57] As this document concerns the future, it is only briefly discussed in the concluding chapter.

social sector-specific strategies as well as spatial district development plans (tier 3). For example, in agriculture, there have been four Strategic Plans for Agriculture Transformation throughout the years (PSTA I 2005-2008, PSTA II 2009-2012, PSTA III 2013-2017, and PSTA IV 2018-2024) as well as two National Agriculture Policies in 2004 and 2018. In industrial development, there have been the National Industrial Policy 2011 and several sub-strategies. It is important to acknowledge that the coordination among and between these upper levels of development strategy documents has been quite poor for many years and until at least 2013 (Chemouni 2017b).

Additionally, there are usually topic-specific strategies within each domain (tier 4). In agriculture, there has been the Strategy for Developing Fertilizer Distribution Systems in 2007, the National Agricultural Extension Strategy in 2009, the Strategy for Sustainable Crop Intensification in 2011, the National Fertilizer Policy in 2014, the Irrigation Master Plan in 2020, and many others. Regarding the industrial sector, there have been, for instance, the Small and Medium Enterprises (SMEs) Development Policy in 2010, the Special Economic Zone Policy in 2010 (revised in 2018), the National Export Strategy (NES) in 2011 and NES II in 2015, the Private Sector Development Strategy in 2013, the Domestic Market Recapturing Strategy in 2015, and the Made in Rwanda Policy in 2017. Finally, the in-depth, day-to-day implementation of all of these strategies is planned, monitored, and evaluated by annual plans and budgets, performance contracts, and other monitoring and evaluation frameworks (tier 5). Aligning the sector- (tier 3) and topic-specific (tier 4) policies with the goals set out in tier 1 and tier 2 documents was accomplished over time. However, the complementarity among tier 3 and tier 4 policies is not always given. For example, it may be the case that a topic-specific policy was formulated some years ago but is later considered outdated or inadequate or performance contract goals did simply not include its contents. Also, a new topic-specific strategy may have been drafted that de-facto superseded the earlier one, as actual action plans, budget positions, and *imihigo* targets were aligned with this new one (interview M-21). Furthermore, it appears to be virtually impossible to adequately align all relevant policies in light of the sheer number of these documents and the still capacity-constrained bureaucracy.

The tasks of proper planning and budgeting were both particularly hard and important to get right. When PRSP 2002-2005 as the first implementation strategy of Vision 2020 produced disappointing results, it was made sure that first, its successor EDPRS I was more closely aligned with the overarching vision and second, all ministries had EDPRS-aligned five-year plans (Chemouni 2017b). Regarding annual budgeting, MINECOFIN was in charge of assigning funds to all government entities. This process was streamlined and reformed over the years, with a new (and arguably too complex) budget law introduced in 2006, a second budget call circular added to the yearly budgeting procedure to emphasize detailed policy planning by ministries and agencies, and several other reform measures. Improving intergovernmental coordination both in general and concerning planning and budgeting in particular was considered essential to deliver on the ambitious development goals of Vision 2020 and other strategies, and as a consequence, conducive, iterative and solution-oriented tinkering could be observed in the technocratic domain.

A government that has both the political willingness and power to initially recreate a capable state and then drive its capabilities to unprecedented heights has a decent chance to eventually accomplish this. The actual path would still involve years and decades of hard work, trial, error and adjustment, skilful leadership, navigation through conflicts and crises, and some serendipity. The state-building processes in some Rwandan government organisations and functions have been described in Chemouni's and Behuria's works quoted above. Further examples largely fuelled by original evidence are provided in chapters 4-7. For now, the observable trajectory of the incremental construction and professionalisation of the Rwandan state governance system is taken as given.

Making the State Effective

Given a state that is on a trajectory to continuously increase its capabilities, the pressing question is how high state performance is governed and enforced over time. When initial development efforts produced disappointing results in some areas, it became apparent that the state, i.e. the various government ministries, organisations, and agencies, and their employees, needed to be made more effective. Their poor performance regarding policy implementation was traced to an undynamic and procedural bureaucracy (Kamuzinzi 2016) and particular problems were seen in rural development, as this was where the majority of poor people resided. After the administrative reform of 2004/05 had created thirty districts and district mayors had been elected for the first time in 2006, a technical committee was established by the President to design a performance management system that held them to account (Scher 2010). Such a system would have to comply with the continued need for maximal political control, which is why the prevailing top-down governance mode was implicitly integrated in it. Initially, annual performance contracts containing actions to be taken, sometimes expressed in terms of quantifiable goals, were set up for each district and signed by all mayors. While being based on the logic and mechanisms of results-based approaches that were more and more applied to these frameworks over the years (Klingebiel et al. 2019), they were also rooted in the pre-colonial cultural practice of *imihigo*, which can be translated as 'pledge' (Google Translate 2021) or "self-defined policy target one vows to achieve for public good" (Kamuzinzi and Rubyutsa 2019:634). The resulting system has been interpreted as a hybridisation of a traditional Rwandan concept and instruments of new public management (Kamuzinzi 2016). Whereas the prevalence of *imihigo* in traditional culture may have been limited to elite circles, the Rwandan government devised and promoted them as one of their 'home-grown initiatives' to strengthen local ownership (Hasselskog 2018).

In early years, district *imihigo* were non-standardized, not connected to budget constraints, and performance was poor (Kamuzinzi 2016). Over time, the system was incrementally adapted, expanded, streamlined, and professionalised. In 2011, annual performance contracts for central ministries were introduced, and in 2015, joint sector *imihigo* for several related ministries and district mayors were added. Virtually every civil servant downwards from the President (as well as managers of parastatals and theoretically even individual households) is bound by annual performance contracts. The earliest publicly available performance contract is the 2008 Nyamagabe district *imihigo*. It lists 82 actions and corresponding goals in 20 policy domains and four overarching pillars (governance, justice, economy, social welfare). All actions were assigned a deadline, a budget, and a funding source but only a few had quantified baselines and targets (RoR 2007a). In 2011/12, this district's *imihigo* had been restructured and now contained 48 objectives, all with one output, indicator, baseline, and target value as well as with a time frame, budget, and funding source (RoR 2011). From 2014/15 onwards, the so far final structure had been introduced with one outcome containing several outputs, which again often entailed a number of indicators (RoR 2014). Similar trends of professionalisation can also be observed in the evolution of Huye district's performance contracts (RoR 2010b, 2017b, 2020b). Most district *imihigo* assigned a superior role to agriculture, as all but the three Kigali districts are very rural (see chapter 6). Performance contracts of central ministries are structured identically but often contain less goals. For example, the 2015/16 *imihigo* of MINAGRI had eight outcomes, 19 outputs, and 30 indicators (RoR 2015b), while its 2020/21 contract exhibited only three outcomes, seven outputs, and 16 indicators (RoR 2020a). MINICOM's 2015/16 contract had three outcomes, nine intermediate outcomes, 25 outputs, and 34 indicators (RoR 2015a) and its 2020/21 *imihigo* contained three outcomes, eight intermediate outcomes, 21 outputs, and 34 indicators (RoR 2020c).

One of the system's theoretical core principles is voluntarism and the planning process is intended to involve strong participation of the grassroots level (MINALOC 2010) but in practice –like virtually everything else in Rwanda– it has been a top-down governance process from the start, where the Presidency and central ministries impose their priorities on local government entities, leaving them little room for own initiatives (Chemouni 2014). In particular, key goals from the overarching development strategies are always integrated in ministerial and district *imihigo*. While the prime minister's office as well as MINECOFIN are responsible for the administration of these contracts, the President himself signs them, thereby making them the highest priority document for the particular government organisation for a given year (Chemouni 2017b). An annual elaborated evaluation mechanism ensures that set goals are actually pursued with highest efforts. From 2009/10, all 30 districts were evaluated each year by diverse teams from various central ministries and government offices and a district ranking was published. From 2014/15 to 2016/17, the evaluation was conducted by the Rwandan Institute of Policy Analysis and Research, and from 2017/18 NISR took over. Keeping one's job and being promoted is strongly based on *imihigo* performance (Versailles 2012).

Other accountability mechanisms for government employees have been created that complement performance contracts. Apart from the auditor general's regular investigations, two further annual key events were introduced. First, already in 2004, a national leadership retreat was created, in which the President, the prime minister, all central ministers, and many other top civil servants met and discussed the most pressing issues for the upcoming year. The retreat was reformed several times, among others to align its timing with the overall annual development planning process (Chemouni 2017b). Second, a national dialogue was initiated, where a broad cross-section of the Rwandan society was present and everyone could ask questions to the highest government representatives. During this well-publicised event, the President and other senior politicians often made pledges about goals to fulfil for the upcoming years (Chemouni 2017b).

Many of Rwanda's impressive achievements, for example the strong decrease in maternal and child mortality, and the very high uptake of health insurance, are attributed to its performance contract system (Abbott, Sapsford, and Binagwaho 2017; Chemouni 2018; Golooba-Mutebi and Habiyonizeye 2018). In general, the Rwandan government is regularly lauded for its high technocratic effectiveness in implementing policies and delivering measurable results (AfDB 2012; Chemouni 2016; Klingebiel et al. 2019). Even strong critics acknowledge the capacity of the Rwandan bureaucracy to getting things done (Ansoms and Rostagno 2012; Reyntjens 2013). After several years of incremental reforms, which are certain to continue in the future, an all-encompassing governance system emerged that broke down the overall goal of becoming a middle-income nation by 2020 via several levels to concrete individuals actions to be taken by government organisations and its employees. Therefore, virtually any development progress made has been governed and channelled through this comprehensive management system.

However, whereas the relative effectiveness of the governance system of performance contracts in compelling state representatives to put in their highest efforts that lead to highly impressive, observable results is undisputed, the system also suffers from severe, structural weaknesses that may undermine desired transformational outcomes. First, pre-defined goals are rigid and impossible to change, meaning that public officials often only care about quantified *imihigo* targets without deliberating their usefulness (Kathiresan 2012). This is a direct consequence of the government's unchanged top-down governance mode. Second, even though an outcome level has been introduced a few years ago, measurable indicators are still only related to outputs. The attribution gap between directly quantifiable output (e.g. classrooms built or farmers trained) and actually desired outcomes (e.g. a higher education level or higher farmer income) is a general challenge for any results-based framework. In the Rwandan context, a particularly strong output orientation can be observed, as actual control can only exist on this level. This can have significant consequences, as some apparent Rwandan success stories, such as in the education and energy sector, turn out to have only accomplished output targets (primary school access and capacity instalment) and failed to reach outcome goals (higher education quality and better electricity provision) (Chemouni and Dye 2020; Williams 2017). Third, the pressure to accomplish targets and outperform other districts or ministries provides a considerable incentive to tweak the numbers wherever necessary and possible. Even though there is a thorough annual district *imihigo* auditing process conducted by particularly high-ranking public officials, auditors have very limited time to check the veracity of reported accomplishments. Over the years, evidence of deliberate performance overreporting has been uncovered in various sectors (Huggins 2014:375; Linek 2020:30; Williams 2017:555) and in 2019, systemic *imihigo* data fabrication by districts was raised as a critical problem by the Rwandan prime minister (Sabiiti 2019). This issue and its implications for Rwanda's overall development trajectory are addressed again in the empirical chapters and the conclusion. While some deliberations on further significant reforms including devising a more genuinely outcome-oriented ‘*imihigo* 2.0’ system exist (Klingebiel et al. 2016, interview M-08), it is unclear whether the recent changes to include outcomes in the contracts already constituted this endeavour or whether further-going reform plans exist.

3.5 Economic Organisations

A majority of the largest and most important economic actors in post-genocide Rwanda are connected to and ultimately under the control of the ruling elite and its inner circle around President Kagame. It needs to be distinguished between party-, military-, and state-owned enterprises as well as informal investment groups. The RPF owns the holding company Crystal Ventures Limited (CVL), which is a conglomerate of several firms that are all leaders in their respective markets. They are, among several others, Inyange Industries (food processing), NPD Contraco (construction), Real Contractors (real estate services), and ISCO Security (security services), as well as four firms operating in the processing, manufacturing, trading, and sales of various construction materials (clay bricks, stone, granite, timber) (CVL 2021a). Additionally, CVL holds minority stakes in several joint ventures. Their portfolio is constantly in flux, which is why even recent listings may be outdated. Furthermore, there is not full transparency of all of their investments, and general information on their financials is completely missing. In 2013, their assets were estimated to be worth 500m USD, which amounted to 7.7% of Rwanda’s GDP (Behuria 2015a). CVL, known as Tri-Star Investments until 2009, emerged out of the RPF’s ‘Production Unit’ during the civil war, whose original funds came from the diaspora and other supporters (Booth and Golooba-Mutebi 2011). With government reserves completely depleted in 1994, the party used its own funds to initially pay civil servant salaries, settle international debt, buy the most needed essentials, and kick-start a dead economy. There appears to be no information about the immediate post-1994 capital accumulation of CVL, but around 2000, they owned the respective market-leading firms in “metals trading, road construction, housing estates, building materials, fruit processing, mobile telephony, and printing, as well as furniture imports and security services” (Booth and Golooba-Mutebi 2011:388). From then on, the portfolio evolved incrementally. There have been and still are other party-owned enterprises or holding structures, such as Prime Holdings.

The Rwandan military, known as Rwanda Defence Force (RDF), owns several holding companies and firms as well. There is the Horizon Group, active in construction, defence logistics, pyrethrum cultivation and processing, roofing tiles, and concrete construction materials (Horizon 2020). The RDF also owns Ngali Holdings (formerly Digitech Solutions), which engages in the energy, mining, transport, ICT, and healthcare sector as well as in commodity trading (partially via joint ventures) (Ngali Holdings 2021). A further military-owned enterprise is Agro Processing Industries, whose main business is seeds production (API 2021). Finally, the military owns its own health insurance that is compulsory for soldiers (Medical Military Insurance) and its own microfinance institution (Zigama CSS). Formally, these two companies fully own the three investment groups described before (Behuria 2015a). There is no information available about the financial size and performance of these groups.

There are also several state-owned enterprises, which can be public service providers, such as water and energy companies, the post office, the social security board, which collects citizens contributions and reinvests this money, as well as the national airline carrier RwandAir. Finally, there are informal private business groups, in which domestic entrepreneurs pool their money to jointly invest in (often) strategic businesses. These informal vehicles were initiated and promoted by the government. The most prominent one is Rwanda Investment Group (RIG), which has invested in energy extraction from peat and methane gas, the construction sector, and cement manufacturing (RIG 2021b). Inspired by RIG, there are now also many regional investment companies. On top of that, there exist several joint companies co-owned by two or more of the various entities described above. If state-owned enterprises or district governments partner with private business groups, individual private companies, or military-/party-owned enterprises, these vehicles are often described as public-private partnerships by the Rwandan media.

It is conducive to understand the strategic purposes and practical operation of these various entities. Starting with the ruling party, it is undisputed that CVL is a powerful instrument of the ruling elite to centralize rents, that is to control rent flows, by earning large profits from successful and usually non- or not fully competitive business operation. These funds are then used for several purposes, of which the respective extents are contested in the literature. There is, first, the self-financing of the ruling party, making it possibly impervious to grand political corruption and independent of monetary needs that otherwise would have to be exchanged for political influence (Booth and Golooba-Mutebi 2011). Second, there is the allegation that the conglomerate is used for personal enrichment by the ruling elite (Gökgür 2012). Third, funds are allocated to powerful groups and various strategic (off-budget) projects, both of which serve to increase political control, manage political stability, and also to foster economic development projects (Booth and Golooba-Mutebi 2011).[58] The degree to which political corruption occurs and CVL (and other economic organisations) are used for the personal enrichment of powerful individuals is virtually impossible to know or investigate. While it may be important for narratives on the personal character of Paul Kagame and his inner circle, which has led to diametrically opposing storytelling by both ‘sides’, it is negligible for understanding the impact these organisations are having on steering Rwanda’s economic development. This is because, even if powerful networks were using their political influence to personally enrich themselves, this would not automatically prevent the country from developing rapidly, as the now well-known case of grand corruption in South Korea during its most dynamic growth phases demonstrate (Wedeman 1997). In fact, all listed purposes of funds utilisation are not mutually exclusive but complementary. Therefore, this contentious question can remain unanswered and instead, the focus is put on the ruling party’s economy-shaping impact.

[58] Behuria (2015a, 2016a) describes a further channel of how various economic organisations tied to the ruling elite are used to exert political control. Rents are dispersed across these entities to limit the power of various factions and to keep elite frictions under control. Additionally, powerful individuals (often from the military) are constrained from accumulating political power by being assigned to various business functions and then being reshuffled regularly.

And indeed, CVL's sheer size in combination with its political clout means that its investment decisions influence the overall structure of the entire economy. The conglomerate's official purpose has been to spearhead investment in strategically important but contemporarily unattractive business sectors, which would encourage the private sector to follow suit. Ideally, CVL would be the first mover in an undeveloped sector, earn decent profits, develop the sector, make private companies invest and become competitors, sell its own company, and reinvest the money in the next industry (Behuria 2015a). There are a few examples, where this strategy has worked to a considerable degree. In the communications sector, CVL and the South African MTN Group jointly founded MTN Rwanda, which developed a mobile network in the country from scratch (Behuria 2015a). Today, the Rwandan mobile communications market is widely developed with decent country-wide 3G and urban 4G coverage, mobile phone subscription of 83% of the population (RURA 2021)[59], and various services, such as mobile money, are widespread. Three companies –MTN, Tigo, and Airtel– control the market (i.e. constitute a sector-typical oligopoly). CVL has completely divested from MTN Rwanda. In the hospitality sector, Prime Holdings rehabilitated two rundown hotels that have become Serena-branded and are among the finest and busiest hotels in the country. It is widely reported that the ruling party has completely divested from the hotels, making it another paragon story of 'invest, develop, divest' (Behuria 2015a) (see chapter 5 for details). Finally, CVL opened the first coffee houses in Rwanda under the brand Bourbon Coffee, which has led to emulation and a recent mushrooming of cafés in Kigali and secondary Rwandan cities. Bourbon Coffee temporarily expanded to the US and the UK, but was unable to prosper there and had to close down most overseas branches.

The majority of economic sectors, in which CVL, Horizon, and the other public and private investor groups listed above have been active, are strategically important for economic development. For example, the construction of modern infrastructure (tarmac roads, waste water systems, buildings of various types) is central after war and destruction and as a prerequisite for further development. Having a decent telecommunications network can be seen as a further necessary condition for rural development. A severe lack of energy, often cited by entrepreneurs as a key constraint, led to the (over)investment of mostly private and foreign entities into electricity generation facilitated by the government (Chemouni and Dye 2020). As the tourism sector was identified as a promising growth and export engine, CVL invested in hotels, the government resurrected the national airline, and resources were pooled via political channels to construct conference tourism infrastructure. Experiments in establishing and scaling-up agro-processing systems for various products were conducted: coffee washing stations (built by the military), a cassava processing plant (private business groups), dairy processing centres (district-led public private partnership as well as CVL's Inyange), floriculture, and sericulture. Finally, import substitution of the most needed basic goods, i.e. the construction materials cement, stone, and granite, is under way.

[59] Many Rwandans have multiple subscriptions, so the share of the population using phones is smaller.

At the same time, it seems evident that several of the investments made originally and held over time serve to earn juicy profits. Especially the construction and real estate sector has been developed in the meantime and would probably not require the continuous presence of CVL, Horizon, and other political elite-affiliated companies. Similarly, Inyange Industries as a major producer of bottled water, fruit juices, and dairy products now has several domestic competitors. In these industries, it may be the case that continued public engagement crowds out further private sector investment.

To complete the list of economic actors in Rwanda, there are of course also individual domestic entrepreneurs, who are usually loyal to the regime, meaning that they participate in national development projects, such as the investment groups and certain national funds, and are then allowed to pursue their business more or less in peace (Behuria 2019a; Gathani and Stoelinga 2012, 2013; Golooba-Mutebi and Booth 2018). Foreign companies are active in most sectors, and some of them hold large market shares. Among the most prominent ones are Belgian-owned Bralirwa (beer production), Swiss-owned Rwacof (coffee trading), the telcom companies MTN, Tigo, and Airtel, the global hotel brands Serena, Marriott, and RadissonBlu, and several Chinese construction companies. Finally, rural agricultural production is increasingly organised in cooperatives. While the membership rate and their professionalism remains low, the government has set up an elaborate governance structure, with a national confederation, crop-specific federations, district-specific unions, and thousands of individual cooperatives as well as informal associations (interview A-01).

3.6 Economic Structure

This sub-section analyses the structure of the Rwandan economy and its evolution since 2000, which is necessary to understand for evaluating any economic development strategy. It dissects national accounts data to understand in which economic sectors and activities value and growth was produced and then analyses the country's main trade flows.

Economic Value-Creation and Growth over Time

As already sketched in chapter 1, Rwanda's economy boomed after the immediate post-genocide period was over. In the twenty years from 1999 to 2019, the country's GDP grew on average by 7.7% per year, with growth being only slightly higher over the first of these two decades.[60] The service sector grew annually by 9.3%, industry by 8.7%, and agriculture by 5.4%. This led to the share of services within the total economy increasing from roughly 42% to 49%. The industrial sector's share virtually stagnated at 18.5% despite including the rapidly expanding construction sector, while agriculture's share shrank by eight percentage points to 23.5%. The remainder of the economy is made up of the position Taxes less Subsidies, which remained at about 8%. Consequently, only a medium degree of (further) structural transformation took place. These numbers are in line with Rwanda's initial strategy of leapfrogging industrialisation and fully concentrating on service sector development instead. Taking into account the

[60] All data in this sub-section comes from Rwandan national accounts published by NISR. Growth rates are calculated by using the geometric average instead of the simpler arithmetic average, as negative growth rates skew the latter.

relative sizes of the economic sectors, services accounted for over 50% of all growth, while both agriculture and industry contributed around 20% (figure 9).[61]

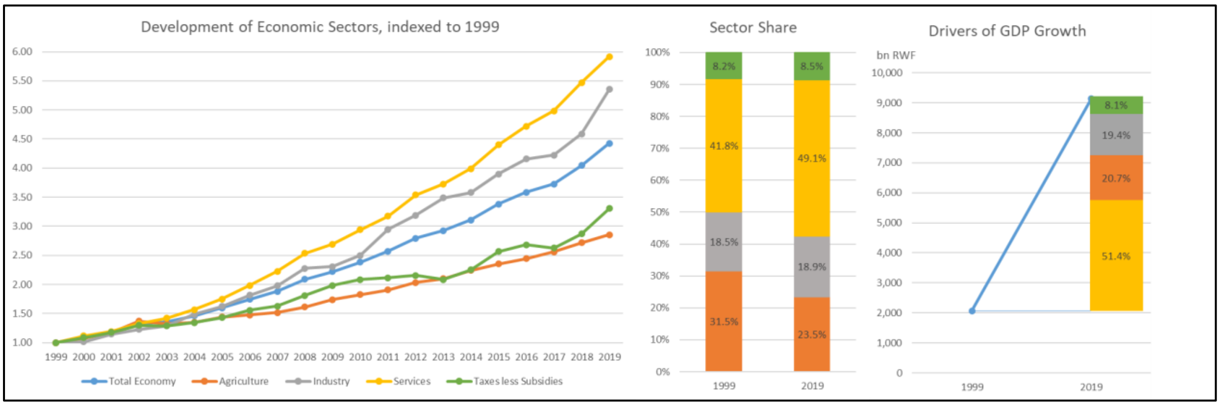

Figure 9: Development of the Rwandan Economy 1999-2019
Source: own illustration, based on data from Rwandan National Accounts (NISR 2020)

Examining the Rwandan agricultural sector more closely, its largest sub-sector food crops grew on average by 5.5% per year over the last twenty years, while the small export crops sub-sector grew by 4.4% p.a. Forestry grew by 5.1% p.a. and livestock & fisheries grew by 5.5% p.a. The relative share of the sub-sectors within agriculture changed only a bit since 2006.[62] The huge share of food crops increased even more from about 50% to roughly 57%, while livestock & fisheries increased from 10.4% to 13.1%. Forestry and export crops decreased by roughly 5% each, the former to a share of about 25%, the latter to mere 5.2%. Almost two thirds of agricultural growth was driven by food crops, while forestry accounted for 18%, livestock & fisheries for almost 12% and export crops for the remaining 6% (figure 10).

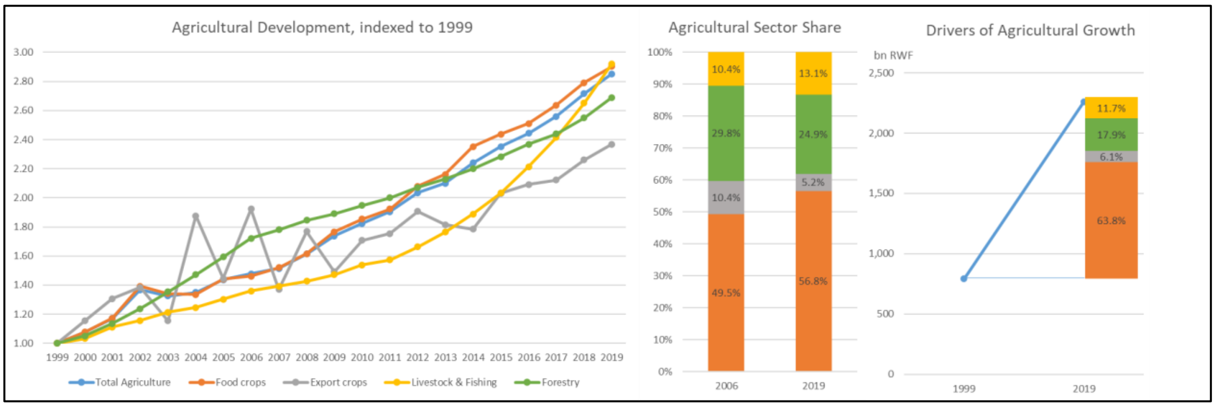

Figure 10: Development of Rwandan Agriculture 2006-2019
Source: own illustration, based on data from Rwandan National Accounts (NISR 2020)

Looking at the Rwandan industrial sector, over the last twenty years, its mining & quarrying sub-sector grew by almost 12%, construction by almost 11%, manufacturing by 6.5%, and utilities by 1.3% per year. Regarding industrial sector shares, mining & quarrying grew from less than 1% to 7.7%, while construction also increased strongly from 23.3% to almost 40%. Manufacturing's share decreased from

[61] Here and in the following figures, the indexed development of the respective sectors as well as the drivers of growth are calculated on the basis of constant prices. However, the sector shares are computed on the basis of current prices.

[62] The considered timeframe for the sector share is only thirteen years, as there is a data anomaly in 2005-2006 in the agricultural domain. While the time series in constant prices remains smooth, the sector composition in current prices changes abruptly from 2005 to 2006 and therefore sector shares from before 2006 cannot be compared to those after 2006.

55% to 44%, and utilities more than halved from almost 20% to roughly 8%. Industrial growth was driven by 40% each through construction and manufacturing, while mining & quarrying and utilities contributed 11% and 2.2%, respectively (figure 11).

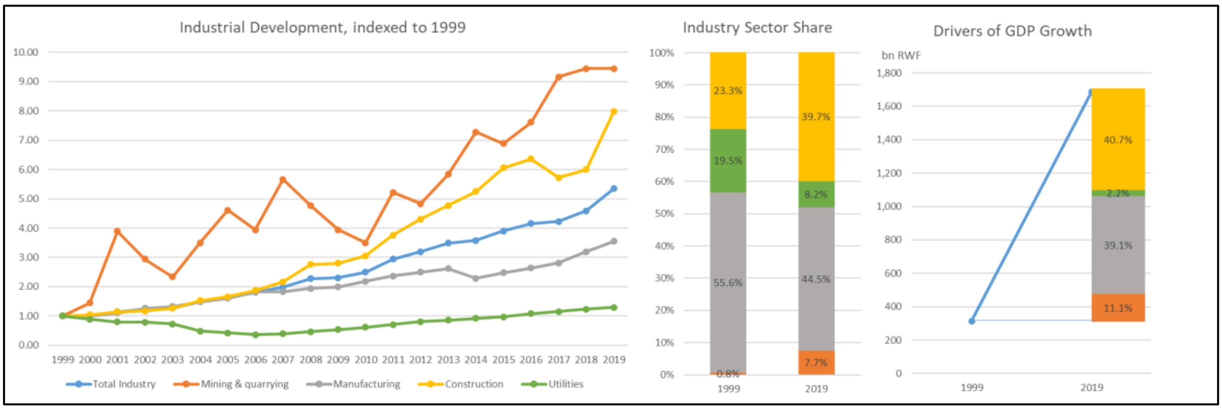

Figure 11: Development of Rwandan Industry 1999-2019

Source: own illustration, based on data from Rwandan National Accounts (NISR 2020)

Finally, dissecting service sector development shows that between 1999 and 2019, trade grew on average by 10.7%, the public sector by 9.9%, transport by 12.7%, ICT & FIRE[63] by 6.4%, and other services by 7.2% per year.[64] The service sector's composition did not change a lot. While the share of trade and the public sector both increased by three percentage points to 17.3% and 30.9%, respectively, the share of other services decreased by almost 3% to 15.1%. Transport more than doubled from 6.6% to 13.6% and ICT & FIRE decreased substantially by more than 10% to 23.2%. Service sector growth was mostly driven by the public sector (contributing 32%) and to a smaller, almost equal amount by trade and ICT & FIRE (nearly 20% each). Transport and other services contributed around 13.5% of service growth each (figure 12).

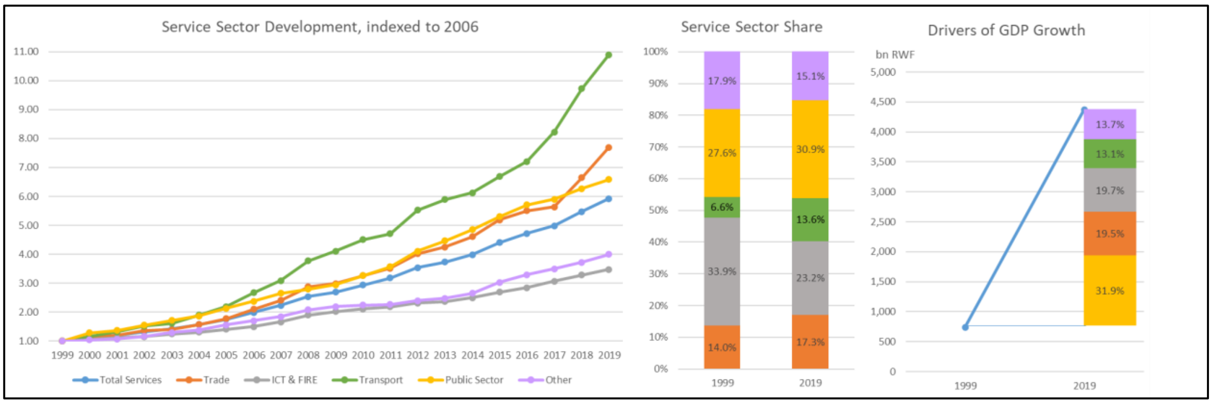

Figure 12: Development of Rwandan Service Sector 1999-2019

Source: own illustration, based on data from Rwandan National Accounts (NISR 2020)

[63] ICT stands for Information and Communication Technology and FIRE stands for Financial Services, Insurance, and Real Estate.

[64] These five service sub-sectors have been created by aggregating a total of thirteen service sub-sectors listed by the Rwandan government. While *Trade* remained a sub-sector on its own, *Transport* is made up of *Transport services* and *Vehicles maintenance & repair*, and *ICT & FIRE* consists of the three sub-sectors *ICT*, *Financial services*, and *Real estate services*. *Other services* contains the three sub-sectors *Hotels & restaurants*, *Professional, scientific & technical activities*, and *Administrative & support service activities*. Finally, the *Public sector* is composed of the four sub sectors *Public administration, defence & compulsory social security*, *Education*, *Human health & social work activities*, and *Cultural, domestic & other services*. While this definition of the public sector probably includes a small share of private sector activities, the state's involvement in other service sub-sectors (e.g. FIRE and transport) means that the state's involvement in the economy is still strongly underestimated.

Plotting a simple share-growth matrix provides further helpful insights (figure 13).[65] Starting with the bottom left quadrant of low growth and a low sector share, three of the five agriculture sub-sectors (fishing, livestock, and export crops) can be found there, pointing to the apparent small and diminishing importance of agriculture as a (potential) growth engine. Furthermore, two service sub-sectors and the utilities sector are located in this quadrant. While utilities have a tiny sector share and the smallest growth rates of all, they are a strategically important sector as electricity production is a part of it. In the earlier decade of the time series, its growth was very low and lack of energy was seen as a binding constraint for missing investment. In recent years, it has exhibited quite strong growth rates, and installed power capacity will not be a bottleneck in the foreseeable future anymore (Chemouni and Dye 2020). Considering the bottom right quadrant, i.e. exhibiting low growth but having a high sector share, food crops stand out as an outlier with a particularly high sector share of over 13% (the second largest sub-sector has less than 9%). This is a sign of the limited transformation of the Rwandan economy, where (subsistence) farming still accounts for a large share of income. While its growth rate is on a medium level, chapter 6 shows it to be exaggerated. The sub-sector of forestry can also be found in this quadrant. Real estate services amount to 7% of the overall economy, which is directly connected to the on-going construction boom in Rwanda. Finally, manufacturing lies almost on the upper border of the quadrant, exhibiting growth rates higher than 6% and already representing almost 9% of the economy. However, compared to recently industrialising countries in Asia, both numbers are rather small, showing that Rwanda's growth path is at least currently not built on the traditional industrialisation process.

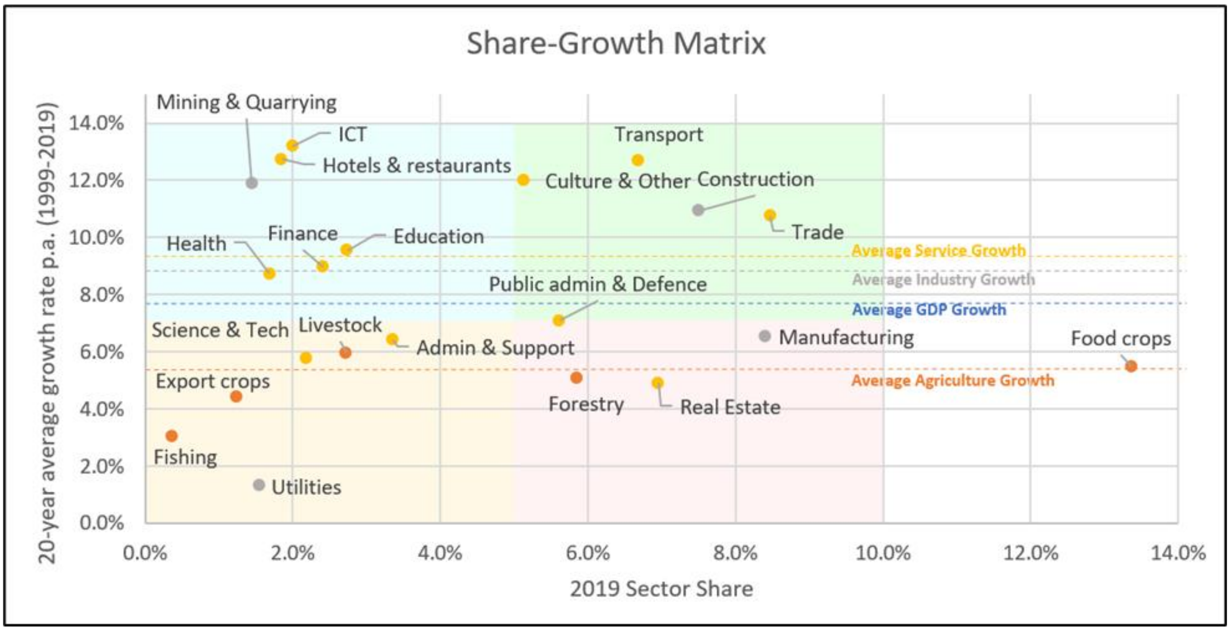

Figure 13: Share-Growth Matrix of the Rwandan Economy
Source: own illustration, based on data from Rwandan National Accounts (NISR 2020)

[65] The 2019 sector share in the overall economy is depicted on the horizontal axis and the 20-year average growth rate per year from 1999-2019 is displayed on the vertical axis. The arbitrary borders of the four quadrants are set at a sector share below or above 5% and a growth rate of below or above 7%. This matrix uses the more granular sub-sector division of the Rwandan national accounts. In particular, livestock & fisheries is split up into its two components and the service sector is now presented with the thirteen sub-sectors as described above.

The top-left quadrant of a low sector share and a high growth rate contains promising sub-sectors that may become powerful growth engines in the future. There are five service sub-sectors as well as mining & quarrying in it. The latter's high growth rate needs to be seen under the light that it was virtually non-existing around 2000 and that natural resources from DRC have been brought illicitly to Rwanda during the Congo Wars and have been exported from there, which may have skewed the results to an unknown degree. Nonetheless, the mining and quarrying sector in Rwanda was strategically developed in the past decades (Behuria 2015b). The service sub-sectors include health and education, in which, as discussed before, the Rwandan government and donors invest heavily. Furthermore, finance and ICT are also present here, showing that Rwanda's ambition to leapfrog industrialisation by building up high-value service sectors is pursued in earnest. The high growth rates show initial success, stemming from the rapid rise of mobile phone service providers as well as the quite competitive and large banking market, but the tiny shares in a tiny economy simultaneously demonstrate the long way to go. Finally, hotels and restaurants exhibit double digit growth (around 13%), which can be interpreted as increasing tourism revenues and/or rising purchasing power of middle class Rwandans.

The top-right quadrant of high sector growth and a high sector share comprises current growth engines of the Rwandan economy, i.e. those sub-sectors that already have a medium to large share in the overall economy but still grow rapidly. It includes five sub-sectors, of which four belong to the services domain. Public administration & defence is situated almost in the bottom-left corner of the quadrant, and reflects the government's continuous state building as well as its need to strengthen its military. A rather peculiar sector in this quadrant is Culture, domestic and other services, for which it is obscure what exactly is included in it. The three remaining sub-sectors in the quadrant are trade, transport, and construction. They are situated rather to the top-right of it, all exhibiting double digit growth and a sector share of 7-9%, respectively. Given that the trade sector represents only the facilitation of exports and imports of goods and services combined with the argument made in chapter 2 that sustained wealth creation comes from production, the trading sector cannot be understood as a promising long-term growth driver. There has been a continuous construction boom in Rwanda since the country stabilised after the immediate post-genocide years. It encompasses private housing, commercial buildings, and the public sector, and can be observed all across the country, but especially in the capital Kigali. There are reports that the boom has become a bubble and that many office and up-scale residential buildings remain empty. However, several comparably large domestic construction companies were able to grow and become more professional, and additionally, both backward linkages (construction material manufacturing and quarrying) and forward linkages (real estate services) could be established. Regarding transport services, a large share (about 26% in 2016)[66] may be attributed to the operation of RwandAir, Rwanda's state-owned airline carrier, which was established in 2002 and has strongly grown since then in destinations and revenues, but has not yet broken even (see chapter 5). It is not clear, where the remainder of value

[66] In 2016, transport services in national accounts amounted to 381m USD, while RwandAir was reported to earn revenues of 100m USD.

creation in transport comes from, but it is well possible that ordinary transport services in the country constitute the rest of the comparably large sub-sector.

Trade Flows

Rwanda's trade flows of goods and services have been continuously increasing since the early 2000s (figure 14).[67] Regarding both goods and services, the country has a negative trade balance. Concerning goods, this trade balance has been severely widening over the last years, reaching more than 2 bn USD in 2019, with total goods exports at 1.2 bn USD, constituting a trade deficit of 175%. Data for service trade flows exists only until 2015 and show a narrowing trade deficit of 190 m USD in 2015 with total service exports at 714m USD, constituting a gap of 26%. In 2015 (the latest year for which data is available for both types of trade flows), Rwanda exported more services than goods.

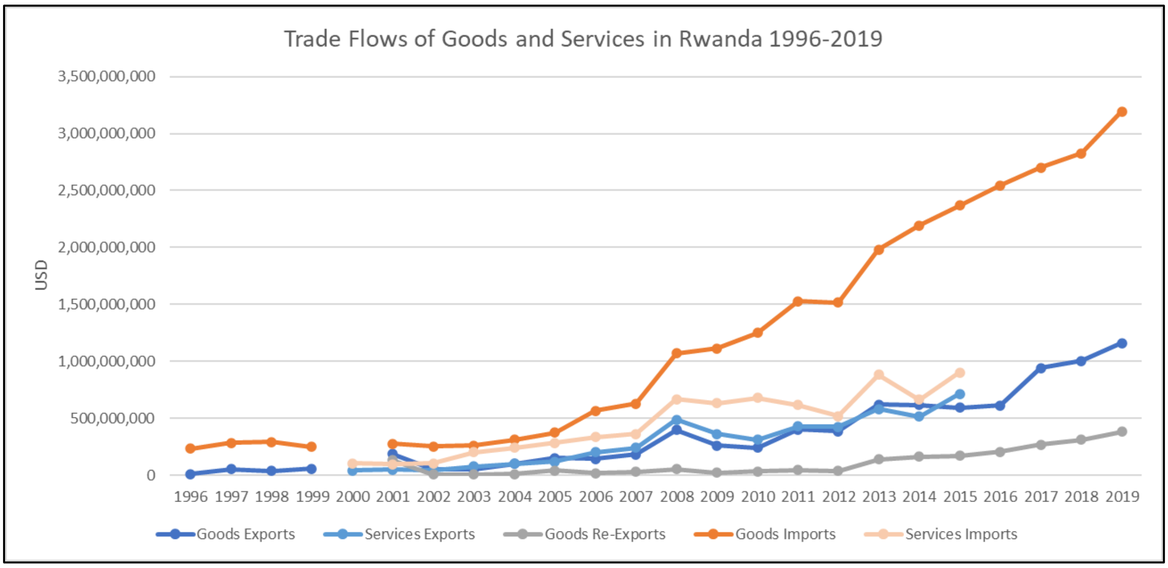

Figure 14: Trade Flows of Goods and Services in Rwanda 1996-2019
Source: own illustration, based on UN Comtrade data

The top five export goods in 2016, according to data from both UN Comtrade and the Observatory of Economic Complexity (OEC), are bituminous oils, various ores, gold, tea, and coffee (table 3), accounting for roughly two thirds of all goods exports.[68] Furthermore, Rwanda started diversifying its exports, even though this can hardly be seen in the aggregated data. Looking at the ten next highest valued export goods (and discounting obvious re-exports, which are not listed as such, i.e. nuclear machinery, electronics, and vehicles), all of the remaining seven exhibit exponential growth curves since

[67] Data has been taken from the UN Comtrade dataset.

[68] Rwanda's trade data suffers from severe data quality problems. First, UN Comtrade and OEC data differ significantly. For example, the OEC value of 2016 gold exports is more than double the respective Comtrade value. Second, in recent years, Comtrade data has stopped to contain many product-specific numbers. In particular, in the Rwanda dataset downloaded in 2018, disaggregated 2016 export data is available for most products, i.e. adding up all product-specific export values amounts to 90% of the overall export value. In the updated Rwandan dataset downloaded in 2022, the overall 2016 export value hardly changed (indicating that there has not been a general overhaul of the data), but disaggregated product-specific data now accounts for only 46% of total exports. For example, while in the old dataset bituminous oils exports were worth 108m USD and accounted for 17.4% of all goods exports, the value was completely missing in the updated dataset. While this change may be due to the unreliability of the old data, it is the best one available to assess the composition of goods exports in Rwanda, and this is why it is used in this sub-section. This also means that there is no disaggregated data available for goods exports after 2016.

2000, when their export value was (virtually) zero. Six of them belong to the agricultural sector (animal fats, flour, cereals, food wastes, raw hides and skins, and live animals), while the seventh is cement. Export destinations are hard to determine, as the indicated receiving country is often only an intermediary stop. However, the most important export destination is neighbouring DRC. Rwanda's top imports in 2016 were electrical machinery and equipment (12.8%), boilers, machinery and mechanical appliances (11.2%), and vehicles (7.7%).[69] Despite data quality issues, it can clearly be seen that Rwanda's exports are strongly characterised by raw materials or only slightly processed goods, while its imports are heavily processed, high value goods.

2016 Export Goods					
UN Comtrade			OEC		
Product	**Value (USD)**	**Share (%)**	**Product**	**Value (USD)**	**Share (%)**
Total	*621,605,000*	*100.0%*	*Total*	*759,000,000*	*100.0%*
Bituminous oils	108,413,093	17.4%	Bituminous oils	97,911,000	12.9%
Various ores	86,504,458	13.9%	Various ores	144,376,980	19.0%
Gold	80,228,956	12.9%	Gold	168,498,000	22.2%
Tea	73,527,849	11.8%	Tea	71,573,700	9.4%
Coffee	59,539,454	9.6%	Coffee	62,086,200	8.2%

Table 3: Rwanda's Goods Exports in 2016
Source: UN Comtrade data and OEC data

Service exports developed impressively, by rising from 41m USD in 2000 to 714m USD in 2015. In that year, travel and transportation services account for 45% and 13%, respectively. Jointly, they constitute tourism exports and amounted to 414m USD. Government services have a share of 35%, and they appear to consist of all trade flows between the Rwandan government in Rwanda and its entities (e.g. embassies, consulates, etc.) abroad.

3.7 Exogenous Conditions

Exogenous conditions, i.e. those factors beyond the control and influence of the Rwandan state, play a crucial rule for the country's evolution and the political survival and economic development strategy chosen by the ruling elite. Six salient ones are outlined in this section, two of which refer to Rwanda itself (land scarcity and a very hilly terrain), two regarding the region (landlockedness and being surrounded by poor and partially insecure neighbours, together constituting a development trap according to Collier (2008)), and two concern worldwide factors (global political and global economic conditions). Taken together, these conditions can only be described as being extremely adverse to successful economic development.

Land scarcity

Rwanda's land area is less than 25,000 km², making it the 51st smallest country (of 195) in the world.[70] With a population density of 471 people/km², Rwanda is the sixth-most densely populated non-island

[69] Only 60% of import value was accounted for by specific products.

[70] To help readers from the global North contextualise this size, Rwanda is slightly smaller than Belgium or Massachusetts.

country in the world and number one in Africa. Overpopulation has been identified as one factor exacerbating the genocide (Verpoorten 2012; Verwimp 2013). As the large majority of the population remains peasants living in rural settings, this means that the entire soil of the country (except for the national parks) is tilled, including the partially very steep hills up to the peak. Farming area has been increased in recent years by the utilisation of marshlands in the valleys but this option will soon be exhausted.

Very hilly terrain

Almost Rwanda's entire area (bar the plains in the East) is made up of mountainous terrain, which led to Rwanda's label 'Land of a thousand hills'. This geography creates many micro- and niche climates, which makes generic agricultural strategies ineffective. Even more, mechanized agriculture is virtually impossible on most farms and even the use of animals for ploughing or the possibility of irrigation is strongly constrained. Also, yields on non-flat grounds are smaller. Finally, the terrain makes the erection of infrastructure, such as roads and power lines, more expensive.

Landlockedness

Rwanda is a landlocked country, with a distance of about 1,500 km from Kigali to the two sea harbours Dar es Salaam (Tanzania) and Mombasa (Kenya) each. Roads to these ports are largely in poor shape, there is no rail connection, and at least one country border needs to be crossed (by definition). Given that most goods exports are transported by cargo, this makes any export-oriented development strategy quite difficult for Rwanda, especially for (usually) heavier manufacturing products.

Poor and insecure region

Rwanda's neighbouring countries are Uganda, Tanzania, Burundi, and DRC. All four are categorised as least developed countries, and Burundi and DRC are even poorer than Rwanda. While Tanzania has been politically stable for decades and Uganda has been largely so, Burundi and DRC have been and still are particularly unstable. Burundi has been on the verge of civil war within the last years, and those parts of Eastern DRC that border Rwanda (i.e. North and South Kivu) have been close to anarchy. Even in recent years, there have occasionally been raids conducted from these countries into the border regions of Rwanda, which had to be fought back by the RDF.

Global economic conditions

As has been pointed out by several prominent development scholars, global economic conditions have changed dramatically over the last twenty years, making latecomer economic development of poor countries even harder than it was before. First, production of almost all goods has been organised in very efficient global production networks, and it is increasingly hard for newcomers to enter into these global value chains. Second, the rise of China as the manufacturing centre of the world has led to enormous efficiency gains, and the size of the country's labour force allows it to continue producing even low-value products such as garments. If some of these production lines move out of China, they usually go to other Asian countries, leaving few opportunities for Africa. Academics disagree whether catching up nowadays can still be based entirely or largely on manufacturing or has to involve a mixture of industry and services.

Global political conditions

Currently, geopolitical interest in East Africa is low. The primacy of the international financial institutions, i.e. mainly the World Bank and the International Monetary Fund (IMF), in steering international development funds remains strong and their promotion of neoliberal ideology even within development programmes intended to increase social welfare has been found to be counterproductive to development (Bayliss, Fine, and van Waeyenberge 2011; van Waeyenberge 2017). The global development discourse among other donor organisations is focusing more and more on principles of democratic governance, climate resilience, and other measures that may in the best case lead to structural poverty being a bit less strenuous but it does hardly provide support for actually escaping these vicious structures. While industrial policy in the broader sense of fostering productive economic sectors has become more popular within development economics in recent years, it remains a niche topic in donor priorities. For example, Germany as the second largest donor country almost omits any industrialisation efforts on the extensive website of its Federal Ministry for Economic Cooperation and Development despite the country's valuable continued experience in this sector (BMZ 2021). Furthermore, the United Nations Industrial Development Organisation has seen declining country membership. In a nutshell, countries that aim to pursue an economic transformation cannot count on the large majority of the international community (at least not on traditional Global North donors) and are largely on their own, with only a few specialized organisations focusing on building up productive (export) sectors.

3.8 Overall Economic Development Strategies and Results

The overall long-term vision of Rwanda's economic transformation strategies is to transform Rwanda from a least developed into a middle income country (and thereby overcome poverty and division). This required, according to Vision 2020, in the short term the promotion of macroeconomic stability and state-building, in the medium term the transformation of the economy from being agrarian to becoming knowledge-based, and in the long term the creation of a productive middle class and an entrepreneurial private sector. The strategy document specified six priority pillars (state capability, human resources, private sector, infrastructure, agricultural transformation, and regional and global integration) as well as three cross-cutting areas (gender equality, environmental protection, and science and technology). Of its 47 quantified goals, three stood out: raise annual per capita income from 290 USD to 900 USD, reduce poverty from 64% to 30% of the population, and increase life expectancy from 49 to 55 years (RoR 2000). When Vision 2020 was overhauled in 2012 (partially because some goals were already achieved and partially because the performance indicators were significantly improved to better capture the particular implementation strategies that had been developed in the meantime), these key goals were revised upwards to 1,240 USD p.c. income, 20% poverty, and 66 years life expectancy (RoR 2012).[71] EDPRS I focused on three flagship programmes to drive the accomplishment of Vision 2020 goals. These were 'Growth for jobs and exports', the 'Vision 2020 Umurenge' programme that supports particularly vulnerable strata of society, and continued governance reform. Regarding exports, there was a sectoral focus on tea, coffee, mining, and tourism (RoR 2007b). EDPRS II reformulated primary intervention efforts as economic transformation (focusing on infrastructure, exports, channelled investment, urbanisation, and the green economy), rural development (concerned with land use, productivity, extreme poverty, and rural infrastructure), productivity and youth employment (concentrating on skills, technology, entrepreneurship, and access to finance), and accountable governance (looking at citizen participation and service delivery) (RoR 2013a). Finally, NST 1 has framed its interventions under the labels economic transformation, social transformation, and governance for transformation (RoR 2017a), which incidentally are very much in line with the understanding of sustained development as capitalist transformation.

Looking at the main economic sectors, Rwanda has followed a dual strategy of first transforming agriculture and second leapfrogging manufacturing and industrialisation in favour of becoming a modern and diversified services hub (Behuria and Goodfellow 2019). However, from the early 2010s onwards, a partial focus on manufacturing was added to Rwanda's development efforts (Behuria 2017). The sector case study chapters 4-7 cover specific industries within these overall sectors. In particular, chapter 4's case study in coffee-processing provides an example for the promising agro-processing/agri-business sector (to be understood as an industry at the crossroads of agriculture and manufacturing). Chapter 5 examines tourism as a major service sector within the Rwandan service-led growth strategy. Chapter 6 discusses Rwanda's agricultural transformation plans of inducing a fully-fledged Green Revolution. Finally, chapter 7 characterises various recent attempts to build up product-specific manufacturing sectors. This means that some important aspects of Rwanda's sectoral development strategies, such as agro-processing in general terms, construction as the growth engine of industrial growth, mining and quarrying, and various service sectors, had to be omitted in this thesis. Nevertheless, the studied sectors are understood to be highly significant, sufficiently diverse, and broadly representative of Rwanda's overall economic development.

Tracking in detail the degree to which each goal and indicator in the main strategy documents has been achieved is beyond the scope of this thesis. In fact, such exercises are rarely conducted in a structured way, even though the reference period of Vision 2020 ended recently. It may be the case that the government and international development organisations are not too keen on these analyses, as they would reveal some shortcomings, while scholars may be more interested in other questions. Hence, only a short look at the three key goals of Vision 2020 is taken. According to the World Bank's latest data, annual per capita income was 830 USD in 2019, poverty stood at 38.2% in 2016, and life expectancy

[71] Of the original 47 performance indicators, 10 were left unchanged, 20 were revised upwards, and the remaining 17 were exchanged for 18 new ones.

was 68.7 years in 2018. If extrapolating these numbers towards 2020 (without accounting for incalculable Covid-19 effects), it becomes clear that Rwanda came close but did not quite reach the original 900 USD p.c. and 30% poverty marks, but exceeded even the revised life expectancy target. However, in recent years substantial evidence has emerged all but proving that the poverty trends were incorrect and that poverty rather increased in recent years (Anonymous 2019; Desiere 2017; Wilson and Blood 2019). Furthermore, there is also some doubt about growth figures (see chapter 6).

3.9 Chapter Conclusion

The horrific civil war and genocide in 1994 led to a critical juncture in Rwanda's political settlement. The new ruling elite was willing and able to deploy all means necessary to re-establish order and the state monopoly of violence. Because it suffered from a high degree of systemic vulnerability and legitimisation angst, the RPF did everything it could to maximise its political control over the country. As a result, Rwanda today is politically stable and peaceful, but at the same time tightly surveilled and controlled. The ruling elite's long-term strategy has been to escape vulnerability by fundamentally transforming the country socially and economically into a modern, wealthy, and capitalist society, in which ethnicity and absolute poverty cannot lead to grievances and political mobilisation anymore that would threaten their political survival. These efforts can best be analysed through the lens of capitalist transformation (entailing both social and economic transformation). Two and a half decades after the genocide, Rwanda has made substantial steps towards achieving this long-term goal. The economy has been continuously growing at a high rate and transformative reforms in all domains of society have been launched with often impressive results. These achievements were made possible by steadily high efforts of state building, including the introduction and incremental professionalisation of a multi-layered governance system, in which overall development goals are broken down into several strategies, objectives, and indicators, which are earnestly pursued by government organisations, incentivised and pressured by annual performance contracts. At the same time, this governance system exhibited significant weaknesses that contributed to some sectoral failures. In general, Rwanda's economy is still very underdeveloped with a high share of the population engaged in unproductive subsistence agriculture, a small degree of industrialisation, and a tiny and weak capitalist sector with few firms that exhibit low technological capabilities. Additionally, the country faces particularly adverse exogenous conditions.

The Rwandan ruling elite's dual goals of keeping political control maximal at any point in time and fundamentally transforming the country sometimes go hand in hand, as deepening capitalist relations increase infrastructural power (Mann and Berry 2016), but they also often clash. These instances of irreconcilable control and development needs are key to understanding Rwanda's development outcomes. In a direct sense, control needs and development goals collide, when entrepreneurs garner economic power that at some point may lead to political clout. Political settlement theory argues that economic development requires a broad and fairly independent capitalist sector. As discussed, the

Rwandan government appears to scotch any potential future challenge by impeding successful entrepreneurs from further advancing their business conglomerates as soon as they are perceived as insufficiently loyal to the government. There have been cases of domestic investors being expropriated but the concrete circumstances are usually non-transparent and the respective causes for the fallouts are hence unclear. The occasional pre-emptive disruption or at least intentional keeping down of fledgling tycoons by the Rwandan government may thus stifle entrepreneurial development. A related argument was that the government may at times crowd out private-sector activity by being very engaged in key economic sectors itself. However, the main manifestation of clashing control and development needs explored in this thesis is of an indirect and subtler yet very impactful nature. The Rwandan ruling elite rebuilt the all but destroyed state apparatus in a very specific way that was directly adopted from its governance mode as a rebel army, which was fully compliant with its need for maximal control. In fact, the RPF's top-down command-and-obedience governance mode significantly shaped the newly built governance system. This was well-suited for easier and more immediate development goals and industrial policies, which is why impressive successes have been recorded in the first two decades. However, the underlying governance mode of the governance system is unfit to deal with more sophisticated industrial policy because this would require a more independent and less directly controlled bureaucracy. So far, whenever control needs clashed with development goals in this indirect sense, priority was given to the former.

This chapter has discussed Rwanda's political economy in detail, mostly by using existing academic literature. It provided substantial evidence to illustrate that the Rwandan government indeed had both the *political will* for transformative economic development and the *political power* to effectively implement its policies (proposition 1). It also depicted how and why the particular manifestations of political will and political power arose from Rwanda's particular civil war and immediate post-genocide history. Moreover, it was shown that the particular recent historical trajectory of the RPF led to the current government's need for maximal political control (proposition 2). The emergence and characteristics of the Rwandan governance system has been described at length and it was demonstrated how a fairly effective state and meritocratic bureaucracy arose that is incentivised and guided by a complex *imihigo* performance contract system (proposition 3). Finally, the country's governance system's weaknesses were discussed (proposition 4) and their existence was traced to the ruling elite's unchanged top-down governance mode, which again is considered necessary to maintain maximal political control. Accounting for the mechanisms of successful industrial policy laid out in chapter 2 that require a delicate power balance between the ruling elite, bureaucrats, and capitalists, it is evident that the current setup of Rwanda's governance system may fail to properly design and implement advanced industrial policies, even though the ruling elite's political will and political power are both forthcoming. The subsequent four empirical sector case study chapters explore the roles of industrial policy and the governance system to respective sectoral success and failure.

Chapter 4: Coffee-Processing

This chapter on the Rwandan coffee sector, like the three subsequent empirical chapters, serves a dual purpose. First, it conducts a detailed assessment of the sector as such and explores the most salient factors that led to remarkable policy success in coffee-processing as well as policy failure in raising coffee production volume. Second, it provides in-depth empirical evidence that contributes to the goal of gaining a better general understanding of Rwanda's development trajectory, which is then used in the final chapter to answer the overall research question on the causes and reasons for varied sectoral performance. In total, 74 semi-structured interviews were conducted with stakeholders of the Rwandan coffee sector, including farmers, cooperative managers, coffee washing stations, traders, exporters, government representatives, and NGO employees. Additionally, most of the available qualitative and quantitative data from academic articles and working papers, numerous reports by the Rwandan government and international organisations, Rwandan online newspaper articles, as well as two government-internal databases has been compiled and analysed. The triangulation of this data from various sources should therefore have led to a robust balancing of the existing evidence.[72]

The chapter starts with a brief overview of the basics and mechanics of Rwandan coffee cultivation and -processing (4.1). Then, the historical development of the sector until 2001, i.e. before domestic value addition through wet mill processing began, is outlined (4.2). Next, the government and donor interventions in the Rwandan coffee-processing sector from 2000 to 2019 are illustrated in detail (4.3), complemented by depicting the transformation of the upstream value chain node of coffee cultivation (4.4), the recent establishment of a zoning policy (4.5), and the evolution of the downstream node of coffee exporting (4.6). Finally, a sector case study conclusion is drawn (4.7).

4.1 Basics of Coffee Cultivation and Coffee-Processing in Rwanda

Rwanda's geography is almost perfectly suited for coffee cultivation. It avails of "[r]ich volcanic soils, high altitudes that slow bean development and favour taste enhancement, adequate rainfall, and clement temperatures" (Chemonics 2006:9). Throughout the years, 99% of coffee cultivated in Rwanda has been Arabica with the remaining 1% being Robusta. Arabica coffee is of higher quality and taste and fetches higher prices than Robusta, which however contains more caffeine. Arabica varieties exhibit biannual patterns of high and low harvests in Rwanda and other countries. The main coffee harvest in Rwanda occurs from April to July, while some particularly fertile regions, e.g. in the Northwest, have a second much smaller harvest from September to November (interview C-46).

[72] Hence, data availability is not a problem for analysing the Rwandan coffee sector (even though much important data is not publically available). Rather, the abundance of available qualitative and quantitative data, much of which is of mediocre quality and exhibits internal contradictions, creates new challenges. The low quality is to some degree due to the rapid changes rendering some numbers outdated within months and partially because the capacity of data collectors is limited and their priorities sometimes lie elsewhere. Also, some statistics are reported in calendar years and others on the basis of the Rwandan fiscal year from July to June, which may create severe deviations. However, whereas some inconsistencies are minor (e.g. deviating numbers of how many wet mills existed in each year), others are huge and baffling (e.g. the evolution of annual coffee area) and create severe problems for quantitative analyses. Where relevant, data quality issues are mentioned in the text.

Coffee is a perennial crop and grows as cherries on small trees that require a lot of effort for maintenance. One coffee cherry contains two coffee beans. Coffee trees start bearing fruits three years after seedlings are planted and lose most of their productivity after thirty years. They require regular pruning and occasional rejuvenation (i.e. cutting the tree back to its trunk). Many inputs and agronomic practices need to be applied (or are recommended): organic and chemical fertilisers, pesticides, mulch against erosion, lime for acidic soils, regular weeding, and growing grevillea or other trees around coffee trees for shade-giving. In Rwanda, one coffee tree needs four square metres of soil, which means that a one-hectare coffee plantation contains roughly 2,500 trees (NAEB 2016c). Intercropping with beans or banana trees is often practised in Rwanda and neighbouring countries, though not recommended by the authorities. Common biological challenges include leaf rust, bugs, and a specific African Great Lakes problem of the so-called ‘potato taste defect’ (Bigirimana et al. 2012, 2019). In land-scarce Rwanda, the overwhelming majority of coffee farmers can be described as micro-holders owning a few hundred trees and growing coffee as one of many crops. Large coffee plantations are very rare. Within the country, coffee is grown almost everywhere, but with a regional focus on the Western and Southwestern shores of Lake Kivu, and parts of the South, central region, and the East (NAEB 2016c).

There are two main modes of processing coffee cherries into parchment coffee, which can be described as artisanal un- or semi-washed processing usually resulting in ordinary or standard coffee and professional fully-washed processing leading to high-quality or even specialty coffee.[73] A ripe coffee cherry’s pulp and mucilage need to be removed to isolate its two coffee beans. In artisanal coffee-processing, small manual depulping machines or occasionally mortars are used, which leads to a partial uncovering of the beans, and this low-quality parchment is then either soaked in water and dried on mats (semi-washed) or directly sold (unwashed) to traders. Fully-washed coffee follows a more elaborate processing procedure. After harvesting, coffee cherries need to be brought to coffee washing stations (CWSs) within a few hours because otherwise they would start to ferment and lose some of their quality. At CWSs, cherries are floated in water to identify unripe or defect cherries (i.e. floaters), which are sorted out. They are either bought by wet mills at a much lower price or taken home by farmers, who process them at home or sell them on. All other cherries are then weighed, the details are noted down, and suppliers are paid a fixed price per kilogram directly or later. Cherries are then sorted into different grades by manual labourers. These distinct grade piles are then depulped by a depulping machine. The capacity of this machine is usually the bottleneck of processing and determines the overall wet mill’s coffee-processing capacity.[74] Afterwards, the beans are soaked for 24-48 hours in soaking pools. Then, they are put in washing canals were manual labourers rake them, which removes the remaining mucilage. Next, the now completely depulped coffee beans (i.e. parchment) are put on drying beds, where they are regularly turned to ensure uniform drying. They can be covered with foil within minutes

[73] Specialty coffee is usually defined as coffee receiving 80 or more points in the Specialty Coffee Association’s scoring system (AgriLogic 2018).

[74] CWS capacity is measured as how much tonnage of coffee cherries can be processed within the three-month harvesting period, assuming one shift of eight hours per day (interview C-15).

to protect them against rain (which is however rare during this time of the year). While drying, further quality checks and sorting usually takes place. After several days, the dried beans are packed in bags and stored in a warehouse. Parchment coffee (whether resulting from un-, semi- or fully-washed coffee) is then brought to dry mills and hulled (i.e. de-parched) to become exportable green coffee. All green coffee is brought to the Rwandan government's central warehouse in Kigali, where it is often sorted again, as the various processing steps can lead to the breaking or damage of coffee beans (known as *triage*). After clearing all paperwork, the green coffee is ready for export via road transport to the ports in Mombasa and Dar es Salam. Recently, some CWSs have started to produce naturally- and honey-processed coffee, which follows slightly different procedures and can fetch substantially higher prices. Also, several firms in Rwanda have started to roast some of their coffee domestically, both for local consumption and for export. Irrespective of the processing method, it is often assumed that approximately 5 kg of coffee cherries result in 1 kg of parchment coffee and 1.2 kg of parchment coffee leads to 1 kg of green coffee. Therefore, the ratio of harvested coffee cherries to exported green coffee is theoretically around 6:1. However, these ratios can vary significantly, depending on the quality of coffee cherries and depulping and hulling machinery, the efficiency of the processing procedures, and embezzlement issues. Cherry-to-parchment (CtP) ratios of 4.3:1 have been reported (interview C-72), while the government estimated the average to have been 5.3:1 in 2018 (NAEB 2018). Cherry-to-green (CtG) ratios were estimated as having been as high as 7.8:1 in 2007 (MINAGRI and MINICOM 2008). A TechnoServe dataset of 42 CWSs suggests an average CtG ratio of 7.1:1 (TechnoServe n.d.) and the government used a 7:1 ratio in 2018 (NAEB 2018).

4.2 The Coffee Sector in Rwanda until 2001

Understanding the coffee sector in Rwanda before 2001 is paramount for analysing its later evolution because of the enormous political and economic importance of coffee cultivation in the country as well as because several of its political economy features have endured over time and still play a salient role in the sector today. Introduced by German colonialists in 1905, coffee production was prioritised from the late 1920s and multiplied from ten metric tons (t) in 1927 to 2,000t in 1937 (Kamola 2007; Newbury 1988). Soon thereafter, coffee cultivation as well as applying certain agricultural techniques (pruning, mulching, etc.) was made mandatory by the colonial regime and enforced by domestic elites who profited economically from this system (Newbury and Newbury 2000). In 1957, the first coffee cooperative (Trafipro) was established in Rwanda, and its head, Gregoire Kayibanda, used the organisation to acquire political power. He eventually became the first President of newly independent Rwanda in 1962 (Kamola 2007). Coffee became the most important export good and Kayibanda turned Trafipro into the state's marketing board. In combination with newly established OCIR-Café in charge of export management, the Rwandan regime directed the entirety of coffee production and sales in the country. With the establishment of the International Coffee Agreement in 1962, world coffee supply was regulated and global coffee prices stabilised, allowing Kayibanda to increase his political power based on the economic benefits of coffee exporting (Behuria 2015b). Coffee cultivation remained mandatory and neglecting or even uprooting coffee trees as well as intercropping were prohibited. During the First Republic under Kayibanda (1962-1973), Rwanda's coffee production steadily and moderately grew from roughly 8,000t to approximately 13,000t (figure 15), while coffee prices were stable.[75] According to data from the Food and Agriculture Organization Corporate Statistical Database (FAOSTAT), this production growth was almost entirely based on the increase of harvested area, while yields remained virtually stagnant.

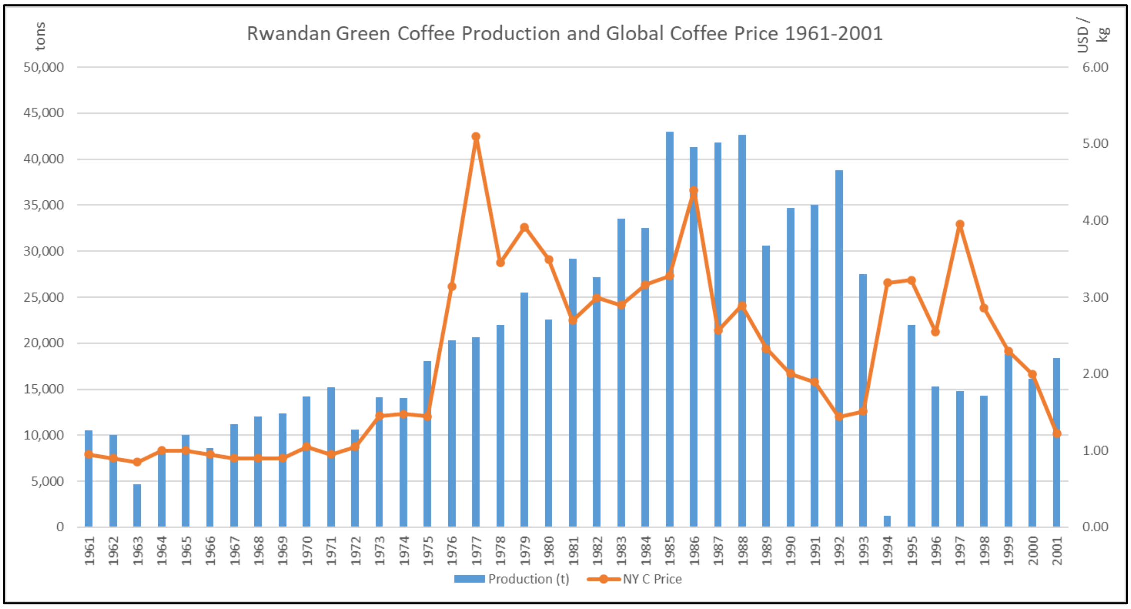

Figure 15: Rwandan Coffee Production, Area and Yield, 1961-2001
Source: FAOSTAT, macrotrends.net

For the subsequent Second Republic under Juvenal Habyarimana (1973-1994), Prunier observed that domestic political stability was highly correlated with international coffee prices (Prunier 1997:84). Behuria visualised this relation and showed how a failed coup attempt in 1980 coincided with a trough in prices, while the steady further decline of the international coffee price from 1986 to 1993 went along with the incremental deterioration of political stability and the rise of extremism in Rwanda (Behuria 2015b:205, figure 6.7). Several authors connected the Rwandan regime's enormous coffee dependence at that time (60%-80% of state revenues came from coffee exports) with the eventual outburst of genocidal violence, though without establishing direct causality (Kamola 2007; Verwimp 2003). Habyarimana shut down Trafipro and established the monopsony buying agency Rwandex. During his reign, the focus on coffee quantity, not quality continued. As a consequence, production levels skyrocketed from roughly 13,000t in the early 1970s to almost 43,000t per year in 1985-1988, and fluctuated between 28,000t and 39,000t in 1989-1993 (see figure 15). This increase was again largely driven by area growth and much less by yield improvements.[76] In the years after Habyarimana's ascent,

[75] Exact production growth is hard to determine, not only because statistics can be unreliable but also since the biannual patterns of Rwanda's Arabica coffee occasionally lead to severe peaks and troughs. According to FAOSTAT, Rwanda's coffee production was 10,000 t in 1962, 4,700 t in 1963, and 8,100 t in 1964. Similarly, it stood at 15,200 t in 1971, 10,600 t in 1972, and 14,200 t in 1973. These numbers were aggregated to the overall growth trend reported above.

[76] However, FAOSTAT data on yields and harvested area is not reliable, as it exhibits highly unrealistic one-year jumps and other peculiar patterns, a common feature in African agricultural statistics (Carletto, Jolliffe, and Banerjee 2015). For example,

world coffee prices rose substantially, which allowed him to both increase prices paid to Rwandan coffee farmers buying him loyalty, and to use substantial export profits to consolidate his power and distribute rents to his supporters (Kamola 2007). Producer prices skyrocketed from 45 Rwandan Francs (RWF) in 1974 to 125 RWF in 1977 (Verwimp 2013). Scarce mineral fertilisers were reserved for cash crops (i.e. mostly coffee, but also tea). More and more land was dedicated to coffee cultivation and rural state agents were installed to monitor coffee production. While theoretically coffee export surpluses from high world prices were to be allocated to a coffee fund to compensate for future low-price intervals, these profits were siphoned off by the ruling elite and its supporting factions instead (Behuria 2015b). Even during these episodes of high world prices, farmers had to be actively encouraged, monitored and disciplined to concentrate on coffee cultivation. This was because of their needs to sustain themselves by growing food crops while facing land scarcity, the high amount of labour required by coffee trees, and the availability of lucrative alternatives, most importantly bananas, which required less labour and could be processed locally into banana beer that produced reliable cash income (Behuria 2015b; Verwimp 2013).

When global coffee prices started to drop in the late 1970s and continued to do so in the 1980s, producer prices were kept constant for a long time by the Habyarimana regime to continue encouraging farmers to grow coffee and to keep them loyal. This meant that the margin for coffee exporters (i.e. the government itself) continuously shrank. While coffee farmers received about 50% of international prices until the mid-1980s (traders earned 20-25% and the state pocketed 25%-30%), this share grew higher and higher and reached levels of more than 100% in the late 1980s (Verwimp 2003). As wholesaler income remained constant, the state earned less and less, and went into making losses, i.e. subsidising farmers (and intermediaries) in these years. These funds were then missing for allocation to supporters of the ruling coalition and the political power of the government and thus political stability deteriorated. However, even a constant price paid to farmers meant a decline in purchasing power due to regular inflation. In particular, the real price of parchment coffee had halved from 1980 to 1991 (Verwimp 2003). Eventually in 1990, producer prices had to be reduced in nominal terms from 125 RWF to 100 RWF.

Coffee farmers became less willing to grow coffee, which meant that coercion was increased by the state. Penalties for neglecting or uprooting trees were enforced more strictly. Given both the already mentioned need of farmers to grow subsistence crops and the availability of more lucrative cash crops, coffee cultivation was simply “economic nonsense” (Verwimp 2000:354). Whereas the government continued its policy of expanding coffee cultivation area, peasants increased their resistance by putting less efforts into coffee cultivation, which resulted in substantial neglect, abandonment, and uprooting of coffee trees. This is reflected in both the decreasing volume and deteriorating quality of Rwandan coffee

there is a yield hump from 1982 to 1989 (from 1.4 kg/tree to 2.6 kg/tree and back), coinciding with a proportionate area trough. It is unclear whether these developments happened in the way the data suggests, and if so, what the drivers were. Given the data’s unreliability, it is not depicted here but can be found in Behuria (2020a). Production data is much more reliable, as Rwanda exports virtually all of its coffee and therefore production statistics can be triangulated with trade data.

during the late 1980s and early 1990s. While it is hard to estimate direct effects of prices on coffee production (due to many other determining factors including the biannual character of arabica coffee), overall production levels in the early 1990s were substantially lower than in previous years, while yields decreased even more.[77] Thus, production levels were prevented from plummeting sharply mainly by ever increasing state-enforced area expansion. Regarding coffee quality, in the early 1970s, 70% of produced coffee achieved standard quality (the rest being of sub-standard, i.e. ordinary, quality), in 1987 it was only 40% and in 1989 only 30% (Chemonics 2006; Verwimp 2003). Only continued massive government intervention prevented the majority of farmers from abandoning coffee cultivation (Behuria 2015b). In the chaos of 1994, coffee production almost came to a complete halt. It immediately bounced back in 1995 to over 20,000t, which was roughly half of the high late-1980s levels and on par with mid-1970s levels.

After the new government took control of the country, it soon liberalised the previously almost fully state-controlled coffee trading and export business in 1995. This led to the immediate entrance of a handful of international export firms, of which all but one withdrew again a few years later. Only Rwacof, the newly established subsidiary of Swiss trading giant Sucafina, which had entered the Rwandan coffee market in 1995, stayed and has grown into and continues to be the largest coffee exporter in the country. In 1998, there was a duopoly of coffee exports shared roughly equally between Rwacof and the still operational and state-controlled Rwandex (IMF 2000). In subsequent years, new exporters entered the market (and some of them later exited again), including domestic ones. In 2000, there existed four well-established coffee exporters in Rwanda: next to Rwacof and Rwandex, these were Sicaf and Agro Coffee Industries, which were both owned by ruling party-associated domestic entrepreneurs (Behuria and Goodfellow 2016; CFC 2001).

During the early post-genocide years, i.e. 1995-2001, official production numbers fluctuated between 16,000t and 21,000t (see figure 15). Annual coffee export revenues rose and fell with international prices. Simultaneously, coffee quality deteriorated even further from the already low level in the late 1980s. In 2000, only 10% of coffee was still of standard quality, the remaining 90% were rated as only ordinary (Chemonics 2006). This was likely driven by coffee farmers taking less and less care of their trees, simply because it was both laborious and not lucrative, and thus they focused on subsistence food crops as well as more profitable other cash crops. In particular, coffee farmers applied less fertiliser, pesticides, and mulch and conducted less tree pruning in 2001 compared to 1991 (Behuria 2015b). Certainly, as the new government was occupied with restoring order and basic state-building, the grip on farmers was less strong in these years. However, the authorities were aware of this trend and tried to incentivise coffee farmers to maintain their trees by offering a high farmgate price for coffee parchment of 300 RWF from 1994-1998, which decreased to 270 RWF in 1999 (IMF 2000). During this time, global prices fluctuated on a rather high level from 1995 to 1998, but they continuously deteriorated

[77] Notwithstanding the data quality issues around coffee yields and area, overall trends are still plausible.

from then to reach an all-time low in 2001 and did not rise substantially for two years, which meant that a steady farmgate price (all the while quality deteriorated), led again to a rising producer share in total export revenues. These trends have been described as “bankruptcy at the top and misery at the bottom” (Behuria 2015b:215) and a “poor quality, low productivity paradigm” (Chemonics 2006:11). In early 2002, Rwanda’s coffee sector was described as being at a crossroads, with one scenario being that decreasing production volumes, cultivated area, and yields may lead to a situation where “national production falls below quantities needed to maintain its marketing structure” (Loveridge, Mpyisi, and Weber 2002:4).

4.3 Building up a Domestic Coffee-processing Sector from Scratch

When, at the turn of the millennium, the Rwandan government started to pursue a long-term development strategy, supporting the coffee sector was an obvious choice, simply because there was a lot of history, endowment, experience, and trade links in this sector. Without viable alternatives, giving up on coffee would not have made sense despite the sector’s desolate condition. The government initiated a first coffee strategy for 1999-2003, which aimed to increase production quantity and quality by planting new coffee trees and distributing chemical fertiliser to farmers, but its targets were only partially met (Chemonics 2006). In spite of dismal global coffee prices, the market for specialty coffee was booming, which meant that, overall, the potential for large revenues and economic growth from *high-quality* coffee was enormous (Ponte 2002). However, as shown above, in 2000, the large majority of Rwandan coffee was not even of standard quality, meaning that it fetched prices even below very low international prices. Adding Rwanda’s tiny size and meagre production volume potential compared to other countries, this meant that the strategic direction of the coffee sector’s revitalisation could only lie in upgrading the coffee-processing node of the domestic value chain to improve the product’s quality. This fit well with both the government’s modernisation ideology and the American donor programmes’ agri-business and upgrading rationale, which had recently shifted their focus within the Rwandan agrarian sector from food aid to agricultural development.

Emulating Burundi’s technology of large coffee washing stations seemed the logical choice (interview C-70). In 2000, the two existing but inoperational CWSs were resurrected and the government-aligned exporter Sicaf started to build three small new wet mills in the Southwest. At the same time, a detailed study was commissioned by the Rwandan government and the International Coffee Organisation (ICO), which described and analysed the status quo of semi-washed processing and conducted a business analysis of how to establish and operate CWSs in the country (CFC 2001). Furthermore, one of the American projects, the Partnership for Enhancing Agriculture in Rwanda through Linkages (PEARL), also built one wet mill with and for the recently established coffee cooperative *Abahuzamugambi*, internationally known as *Maraba* in Huye District (Chemonics 2006). The approach and implementation of the US donor programme regarding the incremental erection of a Rwandan specialty coffee production sector can be described as almost exemplary. The contribution and impact of donors in the early years of the Rwandan coffee sector’s transformation, in particular the three US projects PEARL, ACDI-VOCA, and ADAR, cannot be overstated, are even acknowledged by fierce critics of aid and technical cooperation (Easterly and Reshef 2010), and the present assessment finds them to have been a salient factor for the sector's success.[78]

The PEARL-financed wet mill of Maraba produced 200kg of fully-washed coffee in the 2001 season, which was classified to be of high quality by an American expert, who then was funded to come to Rwanda to assess the country's overall potential for specialty coffee. His appraisal led to an expansion of the Maraba wet mill and the production of 33t of high-quality coffee in 2002, with the in-situ help of the expert (Chemonics 2006). The donors' network helped to find an American and a British buyer for these two containers for a price 200% higher than the average price for the remaining Rwandan coffee (Chemonics 2006). In subsequent years, more and more American-financed CWSs were built in major coffee growing regions, partially with private entrepreneurs and partially with newly established cooperatives. This led to a continuous increase of both wet mills and fully-washed coffee. At the end of 2005, 46 CWSs existed, of which 38 were built with the support of the United States Agency for International Development (USAID). Of those, at least 16 belonged to private entrepreneurs and the remainder was mostly built by cooperatives. In that year, Rwandan CWSs produced 1,109t of fully-washed green coffee, which amounted to 7% of the country's total coffee volume (Chemonics 2006). To kickstart the evolution of a professional domestic coffee-processing sector had required massive upfront investments and extensive technical support, neither of which the government could have provided on its own. It is therefore fair to say that while the government conducted several measures, especially regarding renewing and expanding coffee cultivation, and supervised CWS construction, it was donors who drove and implemented the emergence of the professional Rwandan coffee-processing sector. However, a serious problem was that most fully-washed coffee (FWC) was of rather low quality and did not earn price mark-ups. Therefore, success stories at that time were rather anecdotal than representing the reality of the entire sector. Moreover, CWS utilisation was very low, increasing from 14% in 2003 to 32% in 2005 (Behuria 2015b), meaning that wet mills were not operating profitably, but rather incurred substantial losses.

Nevertheless, encouraged by stories of early success and the government's active promotion of wet mill investment (including offering good financing conditions), more and more local investors and entrepreneurs engaged in 'herd behaviour' (Bikhchandani, Hirshleifer, and Welch 1998), constructed a CWS (usually with donor loans/grants or subsidised bank loans), and tried to participate in the booming market by operating a wet mill on their own. The accelerating speed of new CWS construction meant that coordinating their placement as well as keeping a certain level of control over the domestic coffee value chain as a whole became an increasingly complex task for the government. A rather chaotic

[78] However, some mistakes were made. For example, as coffee plantations in Burundi were much larger than in Rwanda, its coffee washing stations were as well (with capacities of 2,000t of coffee cherries per season, while nowadays most Rwandan CWSs can process 500t or less per harvest), and therefore directly emulating Burundi's processing structure proved to be an early mistake. Following donor advice, a few very large CWSs were built, which then operated way below capacity without the prospect to utilise it in the foreseeable future (Behuria 2015b).

dynamic developed over the next years. While the sites of CWS construction broadly matched with coffee supply (i.e. coffee tree density), the particular location was often sub-optimal regarding water supply and transport, which made operating costs unnecessarily high. A government license was needed to build a CWS, but one was granted to everyone who applied (Behuria 2015b). As rural governance was working well, no illicit wet mills were established. Within just a few years, the number of coffee washing stations in Rwanda multiplied from 46 in 2005 to 187 in 2010. From then on, their growth rate slowed down a bit, leading to 297 CWSs in 2017, this time with a focus on building significantly smaller ones. Over the last four years, the number of wet mills increased only marginally. In 2021, 313 CWSs existed in Rwanda (figure 16). The direct goal of building CWSs was to process coffee cherries in these stations and thereby to incrementally increase the share of FWC relative to semi-washed coffee (SWC) and other coffee products (mainly *triage*).[79] This share did indeed grow substantially over the years, from 0% in 2001 and before to 6% in 2005, 20.5% in 2010, 44.6% in 2016, 60% in 2018, and 80.2% in 2021 (see also figure 16). Even more, the correlation coefficient of the number of CWSs and the amount of FWC produced for 2002 to 2021 is 0.93.

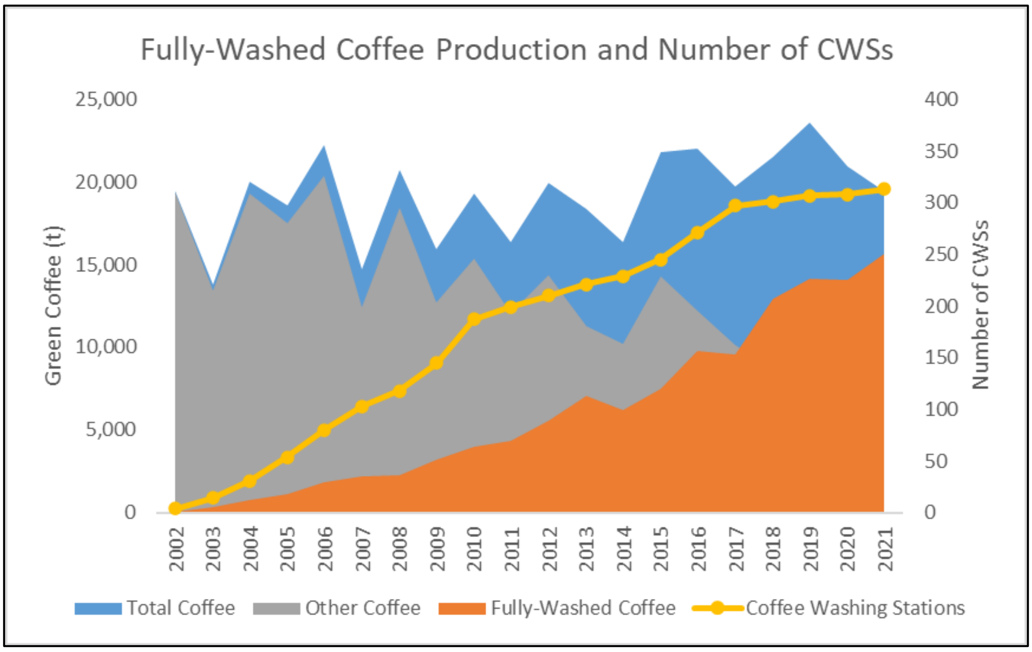

Figure 16: Fully-Washed Coffee Production and Number of CWSs in Rwanda, 2002-2021
Source: NAEB Annual and Monthly Reports, JICA (2014), FAOSTAT dataset, Guariso and Verpoorten (2018)

While most CWSs were constructed by cooperatives or domestic entrepreneurs, both the state and exporters also invested in wet milling. In particular, the Rwandan military constructed ten CWSs via its Horizon Group and operated them for several years. Rwacof mostly abstained from fully-washed coffee-processing until 2012 (interview C-70). Also the other big coffee traders, notably the still existing

[79] Rwandan coffee production and export statistics distinguish between fully-washed coffee, semi-washed coffee, *triage*, Robusta, and roasted coffee (NAEB 2016a). Recently, also naturally-processed and honey-processed coffee were added as categories (NAEB 2020). Technically, this coffee classification is not consistent, as roasted coffee is produced from (fully-washed) green coffee and Robusta is a different coffee variant, which usually is semi-washed but may be fully-washed; there is one CWS in Gakenke district that processes Robusta coffee (interview C-47). Also, naturally- and honey-processed coffee is not fully-washed but professionally processed by CWSs. However, since all coffee product volumes except FWC, SWC and *triage* are negligible so far, one widely-used metric of country-wide CWS performance is the amount of FWC as a share of total coffee.

Rwandex and the new entrant Coffee Business Center (CBC), run by a domestic entrepreneur, who according to Rwacof senior management was so talented that he outperformed foreign-backed Rwacof for many years (interview C-72), stayed with semi-washed coffee trading. While this was probably a rational business strategy for many years, it also impeded the on-going professionalisation of coffee-processing in the country. In 2012, Rwacof properly entered fully-washed processing when it bought Horizon's ten CWSs (interview C-70). From then on, they acquired several more CWSs, went into service provider partnerships with others, and supported a domestic CWS operator, Impexcor, to build and grow their business. In 2018, Rwacof owned 19 CWSs, had rented three, and had exclusive partnerships with 50 more. Domestically-owned Impexcor, as a very close Rwacof partner, owned 14 CWSs, rented one, and was a service provider to four. Today, the military retains two CWSs via their subsidiary Agro-processing Industries. In February 2008, Rwandex went bankrupt (likely due to gross mis-management) and had to be liquidated (Times Reporter 2008). In July 2009, American businessman and billionaire Scott Ford, former CEO of Alltel and a personal connection of President Kagame, bought Rwandex' remains and started Arkansas-based Westrock Coffee, locally operating as Rwanda Trading Company (RTC) (Behuria 2015b; Times Reporter 2009). RTC grew quickly, bought coffee washing stations from struggling cooperatives and entrepreneurs and went into partnership with several more. In 2018, it owned 12 CWSs, rented three, and had exclusive partnerships with 56 further wet mills. Thus, Rwacof and RTC have both extended their business operations upstream, and dominate the Rwandan coffee market also in terms of processing capacity and parchment access. In 2018, they jointly owned or were closely affiliated with 53% of all CWSs.[80]

Other foreign investors have been Kenya-based C. Dormans, which owned 9 CWSs in 2019 (interview C-60), Swiss-Rwandan Teuscher Investment (brand name Kivubelt), which is one of the few fully-integrated coffee producers, owning 42 hectares of coffee plantations themselves as well as two CWSs (interview C-55), and Muraho Trading Company (MTC), co-owned and run by the son of the long-time South Asian Rwacof managing director, owning five wet mills and having a close relationship with one more in 2019 (interview C-67). Important domestic processors, besides the already mentioned Impexcor (14 CWSs; interview C-27) and CBC (3 CWSs; interview C-65), are ENAS (9 CWSs; interview C-69), Caferwa (5 CWSs; interview C-25), and COOPAC (8 CWSs; interview C-58). Furthermore, there are two cooperative alliances that were established as part of donor programmes' exit strategies. In 2005, eleven cooperatives established Rwanda Small Holder Specialty Coffee Company (Rwashoscco), which today comprises five cooperatives (including Maraba) and one company (Bufcoffee) after they excluded a handful of cooperatives that were not able to meet their high standards (interviews C-29, C-42). The six shareholders together own 17 CWSs and export their coffee via Rwashoscco but keep their brand names and earn the majority of the profits. A second construct is Misozi Coffee, which was started in 2007 with the support of the British NGO Twin. There were eight cooperatives as shareholders in the

[80] Data on CWS ownership and affiliation comes from a NAEB-internal CWS database (NAEB 2018) as well as interviews with company representatives (interviews C-72, C-73).

beginning, but their number was reduced to five over time, also because the excluded ones were not performing adequately regarding coffee quality. Additionally, Misozi has close relations with four other cooperatives from which they buy regularly. The five shareholders own 7 CWSs in total (interview C-26). There are several Rwandan companies that own two or three CWSs, most of which are also engaged in coffee exporting.[81]

While rapid CWS construction and the rising share of FWC was an unambiguous success, the wet mills faced severe problems regarding their profitability. Despite the fully-washed production process from coffee cherry to dried and stored parchment coffee being rather simple, some amount and time of learning-by-doing was obviously needed. For example, even Rwacof, which constructed one CWS in 2005 and had the capital to properly operate it (including by hiring experienced personnel), failed in their initial season and spoilt all the beans (interviews C-66, C-72). Indeed, most CWSs were poorly run for several years and some continue to be highly inefficient today. A major constraint was the complete lack of experience with the technology in the country. Early donor projects had brought in and funded experienced technicians and operating managers from Kenya and Burundi. With the increasing number of CWSs in the country and their tight capital, this was not an option for most of them.

A study from 2001 analysed whether CWSs could be run profitably given fluctuating global coffee prices and varying Rwandan coffee price mark-ups and mark-downs (CFC 2001). While they found that in all scenarios the fetched prices would be sufficient to cover capital, operating and raw material costs of wet mills, profits were prohibitively low (3 USD/t) in low-market scenarios.[82] It is instructive to compare their middle scenario (medium prices and zero mark-up) with actual CWS financial numbers from 2006 and 2007 reported in the Coffee Strategy Update 2009-2012 (MINAGRI and MINICOM 2008). It can be seen that projected operation and financing costs per unit in 2000 were significantly lower than the actual costs in 2006/2007, both in absolute and relative terms (table 4). The projections in 2001 assumed that all costs other than raw material would amount to 21% of the sales price, while they actually represented 42% and 61% of the sales price in 2006 and 2007, respectively.[83] Actual unit costs (in USD) are harder to compare because of RWF and USD inflation, the continuous depreciation of the Rwandan Franc vis-à-vis the US Dollar, and since the items do not always measure the exact same thing. However, it can be seen that all types of operating costs were much higher in 2006 and 2007 than what was assumed in 2001, while the projected financing costs were roughly in line with actual 2006 numbers. Equally interesting is the comparison between actual 2006 and 2007 numbers, as the

[81] In 2018, these included Baho Coffee, Multi-sector Investment Group, Café de Gisagara, Dallas Investment, Gisaka, Huye Mountain Coffee, Karengera, Land of a Thousand Hills Company, Pride Rwanda, Rusizi Specialty Coffee, Simbi Coffee Investment, Trapro, as well as several entrepreneurs (NAEB 2018).

[82] The reports' calculations, while quite sophisticated and therefore very insightful, contained a few assumption mistakes and other errors. First, the authors assumed a processing capacity of 1,250t of coffee cherries per season (resulting in 250t of parchment coffee), which was much higher than even the early Rwandan average. Second, it was assumed that this capacity would be fully utilised early on, which turned out to be almost unachievable even for the majority of smaller wet mills in the long run. Third, the final step of processing parchment to green coffee in dry mills was apparently omitted, thereby leaving out both the related costs and the resulting volume decrease (roughly 20%) of the final exportable product.

[83] This is the case even though actual sales prices in 2006 and 2007 are even much higher than the projected ones in 2001.

RWF/USD exchange rate virtually stayed the same and one-year inflation rates do not distort the picture too much. Annual unit costs per item mostly increased strongly within one year. For example, supplies and labour cost almost doubled, final processing cost tripled, working capital interest almost quadrupled, and other capital costs multiplied by a factor of 2.4. As a result, despite a 20% increase in the sales price and a doubling of the price differential to global prices, the average losses per kilogramme of green coffee skyrocketed from 0.22 USD/kg to 1.06 USD/kg (equivalent to a profit margin of -8% and -31%, respectively). The share of cherry costs increased only slightly (from 65% to 70%), meaning that the large majority of additional losses came from much higher operating costs in 2007 compared to 2006.[84] As these numbers represent the average of surveyed CWSs, the financial performance of individual wet mills obviously varied significantly. However, 70% of all CWSs were making losses (MINAGRI and MINICOM 2008). Finally, the strategy offers a potential future break down of unit costs, which, however, is strangely unrealistic in most parts (despite the generally high quality of the document). For example, while it assumes that costs for transport, supplies, and working capital remain constant, it projects labour costs to fall from 8%/12% in 2006/2007 to only 1%, which seems impossible, even though it was well known that labour hours were much too high in CWSs.

Profitability of 1 kg of Green Coffee	CFC (2001)		MINAGRI & MINICOM (2008)					
	Proj.		2006		2007		Potential	
Revenue (USD)								
Sales Price	2.20							
FOB & Export	0.24							
Act. Sales Price	**1.96**		**2.78**		**3.38**		**2.90**	
Cost (USD)								
Raw Matrial (Cherries)	**0.86**	**44%**	**1.82**	**65%**	**2.38**	**70%**	**1.61**	**56%**
Operation	**0.18**	**9%**	**0.96**	**35%**	**1.45**	**43%**	**0.52**	**18%**
- Transportation	0.07		0.19		0.16		0.16	
- Supplies	0.03		0.15		0.29		0.29	
- Labour	0.04	2%	0.23	8%	0.42	12%	0.02	1%
- Other Charges	0.04		0.29		0.28		0.00	
- Final Processing	0.00		0.10		0.30		0.05	
Financing	**0.24**	**12%**	**0.19**	**7%**	**0.57**	**17%**	**0.31**	**11%**
- Working Capital Interest	0.07		0.08		0.31		0.31	
- Loan Costs / Depreciation	0.17		0.11		0.26		0.00	
Sales Charges	**0.00**	**0%**	**0.03**	**1%**	**0.04**	**1%**	**0.17**	**6%**
Profit/Loss (USD)								
Profit/Loss	**0.69**	**35%**	**-0.22**	**-8%**	**-1.06**	**-31%**	**0.29**	**10%**
New York C per kg	2.20		2.39		2.60			
Differential	0.00		0.39		0.78			

Table 4: Profitability of 1kg of Exported Green Coffee
Source: CFC (2001), MINAGRI & MINICOM (2008)

The government heavily intervened to make farmers deliver their harvest to CWSs and not process cherries themselves and then sell the parchment to traders. Macchiavello and Morjaria (2015) called the phenomenon that not more coffee cherries were delivered to CWSs in these years despite everyone

[84] The data came from a 2008 survey of 26 CWSs in Rwanda conducted by On the Frontier (OTF) consulting. It is not known whether these wet mills are representative for all Rwandan CWSs. However, since 2006 and 2007 numbers were retrieved at the same time, interviewees would have reported annual changes deliberately, which reduces reporting bias.

theoretically profiting from this arrangement a key paradox. According to actually paid prices for cherries and parchment (AgriLogic 2018; JICA 2014), it became more and more economically advantageous to do so (table 5). In 2005, farmers received 550 RWF per kg of parchment and 110 RWF per kg of cherries, which means that –assuming a conversion ratio of 5:1– both products earned the same amount, but cherries required much less labour than parchment (just delivering cherries to CWSs instead of self-processing them). In 2018, 5 kg of harvested cherries earned farmers 1,500 RWF, while the self-processed parchment resulting from the same amount would only pay 1,000 RWF.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Actual Parchment Price (RWF)	550	550	625	610	625	750	1,350	700	500	800	900	600	900	1,000
Actual Cherry Price (RWF)	110	110	135	150	160	198	258	187	140	210	220	170	270	300
Ratio	5.0	5.0	4.6	4.1	3.9	3.8	5.2	3.7	3.6	3.8	4.1	3.5	3.3	3.3

Table 5: Actual Parchment and Cherry Price (RWF), 2005-2018
Source: JICA (2014), AgriLogic (2018)

However, there were various coordination problems in the sector that impacted negatively on each other and prevented a rapid transformation of the coffee sector from phasing out semi-washed to producing mostly fully-washed coffee. First and perhaps most importantly, several CWSs stopped accepting cherries as soon as they had collected enough to produce the amount of coffee for which they had sales contracts with buyers (interview C-61). Second, many CWSs had insufficient working capital and were not able to pay for cherry deliveries on the spot, which turned away some farmers, who preferred less but immediate cash over higher future payments (interview C-15). Third, the lack of timely working capital for many CWSs was due to late, faulty or declined loan applications, sometimes because of earlier payback delays or defaults (AgriLogic 2018). Fourth, some entrepreneurs offered very high prices to farmers and went bankrupt as a result (interview C-15). Fifth, technical problems with the machinery could also mean that farmers were turned away (interview C-31). Sixth, in some regions and years, scarcity of coffee cherries led to fierce competition between CWSs in some areas that drove producer prices up and hurt the CWSs' bottom lines even more (interviews C-32, C-40).

Finally, strong and deep informal relational contracts between farmers and intermediary traders, who bought semi-washed parchment from them and sold it to exporters, also impeded cherry delivery to wet mills. These relations included both indebtedness and support in emergencies and times of need. These wholesale traders played a major role in the domestic coffee value chain until very recently. Often, they were coffee farmers themselves, who owned a comparatively large number of trees and therefore had the means to engage in trading. Others were professional traders who were provided with working capital to buy parchment by SWC exporters. They were widely conceived as adding little value to the coffee sector (except logistics and transport), all the while pocketing a large share of profits (interviews C-01, C-04). However, they were locally well connected and thus quite powerful in their respective region. Despite the government's very high political power, it was deemed not feasible to simply force them out of the coffee sector. Instead they were incentivised and compelled to partake in the sector's transformation by constructing CWSs on their own. Several locally prominent wet mill owners were important traders of semi-washed coffee in the 2000s. Examples are Epiphanie Mukashyaka, owner of Bufcoffee (shareholder in Rwashoscco and owner of 4 CWSs), Bernard Uwitije, owner of Trapro / Ibisi Mountain Coffee (2 CWSs), and David Rubanzangabo, owner of Huye Mountain Coffee (2 CWSs) (interviews C-37, C-39, C-42).

In hindsight, it is evident that the various coordination problems were sorted out, which led to the eventual increase of the share of fully-washed coffee as well as a better CWS capacity utilisation rate. However, in the meantime, many CWS owners defaulted on their bank loans, stopped processing, and abandoned and/or sold their wet mills. As a result, obtaining funding became even harder, and several wet mills became inoperational. In 2014, 13% of CWSs (30 out of 229) were out of order. According to official NAEB statistics, the percentage incrementally decreased to 7% in 2019, while the total number of inoperational CWSs decreased only slowly to 22 in that year. It was only in 2020 and 2021 when almost all CWSs had become operational (304 out of 308 and 311 out of 313, respectively). In the early 2010s, a consolidation process started, which accelerated in recent years, where larger, more professional and better funded CWS operators and/or coffee exporters bought wet mills from other owners. Simultaneously, two intervention measures were set up by the government in collaboration with NGOs. First, there was a CWS turnaround programme that aimed to help wet mill-operating cooperatives in financial distress to restructure their business operation and acquire the business skills necessary to run their organisation more professionally. This initiative was successful in some cases (IFAD 2018; NAEB 2019a). A second path to bring CWSs back on track was a service provider model, in which a large exporter entered in an often exclusive partnership with a CWS by equipping it with working capital to buy coffee cherries, providing technical and logistical support, and guaranteeing to buy their parchment. This model was quite successful in so far as struggling CWSs faced much less risk and were given the help to maintain and professionalise their business operation, while exporters received relatively stable amounts of parchment coffee for comparatively low prices. As long as domestic entrepreneurs and cooperatives managed to stabilise their business, they were able to maintain their ownership. In 2018, 282 operational CWSs were owned by 173 different entities, either companies, cooperatives or individuals, of which 136 owned only a single wet mill (NAEB 2018).

Data on the evolution of capacity utilisation of CWSs over the years is patchy and partially contradictory. Combining several sources, including official government numbers from 2013 to 2021, shows that the overall cherry-processing capacity of all existing CWSs surpassed the overall annual cherry production in Rwanda in 2017 (figure 17a). In 2021, the installed capacity was 144,000t of cherries (meaning that the average CWS processing capacity was 459t), which corresponds to roughly 24,000t of green coffee. Since 1994, Rwanda came close to producing this amount of coffee only once (in 2019). Capacity utilisation is measured by collecting data from all CWSs on how much tonnage of cherries they processed in each year. Very low capacity utilisation rates in the 2000s improved to reach quite high values in 2015-2018 (fluctuating between 66% and 84%), but apparently declined again in recent years to only 50% in 2021 (figure 17b). Assuming a certain cherry-to-green coffee ratios allows to compute the amount and share of fully-washed coffee produced in each year. This share peaked at 87% in 2018, and dropped to levels around 60% for 2019 to 2021.[85] Despite various data problems, it can be recorded that first, capacity utilisation improved over the years (even though installed capacity increased rapidly as well until 2017), second, it remained on a medium level for many CWSs, third, installed capacity now exceeds total production even in good years, and that therefore, coffee production levels need to start rising eventually, if CWSs are to come close to full capacity utilisation to overcome their profitability problems for good.

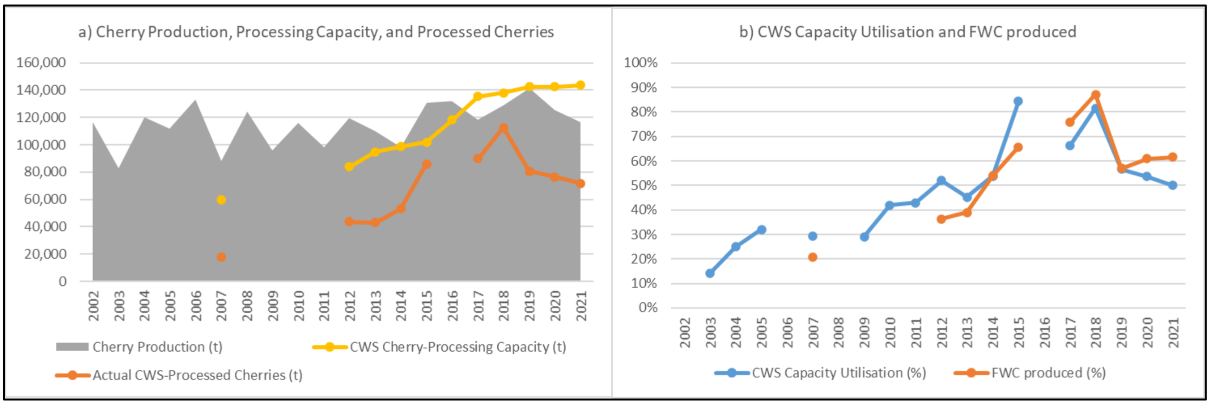

Figure 17: CWS Processing Capacity, CWS Capacity Utilisation, and Produced FWC
Source: Behuria (2015b), Macchiavello and Morjaria (2017), MINAGRI and MINICOM (2008), NAEB Annual Reports 2013/14 – 2020/21

There is little data available on recent CWS profitability. A 2017 case study of a large cooperative-owned CWS (1,106t of cherries processed) showed that cherry procurement amounted to 55% and operating costs including labour equalled 23% of the export price for 1 kg of green coffee. This would lead to a gross margin of 22% with unknown financing costs and return on equity to be paid to investors. Further evidence is provided by Rwacof, whose overall costs including overhead amounted to 3.10 USD/kg of green coffee in 2018 (interview C-72). One owner of two CWSs suggested that he considers recent years as the investment period, in which high financing costs had to be paid and accordingly losses were made, but that soon the loan for CWS construction was paid back, which meant that capital costs were much smaller and therefore profits would be forthcoming (interview C-37). Also, more experience and learning-by-doing is expected to lead to higher quality of fully-washed coffee, which can lead to higher sales prices, if buyers can be found. However, even if CWSs increase their efficiency, improve their outcome quality, and reduce embezzlement, the scarcity of available cherries and therefore their high price remains a structural constraint largely beyond their control.

[85] The share of fully-washed coffee produced is different to the share of fully-washed coffee exported shown in figure 16. Their difference comes from some FWC being stored for some time in domestic warehouses before buyers are found or exporters decide to sell, as they sometimes wait when prices are expected to rise. While these two time series run in opposite directions from 2018 to 2021 (for produced FWC from 87% to 62%, and for exported FWC from 60% to 87%), the total amount of produced and exported FWC is almost identical (56,941t versus 56,746t). However, the numbers do not add up for earlier years, revealing irreconcilable data patterns. In general, export data is much more reliable than FWC production data. It is therefore impossible to say to which degree the recent decline of capacity utilisation is real and to which degree it is due to poor data quality.

4.4 Attempts at Transforming Smallholder Coffee Cultivation and Their Results

The goal of transforming the coffee sector included a significant improvement of harvested coffee cherry quality (to reverse the trend of the last twelve years or so) and high growth of coffee production volume. In particular, fully-washing coffee cherries only makes economic sense for high-quality ones, which is why the quality of the already existing annual production needed to rise significantly. Furthermore, extremely ambitious quantity targets were set in various years, which were corrected downwards over time but still remain beyond reach (table 6). To achieve these twin goals, coffee farmers were both substantially supported and rigorously controlled by the government and donors.

<table>
<tr><th>Document</th><th>Goal</th><th>Achieved</th></tr>
<tr><td>Vision 2020
Source: MINECOFIN (2003) in MINAGRI (2009c)</td><td>44,160t
(2010)</td><td rowspan="2">19,319t</td></tr>
<tr><td>Strategic Plan for the Transformation of Agriculture in Rwanda (PSTA I)
Source: MINAGRI (2004)</td><td>37,000t
(2010)</td></tr>
<tr><td>Strategic Plan for the Transformation of Agriculture in Rwanda (PSTA II)
Source: MINAGRI (2009c)</td><td>40,000t
(2012)</td><td rowspan="2">19,955t</td></tr>
<tr><td>Rwanda Coffee Strategy 2009-2012
Source: MINAGRI and MINICOM (2008)</td><td>33,000t
(2012)</td></tr>
<tr><td>Strategic Plan for the Transformation of Agriculture in Rwanda (PSTA III)
Source: MINAGRI (2013)</td><td>35,000t
(2018)</td><td>21,548t</td></tr>
<tr><td>Strategic Plan for the Transformation of Agriculture in Rwanda (PSTA IV)
Source: MINAGRI (2018b)</td><td>32,500t
(2024)</td><td rowspan="2">---</td></tr>
<tr><td>NAEB Strategic Plan 2019-2024
Source: NAEB (2019b)</td><td>27,400t
(2024)</td></tr>
</table>

Table 6: Goals Set for Green Coffee Production in Various Rwandan Strategies
Source: See in table

The number of coffee farmers decreased from roughly 450,000 in 2000 to 400,000 in 2009 and 355,000 in 2015 (Chemonics 2006; NAEB 2016c) but it is unclear to what degree this was driven by demographic change or peasants actively stopping coffee cultivation. The average age of coffee farmers was 51 years in 2015, which is very old given Rwanda’s demographics. There is no data available for earlier years (NAEB 2016c). Older farmers are thought to keep to coffee cultivation, while younger ones focus on more lucrative options, such as horticulture (interviews C-01, C-35). The profession is male-dominated, with 68% of coffee farmers being men (NAEB 2016c). Farmers are strongly encouraged to organise themselves in informal producer associations and formal cooperatives. Cooperative membership data ranges from 39,500 members (11% of all coffee farmers) in 236 cooperatives in 2017 (NAEB 2017a) to 45,000 members (14%) in 390 cooperatives in 2015 (NAEB 2016c). The government entity responsible for coffee is the Ministry for Agriculture and Animal Husbandry (MINAGRI). However, in practical terms, OCIR Café, the long-standing governmental coffee agency subsumed under MINAGRI, took care of the implementation of all policy measures. In 2011, it was merged with two other agencies to become the National Agricultural Export Development Board (NAEB), which has been in charge of all agricultural export crops from then on (NAEB 2016b).

As already depicted in figure 17, according to official statistics, the volume of produced coffee in Rwanda did increase only slightly since 2002. Due to the volatile and cyclical nature of Arabica production levels, an average growth rate can be misleading. Comparing the total production over the decade 2002-2011 with that of 2012-2021 reveals a 12.5% growth rate, which would translate to annual growth of 1.25%. As different data sources report distinct numbers, it needs to be acknowledged that the calculated growth rate lies within the margin of error. However, there are two additional effects that are likely not reflected in official numbers. First, it is estimated that in the early to mid-2000s, up to 30% of coffee exports were actually grown in Eastern Congo and brought informally to Rwanda, as sales conditions were better in the latter (interviews C-14, C-15). This share is thought to have decreased to 5-14% since then (interviews C-14, C-72), which would mean that the actual quantity of coffee harvested within Rwanda grew more substantially. The second observed development goes in the opposite direction. The government outlawed the production of semi-washed coffee for the initial two months in each harvesting season to support wet mills and fully-washed coffee (Behuria 2018c). Therefore, some semi-washed coffee was informally exported to Uganda, but the extent of this trade flow is unclear (NAEB 2015b). In sum, even if these trends mean that Rwandan coffee production rose somewhat more than indicated by official statistics, its growth rate is still small and remained way beyond initial and revised goals. This section examines why this was the case.

Since the first post-genocide coffee strategy was rolled out in 1999, expanding the area of coffee cultivation has been a priority. This incorporated the identification and preparation of suitable land, the purchase of high-quality seeds, the systematic growing of coffee seedlings in nurseries, and the eventual transplantation of these seedlings into actual coffee cultivation plots. Data from different sources on the evolution of coffee acreage in Rwanda over the past years has been highly contradictory (figure 18). In particular, there is a clearly discernible hump from around 2010 to 2015, which also exists for several food crops. The proliferation of this data pattern and its origin in systemic overreporting driven by the need to fulfil performance contract targets is discussed in chapter 6. In the present case the discovery of massive overestimation was likely due to the 2015 coffee census, as official Rwandan numbers drop to the levels reported in the census in that year. Equally concerning is the diverging data of FAOSTAT and NISR since 2015. Diving into FAOSTAT data on Rwandan coffee reveals that their production volume, area, and yield data since 2015 has evolved in strange ways (strongly decreasing area, strong rise and then strong fall in production, and an astronomic rise and then medium fall in yields). This does not correspond to Rwandan and other international sources (such as the ICO), which means that it is dismissed as unreliable. Inferring the overall trend emerging from all (reliable) data sources reveals that a moderate increase of coffee area over the last two decades is likely.

This is despite very detailed and credible reports by NAEB about the plantation of millions of coffee seedlings each year on thousands of hectares (e.g. NAEB 2012, 2014), meaning that there is some evidence suggesting that the strong area growth reported in Rwandan data from 2010 to 2014 actually did take place. However, according to the coffee censuses 2009 and 2015, there were 72m coffee trees in 2009 (OCIR Café 2010) and 90m coffee trees in 2015 (NAEB 2016c). NAEB Annual Reports report that 74m coffee seedlings were planted between these years (NAEB 2012, 2013, 2014, 2015a). This

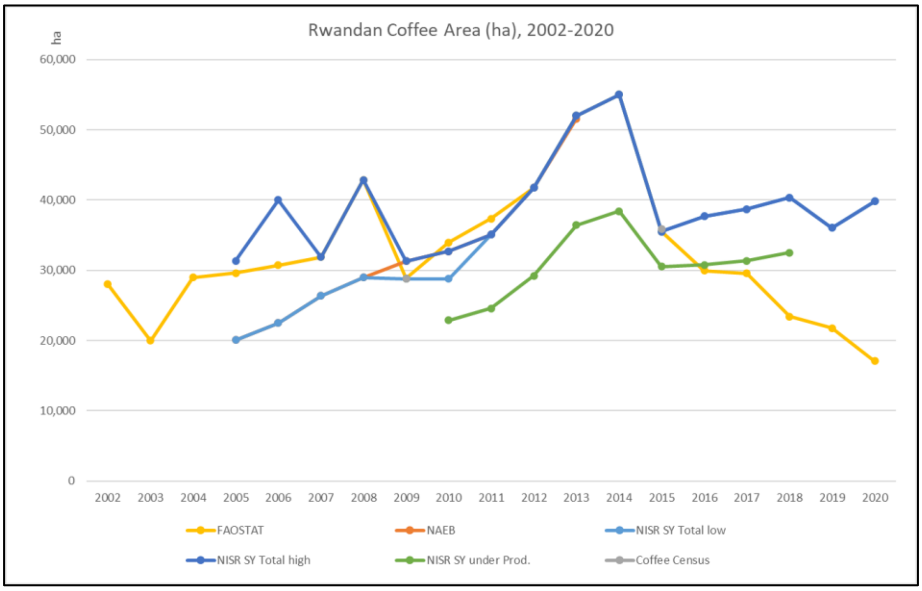

Figure 18: Rwandan Coffee Area (ha) in 2002-2020 according to different data sources

Source: FAOSTAT, NAEB Annual Report 2011/12, NISR Statistical Yearbooks 2009-2021, NAEB Coffee Census 2009, 2015

means that there is an excess of 56m planted seedlings, which in part will have replaced old trees and in part would have to have been abandoned or have died for the numbers to make sense. Even more, there were more unproductive trees (older than 30 years) and less young trees (younger than 3 years old) in 2015 than in 2009 (table 7). Furthermore, the average number of coffee trees per coffee farmer can be computed. In 2015, coffee farmers on average owned 253 coffee trees on 0.1 ha or 150 productive trees, which is a tiny number even compared to neighbouring countries. Even more, the median number of trees is less than 100. Only 19.5% of farmers own more than 300 trees and only 0.4% own at least one hectare, i.e. 2,500 trees (Gatarayiha 2019). The long-serving director of coffee in NAEB considers all plots smaller than 0.25 ha (i.e. less than 600 trees) unviable, which amounts to 88.5% of all farmers (Gatarayiha 2019).

Trees	Total	Young (< 3 years)		Prod. (3-30 years)		Old (>30 years)	
2009	72,065,000	17,295,600	24.0%	37,473,800	52.0%	17,295,600	24.0%
2015	89,727,500	13,459,125	15.0%	53,118,680	59.2%	23,149,695	25.8%
Diff.	*17,662,500*	*-3,836,475*	*-9.0%*	*15,644,880*	*7.2%*	*5,854,095*	*1.8%*

Table 7: **Number of Coffee Trees in Rwanda in 2009 and 2015 According to Age**

Source: NAEB 2009, 2015

Coffee yields are even harder to measure than area. FAOSTAT calculates it as green coffee production over acreage (usually indicated in hg/ha), therefore including efficiency ratios in transforming coffee cherries into exportable coffee beans. However, significant deviation of annual production numbers and the very high differences of annual acreage across sources leads to almost meaningless yield calculations. An often used alternative metric is coffee cherry production per tree (in kg/tree).[86] Here, a distinction can be made between the average productivity of all trees (including very young and old ones), only the productivity of productive trees (3-30 years old) or that of all trees older than three years.

[86] The two yield measures are convertible if one has an estimate for the CtG ratio.

As there is no clear standard, reported yields differ widely and are hard to compare. For example, according to the 2015 coffee census, the yield per tree was 1.46 kg in 2015, the yield per adult tree was 1.72 kg, and the yield per productive tree was 2.46 kg (NAEB 2016c). The 2008 coffee strategy reported an actual yield of 4.4 kg/tree (unclear how it was measured) and declared a goal of 5.2 kg/tree for 2012 (MINAGRI and MINICOM 2008). PSTA IV indicated an actual yield of 2.8 kg/tree in 2018 with a goal of 5 kg/tree (MINAGRI 2018b). Clay et al. (2018) measure an average 1.75 kg/tree in a survey of 1,024 non-representative coffee farmers. Finally, anecdotal evidence provided in interviews range from 1.5 kg/tree to 5 kg/tree (interviews C-02, C-38). It can be concluded that reliable data on coffee yields and their evolution is currently not available for Rwanda.

In addition to the national seedlings production and distribution efforts, there is also a centralized programme in the distribution of mineral fertiliser as well as the organisation of and support for the generation and application of organic fertiliser made from the remaining pulp of coffee cherries. These resources are usually given to coffee farmers for free with the only condition that they have to be applied to their coffee trees and not to other plants or to be sold. While the government initially simply purchased and then distributed fertiliser, subsequently, a special fund was set up, which is administered by the Coffee Exporters & Processors Association of Rwanda (CEPAR), an umbrella organisation for Rwandan coffee exporters established in 2012 and currently having 37 members. The fund collects fertiliser taxes of 97 RWF/kg of exported high-quality green coffee and 29 RWF/kg for low-quality coffee from exporters (interview C-61, AgriLogic 2018). The actual application of mineral fertiliser to coffee trees is described as sub-optimal, as it would have to be applied two times a year but government distribution occurs only once per year, does not reach all farmers, and does not distribute sufficient amounts, and farmers are encouraged to buy fertiliser for the second time, which most however do not do (interview C-15). There are several reports of fertiliser designated for coffee trees being applied to other crops, e.g. tomatoes, or sold to traders, as both is deemed more lucrative (interviews C-01, C-38, C-52). However, it is not possible to quantify these challenges. Further means to increase coffee yields are the application of mulching, which is widely supported by the government, and lime for acidic soils, which has largely been neglected so far but may be highly effective in some areas according to anecdotal evidence (interview C-15).

A further government (and donor) activity is the control of pests and diseases. This includes the distribution of pesticides (insecticides and fungicides), which is funded by a pesticide tax of 11 RWF/kg of green coffee exports, also collected by CEPAR. The four main diseases to be tackled are antestia bug, coffee berry borer, coffee leaf rust, and coffee berry disease (NAEB 2013). High research efforts into these pests have been made, which is perhaps due to the fact that NAEB employees responsible for coffee were specialists in this area (interview C-13). Much research was conducted in collaboration with a large-scale USAID donor programme implemented by the Michigan State University. In particular, it was established that the potato taste defect is highly correlated with and probably caused by antestia bugs (Feed the Future 2018). Finally, various farmer training programmes, recently known as ‘Farmer

Field Schools', have been conducted by several NGOs (interviews C-05, C-08, C-10). Among others, they aimed to educate farmers on best coffee husbandry practices. Whereas NGO programme evaluations (TechnoServe 2016; TripleLine 2017) and countless anecdotal evidence (e.g. Brody 2017; Falcon Coffees 2022; Wallace 2017) points to their effectiveness, and the government planned to roll them out much further in 2019 (Gatarayiha 2019), a survey found that many farmers were aware of the agronomic mechanisms behind increasing coffee yields but abstained from them on purpose because of missing economic incentives (Feed the Future 2018).

And indeed, arguably the most important factor affecting both the quality and quantity of produced coffee are the prices received by farmers for cherries and self-processed parchment. All the interventions described above can be understood as mostly necessary conditions and occasionally add-on measures to ensure continued coffee production. But ultimately, it is coffee cultivation being lucrative compared to alternative crops that drives farmers' decisions (Clay et al. 2018). This is why the evolution of the price received by farmers for their harvested coffee (known as producer or farmgate price) has been subject to intense academic and non-academic debate in Rwanda. Historically, the price paid for one kilogram of self-processed *parchment coffee* was the relevant one. As outlined in section 4.2, it was set by the government and was supposedly higher than free market prices in most years and intended to both buy loyalty from coffee farmers and support the growth of the dominant export sector. Over the last fifteen years, the government-set farmgate price for one kilogram of *coffee cherries* has become more and more important, as a growing share of harvested coffee cherries is sold directly (or via traders) to coffee washing stations, while the share of self-processed parchment coffee has decreased continuously. At the beginning of each coffee harvesting season (i.e. in February), the government announced a minimum price, to which some processors added varying mark-ups in the fight for scarce cherries. This farmgate price is determined by using an unknown formula that produces a suggested value by taking into account both world coffee prices and farmers' cost of production, which is then used as the basis for negotiations between all coffee stakeholders in the country (government, processors and exporters via CEPAR, and farmers and cooperatives via the Rwandan Coffee Farmers Federation).

From 2005 to 2016, farmgate prices for coffee cherries, export prices for Rwandan coffee, and global coffee prices rose and fell in unison and correlated strongly (figure 19). In particular, the enormous two-year hike in global coffee prices in 2010/11 followed by an equally steep two-year drop in 2012/13 was completely conveyed to both Rwandan export and producer prices. In 2015, a gap emerged between the Rwandan export price (which is the weighted average of all types of exported coffee) and the New York C price that slowly widened in subsequent years, as a higher share of FWC was sold for a mark-up (see also figure 22b). Domestic coffee cherry prices earned by farmers exhibited an irregular hump from 2016 to 2019, in which they were decoupled from green coffee price developments until they realigned from 2019 onwards. This two-year deviation (2017 and 2018) can be traced back directly to the finding of a Michigan State University research project that farmers' average cost of producing 1 kg of coffee cherries was 177 RWF instead of the previously assumed 80 RWF (Church and Clay 2016).[87] As a consequence, NAEB drastically increased minimum farmgate prices from 150 RWF in 2016 to 264 RWF in 2017 despite stagnant world prices (interview C-72, Times Reporter 2017a). When both world prices and Rwandan export prices decreased for two years (2018-2019) to very low levels, NAEB was forced to also decrease the minimum farmgate price to 190 RWF in 2019 (Ntirenganya 2019).

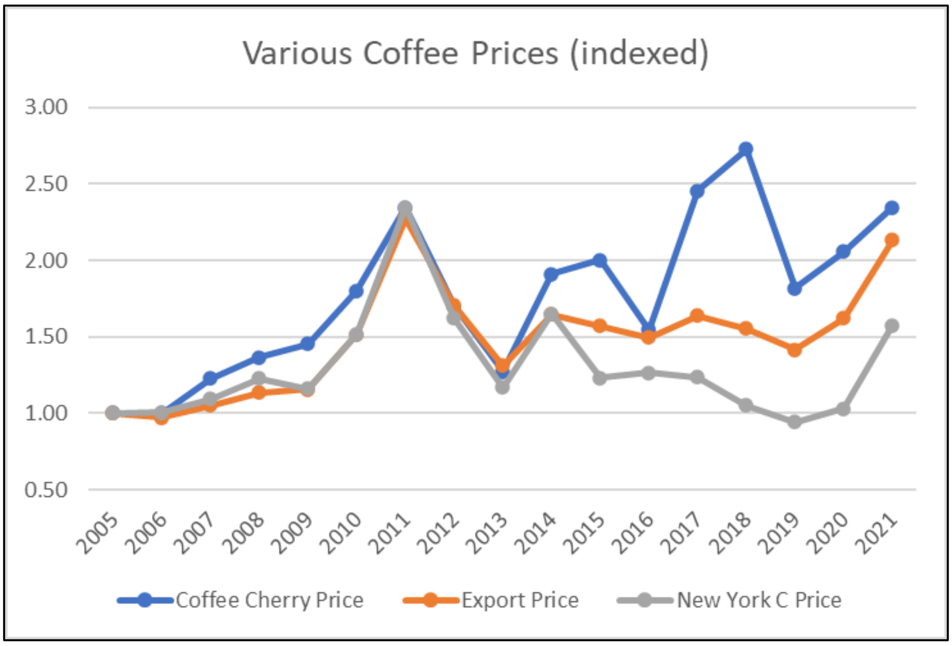

Figure 19: Rwandan Coffee Producer and Export Prices and Global Coffee Prices (indexed)
Source: JICA (2014), Agri Logic (2018), NAEB Annual Reports 2013/14-2018/19, Macrotrend

While the strong correlation of producer and export prices shows that temporary gains are adequately transferred to farmers, it does not say anything about whether farmers receive their fair share in the coffee sector. Clay and co-authors provide quantitative evidence from ICO data and "other official sources" (Clay et al. 2018:204) that Rwandan farmers have been underpaid for many years relative to their East African peers (Burundi, Ethiopia, Kenya, Uganda, and Tanzania), as Rwandan producer prices appear to have been on average 25% lower than the East African average from 2003 to 2014. This data's reliability is doubtful. First, there exists OTF data, which suggests that cherry prices in Rwanda were equal or higher than those of Burundi, Tanzania, and Uganda in 2005-2007 (Behuria 2015b:222). Second, they do not specify whether the prices refer to parchment coffee or coffee cherries. As their time series begins in 1990, at least in the beginning prices must have referred to parchment, as cherry prices did not exist in Rwanda before 2002. Therefore, if they did not switch to cherry prices at some point in their time series, the price comparison for parchment in recent years is not very relevant, as more and more coffee is being sold as cherries.[88] Third, it is possible to perfectly reproduce their graph using ICO data until 2004 (which reports parchment prices)[89], but not beyond that year because

[87] These calculations were strongly criticised as unrealistic and using false assumptions not only by exporters who might have an interest in keeping producer prices down (interview C-72) but also by farmer-centric NGOs (interview C-14).

[88] If they switched from reporting parchment to cherry prices, they did not indicate this.

[89] They calculated aggregated East African prices without weighing them according to each country's production volume, but doing so hardly changes the numbers.

Rwandan producer prices are not reported for later years. Prices from other countries are also missing for some years (for Kenya from 2005, for Tanzania from 2009, and for Burundi from 2011). It is unclear, which data was used for these years and countries and a written request to the authors has not yet led to a definite answer. Finally, comparing the absolute level of coffee producer prices converted from local currencies to USD does not necessarily reflect whether farmers are paid fairly, as exchange rate regimes, national inflation levels, and differences in coffee type, quality, export price, other costs, and economic structure and political economy of national coffee value chains in general play a role in determining farmgate prices.[90]

A more meaningful metric of whether farmgate prices are generally fair for farmers is the share of the cherry price in the overall export price. AgriLogic (2018) found that Rwandan farmers received 69% of the export price[91], which was above the African average. While figure 19 showed that indexed farmgate prices for coffee cherries grew more than indexed export prices from 2005 to 2021, the effective overall share of producer prices (i.e. the farmers' share) in coffee export earnings decreased in that time period from 73% to below 50% (figure 20). This is partially due to a rising efficiency in transforming coffee cherries into green coffee (i.e. the CtG ratio decreasing from 7.8:1 in 2005 to 6.7:1 in 2021) and even more because of the deliberate and controlled continuous devaluation of the Rwanda Franc against the US Dollar (from 557 RWF/USD in 2005 to 989 RWF/USD in 2021). While this means that the farmers' share in rising export prices did in fact decrease and therefore farmers did profit less than proportionately from the quality increase of exported Rwandan coffee, it is not clear to which value chain actors the increased prices accrued. It is likely that increased revenues were collected at least partially by CWSs, which in many cases, are now integrated with exporters, and thus may have led to more and more wet mills operating profitably. Without more data, this question cannot be further investigated. However, when considering that the average annual growth of farmgate prices from 2005 to 2021 was 8.4%, while consumer price inflation was 6.6% in that time frame, it becomes clear that coffee cultivation cannot have contributed much to poverty reduction for the average of Rwandan coffee farmers.

Having considered all measures conducted by the government and donors to increase coffee volumes produced in the country, the remaining question is why coffee quantity did hardly rise despite these massive efforts. Comparing coffee with Rwanda's other traditional cash and export crop, tea, reveals that the latter's production levels doubled from 16,458 t in 2005 (NISR 2010) to 33,209 t in 2020 (NISR 2021). Clay et al. (2018) concluded that those farmers with the means to invest substantially in their coffee plantations did not do so because coffee farming was simply not lucrative both in absolute terms

[90] For example, individual farm size is much larger in Burundi than in Rwanda despite its similar demographics and land scarcity, the dominant coffee variety in Uganda is Robusta, and local coffee consumption is over 50% in Ethiopia, while it is negligible in all other East African countries. Interestingly, Rwanda, Burundi, Kenya, and Tanzania all exhibited stagnating coffee production levels in recent years, while those of Uganda and Ethiopia, the two coffee giants in East Africa, grew significantly. In sum, a proper country comparison is beyond the scope of this chapter.

[91] In particular, the export price referred to the Free on Board (FOB) value of Rwandan coffee. There is little data on whether export prices are reported as FOB or Free on Truck (FOT). Often, average prices are mixed or unspecified, making the whole exercise somewhat less precise.

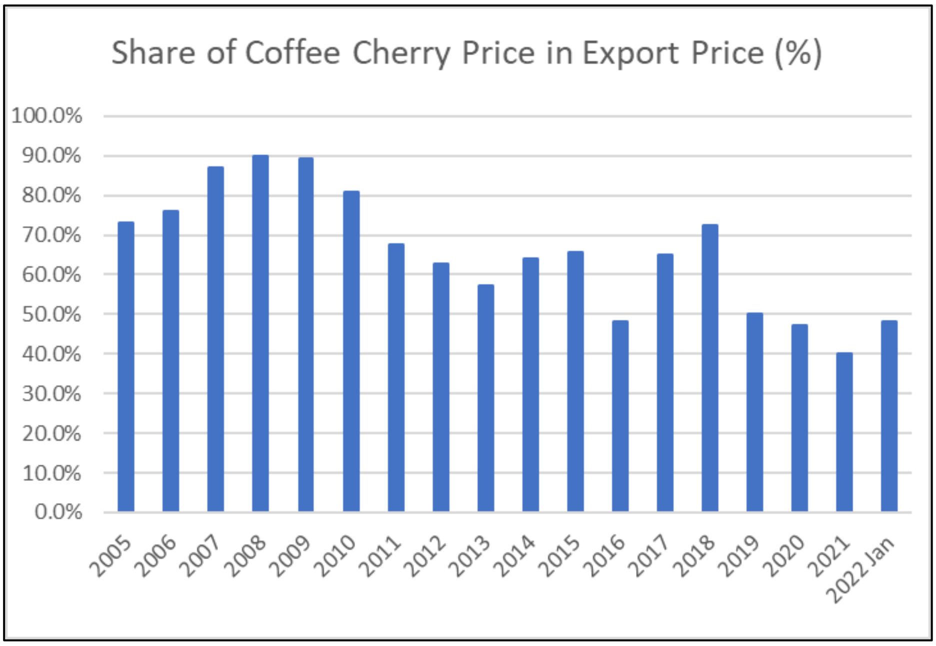

Figure 20: Share of Coffee Cherry Price in Green Coffee Export Price
Source: JICA (2014), Agri Logic (2018), NAEB Annual Reports 2013/14-2018/19

and relative to other crops. They reasoned that producer prices in Rwanda were artificially low because farmers' political power was low and their participation in coffee governance was almost non-existent. While this mechanism is rejected on the grounds of the evidence provided above, the overall logic that coffee cultivation is not growing in Rwanda because of its unprofitability is maintained. In fact, the economic structure that made coffee farming 'economic nonsense' in the early 1990s and led to a steady decrease of coffee quantity and quality until the early 2000s, has, by and large, remained valid until today in spite of all successful value addition efforts and government and donor support for coffee growers. Both before 1994 and in recent years, coercive government measures, such as prohibiting the uprooting of coffee trees and controlling coffee cultivation generally, have played a significant role in keeping coffee volumes on constant levels. It is concluded that coffee cultivation measures were successful in the sense that without them, coffee cultivation would have gone down to minimal levels. These efforts, however, were insufficient to make coffee production in Rwanda rise significantly.

4.5 Zoning

Aware of both problems, i.e. almost stagnant production levels and struggling CWSs, the Rwandan government started to introduce coffee zones in the entire country in 2016, where each coffee-growing village (the smallest administrative unit in Rwanda) was allocated to one CWS. When fully implemented, this would make each wet mill a monopsony buyer of coffee cherries in its zone. The annually set minimum price for one kilogram of non-defect coffee cherries became fixed (with districts having a bit of discretion to increase their district-specific price) meaning that CWSs were prohibited to pay more. The reasoning behind these strict regulations is the prevention of side-selling (farmers bringing their cherries to a different CWS outside of their zone), which is assumed to lead to fierce competition between CWSs in some areas and consequently to losses for wet mills (Gerard et al. 2022).

There have been instances where CWSs paid slightly higher prices to farmers and were immediately contacted by district governments to stop this (interview C-01). While this once again demonstrates that rural levels of political control can be very high and effective, there is a strong opinion by many coffee stakeholders that a full enforcement of zoning will be impossible and that some wet mills will always offer higher prices and farmers will accordingly find ways to deliver cherries to CWSs outside of their zone despite tight surveillance and increasingly digitalized registration of sales (interviews C-14, C-21, C-40). For farmers to profit from well-running CWSs, wet mills are expected to make a second payment to farmers after the season. Whereas the often cited advantages are the possibility to establish a proper appellation system, i.e. to produce and market single-origin coffee (interview C-04), as well as better paternalistic control of the entire sector (interviews C-01, C-31), zoning in Rwanda has also been recommended by some mainstream economists on the grounds of improved efficiency in the context of relational contracts (Macchiavello and Morjaria 2021). This new governance system would allow the government to step back some direct support activities and hand them over to wet mills. The intent is that a cooperative and nurturing business relationship between farmers and CWSs evolves, while order and control are maintained or even increased.

Defining proper zones, implementing the policy, and actually enforcing it was undisputedly a major challenge and required enormous efforts. The task was given to district governments, in particular their district agronomists. Using a very detailed coffee tree map showing the number of coffee trees existing in each village based on the 2015 coffee census and annually updated by sector agronomists, each CWS was assigned its fair share of trees closest to its location based on its own processing capacity relative to all other CWSs in the district. Using Huye district as an example, there were 19 CWSs with a combined processing capacity of 11,760 tons per season in 2019, meaning that 6.8m coffee trees in more than 350 villages organised in 72 cells, which were again subsumed under 14 sectors, had to be allocated proportionally to these wet mills to create 19 coffee zones in the district. In the draft zone definition, the trees per ton of processing capacity (as a measure of fair allocation) ranged from 358 to 1,510 with an average of 614. However, the middle thirteen of the 19 zones ranged fairly closely between 514 and 686. Two main complaints were made by CWSs. First, coffee trees can be of very different quality, depending on their age and how well they have been tended to in the past. Some CWS owners remarked that they had been assigned areas with poorly maintained trees and low yields. Second, cooperatives had the particular problem that a lot of their members were now located in a zone not belonging to their wet mills. This would mean that these cooperative members, who are also their CWSs' co-owners, are not allowed to deliver their cherries to their own CWSs anymore but have to deliver to their competitors. In Huye district, where the Maraba coffee cooperative is located and owns four CWSs, 49% of their own members were located outside of their four zones (interview C-40). Similarly, some private coffee washing stations reported that they had built relationships with some coffee farmers and had provided them with health insurance, school fees, livestock, tools, etc. and that these peasants were now located in other zones, meaning in effect that their investments were lost (interviews C-39, C-51). These problems were thoroughly discussed among policy makers, and in several districts, the zoning process had been completed by 2019.

The general policy-making process was that district agronomists created draft zones and presented them to CWSs owners. They then discussed this draft and potentially suggested alternative allocation solutions. In Huye district, zoning proved to be more complicated than in other districts, which is why the process was not yet completed in 2019. Several owners were not satisfied with the original draft and a coffee task force was set up, which suggested to the district government that coffee washing stations should provide support to farmers according to the proposed zones but that farmers would deliver the cherries according to existing relationships, especially cooperative membership (interviews C-39, C-40). This was rejected by the government, as it would not fulfil the main purpose of zoning, that is a clear allocation of coffee farmers, trees and cherries for delivery to wet mills. A second meeting proposed to allocate farmers not by village but individually, which was also declined. In late 2019, no solution was yet found, which meant that NAEB employees from Kigali were scheduled to meet with the district government and CWS owners to sort out the problem. There were only two unsatisfied stakeholders left: the Maraba cooperative owning 4 CWSs and a private operator owning 2 CWSs. While all participants declared their commitment to finding a consensus, NAEB indicated that it would decide on its own in the end (interview C-45). In contrast, in Gakenke district with 15 CWSs and 4.3m trees in 19 sectors, zoning proved to be easier and was already fully implemented in 2019. Only one cooperative continued to complain about its members being outside of their zone and having to deliver to competitors (interview C-46). This cooperative's managing director had been taken in police custody at that time because of embezzlement allegations.[92] NAEB stated that in the end, cooperatives would have to accept that zoning leads to some of their members not supplying their harvest to their CWSs anymore. This would mean that these members would not receive second payments from their own CWSs but were allowed to remain members and could continue to earn dividends from the cooperative's profits. One rationale of zoning is that CWSs establish long-term relations with 'their' farmers and support them to improve their yields because it is the only way for wet mills to increase the amount of their raw material. However, NAEB indicated that they might change zones in the future, for example when new CWSs were constructed, the capacity of established ones changed, or the number of productive trees in a given zone changed. As this means that CWSs might lose parts of their zones, in which they are supposed to invest significant resources, this does not constitute 'credible commitment' (Gehlbach and Keefer 2011) by the government for investors who need some degree of security, and might lead to underinvestment. It is too early to evaluate the impact of zoning, which ultimately can only be deemed a success if coffee production increases significantly, since this is the sector's single most important bottleneck for growth. However, there are some early evaluations of zoning, which found that it led to farmers receiving or

[92] There is no evidence that these phenomena were connected. However, some interview partners suggested that embezzlement among coffee cooperatives is wide-spread and that investigations are sometimes initiated if cooperative managers create trouble about government policies (interviews C-67, C-72).

expecting to receive more second payments, CWSs increasing service provision, less farmer side selling, and less intermediary activity (Gerard et al. 2022). However, the collected survey evidence suggested no increased farmer investment in coffee trees, which is the most important causal factor that can lead to higher production levels (Clay et al. 2018).

In general, the implementation and enforcement of the zoning policy increases the value of a coffee washing station as an asset. While their physical value is marginal, the monopsony license to source coffee cherries from their own zone means that also badly managed wet mills with poor farmer relations are highly valuable as long as the coffee trees in their zones produce sufficient coffee volumes. Examples of integrated, well-managed processing-cum-exporting companies owning a handful of CWSs and having good buyer contracts shows that this business sector has the potential to be very profitable for firms, if they manage to overcome various challenges (interviews C-29, C-67). Given that in most regions no additional CWSs will be built for the foreseeable future, a consolidation scramble has ensued among several medium and large exporters. Most interviewed coffee companies in Rwanda reported that they intend to increase the number of their CWSs (interviews C-27, C-60, C-65 C-66, C-72, C-73).

4.6 Diversifying Exporters, Acquiring Sales Markets, and Adding More Value Domestically

Moving downstream the coffee value chain, fundamental change also occurred in the node of coffee-exporting and further domestic value addition. The early liberalisation of the coffee export node has already been mentioned. Over the last twenty-five years, it has led to an eventual explosion of exporters. According to the official coffee exporters list, there were 69 registered companies in 2017 (NAEB 2017b). Over the time frame 2015-2018, 76 firms exported coffee in at least one of these years (NAEB 2019c). However, the market has always been quite concentrated. Rwacof and RTC were jointly responsible for almost 50% of all coffee exports in 2015-2018, while six companies (additionally: CBC, Rwashoscco, ENAS, and COOPAC) accounted for more than three quarters of all sales in that period (figure 21). In 2018, there were 37 companies that directly exported at least one container (19,200t) of green coffee, while fourteen more exported smaller amounts or micro lots. There are only five foreign coffee exporters active in the market (Rwacof, RTC, C. Dormans, OLAM, and MTC), which jointly accounted for 51.8% of all exports in 2018 (NAEB 2019c).[93]

Many processors, exporters, and government representatives state that the most difficult part of the coffee business is to find proper buyers of high-quality coffee (interviews C-25, C-42, C-56, C-57, C-61, C-68). It needs to be distinguished between higher-quality, fully-washed coffee that goes into upper market blends and highest-quality specialty coffee that is branded and sold as single-origin coffee for very high prices. For example, Rwacof's 2018 sales can be categorised in four segments: category 1 coffee sold for 4.5 USD/kg (4.4% of total volume), category 2 that went for 4-4.5 USD/kg (22.2%), category 3 for 3-4 USD/kg (40%), and category 4 that fetched less than 3 USD/kg (33.3%). The first

[93] It may be the case that there are a few small exporting firms that are actually owned by foreign citizens, most likely Ugandans. If so, their sales share would be minuscule.

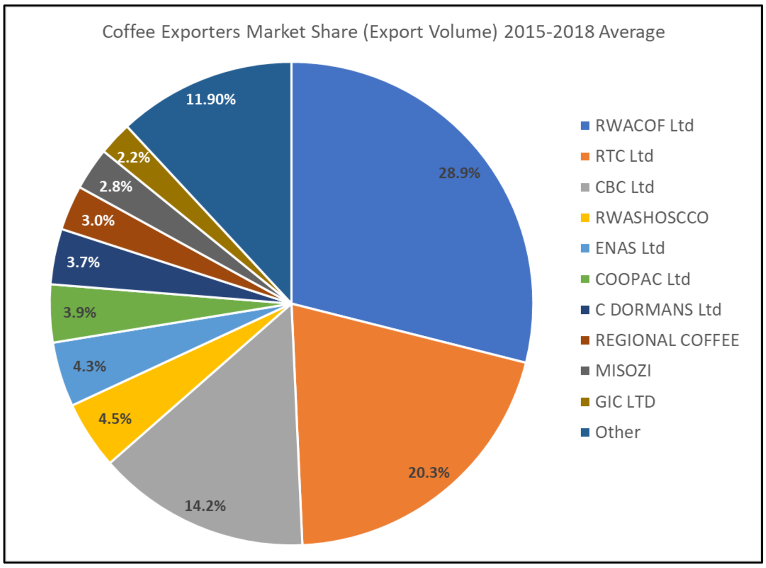

Figure 21: Coffee Exporters Market Share, 2015-2018
Source: NAEB-internal dataset

two categories are decommoditised coffee, the third one is semi-commoditised and goes into blends (e.g. of Starbucks), and the fourth one is sold purely opportunistically (interview C-72). Rwacof and other exporters sell a majority share in category 3, in which competition is quite high, as roasters and retailers may easily substitute Rwandan coffee for Ethiopian or Kenyan one, if they are dissatisfied. Even more, if buyers are very happy with what they are getting, they can hardly scale up their amount of Rwandan coffee, as the overall volumes are small. Similar to initiating coffee-processing and finding early specialty coffee buyers, American donor programmes were also responsible for kickstarting the acquisition of large-scale international buyers. In particular, Starbucks started to source Rwandan fully-washed coffee in 2004 and included the produce of two wet mills in their exclusive 'Black Apron' programme in late 2005 (Chemonics 2006). Additionally, President Kagame himself contributed to the sector's rapidly rising reputation by personally receiving these international buyers in the country, inaugurating coffee cooperatives and washing stations, and using his personal network to acquire new buyers. Rwandan state representatives were required to promote Rwandan coffee on international missions. Classic sales measures, such as participating in international trade fairs and creating a country-specific coffee brand, were conducted (interview C-06). Domestic consumption in hotels and restaurants was fostered as well.

Another huge problem for Rwandan exporters is their unfamiliarity and lacking skills regarding international sales communication. A look on their websites, social media accounts (if existing) and brand designs reveals that some basics are missing (e.g. not functioning website features, not up-to-date contact information, dismal English, very outdated brand optics, etc.). This is confirmed by government representatives, who admit that they had to start from scratch as well regarding any type of international marketing activities and observe that exporters do not know how to behave on coffee exhibitions and fairs (interviews C-06, C-71). Rwandan exporters themselves concede that they lack the skills and understanding of how sales communication works in the global North (interviews C-25, C-56, C-68).

MTC, which is arguably one of the most professionally managed small exporters (owned by a young South Asian), reports that their Instagram account (which is tailored to their Western audience very well) is their most effective marketing channel (interview C-67). Moreover, MTC has occasionally been able to pick up buyer relationships from domestic exporters when they failed to follow-up on initial contacts. It appears evident that the majority of small and medium-sized Rwandan exporters will only be able to acquire proper marketing skills over time, which, according to their self-assessment, has already occurred to some degree over the past years and is continuing. A further challenge faced by them is their access to finance. While international companies either are financed by their home markets (RTC) or are able to borrow in US dollars from Rwandan banks at international rates, i.e. 6-7% p.a. (Rwacof, MTC), this option is not open to most Rwandan exporters (even the larger and more professional ones), who have to borrow in Rwandan Francs and pay the usual exorbitant interest rates of roughly 20% per year.

This is why it is all the more impressive how both Rwashoscco and Misozi have been able to continuously produce and sell single-origin specialty coffee for many years without the marketing expertise of donors who left in the mid-2000s. Both marketing alliances are responsible for their shareholders' marketing, quality control (having their own cupping lab), and sales (i.e. contract negotiation). At Rwashoscco, the headquarters received a commission fee of 3% of the export price from their members until 2014 and then changed to charging a fixed amount of initially 90 RWF/kg that was intentionally reduced to 45 RWF/kg in 2019. This was possible because they built their own roastery on their premises with a grant from the US African Development Foundation, which earns most of their income (interview C-29). The company is run by Angelique Karekezi since 2014, who is very apt in marketing Rwandan smallholder coffee as well as women-produced coffee to international buyers. Her own brand, Angelique's Finest, is sold, among others, via the online platform of the German retail store dm and cost 22-30 USD/kg in 2021 (dm 2021). Misozi does not have its own roastery and charges a commission fee of 2% for exported coffee, which is again sold as original brands (interview C-26).

Overall, Rwandan coffee exports have strongly risen in terms of value, while exported volumes stagnated (as a consequence of stagnating production). In particular, coffee revenues multiplied from an all-time low of 12m USD in 2002 to an all-time high of 80m USD in 2021 (figure 22a). While Guariso and Verpoorten (2018) point out that initial revenue growth was strongly driven by increasing world prices, the differential between the average Rwandan coffee export price and the benchmark New York C price reveals that since 2015, the historically continual price mark-down has turned into a continuously increasing mark-up that reached almost 1 USD/kg in 2020 (figure 22b). This was largely driven by the share of high-quality coffee within overall exports growing strongly, while increasing price differentials for high-quality coffee played a minor role. As only average Rwandan prices are reported continuously, and thus proper time series for fully-washed coffee prices are not publicly available, the exact degree of both factors cannot be determined. However, the trendline of figure 22b clearly indicates that the internal transformation of the Rwandan coffee sector from producing low-quality to high-quality coffee has been successful.

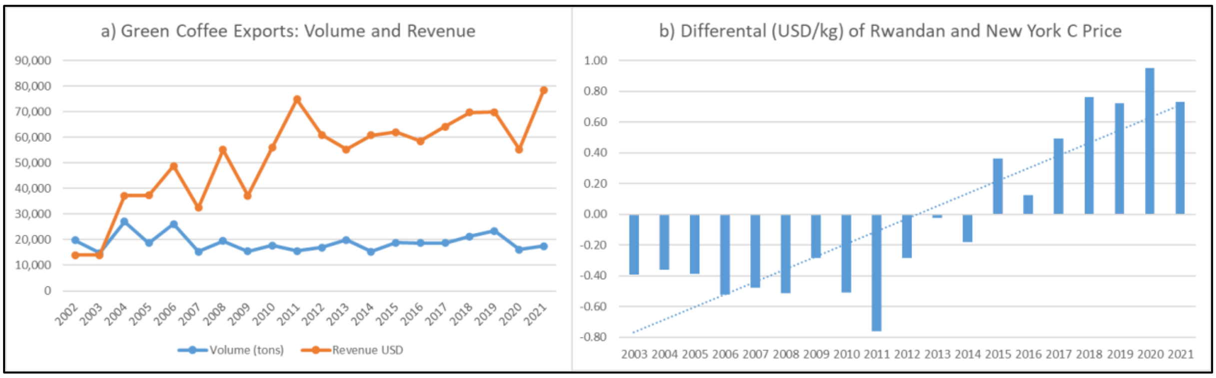

Figure 22: Coffee Exports: Volume, Revenue and Price Differential
Source: NISR Statistical Yearbooks, Comtrade, NAEB Annual Reports, macrotrends.net

Finally, further domestic value addition has been targeted in recent years in Rwanda. This concerns the production of natural- and honey-processed coffee by wet mills, domestic retail sales in supermarkets, restaurants, and cafés, and the export of domestically roasted coffee (Behuria 2018c). Domestic consumption of overall coffee output increased from below 1% to close to 3% in 2019 (Kuteesa 2019). A state-of-the-art roasting facility started operations in 2015. Funded and co-owned by the Clinton Hunter Development Initiative (49%) and the Rwandan government (51%), Rwanda Farmers Coffee Company held close to 50% of the domestic roasting market in 2018 (Mwai 2018). Many exporters have since acquired their own roasting machinery and started to roast a small share of their annual production. However, there exist some structural problems that prevent Rwandan roasters from increasing the share of Rwandan green coffee that they roast locally beyond a certain threshold. Compared to the capital and know-how of professional roasters in coffee-consuming countries, their roasting quality cannot compete. Coffee retailers and consumers look for certain roasting profiles and most importantly reliability and consistency. Additionally, the shelf-life of roasted coffee is only roughly six months compared to a full year for green coffee, which creates further problems due to long shipping transport time and expensive air cargo (interview C-32). Finally, in the current market structure, roasters from the Global North hold substantial market power and will not cede this to upcoming roasters from the Global South. Nevertheless, aiming for maximal domestic value-addition was the right choice by the Rwandan government. It needs to be acknowledged, though, that the potential is limited.

4.7 Sector Case Study Conclusion

Building on long-standing coffee cultivation in the country, the Rwandan government, in close collaboration with donors, succeeded in revitalising and indeed transforming the coffee sector from growing and processing low-quality semi-washed coffee to producing high-quality fully-washed coffee by establishing a professional domestic coffee-processing sector from scratch within less than two decades. Arguably the most important factor to make this possible was the good fit and fruitful combination of government and donor plans. Providing both the required investment and expertise to build up dozens and then hundreds of coffee washing stations as well as the network to acquire initial sales markets and buyers was effectively done by donors, while the most decisive government actions of convincing a manageable number of domestic traders and entrepreneurs to invest in CWSs as well as making farmers deliver coffee cherries to wet mills were enforceable in a top-down manner. The latter was made easier over time because after overcoming initial challenges, farmers supplying their harvest to CWSs instead of producing parchment coffee themselves was in line with market forces, as it quickly became more profitable. The only resisting factions regarding coffee-processing were locally powerful semi-washed coffee traders who were co-opted by the government to participate in the value addition drive by investing in CWS construction and profiting from it themselves. Therefore, when considering the coffee-processing node in isolation, its transformation constitutes a case of impressive policy success. However, it may also be characterised as having harvested comparatively low-hanging fruits of rather simple (but still labourious) industrial policy implementation.

At the same time, the government failed to raise coffee production levels despite large efforts, which has become the binding constraint for further increasing coffee revenues. The main reason for this failure was that coffee cultivation was too risky and often not lucrative for Rwandan farmers, even when factoring in government subsidies in the form of minimum coffee cherry prices as well as the cost-free provision of mineral fertilisers and seedlings. Farmgate prices still fluctuated substantially due to volatile global prices, and less fickle and generally rather profitable cash crops alternatives (beer bananas and vegetables) existed for many peasants. The combination of supportive interventions, such as predominantly donor-financed farmer education, with some coercive measures, such as prohibiting uprooting and intercropping and monitoring whether distributed fertilisers were actually applied to coffee trees, were insufficient to make hundreds of thousands of peasants put much effort and investment in coffee husbandry given the availability of preferred crop alternatives. Because of the requirement to process cherries a few hours after harvest to produce high quality coffee it was not feasible to import large amounts of coffee cherries from neighbouring countries. A more disruptive approach would have been to change the structure of coffee farming from individual smallholders working on tiny plot sizes towards contract farming or larger coffee plantations. This would have required fundamental land reforms, enormous investments, and the import and/or rapid acquisition of know-how on these alternative farming modes. Instead, the selected strategy to increase coffee production has been the introduction and rigorous enforcement of zoning, which is intended to lead to a collaborative and productive partnership of wet mills and farmers organised in cooperatives and associations. It is unclear whether the policy will have a measurable positive impact on produced coffee volume, but considerable doubt is warranted as the structural dual problem of high risks and mediocre profitability for smallholder farmers is unlikely to be solved.

The necessity to substantially support and subsidise coffee cultivation meant that the government had to concentrate simultaneously on at least two value chain nodes, which decreased the likelihood that it would succeed in either, as both were uncompetitive. Supporting coffee growers meant that processors had to pay high prices for raw material, and as a result, some CWSs stopped accepting cherries as soon as they had collected enough to produce the amount of coffee for which they had sales contracts with buyers. Thus, effective demand for cherries at the imposed price was low in some regions, creating the danger of a vicious cycle. In fact, it can be considered a peculiar industrial policy to maintain a high input price, as a reduction of raw material costs would be expected to provide rents for processors. Hence, many CWSs struggled for some time, became inoperational, changed ownership, received targeted support in the turnaround programme, and/or entered into service provider relationships with exporters. Nevertheless, coffee-processing as a value chain node in the coffee sector was professionalised and as a consequence, coffee export revenues doubled within less than twenty years, while export volumes stagnated. Therefore, the sometimes confused and uncoordinated policy supporting both producers and processors was still quite successful, as it ensured at least a stable amount of annually produced coffee cherries, while it eventually succeeded in having 80% of this volume processed in wet mills, leading to higher prices and revenues, and more professional and efficient coffee washing stations.

However, it appears that the potential of value addition in the coffee sector has been exhausted to a large degree. It may be the case that coffee quality in existing wet mills continues to rise and buyers that are willing to pay respective higher prices are found. It is also possible that CWSs increase their efficiency, earn higher profits, and pay their employees better salaries. Finally, the share of green coffee that is roasted domestically (for export or local consumption) may grow. However, all these avenues provide only limited growth potential for the sector. This means that unless zoning leads to increased coffee production after all or fundamental reforms in coffee cultivation are enacted, the sector cannot serve as a growth engine but will instead be more and more dwarfed by other (agro-based) sectors that grow more rapidly. Considering NAEB’s recent development strategy, it appears that this has been recognized since coffee revenues are expected to increase only a bit to 95m USD until 2024 and they would then only account for 9.5% of agricultural export value (NAEB 2019b). The missing coffee focus in that document may be understood as a de-prioritisation of the coffee sector.

Looking at the coffee industry from a long-term perspective of identifying and fostering growth engines that drive Rwanda’s economic transformation, the sector appears to have been the wrong choice from the start. Difficult global conditions –mostly low and volatile coffee prices that translate to high risk and low profitability for coffee farmers– as well as unfavourable local conditions –mainly the land ownership structure of tiny plot sizes that prevents more professional farming modes– strongly limited scaling up the coffee sector beyond a certain threshold that may soon be achieved. Despite the recent acknowledgement of this structural feature in the agricultural export strategy, substantial efforts are maintained by state actors and donors in support of the coffee sector along the entire value chain. This approach may be criticised as the government’s tendency of trying to do everything at once. However, it is very understandable that the government and donors focused on the coffee sector in the early 2000s and even that they continued on this path in subsequent years, simply because of the existing history, infrastructure, and experience in the sector that –also due to a lack of alternatives– was seen as a promising sector to get agricultural value addition and agro-processing going in the country.

Connecting this chapter's sector case study with the overall argument on economic change in Rwanda, the transformation of the Rwandan coffee sector's processing node provides a clear-cut example of a developmental success story. The ruling elite's political willingness for transformational development and its political power to implement necessary changes could both be observed in the coffee sector. In particular, the government was strongly interested in modernising and professionalising traditional low-value agricultural exports. It had the political power to initiate and implement fundamental changes in domestic coffee-processing (construction of wet mills and farmer delivery to them), and enforce these initiatives against some resistance and non-cooperation of intermediaries and well-established semi-washed coffee exporters. The ruling elite's need for political control could also be found in the coffee sector, one undisputed effect of rigorous zoning is the establishment of structure and order in the countryside. NAEB's annual goals contained the incremental rise of fully-washed coffee, which could only be achieved by a combination of policy measures, including the continued construction of new wet mills and ensuring that farmers delivered sufficient coffee cherries to all CWSs. In general, the Rwandan governance system of top-down implementation in the form of direct state investment, coercing domestic actors into participating in investments, and skilfully capitalizing on good high-level international relations (donors, politicians, and businesspeople) proved to be highly effective. Two exogenous sector-specific conditions played a significant role. First, the existence and quality of very engaged and apt donor programmes was serendipitous. It is not an exaggeration to describe the coffee-processing success story as 'transformation by foreign (donor) expertise, even though it is clear that the entire trajectory was only possible because government and donor interests were almost perfectly aligned. Second, once the infrastructure and supply chain for fully-washed processing had been created and investments had been made, domestic and global competitive forces supported transformation, professionalisation, and efficiency improvements.

At the same time, the limits of the governance approach became visible in the sector's cultivation node, since the structure and practice of coffee husbandry could not be changed despite massive efforts. Providing free trainings, often administered by international NGOs, giving out coffee seedlings, mineral fertilisers, and pesticides for (almost) no costs, and prohibiting coffee tree uprooting and intercropping did not lead to increased coffee production. Even more, some evidence for false *imihigo* reporting regarding newly added coffee plantation area was uncovered, which shows that driving change in agricultural practices could not be enforced by top-down governance, as the processes were too complex.[94]

[94] This finding is elaborated in the later chapter on food crops.

Chapter 5: Tourism and Hotels

This chapter on the Rwandan tourism and hotel industry, as all empirical chapters, intends to first, provide a sector case study on its own behalf with the aim to identify the most important factors that led to tremendous policy success in the tourism sector and made it a growth engine, and second, to gather more evidence regarding the overall research question on structural patterns that explain varied economic performance across sectors. It uses primary evidence from several months of fieldwork and 33 semi-structured interviews, of which 20 were conducted with senior managers and/or owners of a variety of hotels based in Kigali. Secondary evidence is not abundant. In contrast to the coffee sector, only a small number of high-quality reports and even fewer academic works exist and therefore, the chapter has to rely stronger on interview evidence, government reports, and Rwandan newspaper articles. A large majority of the overall existing evidence has been screened for relevant information. Where data quality or availability issues exist, they are mentioned in the respective paragraphs.

The chapter is structured as follows. It starts with a brief depiction of Rwanda’s endowments that make it a promising tourism destination (5.1) and then presents the key economic developments in terms of tourist arrivals, revenues, and employment that have been achieved in recent years (5.2). Next, it explores the post-2000 Rwandan government’s tourism development policy and practice, which led to the experienced substantial growth outcomes (5.3). Subsequently, the evolution of the country’s hotel sector as a key part of the tourism industry is examined in detail (5.4). Finally, a sector case study conclusion is drawn (5.5).

5.1 Natural Endowments and State-Building By-products as a Basis for Tourism

A good starting point for the study of a country’s tourism sector is its natural and acquired endowments. Located in the centre of Africa near the equator, Rwanda’s nature is blessed with a beautiful hilly terrain, pristine lakes, plenty of rainfall, and therefore a foremost green and blooming landscape. Its unrivalled jewel is a population of several hundred mountain gorillas, which can only be found in the Virunga mountains that Rwanda shares with Uganda and DRC and in a close-by tropical forest located fully in Southern Uganda (WWF 2021). Due to impressive conservation efforts, their number has increased from 620 in 1989 to more than one thousand in 2018, of which more than 300 permanently reside in Rwanda (Bizimungu 2019c). The Rwandan part of the Virunga mountains is located in the Volcanoes National Park (VNP). Additionally, Rwanda avails of two other large national parks: Akagera National Park (ANP) in the East, which invites for a ‘classic’ safari with the possibility to observe the ‘Big 5’ (lions, buffaloes, leopards, elephants, and rhinos) as well as hippos, crocodiles, giraffes, and a large number of antelopes and bird species (African Parks 2021a); and Nyungwe National Park (NNP) in the South, which is an ancient rain forest housing chimpanzees, plenty of other wildlife, and invites for spectacular hikes (African Parks 2021b). Despite Rwanda’s small size and extreme population density, its national parks encompass almost 9% of the country’s entire area (RDB 2016). A further feature of the country’s nature are its lakes, dominated by the largest and most developed Lake Kivu on the

Western border and supplemented by the Kigali-adjacent Lake Muhazi as well as the quite remote twin lakes in the Northwest (see also the map of Rwanda in figure 6). Finally, another exogenous attribute of the country is its geographic location in the heart of Africa. While its severe landlockedness is an unfortunate adversity for many economic activities, especially trade and export-oriented manufacturing, Rwanda may serve as an African service sector, logistics, and transport hub for connecting the Western and Northern parts of the continent with the Eastern and Southern ones as well as operate as a bridge between Europe and Southern Africa (RoR 2012, 2020e).

In addition to its exogenous or historically inherited endowments, a few other features relevant for touristic activities emerged within the last two decades as a by-product of state-building and power consolidation efforts of the ruling party. As described in chapter 3, the RPF has created a tightly controlled state that includes a particularly high degree of law and order, especially in towns and the country's only metropolis, its capital Kigali. Continuously patrolled by the well-trained and highly-disciplined police and military, and supplemented by informal patrols and private security companies (Baker 2007), both heavy and petty crime is low, even compared to many European cities. As a consequence, most areas of Kigali are very safe even at night time and for solo travellers, a feature that is extraordinary, especially in comparison with the neighbouring capitals/economic hubs Bujumbura, Dar es Salaam, Kampala, and Nairobi (Usebounce 2021). Going along with physical security is the city's and country's almost impeccable cleanliness, which is not limited to tourist hot spots or central quarters (Bogle 2021). While the enforcement of these characteristics comes with a dark side, e.g. the confinement of street children and other homeless people (HRW 2015), the image it creates with first-time and even regular visitors (tourists, conference participants, and aid workers alike) is very powerful (Quest and Minihane 2021). These and other features make Rwanda a very pleasant country to visit or live in as a foreign tourist or resident.

5.2 Economic Outcomes in the Tourism Sector: Revenues, Arrivals, and Employment

The most straightforward indicator to measure economic outcomes of tourism are the direct tourism receipts earned by Rwanda (figure 23). Starting with a value of 85m USD in 2005, they grew by more than 15% per year to 614m USD in 2019 (using constant 2017 USD).[95] Tourism revenues per capita rose from less than 8 USD to more than 50 USD within the same time frame. While Rwanda's total tourism revenues stayed substantially below those of its neighbours (achieving 45% of Uganda's, 36% of Kenya's, and 24% of Tanzania's levels in 2019), its per capita earnings overtook all three competitors over the last one and a half decades. This is a spectacular growth trajectory, significantly outpacing overall growth, such that the ratio of tourism receipts to overall GDP increased from 2.3% to 6.1% in that time period. However, this ratio is not equal to the actual share tourism contributed to GDP as value-added. Calculating this is a complex endeavour, as the tourism sector is not represented in the

[95] The numbers in this paragraph as well as in figure 24 come from the World Bank, which uses different data and/or definitions than the Rwandan government whose reported tourism revenues are substantially lower through the years. For example, in 2019, RDB reported tourism receipts of 498m USD, 19% smaller than World Bank numbers (RDB 2020a).

internationally standardised national accounts system and has to be calculated using a tourism satellite account (TSA) that requires the regular conduction of specific surveys (Odunga, Manyara, and Yobesia 2020). Within two projects running from 2008 to 2011 conducted by the tourism development consultancy Acorn, the Rwandan government built up a professional tourism statistics system including a TSA (Acorn 2021a, 2021b). As a consequence, it was possible to determine the tourism's sector GDP contribution (as value-added) as 2.1% in 2011 (Acorn 2021b), in comparison to a direct ratio (tourism revenues/GDP) of 4.3%. This number had risen to 2.5% in 2014 (Odunga et al. 2020) and 3.6% in 2019 (RDB 2020b). However, different statistics by the World Travel & Tourism Council indicate that the tourism sector directly accounted for 5.2% of overall GDP in 2018 and in total even for 12.7%, which included indirect contributions such as tourism investment and induced spending of tourism employees (WTTC 2018). In any case, when Covid-19 became a global pandemic in 2020, Rwanda's tourism revenues crashed to 212m USD and may only fully bounce back in 2024 or later (Vanguard 2021).

Figure 23: Rwanda's international tourism revenues, 2005-2019
Source: World Bank data

A second metric often considered is the number of annual tourist arrivals. Official statistics show that already in 2007, Rwanda had 610,000 arrivals, which grew over the years to reach a maximum of more than 1.7m in 2018, amounting to 14% of its total population (figure 24). Breaking down tourist arrivals by category shows that until 2015 the largest two categories have been business travellers (on average 42%) and visitors of family and friends (on average 31%). The former mostly consist of daily border crossers, mostly from DRC, who conduct informal petty trade business. A further distinction between business travellers, conference participants, and people on a governmental or NGO mission was only introduced in 2018.[96] As most travellers within the business and visitor categories spend very little on their trips to Rwanda, the average spending of each tourist results in a small and almost stagnating value

[96] While the latter category is tiny, it is not clear whether the substantial number of expatriates in the country is captured by these and other tourism statistics. Technically, expatriates are foreign residents and are not included in tourist arrivals. If they travel within Rwanda for touristic purposes, they will count towards domestic tourism, which so far is negligible in comparison to international tourism but is hoped to rise substantially. There is no recent data publically available on the number of expatriates living in Rwanda. In 2012, 87,000 foreigners lived in Rwanda, of which 3,700 were non-Africans (NISR 2014). The next census updating these numbers will be conducted in late 2022. Personal experience, however, suggests that expatriates are responsible for a significant share of tourism income in the country, but there is no data to quantify this conjecture.

of 341 USD in 2006 and 375 USD in 2019. Holiday travellers increased from 34,000 in 2007 to 174,000 in 2019. The number of transit passengers is hard to interpret, as there was a change in categorisation in 2016 and as a result, this category massively jumped upwards. As the change occurred only in land transit passengers and as simultaneously the number of 'other purpose' land travellers dropped sharply (see the switch of the yellow and light blue column in 2015-2016 in figure 24), it may simply be an issue of categorisation at border crossings (NISR 2021).[97] The share of Africans among international arrivals is huge (88-89% in 2013-2017), mostly owing to the fact that many visit family and friends or come to Rwanda for (informal) business purposes. Concerning holiday visitors, who are known to generate the most income, the share of Africans is significantly lower but still amounted to 56% on average from 2013-2017. In particular, leisure tourists accounted for 3.5% of all visitors in 2019 but generated 31% of all revenues (Vanguard 2021).

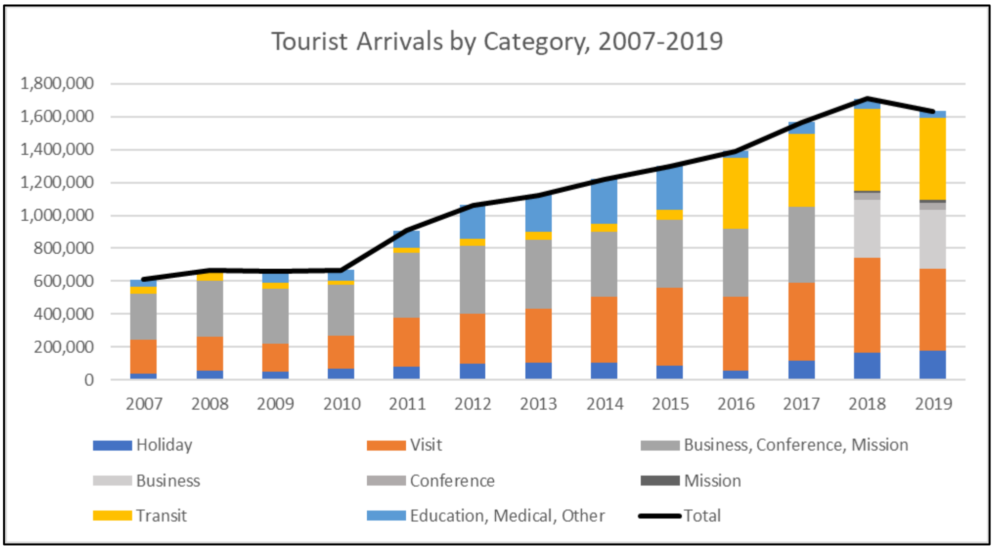

Figure 24: Rwandan Tourist arrivals by Category, 2007-2019
Source: World Bank Data, Statistical Yearbook 2012, 2015, 2020, 2021, NISR 2013, 2016, 2021, 2022

In recent years, a focus on employment creation has emerged in Rwandan policy-making, as it became clear that high economic growth may not automatically create a sufficient number of decent jobs and that a rising number of young adults enter the labour market each year (MIFOTRA 2014). Tourism is seen as an engine in job creation. In 2019, the sector directly employed around 164,000 people, which amounted to 4% of the labour force. The largest shares come from employees in passenger transport and food & beverages (around 40% each), while accommodation accounts for approximately 10%. Annual tourism-related jobs grew by more than 50,000 since 2016 (RDB 2020b).

5.3 Tourism Development Policy and Practice 2000-2019

The Rwandan government realized the country's potential to turn into an upcoming tourism destination early on, once basic security was restored. While Vision 2020 (RoR 2000, 2012) did not yet mention the sector, the first national tourism strategy was approved by the cabinet in 2002 and EDPRS I (RoR

[97] It is noteworthy that World Bank and Rwandan numbers almost exactly match from 2007 to 2017. In 2018 and 2019, Rwandan numbers are significantly higher (0.9-1m more tourists), who appear to be exclusively further road transit travellers.

2007b) named tourism as a key industry in Rwanda's overall service sector-led development strategy. A focus on high-end eco-tourism in contrast to mass tourism was adopted (Kabera 2017; Nielsen and Spenceley 2011). The responsible government organisation was the Rwanda Office of Tourism and National Parks founded in 1974, which was merged into the newly established Rwanda Development Board (RDB) in 2008. Until recently, the Ministry of Trade and Commerce (MINICOM) was also responsible for tourism. There were several strategy updates (tourism policy 2006 and 2009, tourism master plan 2009 and 2014), of which only the Tourism Policy 2009 (MINICOM 2009) is publicly available. EDPRS II (RoR 2013a), NST I (RoR 2017a), Vision 2050 (RoR 2020e), and a flagship study by the World Bank in close collaboration with the Rwandan government (World Bank 2019) all specify tourism as a key industry for economic transformation and job creation in Rwanda both in the short and long term. Additionally, the National Land Use and Development Master Plan (RoR 2020d) is the latest update on the country's tourism strategy that has continuously increased in ambition and sophistication. The following paragraphs discuss the various components of Rwanda's tourism development policy and practice from 2000 to 2019 in chronological and topical order and conclude with a brief outlook on future plans and challenges.

<u>*Gorilla trekking:*</u> After stability was restored in the country, gorilla visits soon became the sole cash cow of tourism revenues. Despite an early realisation of the need for tourism income diversification and the implementation of several initiatives and measures (see below), gorilla tourism remained the largest contributor to overall tourism revenues (Kabera 2017). After territorial security in the Northwest was finally achieved in 2000, the Volcano National Park reopened and gorilla visits skyrocketed from virtually zero to almost 17,000 in 2008. At that time, all available permits were sold[98] and demand outstripped supply (Nielsen and Spenceley 2011). Given the on-going insecurity in Eastern DRC, mountain gorilla visiting is a de-facto duopoly for the Ugandan and Rwandan governments. The latter decided to raise permit prices several times throughout the years. In mid-2007, prices increased from 375 USD to 475 USD (Nielsen and Spenceley 2011), in mid-2012 they rose from 500 USD to 750 USD (Mugisha 2012), and in mid-2017, the government doubled them from 750 USD to 1,500 USD (Times Reporter 2017b).[99] Numbers of annually sold permits are available for 2008-2010 and again for 2016-2019 (figure 25a), revealing a slow upwards trend. The number of visitors to the VNP (of which gorilla trekkers are a large subset) may serve as a proxy for intermittent years. Overall, they rose, too, but exhibit a dent from 2012 to 2013 at the time when prices increased. In 2016, roughly 23,000 gorilla visits took place. This overall rise is consistent with the growth of the number of gorillas located in Rwanda (265 in 15 families in 2009 to 305 in 18 families in 2014 (NISR 2016)). The 2017 price hike

[98] The number of possible daily permits can broadly be calculated by the number of habituated gorilla groups (i.e. those who have become familiar with regular human contact) multiplied with the number of people in one visiting group given that each gorilla group can be visited only one time per day.

[99] These prices apply to foreign visitors. Foreign residents and Rwandan citizens pay substantially less but make up a minority of all permit buyers. As a consequence, the actual average price is a few percent smaller than the prices listed above.

had a more significant negative impact on the number of permits sold.[100] Interestingly, given the Rwandan government's quasi-monopolist market power in this domain, its total direct revenues from permit sales increased from 34.3m USD in 2016-2017 to 44.3m USD in 2018-2019 in a textbook manner (figure 25b). However, there are large indirect revenue flows related to the number of gorilla visitors, namely accommodation and other tourist spending, estimated to amount to at least the permit price (interview T-02). Data to capture the price hike's overall economic effect is not available but a significant negative effect is plausible. As a consequence, the policy change was criticized by tour operators, international development partners (interviews T-01, T-02), and the World Bank (2019). Permits sold did increase again in 2019 before they dropped to extremely low numbers due to Covid-19 in 2020 and 2021. It will be an interesting question whether the number of permits sold will rise again to earlier levels or even approach the current capacity of 35,040 spots that exist according to the Rwandan government (RDB 2021b). While Ugandan prices are 700 USD and Congolese prices are 400 USD, it takes several more hours to get to the gorillas in the former and the security situation in the latter remains volatile (Karuhanga 2016). It may therefore be possible that global demand for gorilla trekking after Covid-19 will rise to sufficient heights for Rwanda to sell most or all of its permits in a few years.

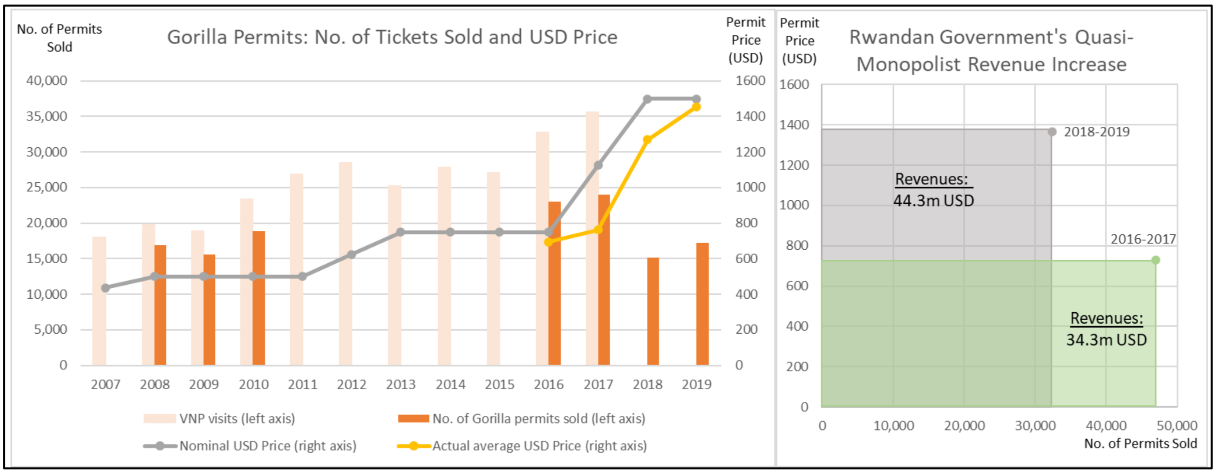

Figure 25: Gorilla Statistics: Permits Sold, Permit Price, Revenue

Source: Statistical Yearbook 2015 (NISR 2016), RDB Park Statistics 2010 (2011), New Times (2019c, 2020a)

Professionalised promotion measures have been incrementally accompanying gorilla tourism. In 2005, the annual baby gorilla naming ceremony *Kwina Izina* was launched, where prominent Rwandans and foreigners (for example Louis van Gaal, Naomi Campbell, and Ne-Yo in 2019) pick names for all newly-born gorillas of the previous year (Bizimungu 2019d). The event draws a significant amount of publicity, President Kagame often attends himself, and it also functions as a fundraiser for gorilla conservation. In general, Rwanda has taken gorilla conservation very seriously from the beginning, understanding that a healthy and growing gorilla population is the key ingredient for a thriving tourism sector and a positive

[100] This finding is robust, even though inconsistent government numbers from two sources obscure this. According to the New Times, permits sold dropped to 10,200 in 2017 and rose again to 15,100 in 2018 (Bizimungu 2019e). However, according to RDB's annual report 2019 (RDB 2020a), 2017 sales even slightly increased to 24,000, which was because 20,700 tickets were still sold at old prices. In figure 25a, the latter numbers were used, as they come from a more reliable source and seem more plausible. Anyway, lower 2018 numbers reported by the New Times, which sourced its information directly from RDB can be considered reliable and are in line with reported 2019 numbers of 17,200 sold permits (Bizimungu 2020a).

public image. To accommodate the expanding ape groups, the government recently announced the expansion of VNP by 10,000 ha, of which about 60% are planned to function as a buffer zone (Ngounou 2022). A further aspect of Rwanda's sustainable and holistic gorilla trekking programme is the inclusion of local communities into the increasing financial benefits by creating employment opportunities and a revenue-sharing mechanism, which disburses 5-10% of annual earnings to these communities and has financed hundreds of local development projects (Komugisha and Nicolson 2014; Nielsen and Spenceley 2011).[101]

Diversification of wildlife tourism: In recent years, Rwanda has worked hard to attract tourists for non-gorilla wildlife experiences. The goal is that the country matures from a three-day gorilla add-on in East African safari packages to a stand-alone tourism destination (English, McSharry, and Ggombe 2016). Apart from promoting golden monkey trekking at VNP, the Akagera National Park has been substantially upgraded, and two further national parks, the Nyungwe National Park in the Southwest and the Gishwati Mukura National Park (GMNP) in the West have been established in 2005 and 2017, respectively. Wildlife in ANP had suffered from unsustainable game hunting, the civil war and its aftermath, and as a consequence, several species had gone extinct there. To increase the park's attractiveness, seven lions were reintroduced to the park in 2015, which have since multiplied to 40 exemplars, and 53 rhinoceroses were imported in three instalments from 2017 to 2021. The total number of all large mammals increased from less than 5,000 in 2010 to over 13,000 in 2018 (African Parks 2021a). Already in 2009, the South African NGO African Parks Networks took over ANP's management for twenty years. This appears to be working well as the same arrangement was established for NNP in 2020. The number of visitors in both parks has substantially grown over the years (figure 26), with ANP visitors even surpassing VNP tourists since 2013. Overall park visitors reached an all-time high of over 110,000 in 2019 before they plunged to 36,000 in 2020. However, direct revenues from ANP and NNP visitors are negligible in comparison to VNP income, as in 2017, 92% of all entrance and trekking fees came from Virunga, 5.4% from Akagera, and 2.7% from Nyungwe. An average tourist spent 481 USD for visiting VNP, 23 USD in ANP, and 35 USD in NNP. Akagera entrance fees were 50 USD for international visitors and 7.50 USD for Rwandans and in 2010, 50% of all Akagera visitors were Rwandan (while they only made up 5% of all Volcano visitors). Several trekking services are offered but the average tourist spending suggests that they are not used by most visitors. The entrance to Nyungwe is free, various trails (e.g. a Canopy Walk for 60 USD) or trekking (e.g. chimpanzees for 90 USD) can be booked. Having opened in 2020, GMNP is the fourth and smallest Rwandan national park, consisting of the last remnants of the largely cleared ancient Gishwati and Mukura forests. It houses chimpanzees, monkeys, and other wildlife and is jointly managed by Botswanan eco-tourism provider

[101] Adverse effects, such as forced relocations or exclusive eligibility requirements, have not been studied and therefore, the net effect of gorilla tourism on local communities both in terms of developmental outcomes and rights cannot be estimated (Munanura et al. 2016; Spenceley et al. 2010).

Wilderness Safari, a Rwandan NGO, and RDB. A very sophisticated and detailed GMNP masterplan has been launched in 2018 (RoR 2018) as part of the overall Kivu Belt tourism development initiative.

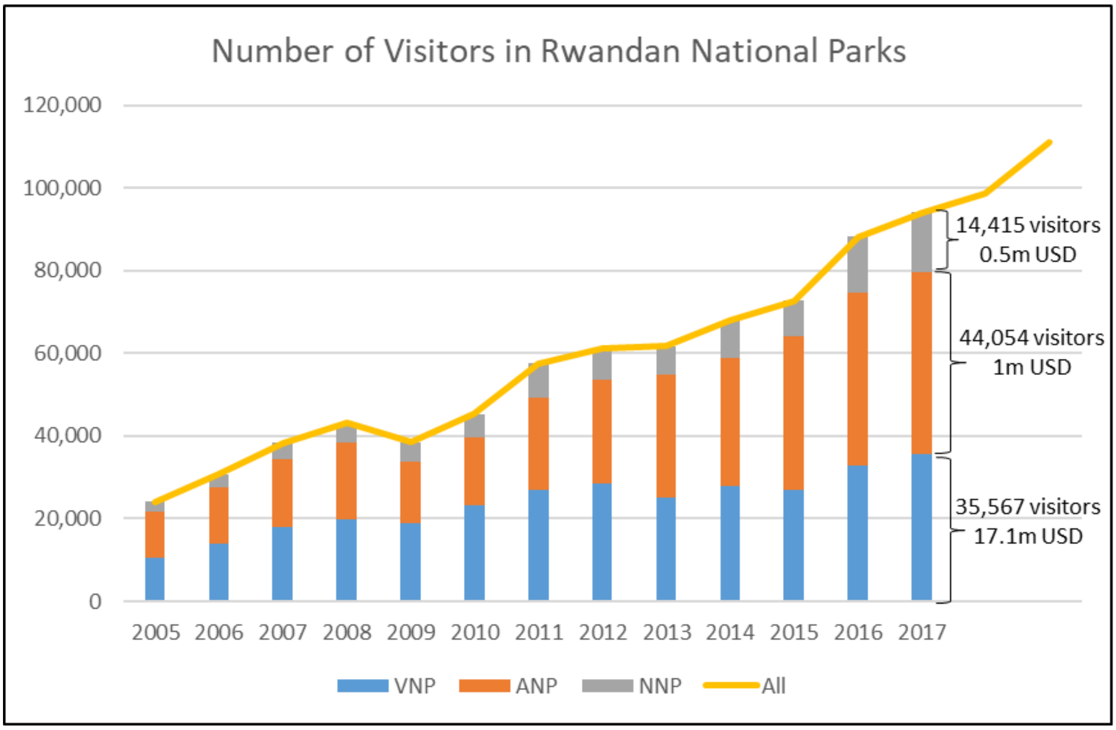

Figure 26: Number of Visitors in Rwandan National Parks, 2005-2017
Source: Statistical Yearbook 2021 (NISR 2022), RDB Annual Report 2017 (RDB 2018)

Diversification towards MICE tourism: While the idea of making Rwanda a regional hub for business and conference tourism already existed in the initial years of tourism planning, a reaffirming feasibility study was conducted in 2012 (interview T-05) and several months later, RDB published its meetings, incentives, conferences, and events/exhibitions (MICE) tourism strategy, outlining its strategic approach and goals (RDB 2014). As is common in Rwandan strategies, it envisioned skyrocketing growth rates of the number of delegates and corresponding receipts, averaging more than 33% p.a. from 2012 (estimated numbers: 12,200 delegates directly bringing in 32m USD) to 2021 (projected numbers: 163,000 delegates spending 571m USD). These projections, however, need to be understood as a best-case scenario, where several optimistic assumptions hold true. A much less ambitious baseline scenario assuming no government investment projected 43,000 delegates in 2021 directly spending 113m USD. The overall long-term vision of the strategy document saw a great opportunity for Rwanda to professionally enter the global MICE market by first establishing itself as an East and Central African hub for hybrid conferences using the latest information technology and second becoming the most prominent African high-end event and incentives destination. Regarding conferences, a strategic focus was put on attracting large international public associations as convenors, which focus on a range of topics that are positively associated with Rwanda, such as good governance, health, gender, security, and development in general. Furthermore, acquiring a share of the (regional) corporate incentive market was seen as primarily constituting a (considerate) marketing challenge, and the establishment of more domestic events was seen as a third strategic pillar on which to concentrate (table 8).

Rwanda's MICE Strategy			
Strategic Long-term Goals	Become East and Central African hybrid conferences hub	Become the most prominent African high-end events and incentives destination	
Strategic Focus	Aquire conferences of international associations on topics where Rwanda excels	Acquire a share of the (regional) corporate incentive market	Create and expand own domestic events (with international audience)

Table 8: Goals and Focus of Rwanda's MICE Strategy
Source: Rwanda MICE Tourism Strategy (RDB 2014)

Several success factors were seen as 'fundamental' or 'important' in order for the entire sector and strategy to take off. Of the eight fundamental requirements, one (government support) was already fulfilled, five others (stability and security, easy accessibility, accommodation facilities, stakeholder partnerships, and a convention bureau) were seen as partially developed, and two further ones (meeting facilities and ICT infrastructure) were considered hardly existing. Important factors with first priority were service quality, service mentality, bottom-up development, and value for money ratio, of which only the latter was judged to be at least partially satisfactory (table 9).

Factors for Successful Implementation			
Success Factors	**Importance**	**Prio-rity**	**Degree of Achievement**
Government support	Fundamental	1	Full
Stability & security; Easy accessibility; Accommodation; Convention bureau; Stakeholder partnerships		1	Partial
Meeting facilities; ICT infrastructure		1	Hardly
none	Important	---	Full
Value-for-money ratio		1	Partial
Marketing; Leisure tourism offers		2	
Service quality; Service mentality; Bottom-up development		1	Hardly
Branding; ICCA ranking		2	
Public transport; Host regional HQs of international organisations and firms		3	

Table 9: Factors for Successful Implementation of Rwanda's MICE Strategy
Source: Rwanda MICE Tourism Strategy (RDB 2014)

Within a decade, several important milestones have been reached, lessons been learned, and huge challenges emerged, whose successful tackling is paramount for continued success in the post-Covid future. First of all, a convention bureau that coordinates the necessary multidimensional efforts of various stakeholders has been established. In 2014, a MICE division was opened within RDB under the tourism department but this was turned into a separate entity, the Rwanda Convention Bureau (RCB), in 2016 (interview T-31). A five-year business plan for 2018-2022 was created that contained much more realistic annual MICE revenue targets (e.g. 85m USD in 2019). In 2019, RCB already employed 42 people. It pursued two main strategies to get conferences to take place in Kigali. First, it bid on calls of international associations (in line with its strategic focus). It won these bids in approximately 25% of the cases (interview T-05). As a result, Rwanda ranked third in Africa (after South Africa and Morocco) in 2017 and 2019 with 21 and 32 hosted association meetings, respectively (ICCA 2018, 2020). While this is certainly a success, it is simultaneously misleading as it represents only a small portion of all relevant conferences and Rwanda's neighbours still hosted more conventions across all categories (interview T-05). Nevertheless, Rwanda's top rank has been used as a marketing tool. A further success factor was the eventual completion of the 300m USD Kigali Convention Centre (KCC). The idea had already existed in 2004, construction commenced in 2009, and after substantial cost increases, delays and a change of contractors, it was finally opened in mid-2016 (four years after the initial due date) to host that year's African Union summit (Behuria and Goodfellow 2019; Opobo 2016). The KCC is a bombastic state-of-the-art conference location in the heart of Rwanda's capital with the capacity to host 5,000 people. It is attached to a five-star RadissonBlu hotel (see next section) and owned by the Rwandan government, CVL, and RIG. Rwanda has already hosted several esteemed conferences and meetings, such as the World Economic Forum for Africa in 2016, the International Conference on AIDS and Sexually Transmitted Infections in Africa with over 7,000 participants in 2019, and the annual Transform Africa summit by Smart Africa Alliance with close to 20,000 accumulated delegates since 2013 (RDB 2020a). Furthermore, the Commonwealth Heads of Government Meeting took place in the KCC in mid-2022 after being postponed twice due to Covid-19 (Mwai 2022). A recent remarkable implementation success was the erection of the indoor Kigali Arena in record time within seven months in 2019. Its construction cost 100m USD and the arena serves to diversify Rwanda's MICE infrastructure, is able to hold 10,000 visitors, and is used, among others, for continental sports events and music concerts (Mwai 2019).

Regarding the number of overall MICE delegates as well as MICE revenues, substantial and continuous growth was accomplished until 2019. The number of delegates almost and the earned revenues more than quadrupled from 2009 to 2019 (figure 27). However, delegate numbers stayed strongly behind the projected large-scale investment scenario (but outperformed no-investment projections) (figure 28a), while MICE revenues did not even reach no-investment expectations (figure 28b).

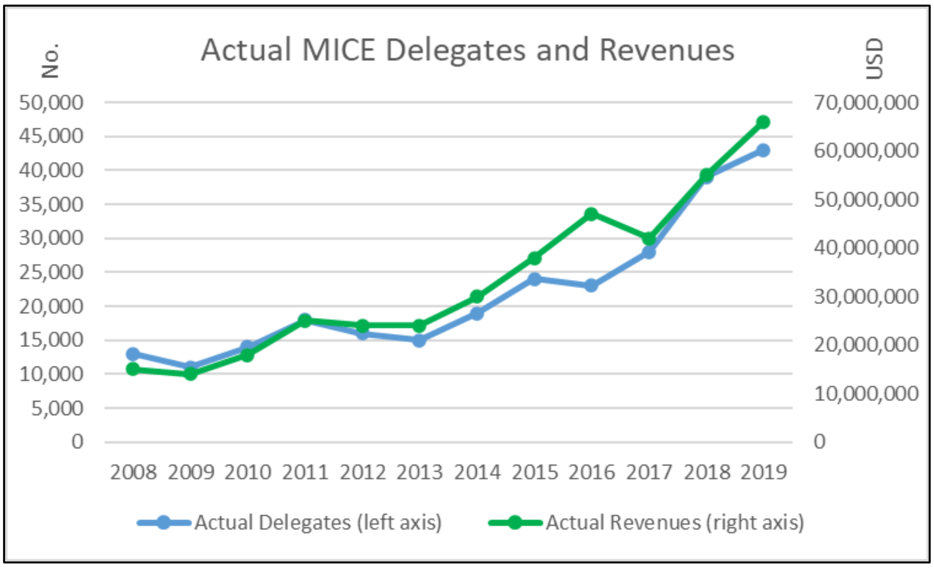

Figure 27: Actual number of MICE delegates and earned MICE revenues in Rwanda, 2008-2019
Source: RDB Annual Reports 2017 and 2021 (RDB 2018, 2022)

Hence, it turned out that keeping up two-digit growth over a decade by attracting both large-scale conferences as well as small-scale meetings was much harder than anticipated and required immense efforts. Establishing RCB and then scaling up its capacities took longer than planned and building the necessary infrastructure suffered from delays as well. Establishing Rwanda as a corporate incentive destination was not yet pursued in earnest and did therefore not materialise. It is evident that the country strives to become an ICT location: it pushed for the installation of reliable mobile and fast internet connections throughout the country, it is fostering a small ICT-focused start-up network, it wooed Carnegie Mellon University to open a campus in Kigali, and it build the technology cluster Kigali Innovation City, which is intended to become a regional ICT hub (RDB 2017a). However, these efforts were not yet sufficient to realise its vision of becoming a *hybrid* conference hub, as its MICE tourism almost came to a complete halt with the pandemic outbreak.

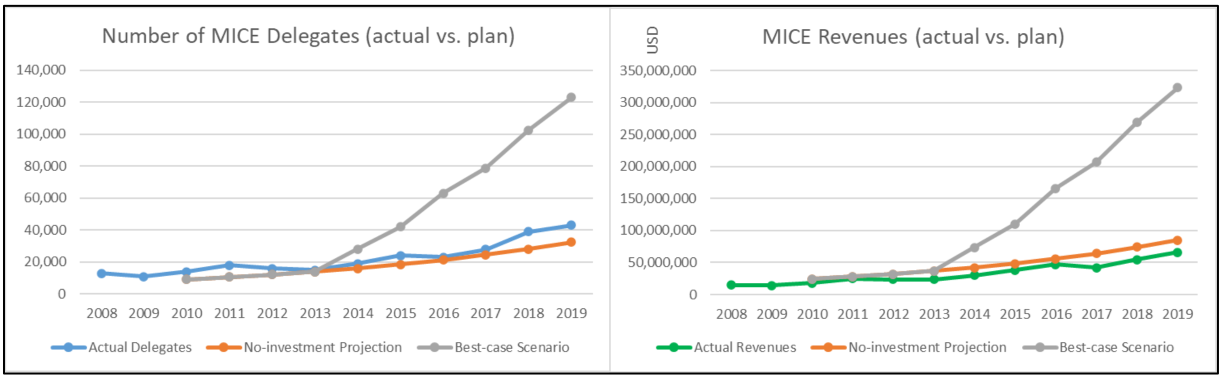

Figure 28: MICE Delegates and Revenues (actual vs. plan), 2008-2019
Source: RDB Annual Reports 2017 and 2021 (RDB 2018, 2022), Rwanda MICE Tourism Strategy (RDB 2014)

Further diversification of non-business tourism: In recent years, the Rwandan government has commissioned international tourism consultancies such as Horwath HTL to develop new regional or activity-specific tourism sub-plans as well as new tourism products. A hub-and-spokes model has been brought forward, where Kigali serves as the hub and several spokes designed as themed corridors lead to various destination management areas (DMAs). In particular, there is an eco-agro corridor leading to the North-western Volcanoes DMA, a heritage corridor leading southwest to the Nyungwe DMA via the cultural hotspots Nyanza and Huye, and a scenic corridor leading westwards to the shores of Lake Kivu in the Kibuye DMA. Along the Kivu belt, there is the community corridor that connects Gisenyi DMA in the North with Nyungwe DMA in the South. Finally, there is also Muhazi DMA and Akagera DMA (Horwath HTL 2013; RDB 2016). Several activities, such as adventure tourism, golfing, and hiking and cycling along the Congo-Nile trail have been designed. Furthermore, plans to establish medical, cultural, and religious tourism are in various stages of implementation. These initiatives can be understood as aiming for Rwanda to become a stand-alone tourism destination for high-end travellers eventually rivalling Kenya or Botswana, but compared with the status quo of its capabilities and performance these are only dreams lying in the not-to-close future (even without the disruptions caused by Covid-19). Rwanda needs to get several crucial things right first (see outlook sub-section below); otherwise these plans may turn into expensive illusions.

Transport infrastructure: Rwanda has been working heavily on improving its transport infrastructure. First, it continuously expanded its tarmac road network from 1,184 km in 2009 (NISR 2011) to 5,229 km in 2020 (NISR 2022). It is noteworthy that road quality and traffic flows in Rwanda are superior to its neighbours. Sometimes taken for granted by residents, it is remarkable that potholes (on tarmac, i.e. all primary and increasingly secondary, roads) and traffic jams barely exist, making attending a conference in Kigali a quite comfortable and relaxed affair. Second, there have been numerous attempts by Rwanda and its neighbours to make progress on an East African railroad network connecting Kigali with Dar es Salaam in a Southern line and with Mombasa via Nairobi and Kampala in a Northern line. However, both projects have stalled several times, with the latest update given in 2018 (Karuhanga 2018). Third, looking at the direct means to bring in more affluent leisure and business tourists, the government has resurrected and massively expanded the national airline, is in the process of establishing a huge state-of-the-art airport, and intends to establish or professionalise regional airstrips.

The country's airline carrier, which had stopped operating during the genocide, was taken over by the current government in late 2002 and was rebranded in 2009 to become RwandAir (Times Reporter 2014b). In its initial years, it slowly grew to encompass more regional destinations and operate a handful of airplanes. From 2010 onwards, the company expanded more rapidly. It multiplied its annual passengers from 130,000 in 2010 (Mugisha 2013) to 1.2m in 2019, which made it rank fifth in Sub-Sahara Africa, but it remained substantially behind its regional competitor and benchmark Kenya Airways with 4.4m passengers (AFRAA 2021). RwandAir's passenger load factor was 63% in 2019, while Kenya Airways achieved 77%. It started to pursue cargo transport in 2017 (84t) and grew its tonnage to 3,100t in 2019 and 3,900t in 2021 despite the pandemic (RDB 2022). Its number of aircraft increased from eight to twelve, and it flew to 33 different destinations located in Belgium, China, India, Israel, Qatar, UK, United Arab Emirates, and 22 African countries (Flight Connections 2021), of which some are currently suspended due to Covid-19. Like the overall African airline industry, it has not been generating profits but losses of 171m USD in 2018 (RwandAir 2021). The airline used to be fully-owned by the Rwandan state but Qatar Airways bought a 49% stake in the company in early 2020 (Darras 2020). The government understands RwandAir as a strategic asset essential for its long-term goal of becoming a service sector-led middle income country (Behuria and Goodfellow 2019). Simplistic calculations on direct financial losses are therefore not expedient.

A similar logic may be applied to the country's largest infrastructure project to date: the construction of Bugesera international airport. The initial design was finished in 2010, construction began in 2017, and the conclusion of the first phase of the airport had to be postponed several times that included a change of the construction company (The East African 2016). In late 2019, in conjunction with the Qatar Airways-RwandAir deal, Qatari investors also acquired a major stake (this time 60%) in the airport. According to current projections, it is scheduled to open in 2023. Over the years, the estimated costs as well as the annual passenger capacity has risen substantially; the former from 800m USD to 1.3bn USD and the latter from 4.3m to 7m in the first phase and up to 14m in the second phase (Al Jazeera 2019). As a benchmark, Kenya's main airport, which is currently East Africa's flight hub, served 6.5m passengers in 2019 and has the capacity to handle one million more (Andae 2019). Actual flight passengers in Rwanda reached 1.2m in 2019 (MININFRA 2020).

Human capital and skills: Inadequate skills of employees has been one of Rwanda's largest weaknesses in tourism and other industries for quite some time. This becomes evident in government analyses and corresponding skills-building strategies and measures (RDB 2012b, 2019b, 2020b), virtually every interview with hospitality managers and sector experts (e.g. interviews T-01, T-02, T-03, T-06), and in daily personal experiences in restaurants, hotels, and any other tourism-related facility. Given the country's inexperience with the sector until recently, the general depletion of human capital because of the civil war and its aftermath, and the difficulties in quickly rebuilding an education system fit for purpose, this is not surprising. Hence, a skills shortage is a major bottleneck in many (service) industries (Kabera 2017:38). This is why there is a skills department in RDB including a Chief Skills Officer (interview M-13) and regular skills audits are being conducted in various economic sectors. Informants state that tourism students have hardly been learning any applicable knowledge or skills in their studies and that almost all relevant competencies are exclusively acquired on-the-job (interviews T-04, T-06). Skills acquisition often fails due to the inadequacy of curricula, the bad quality of teachers, and the lack of funds.[102] A major initiative in Rwanda's hospitality sector is the Mastercard Foundation-funded 50m USD project *Hanga Ahazaza* that runs from 2018 to 2022 and aims to improve tourism education quality in the country as well as train 30,000 youths to become employable in the sector (Mastercard Foundation 2021). In late 2019 (i.e. two years after kick-off), senior implementation partners lamented an unclear overall approach and structure as well as a problematic combination of high pressure, strict guidance, and little money to revise tourism and hospitality curricula leading to poor results (interview T-06). Some hotels state that formal education does not mean anything to them and that they instead make hiring decisions entirely based on attitude (interview T-07). In the meantime, a few high-quality private tourism education institutes have opened in Rwanda, namely the Akilah Women's Center and Vatel Hospitality Management School. A further initiative, in which Swiss-based Les Roches (where several Rwandan senior hotel managers have studied) would manage a new hospitality school in Kigali, failed due to unresolved issues (Nkurunziza 2019). It is clear that both improving the general level of tourism education and producing a substantial number of employable graduates will take some time. While human capital in the tourism sector may be accumulating, senior manager jobs (and sometimes even junior ones such as waiters) are often filled by (African) foreigners or foreign-trained Rwandans (interviews T-04, T-06, T-23, T-28). Furthermore, most interviewed non-Rwandan sector experts explained at length how Rwandan managers and employees of hotels, restaurants, and other tourist facilities lacked the tacit knowledge of how affluent tourists think and what they value. Examples include why people like sunsets or sleeping in a tent. They reasoned that this was a structural constraint responsible for a lack of progress in terms of service professionalisation (interviews T-01, T-02, T-06).

[102] A telling example is that culinary students are required to bring their own cooking ingredients (such as a chicken) but often cannot afford them and therefore cannot practice meal preparation (interview T-06).

Marketing: Rwanda has engaged in several costly, high-profile and sophisticated tourism promotion campaigns, whose economic impact and therefore its cost-benefit ratio is currently not measurable. Most prominently, Rwanda signed a three-year 39m USD deal with English football club Arsenal London to become its jersey sleeve sponsor in 2018 (Arsenal 2018). This has not been planned by RDB or any other Rwandan organisation but occurred on the direct initiative of the President, who is known to be a fervent supporter of the club (Reyntjens 2018c, interview T-04). It has drawn considerable discussion and controversy in the British yellow press, for example in the form of the argument that British tax payer money is flowing into the English Premier League via the UK's aid support to Rwanda (Craven 2018; Dale 2018; Little 2018). The Rwandan government has aggressively argued back that anyone criticising the deal does either not understand the basic mechanism of advertising or wishes Rwanda to stay poor (Kaschel 2018). In late 2019, a second similar but smaller deal with French football club Paris Saint Germain (PSG) was signed (Reuters Staff 2019). The Rwandan state has also hired international public relations agencies to polish their general image (York 2012), which is evidently crucial for sustained success in the tourism industry, especially in light of regular reports on its authoritarianism and political repression. Furthermore, conservation efforts are not only conducted for genuine ecological sustainability concerns but are also marketed professionally to establish Rwanda as an eco-tourism hotspot. Another instrument is the use of globally famous celebrities as testimonials. Through personal contacts of the President, via the deals with Arsenal and PSG, as part of the gorilla naming ceremony, and in other arrangements, prominent figures such as Ellen DeGeneres, Idris Elba, and Naomi Campbell, football trainers and players Arsène Wenger, Louis van Gaal, Didier Drogba, David Luiz, Sergio Ramos, and Julian Draxler, several African stars, and many others have been visiting Rwanda and often reported on their social media accounts about their unique experiences. A reportedly impactful other measure is the requirement for all Rwandan government employees travelling abroad to promote Rwanda as a MICE tourism destination and to acquire international events (interview T-05). Finally, more traditional promotion measures such as exhibiting on travel fairs have been conducted successfully as well, where the Rwandan booths has won several prices (Mkenya Ujerumani 2014; Mwai 2017b; Satguru Travel 2019).

Outlook – Long-term Plans and Challenges: In line with the extremely ambitious Vision 2050, Rwanda's strategic long-term tourism plans project a 10% direct contribution to the country's GDP in 2050, amounting to annual tourism revenues of 27.5 billion USD (RoR 2020e). This would require an average annual sector growth rate of 13.6% from 2018 to 2050. These receipts are intended to mainly come from MICE (25%), wildlife (20%), cultural and historical (15%), water-based (15%), and adventure tourism (10%). 64% of income is supposed to come from international travellers and 36% from domestic tourists (RoR 2020e). This is to be achieved by making districts and cities responsible for their respective tourism attractions and an expansion of the number of DMAs as well as the attractions within them. A (sole) focus on high-end tourism appears to remain, as attracting middle segment customers is mentioned nowhere, which is considered a fundamental strategic mistake by tourist experts (interviews T-01, T-02). The expansion plans for RwandAir as well as the size of the new airport described above fit well within these gargantuan development plans. All of it demonstrates the extraordinary ambition of the ruling elite, which again shows both their ability for visionary long-term thinking and their willingness to take on the substantial risk that these projects and with them the overall transformation strategy may fail. Critics may accuse the government and President Kagame of megalomania and pursuing vanity projects (Kayumba 2019), but understanding them as part of a large-scale gamble to push Rwanda out of abject poverty that may or may not pay off does a better job in explaining the underlying rationale. Covid-19 has of course undermined the immediate goals set for the early 2020s but there is hope that the pandemic has merely put a dent in the country's tourism development and delayed its timeline by a few years. Still, the chances of actually reaching the stated goals appear infinitesimally small, as it is unclear where the accelerating two-digit growth rates (even disregarding Covid-19) would come from. It appears that growth projections assume a full take-off to occur soon but the MICE growth trajectory has shown that this is not realistic. The Rwandan leadership and many civil servants argue that (over)ambitious goals 'keep everyone on their toes' and push them to put in the highest efforts (Chemouni 2019). While this may or may not be true (as psychologically adverse effects or perverse incentives may play a role as well), both the Rwandan ruling elite and its bureaucracy feel that they have no other choice than to try and realise their goals as best as possible by implementing their plans step by step and year by year, adapt the policies where necessary, and see where it takes them.

5.4 Constructing, Operating, and Professionalising Hotels

In any country, the hotel industry is a central and formative part of its tourism sector, as hotels attract a large share of foreign and domestic investment, earn a significant percentage of revenues, and constitute an important part of tourists' experience in and satisfaction with a visit to a particular destination. Along with Rwanda's tourism industry, the country's hospitality sector grew substantially over the past two decades, using the multiplying number of hotels and hotel rooms as a metric. According to interviewed sector experts, there were 600 proper hotel rooms in Rwanda in 2003 (interviews T-05, T-28). A different source estimates the number of hotel rooms at international standards available in the country in 2007 as only 300, which rose to 6,500 in 2013 (The East African 2015). Official Rwandan statistics report 78 hotels in 2008, including all motels and guest houses (NISR 2010)[103], rising to 188 (with close to 4,000 rooms) in 2009 and 375 (with 6,800 rooms) in 2012 (NISR 2013b). In 2020, there existed 870 hotels with 17,000 rooms in the country (NISR 2021). Throughout the years, the share of hotels (and hotel rooms) located in Kigali rose from 38% (and 43%) in 2009 to 47% (and 54%) in 2020 (figure 29).

After the genocide, only four hotels with international standards existed in Kigali: the famous Hôtel des Mille Collines, Hôtel des Diplomates[104], Umubano Hotel, and Chez Lando (interviews T-25, T-28).

[103] Early numbers are not very reliable, as available data is patchy and the included accommodation categories are not clear.

[104] Mille Collines and Hôtel de Diplomates were both built and owned by the Belgian national airline Sabena.

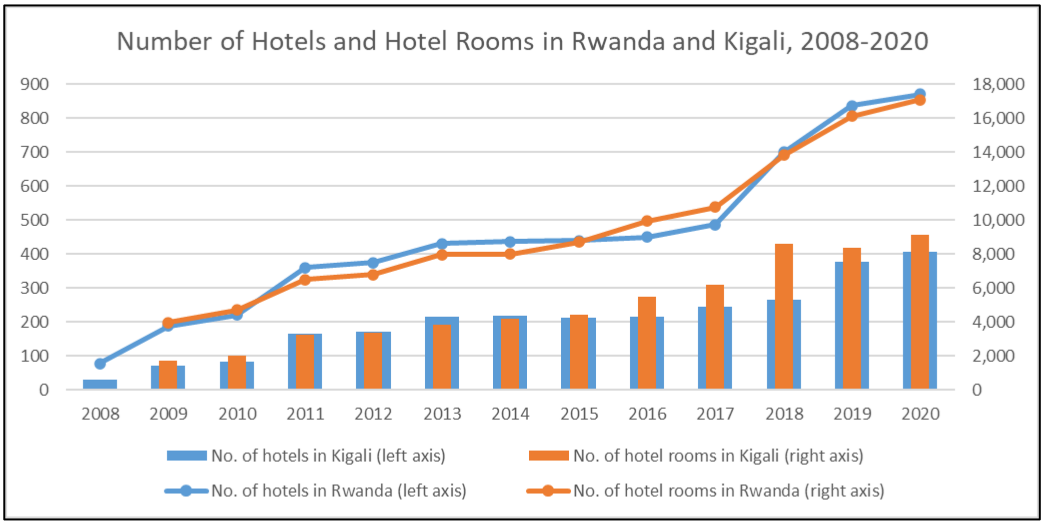

Figure 29: Number of Hotels and Hotel Rooms in Rwanda and Kigali, 2008-2020
Source: Statistical Yearbooks 2010, 2012, 2018, 2021 (NISR 2010, 2012, 2018, 2021)

From 2000 to 2009, 700m USD were invested in Rwandan hotels and restaurants, of which 64% were foreign direct investment (constituting a fifth of all FDI in that period) (MINICOM 2009). Hotel modernisation and the erection of new high- and middle-class accommodation facilities was spearheaded by the Rwandan government's own investments as well as its push for domestic entrepreneurs –both high-level politically well-connected and more middle-segment investors with some funds to spare– to construct their own hotels. Its ignition occurred in 2002, when the government had the Hôtel des Diplomates demolished and a five-star hotel built on the premise with its own funds (via Prime Holdings), acting against donor advice in 2002 (UNCTAD 2006a). It also refurbished a four-star hotel at Lake Kivu in Rubavu. Both hotels' management was taken over by South African Southern Sun in a fifteen-year contract and they were rebranded as Kigali InterContinental Hotel and Kivu Sun Hotel, respectively (Behuria 2015b).[105] Already in 2006, the government and Southern Sun parted ways, and in 2007, the government apparently sold both hotels to the Tourism Promotion Services (TPS) subsidiary of the Aga Khan Fund for Economic Development, which runs several hotels under the brand name Serena.[106] As a consequence, the hotels were renamed Serena Kigali and Serena Lake Kivu and have operated under these labels ever since. In 2008, 20.8m USD were invested in further upgrading, partially funded by the International Finance Corporation (IFC 2008; ODI 2012). Mille Collines, which is a four-star hotel, was initially refurbished by Sabena but then sold to Rwandan diaspora billionaire Miko Rwayitare (acquiring 89%) and two Rwandan government entities (buying the remainder) in 2005 (Majyambere 2005). Since Rwayitare's death in 2007, the hotel is owned by his wife, who has invested substantial amounts in continuous improvement (interview T-20). IFC also invested in it (IFC 2008).

[105] Southern Sun manages the South African hotels of the British InterContinental group, which is why the Kigali hotel got this prestigious branding.

[106] However, the premises and buildings of the two Serena hotels were not sold to TPS but retained by the Rwandan government. TPS leased them for 15.5m USD for thirty years in 2007 and the Rwandan government reportedly received 10% of gross sales each year (interview T-28). While TPS East Africa indicates full ownership of most of its hotels, it reports only a 20% share in the two Rwandan ones (TPSEA 2014). Therefore, while it is not possible to fully crosscheck this information, there is plausible evidence that the two Serena hotels in Rwanda are not owned by TPS but by the government and that it only privatised their operation.

From 2014 to 2016, the hotel was managed by Kempinski and accordingly rebranded. Already built in 1978, Hotel Umubano was majority-owned by the Libyan government (60%) with the remaining 40% belonging to the Rwandan state. In 2001, French Accor took over the three-star hotel's management (UNCTAD 2006b). It went through several crises and ownership changes over the years and is currently up for sale.[107] Finally, Chez Lando is a domestically-owned hotel of genocide survivor Anne Marie Kantengwa, who lost her entire family in the genocide and inherited the hotel from her brother (Times Reporter 2012b). It was partially destroyed in the civil war, then rebuilt, and reopened in 1996. It was expanded several times and operates on a three-star basis without having been officially rated by RDB (interview T-25).

In the early 2000s, many domestic entrepreneurs invested in the construction of new hotels throughout the country, but mainly in Kigali, taking out large loans with high interest rates (18-25% p.a.) to do so (Gatsinzi and Donaldson 2010). This occurred as a reaction to the President's call to seize this opportunity backed by the government's projections of strongly growing tourism activities in the country (interview T-05). It can be described as a similar type of herd behaviour as observed in CWS construction (see chapter 4). As hotel room capacity soon outgrew demand, occupancy rates were low and some hotel owners could not afford their periodical loan payments anymore, such that banks threatened to seize their hotels as collateral and auction them off for prices presumably significantly under market value. About 20 medium-sized hotel owners, organised in the Rwanda Hotel Group (RHG), wrote a letter to the President asking him for declaring a grace period, reducing interest rates, and setting up a hotel guarantee fund (The East African 2015, interview T-28). They claimed that 100 hotels were under threat to be auctioned and this number was widely reported (Behuria and Goodfellow 2019; Gahigi 2015) but it was actually never confirmed. In fact, a commission was set up by the Presidential office, which found that the real number was much smaller and that some of the key initiators had made false claims (interview T-28).[108] The New Times (Ntayombya 2015) ran a damning piece against the main initiator (RHG president and owner of the El Dorado hotel), in which it accused him of taking several erroneous business decisions. In the end, the government did not intervene, a handful of hotels were indeed auctioned off, and that was the end of this story.

Despite these problems, more and more upper segment and high-end hotels kept being built in Kigali.[109] After the so far latest hotel grading exercise conducted by RDB in May 2021, there were three five-star, six four-star and 26 three-star hotels in Kigali (RDB 2017b, 2018a, 2019a, 2021a). Adding to the long-

[107] After having declined in quality over the years and having been up for sale for some years, the Libyan government announced in 2013 to retain its majority share and invest 10m USD in the hotel's upgrading. This, however, fell through and in 2017 the Asian-Ugandan Madhvani Group bought it for 13m USD with the goal to invest 6-8m USD more (Mwai 2017a). The group exited the investment as well and the hotel was taken over by the Rwandan state-owned Agaciro Development Fund (Bizimungu 2020d), which has so far been unable to sell it.

[108] In particular, the owner of Alpha Palace was found to have paid back his loan and had taken up a new one and was then falsely claiming that his hotel was under action. The owner of Sports View Hotel had invested in many businesses simultaneously, and then requested an extended grace period of fifteen years, while banks offered him seven years.

[109] Several luxurious, high-end lodges were simultaneously built in or close to national parks. However, the sector analysis at hand is limited to hotels in Kigali.

standing five-star Kigali Serena Hotel, both Marriott and RadissonBlu (the latter within the KCC compound) opened a five-star hotel in the capital in 2016.[110] Apart from Mille Collines, the other four star hotels launching over the years were the Rwandan-owned Lemigo Hotel in 2010, Gorillas Golf Hotel in 2012, Grand Legacy in 2014 as well as two foreign investments, Ubumwe Grande in 2016 and Park Inn by Radisson in 2017. Of the 26 three-star hotels, five were graded at the end of 2019 or later, meaning that at the time of fieldwork in mid-2019, there were exactly thirty officially graded three-, four- and five-star hotels in Kigali, of which eighteen were interviewed (table 10).[111] Of the 21 three-star hotels, 17 were owned and operated by Rwandan entrepreneurs. The remaining four were foreign-owned: long-standing Chinese-owned 2000 Hotel and Dmall Hotel, Lebanese-owned Manor Hotel, and an establishment of the pan-African Morocco-based Onomo hotel chain that had just opened in 2018.

No.		RDB	Stars	Operation	Ownership	Interviewed
1	1	Kigali Marriott	5	Foreign	GoR / RPF / Ruling Elite	Yes
2	2	Radisson Blu	5	Foreign	GoR / RPF / Ruling Elite	
3	3	Kigali Serena	5	Foreign	GoR / RPF / Ruling Elite	
4	1	Park Inn	4	Foreign	GoR / RPF / Ruling Elite	Yes
5	2	Ubumwe Grande	4	Foreign	Foreign	Yes
6	3	Mille Colline	4	Rwandan	Rwandan Private	Yes
7	4	Grand Legacy	4	Rwandan	Rwandan Private	Yes
8	5	Lemigo Hotel	4	Rwandan	Rwandan Private	
9	6	Gorillas Golf	4	Rwandan	Rwandan Private	
10	1	Onomo Hotel	3	Foreign	Foreign	Yes
11	2	2000 Hotel	3	Foreign	Foreign	Yes
12	3	Dmall Hotel	3	Foreign	Foreign	Yes
13	4	The Manor Hotel	3	Foreign	Foreign	
14	5	The Mirror Hotel	3	Rwandan	Rwandan Private	Yes
15	6	Classic Hotel	3	Rwandan	Rwandan Private	Yes
16	7	Kigali Diplomat Hotel	3	Rwandan	Rwandan Private	Yes
17	8	Nobleza Hotel	3	Rwandan	Rwandan Private	Yes
18	9	Galaxy Hotel	3	Rwandan	Rwandan Private	Yes
19	10	Hill View Hotel	3	Rwandan	Rwandan Private	Yes
20	11	Great Season Hotel	3	Rwandan	Rwandan Private	Yes
21	12	Dove Hotel	3	Rwandan	Rwandan Private	Yes
22	13	Olympic Hotel	3	Rwandan	Rwandan Private	Yes
23	14	Elevate Suites	3	Rwandan	Rwandan Private	Yes
24	15	Five to Five Hotel	3	Rwandan	Rwandan Private	
25	16	Sports View Hotel	3	Rwandan	Rwandan Private	
26	17	Hotel Villa Portofino	3	Rwandan	Rwandan Private	
27	18	La Palisse Hotel Nyandungu	3	Rwandan	Rwandan Private	
28	19	Beauséjour Hotel	3	Rwandan	Rwandan Private	
29	20	Scheba Hotel	3	Rwandan	Rwandan Private	
30	21	Hill Top and Country Club	3	Rwandan	Rwandan Private	
31	---	Chez Lando	---	Rwandan	Rwandan Private	Yes

Table 10: All Five-, Four- or Three-Star-rated Hotels in Kigali as of mid-2019
Source: RDB (2017, 2018)

In recent years, high-end hotel (as well as other real estate) ownership by the Rwandan government, the RPF, and/or the inner circle of the ruling elite has been obscured by using complex and non-transparent ownership vehicles (i.e. holding companies and/or presumed strawmen) as well as by the market entry

[110] This refers only to what RDB calls 'town hotels'. There is now one five-star 'boutique hotel' in Kigali and there are four five-star lodges in the country. Also, there are several star-rated apartments or other types of accommodation, which are all omitted from the analysis (RDB 2018a, 2019a, 2021a).

[111] Additionally, aforementioned Chez Lando was also interviewed.

of several multinational hotel chains, which created the impression that these hotel operators using their international brands were actually the owners. As already depicted for the two Rwandan Serena hotels and as illustrated in table 10, the most prestigious and valuable hotels are owned by these intertwined Rwandan entities.[112] The RaddisonBlu hotel as a part of the KCC complex is co-owned by Crystal Ventures (i.e. the RPF), RIG (i.e. the group of private Rwandan investors described in chapter 3), Prime Holdings, and the Rwanda Social Security Board (both government entities) (Kimenyi 2016). Originally, only the latter three had owned the KCC via the company Ultimate Concept with Prime Holdings owning 50% and the other two owning 25% each (COMESA RIA 2011). The RIG website states that the group currently owns 5% of the holding, so it may be the case that Crystal Ventures took over the remaining 20% (RIG 2021a). It is unclear how this ownership change transpired, which has been criticised heavily by the Rwandan diaspora opposition (Himbara 2016). The Kigali Marriott Hotel is owned by New Century Development (NCD), in which Doyelcy Capital Partners (DCP) holds a large share (DCP n.d.). DCP, which also owns the Kigali City Tower and the Century Park project, holds a 17.5% stake in RIG, has constructed several other prominent premises in Rwanda, and is owned by Hatari Sekoko, who founded it in 2006 and remains its CEO and Chairman (DCP n.d.; Harper 2022). Sekoko is said to be a close confidante of Kagame, and is sometimes denoted as his strawman or nephew (Gakwerere 2018). The co-owners of NCD are three Chinese and Hong Kong personal contacts of Sekoko (The Independent 2009), one of whom is Billy Cheung, the chairman of Master Assets, which develops buildings in East Africa (Master Assets 2021). The Kigali Park Inn hotel is owned by Joseph Mugisha, owner of one of the large Rwandan construction companies (Fair Construction) and also a close companion of Kagame (Igihe 2017, interview T-27).

Conducting a semi-structured survey with 19 medium- and upper-segment hotels based in Kigali revealed a number of interesting patterns and trends as well as a broad picture how the city's hotel sector evolved over the last decade. While some were more successful than others and a few were struggling to survive, all interviewed hotels operated by Rwandan nationals reported similar stories, performance numbers, future plans, and challenges.[113] Except for Mille Collines and Chez Lando, all other fourteen hotels in these categories were opened between 2008 and 2018. Operational and cost efficiency of hotels is hard to measure, as reliable quantitative data was barely available. However, two metrics could be retrieved or constructed using the collected data. First, most hotels reported some number(s) on their occupancy rate. A general sign of the rather low level of professionalism of general managers was that many did not have their overall yearly occupancy rate readily available. Several looked it up in their systems and others estimated a rough rate for the low and high season (for which definitions varied

[112] The ownership information depicted in the table and outlined in the following is based on publically available information and interview evidence. However, given the deliberate non-transparency on these partially delicate issues, some ownership relations as reported here may be outdated or incorrect, as the used sources may not always be reliable in this particular regard.

[113] In the remainder of this section, interview numbers are seldomly provided as cross-checking with other source indications above might allow to identify individual hotels and their performance.

among respondents).[114] Calculating the shaky average of those 18 hotels that reported numbers results in an average annual occupancy rate of 54% in 2018/19. The reported minimum was 30% and the calculated maximum was 77%. Hotels that provided low season numbers indicated for example rates of almost 0%, 5-30%, 20%, and at maximum 53-57%. Reported high season numbers ranged from 40% to over 100% (overbooking).[115] A second available auxiliary performance indicator is the employees-to-rooms ratio, which can be calculated for almost all hotels given the collected data and is somewhat more reliable. It provides interesting insights, even though this metric remains crude for a number of reasons.[116] The overall ratio for sixteen hotels with available data was 1.23:1 (meaning that for every available room, there were 1.23 permanent employees). As expected, distinguishing between foreign-operated and Rwandan-operated hotels reveals that the former were run much more efficiently (0.89:1) than the latter (1.46:1). Excluding Marriott from the foreign ones, which is particularly strongly engaged in hosting conferences and other events, lowers their ratio to 0.46:1, even though it needs to be mentioned that this adjusted value comes from only two foreign hotels. The high ratios of Rwandan-operated hotels indicate that substantial efficiency gains regarding personnel costs are possible. Some interviewees remarked that they had recently reduced the number of employees or planned to do so.

Regarding their overall cost structure, most Rwandan hotels reported that personnel costs were indeed their highest or second highest expense bloc, with loan costs being the other one. Many lamented that their loan conditions, most importantly the interest rate and duration, were quite bad. Not being able to pay back one's loan is therefore a substantial risk for some hotels and was often reported to be the largest challenge. Nonetheless, a majority expected to have repaid their loan in full within a few years, which would make them break even and turn a profit for the first time. Others remarked that they felt obliged by strong competition to take up a new loan and invest in the hotel's upgrading. A third cost bloc that was often mentioned were utilities (i.e. electricity and water). There has been an energy shortage for many years in Rwanda and prices have been accordingly high, an issue which only recently started to become resolved (Chemouni and Dye 2020). To deal with these problems, Rwandan hotels wrote a letter to the President in 2016 asking him for reduced rates, as they were evidently high-volume business users (interview T-14). This request was granted and since then, hotels can apply for being allowed to pay lower rates. Most hotels stated to be making use of these subsidies. In one foreign hotel (Onomo), which

[114] In most cases, the low season was indicated to range from December or January to April and the high season from May to November.

[115] Data reliability for this metric is quite low. For once, there is a general incentive to underreport occupancy rates to justify loan payback problems or to lobby for more government support. However, the main reason for the data's shakiness is the already mentioned phenomenon that interview partners (many of whom were the hotels' general managers) simply did not know their numbers. For some, it seemed that they had never been asked for the annual average occupancy rate before and their general time reference was a month not a year. In line with that, it is a common experience in Rwanda that well-educated people always answer questions about quantities by giving some numbers, even if they do not know the answer.

[116] First, depending on other revenue-generating services hotels provide, more employees might be needed, whose employment might be cost-efficient. Second, the available data is only of medium quality. The question asked in the interviews concerned the number of permanent employees, even though the needed metric would be full-time equivalents. However, several general or other senior managers did not know their employee number and had to look it up and/or were not able to distinguish between permanent and temporary workers. The concept of full-time equivalents was not known to or not used by a few who were asked about it. Third, it may be the case that many very lowly-paid cleaners and security guards are employed informally.

is arguably run most efficiently as it had the lowest employee-room ratio of 0.35:1, the Rwandan foreign-trained general manager noted that their performance metric system was more sophisticated than the ones he had seen in global hotel chains in Europe and the United States and that as a consequence of their strong expenditure controlling their largest cost bloc was actually foodstuff because they had to import most of it (interview T-23).

In terms of customer segments and accompanying marketing strategies and sales channels, many hotels did not focus on particular geographic regions or types of travellers. They rather put up a proper profile on the online platforms *booking.com* and *expedia*, on which most of their sales took place. Most hotels have one or more conference or event rooms, which they rent out for any type of gathering, both private (weddings, birthdays, funerals) and professional (NGO, government or company workshops and meetings, small or medium-scale conferences). Some of the Rwandan 3-star hotels explicitly focused on this revenue stream. For both overnight guests and even much more for events, hotels often have contracts with the Rwandan government, international NGOs or corporations located in Rwanda. While the Rwandan government with its large number of ministries, agencies, companies, and local government organisations makes up a significant share of the demand for small and medium-sized event locations, several hotels remarked that they were not ideal partners, as payment was sometimes delayed for several months or even more than a year. Given the large potential business volume, the process of how hotel partners are determined by government entities is of particular interest. As described in chapter 3, the Rwandan government has put in enormous efforts to make its procurement processes transparent and to wipe out corruption (Chemouni 2017b). Most interviewees confirmed that the established online system was ironclad, but a few mentioned that the people making the decisions were known and that personal connections may be of help, as is the case in any type of business activity. Concerning non-governmental procurement processes, hotels explained that personal connections were very important and that many contracts were concluded in this way.

Overall, it can be observed that some decisive structural changes occurred in recent years in the Kigali hotel sector. Heeding the governmental call, many domestic entrepreneurs invested in the construction of hotels, which led to a steep increase of hotel room supply that outstripped growing demand. As a result of the increased competition, hotels had to decrease prices and increase service quality. This development reached its peak when Marriott entered the hotel market in 2016, and, as they struggled to fill their hotel rooms, initiated a brief price war that amounted to cut-throat competition. They reportedly lowered their regular room prices of about 400-500 USD per night to 140 USD (interview T-28). Several hotel owners characterised this as unfair business practice and demanded that RDB as the regulator introduce certain price thresholds under which a particular star category hotel would not be allowed to go, but sector experts dismissed this option as untenable (interviews T-12, T-24, T-28). Some hotels felt the heat, as they could not keep up with the rising level of competitiveness, which was exacerbated by the fact that some of their owners did not run their hotels professionally (i.e. hiring family members) and withdrew hotel funds for personal consumption. In 2020, Covid-19 exacerbated problems for already struggling operators and two three-star hotels failed to pay their loans and their buildings had to be auctioned off (Mwai 2021). While, in general, a continuous industry professionalisation took place, it is evident that the entire hotel sector suffered tremendously during the pandemic. It is unclear how well the Rwandan tourism and especially MICE tourism sector will bounce back, which will determine to a large degree how many hotels will be able to survive, recuperate, and eventually start to thrive.

5.5 Sector Case Study Conclusion

When the government started to bet on the tourism sector as a promising growth engine in the early 2000s, hardly any capitalist firms existed in the industry. This meant that there were no vested interests that had to be dealt with unlike in the coffee sector where there were some locally powerful coffee traders. However, similar to the coffee sector, almost no infrastructure for value creation or value addition existed, and building it would require enormous amounts of investment. This may have been the reason why donors advised against government involvement in hotel construction (in contrast to their strong recommendation and involvement in establishing a coffee-processing sector). However, the Serena hotel story is now one of the prominent examples of successful Rwandan government investment (Behuria 2015a). Furthermore, the government succeeded in mobilising private funds by motivating and partially obliging domestic entrepreneurs to build their own hotels. Successful investors were allowed to earn potential rents, while they had to bear the losses of failed hotel operations. At the moment (and even before Covid-19), most did not receive rent flows or if so, only for a brief time window before hotel room supply surpassed demand, and many have not yet earned regular profits.[117] The juiciest rents in the hotel sector have certainly been reserved for the government, the ruling party, and private entities owned by the inner circles of the ruling elite. The mechanisms and extent of these benefits are not known and will probably remain so for some time.

Once the RPF had committed to its tourism strategy and had made enormous initial investments, the ball started rolling and the sector was set on a high growth trajectory. In terms of overall economic development, the industry has been one of the largest growth engines in post-genocide Rwanda and it therefore has been the right decision to focus on high-end tourism. Along the way, enormous efforts and hard work were needed, which was duly executed by the country's leaders, bureaucracy, private sector, and international donors. However, the largest success factor were massive and continuous follow-up investments, which were forthcoming due to a pooling of mostly public but also private domestic and international resources. Attracting renowned foreign hotel brands was one of many pieces of the puzzle. This is why the sector's success story can be synthesized as 'creation by (massive) investment'. Nevertheless, the laborious details of productive sector policy has to be designed, implemented, adapted, and enforced. As a result, a lot of low-hanging fruits have been harvested until the pandemic brought the success story to a (preliminary) halt. Relating the findings of the sector case study at hand to the

[117] As discussed above, this is certainly true for almost all hotels as business entities in a direct sense. However, a few interviewees emphasized that it is common for hotel owners to extract large amounts of cash from their enterprises and put them in their private pockets, either informally or as a large formal salary (interviews T-04, T-28).

overall argument on Rwanda's economic transformation, the creation of the Rwandan tourism and hotel sector constitutes a textbook example of another developmental success story. Both the political will for the creation of a high-end tourism sector and the political power of the government to make the enormous necessary investments and basically run a large chunk of the tourism industry itself were there. So far, the implementation of major policy measures (constructing infrastructure and hotels, mobilising and disciplining capital, pushing skills-building, creating proper regulations, etc.) could be implemented and enforced via the Rwandan ruling elite's top-down governance mode. Political control could be upheld during the transformation as most tourist activities were operated by the government or state-affiliated companies and many hotels were owned by the state, loyal entrepreneurs or foreign brands. Also, the entire endeavour was comparatively straightforward and did not require complex and iterative coordination between the bureaucracy and a dispersed private sector.

Once, the potential of gorilla and first-wave MICE tourism has been exhausted, further growth needs to come from a broadening and deepening of tourism activities, which includes the proliferation of hundreds (and then thousands) of small and medium-sized business activities, enterprises, and innovations. Catering for a substantial number of middle-segment tourists, both from industrialised and African countries, acquiring the so far missing tacit knowledge of what travelling customers are looking for, and establishing Rwanda as a stand-alone destination, in other words, maintaining (let alone accelerating) the 2010s growth rate over decades, is where the real challenge begins.

Chapter 6: Food Crops[118]

This chapter on Rwandan food crop cultivation, as its predecessors, has two goals. It first delivers a sectoral case study that stands on its own and discusses first how a flawed performance contract system led to systematic food crop production overestimation and second why the government failed in its endeavour to substantially transform smallholder agriculture and raise food production levels. The second aim of the chapter is to add more evidence on the Rwandan government's development policies and its outcomes to answer the overall research question in the concluding chapter. In contrast to the preceding two empirical chapters, the main type of evidence used here are publicly available agricultural statistics from Rwandan government reports and the FAOSTAT database. Also other Rwandan government documents, most importantly performance contracts and their evaluation reports, were used. Only six interviews on the agricultural sector were conducted, four of which after the fieldwork period via email correspondence and telephone. This communication had the goal to corroborate findings from the assessment of statistical and report evidence.

The chapter starts with an outline of the Rwandan government's strategic approach to agricultural transformation (6.1). Then, the country's agricultural statistics system is delineated as a necessary precursor for understanding the argument laid out afterwards (6.2). Next, Rwandan agricultural production and yield data from 2005 to 2018 from various Rwandan as well as Food and Agriculture Organization (FAO) datasets is dissected (6.3). Section 6.4 discusses potential causes of stagnating food crop production, section 6.5 debates political economy explanations for the revealed data patterns of systematic overestimation, and section 6.6 illustrates the acquisition and maintenance of Rwanda's false reputation of agricultural success. Finally, a sector case study conclusion is drawn (6.7).

6.1 Government Strategies for Agricultural Transformation

Rwanda's agricultural activity is coordinated by MINAGRI and its two main agencies, the Rwanda Agriculture Board (RAB) and NAEB. Additionally, NISR commissions agricultural surveys and collects agricultural data. The most important administrative units of local government are Rwanda's 30 districts, which prioritise and organise agricultural activity via their district agronomists and cash crop officers, as well as government-appointed personnel in each of the country's 416 sectors (Chemouni 2014). Cooperatives have been established as rural change agents to eventually grow into capitalistic actors (Harrison 2017). However, they are not grassroots- but government-driven, and so far, both the membership rate and the level of professionalism have been very low (Ansoms et al. 2018). While large-scale agrarian projects have been initiated (Gaynor 2015; RDB 2019d), agricultural surveys show that major capitalist farms so far only account for a very small share of output and employment (NISR 2019).

Rwanda's agricultural year lasts from September to August. It has two major agricultural seasons with similar output volumes: season A, for which planting starts in mid-September (coinciding with the start

[118] This chapter is the base of and therefore strongly resembles my working paper (Heinen 2021) and journal article (Heinen Forthcoming) on the same topic.

of the short rain season) and harvesting takes place from mid-December to mid-February, and season B, where sowing commences in March (parallel to the long rain season) and the harvest occurs from early June to mid-July (WFP 2016). Additionally, there is a tiny third season (season C) with harvesting in September that accounts for less than 2% of total production and is therefore often neglected. Both the calendar year and the Rwandan fiscal year (July-June) contain the same season A and B, which makes comparing different data sources easier.

Rwanda has embarked on an ambitious agrarian reform programme, formulated in its agricultural transformation strategies, currently in their fourth recurrence (MINAGRI 2018b), and guided by Vision 2020. The policies follow a technocratic 'Green Revolution' rationale of agricultural intensification, modernisation, and commercialisation. Already in 2004, a land tenure regularization process had been initiated that led to both much higher land rights formalisation and a –potentially temporary– increase in land conflicts (Ali, Deininger, and Duponchel 2017; Santos, Fletschner, and Daconto 2014). Over the past years, the main policy regarding agricultural growth has been the Crop Intensification Programme (CIP) that ran from 2007–2020. At its heart was the creation of regional monocropping zones based on agro-climatic conditions (Harrison 2016). For this endeavour, six priority crops were selected: beans, cassava, Irish potatoes, maize, rice, and wheat. The overall goal was to achieve food security and eventually a food surplus for export by increasing food crop production volumes (Kathiresan 2011). This was to be reached largely by substantive yield growth (intensification) via various Green Revolution techniques but also by increasing cultivated land area (extensification) via the reclaiming of marshland, the latter of which has been quite successful (Dawson, Martin, and Sikor 2016).[119]

The CIP comprised four pillars: land use consolidation (LUC), provision of inputs, extension services, and improved post-harvest storage. Regarding LUC, farmers were encouraged or compelled to synchronize crop cultivation by switching to the centrally determined priority crop of their region on rearranged adjacent plots to counter the extremely small size of land holdings (0.76 hectares on average, spread over several scattered plots) (Kathiresan 2011). An elaborate input provision system was designed, implemented and adapted over time, in which farmers participating in the CIP and complying with LUC received substantially subsidised mineral fertilisers (Chemouni 2016). Additionally, improved seeds and pesticides were distributed regularly (RAB 2013, 2017). Extension services entailed education and consulting, such as the propagation of good agronomic practices like terracing against erosion and manure application (MINAGRI 2009b, 2018b) as well as the establishment of plant clinics (Tambo et al. 2020), but also detailed monitoring and strict enforcement of farmers' policy compliance (Ansoms 2009). Logistically, farmer controlling was embedded in the 'decentralized' district-level governance system of *imihigo* performance contracts. Given the designation of food crop agriculture as a key development area for almost all of Rwanda's thirty districts, ambitious district-specific objectives were set within this system according to the priorities of the country's agricultural transformation

[119] An additional important area of Rwanda's agricultural policies revolves around livestock, which is not considered here.

strategy. In particular, annual crop-specific targets for the pooling of acreage as well as for yields within these consolidated areas were formulated in district performance contracts.[120] Additionally, various irrigation and mechanization projects were designed and implemented (MINAGRI 2011a), and extensive agricultural research on soil quality and depletion, crop diseases, pesticides, breeding of new varieties adapted to local conditions, etc. was conducted (RAB 2017).

Simultaneously, a rigorous commercialization was pursued via the creation and continuous upgrading of agricultural value chains. Rural market centres were built, farmer membership in cooperatives was encouraged or compelled, these cooperatives were trimmed towards for-profit business planning, and the state oversaw contracting between them and newly constructed private and parastatal agro-processing companies (Harrison 2016). Cooperatives were organised in a four-level system of grassroots cooperatives, crop- and district-based unions, national crop-based federations and one overarching national confederation (MINICOM 2018a). Additionally, sector-based savings and credit cooperatives (*imirenge* SACCOs) were established nationwide, aiming to financially include rural citizens and encouraging them to open a current account for financial transactions, save money formally, and take up agricultural loans (MINECOFIN 2009). Furthermore, export-oriented cash crops were heavily promoted, including the transformation of the traditional coffee and tea sector from low-value unprocessed to high-quality processed exporting as well as experimentation with building up various horti- as well as flori- and sericulture value chains. In 2019, NAEB launched a highly ambitious high-value export crop strategy, intending to almost double export earnings to one billion USD until 2024, centred on high tea and horticulture export growth (NAEB 2019b).

Regarding the outcomes of these agricultural reforms, two contrasting findings have been reported and discussed in academia. On the one hand, there was a consensus among scholars that Rwanda succeeded in substantially raising its total agricultural production volume and that this was largely driven by substantial yield growth. An often-used summary is that between 2007 and 2011, production volumes of cassava, maize and wheat tripled, those of beans doubled, and rice and Irish potato output rose by 30%. This statement appears in lauding (Golooba-Mutebi 2014), agnostic (Harrison 2016) and condemning (Cioffo, Ansoms, and Murison 2016) articles on Rwanda's agricultural policies. Reports of international organisations use similar formulations (Diao, Bahiigwa, and Pradesha 2014; IFAD 2013; World Bank 2014). Virtually all other publications concerned with post-genocide Rwandan agriculture at least implicitly acknowledge the general notion of the country's agrarian macro-level success. On the other hand, peer-reviewed in-depth micro-level research has established that – independent of agricultural macro-level growth results– Rwanda's agricultural reforms have led to severe negative consequences for many smallholder farmers and rural communities all over the country. Dawson and co-authors found that as a result of agricultural policies, "subsistence practices were

[120] Many district performance contracts can be found online. For example, almost all district *imihigo* documents since 2015 are available on the Ministry of Finance's website (MINECOFIN 2021). Additionally, each district has its own website, usually with several performance contracts uploaded.

disrupted, poverty exacerbated, local systems of knowledge, trade, and labor were impaired, and land tenure security and autonomy were curtailed" (Dawson et al. 2016:204). Pritchard concluded that "the rapid and forceful implementation of tenure and agricultural policies is unnecessarily undermining the livelihood stability of rural subsistence farmers" (Pritchard 2013:186). Nilsson established that a positive association between land use consolidation and crop yields did not hold for households with landholdings of less than one hectare (Nilsson 2019), i.e. 96% of all farms (WFP 2009). Clay and King maintain that "deactivation of local risk management institutions has diminished climate risk management options for most households" and that those without "access to capitals (land, labor, and nonfarm income) […] are pulled deeper into poverty with each successive climatic shock" (Clay and King 2019:1). This chapter manages to bring these two results together by showing that agricultural statistics were wrong for the years in question.

6.2 Agricultural Statistics System

There exist two distinct and only loosely connected agricultural data collection systems in Rwanda: a constantly evolving agricultural survey system that provides data for official statistics and a local agronomist production estimation system present in most developing countries, known as 'routine system' (Carletto, Jolliffe, and Banerjee 2015). The two systems are described in turn as follows.

After the genocide, the comparatively high-quality pre-civil war agricultural data collection system had been destroyed (Kelly and Donovan 2008). In the emergency period after 1994, rough harvest estimates were needed to calculate the required food aid (FAO and WFP 1998) and to that end, so-called crop forecasting surveys were conducted from 1997 onwards (Nyabyenda and Niyonsaba 2009). While their methodology was refined over the years and they were later known as crop assessments (CAs), NISR highlighted in a 2012 stock-taking exercise that they never amounted to ex-post output estimates but remained "*forecasts* of *potential* production produced *before* the end of every season" (NISR 2012b:3, emphases added). However, up to the fiscal year 2013/14, official agricultural statistics were solely based on these biannual CA forecast surveys, even though other complementary and partially more professional and reliable agricultural surveys were carried out over the years.[121] The CAs were eventually discontinued after season 2014B. There is no public information available for the methods of pre-2008.

Being aware of the poor quality of its statistics at the time (MINECOFIN 2002), the Rwandan government established NISR in late 2005, which became jointly responsible for the production of agricultural statistics in collaboration with MINAGRI's statistics department. Authorities realised the need for a large-scale agricultural baseline survey and thus, the National Agricultural Survey (NAS) was carried out in 2008. It was in several regards an important milestone towards the professionalisation of Rwanda's agricultural statistics system. First, it used a representative sampling methodology coming

[121] These included thorough donor-funded biannual household surveys of the Food Security Research Project from 1999-2002, the recurring Integrated Household Living Conditions Survey (EICV I-IV) in 2000, 2005, 2011 and 2013/14, the Light Rural Sector Survey from 2006-2007, and the large 2008 National Agricultural Survey.

from earlier nationwide general surveys. Second, it moved from estimating predicted to actual production and applied rather professional data collection methods (standardized measurement tapes, spring balances, and buckets). Hence, it arguably produced more accurate evidence than previous surveys. Third, since its results are publicly available, they provide an important reference for the simultaneously conducted CAs constituting official numbers. From then on, all post-2008 CAs surveyed a 25% sub-sample of the 10,040 household sample of the NAS (MINAGRI 2009a). However, post-2008 CAs did *not* adopt the improved data *collection* methods but remained with less precise eye estimate approaches (MINAGRI 2009a; NISR 2012b).

In NISR's first National Strategy for the Development of Statistics 2009-2014, the need to improve the "forecasting/estimation methodology for crop […] production" (NISR 2009:160) was formulated as the top priority goal for agricultural statistics. Soon afterwards, it was decided to completely overhaul the agricultural data collection system and to set up a modern state-of-the-art statistical framework (NISR 2012b). External consultants were hired, and they set up a seasonal agricultural survey (SAS) that was initially conducted in season 2013A, became the sole source of official agricultural statistics in the fiscal year 2014/15, and has been carried out in each season ever since. The SAS uses a multiple frame survey design (area and list sampling), which was more professional than in the NAS 2008 (Manzi 2013; NISR 2013a). While the survey reports and accompanying documents are very transparent on sampling methods and content of questionnaires, they hardly mention area and yield *measurement* techniques. It is, however, clear that area was measured by using satellite data and yield metering was conducted via a mixture of standardised weighing procedures and directly asking farmers. Thus, the SAS still partially relies on farmers' recall. However, surveying occurred immediately after or even during harvesting, thus significantly reducing potential recall biases (Wollburg, Tiberti, and Zezza 2021). Even more, splitting data collection in two phases and surveying production results in the second phase during or after the harvest eliminated the likely error in crop assessments resulting from production volume anticipation before harvesting began.

Largely independent of the survey system's evolution, the distinct Rwandan routine system of agricultural data collection carried out by local government representatives and reported to MINAGRI operated in parallel. This administrative system was rebuilt quickly after the genocide, and a detailed network of district- and sector-level agronomists responsible for both promoting agricultural modernisation and monitoring reform results was established throughout the country. This system was streamlined when performance contracts were introduced on district level in 2006 entailing annual agricultural targets. In 2008, these targets were formulated according to CIP pillars, namely priority crop-specific goals for the pooling of acreage as well as for yields within these consolidated areas. Overarching annual objectives were taken from national strategy documents and more detailed targets were negotiated between everyone involved. While initial baselines came from actual values, updated ones in subsequent years did not always come from past actual achievements but were rather targets of earlier year. Thus, performance contract documents usually do not contain any actual values, only past, present, and future targets. Actually achieved results of districts and ministries are submitted in publicly unavailable *imihigo* reports to MINECOFIN. However, realised values of joint sector *imihigo* are publicly available in so-called Backward-looking Joint Sector Review Reports (BLJSRRs) compiled by responsible lead ministries. To sum up, in parallel to the evolving agricultural survey system that provided data for official statistics, a second independent system of decentralized agricultural data collection was in place, in which local agronomists reported to what degree annual *imihigo* targets had been achieved. The system's documented vulnerability to data tweaking as well as its interaction with the agricultural survey system is discussed below.

The switch of the source of official agricultural statistics from crop assessments until 2013/14 to seasonal agricultural surveys from 2014/15 led to a significant break in the Rwandan agricultural data time series. Looking closely at the patterns reveals a number of peculiar inconsistencies that raise strong doubts over the prevailing narrative of Rwanda's exponential agricultural production and yield growth during the turn of the 2010 decade. The only document (of any kind) that could be found studying Rwandan agricultural data in detail was an academic article by Desiere, Staelens, and D'Haese. They compared Rwanda's official crop yield data from the FAOSTAT's database (coming from the country's crop assessments) with two disparate Rwandan sources (the initial SAS from 2013 and the two household surveys EICV II and III) between 2006 and 2013 and found remarkable discrepancies, letting them conclude that "[official yield] numbers in Rwanda are too optimistic and may even be plainly wrong" (Desiere, Staelens, and D'Haese 2016:1384). While their study is recapitulated in the synthesis article of Ansoms et al. (2018), in which Desiere is a co-author, more recent evidence (i.e. any data from later seasonal agricultural surveys) is not included. In fact, not a single academic study, report, or other analysis could be identified via in-depth Internet searches that analyses Rwandan food crop statistics over the time series break 2013-2015.

6.3 Food Crop Production Data

Examining Rwanda's agricultural statistics from 2005 to 2018, this section offers substantial evidence for four claims about the evolution of Rwandan food crop production and yields over the last fifteen years. First, according to all available data sources, Rwandan food crop production and yields stagnated over the whole period 2005-2018. Second, Rwanda massively overestimated its agricultural production and yields from 2008 to 2013. This claim is investigated by firstly scrutinising Rwandan data sources and dissecting both the strong rise (2007-2013) and the massive drop (2013-2014) of food production levels, secondly comparing FAO and Rwandan statistics to identify the origins of the unusual discrepancies between the two sources, and thirdly analysing individual crop data to corroborate the findings. These sub-sections conclude that neither Rwandan nor FAO data is reliable. Third, the dismantling of agricultural production data suggests that Rwanda's GDP is probably overreported by several percentage points. Fourth, district-level food crop production data as reported in performance contracts was even more overestimated from 2008 to 2013, and –in contrast to official statistics– output volumes in the national performance monitoring system remain at strongly inflated levels, demonstrating the ineffectiveness of *imihigo* contracts in the agricultural domain. Potential explanations for these findings are explored in subsequent sections.

Food Crop Production Volume and Yield

FAO data on Rwandan food production and yields between 2005 and 2018 paints a peculiar picture (figure 30a). Production volume increased by 33% from 2007 to 2013, only to fall back to 2007 levels in subsequent years. For yields, the trend looks even worse: food crop productivity jumped by 33% in only three years (2007-2010), stayed on this level until 2013, and then slowly deteriorated to values 17% *below* initial levels in 2018. If considering Rwandan data sources[122], a similar but significantly more extreme trend appears (figure 30b). Production levels (yields) rose by over 70% (50%) from 2007 to 2013 and then crashed to a level 20% (33%) below 2007 volumes in 2014. From there, they slowly rose again to almost reach pre-reform levels in 2018. The FAO and Rwandan time series for food crop production and yields significantly differ, which is uncommon (see below), but they do converge in recent years. Thus, according to both FAO and Rwandan sources, Rwandan food crop production and yields did not increase permanently but rather exhibited a hump from 2007-2014. In both datasets, production and yield levels in 2018 are at or below 2007 levels, constituting stagnation.[123] This result is clearly at odds with the consensus in the literature as summarised above.

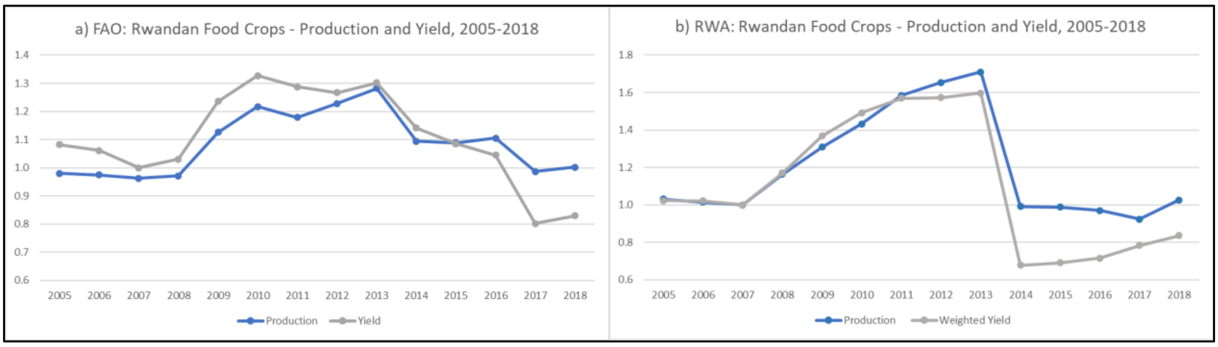

Figure 30: Rwandan food crop production and yields (indexed to 2007 Rwandan data)
Source: FAOSTAT and Rwandan data

Overestimation 2008-2013

Rwandan food crop production data from 2000 to 2007 is internally consistent and was adopted by the FAO without changes. Data inconsistencies between different publicly available Rwandan sources emerge for the first time in 2008 (figure 31), when NISR conducted the NAS. This survey estimated production levels for 2008 to have *decreased* by 22% from 2007. In parallel, MINAGRI continued to

[122] As a result of the rapidly evolving statistics system in Rwanda, there is no single publicly available Rwandan data source that covers the entire period 2005-2018. The data analysis at hand uses numbers from MINAGRI annual reports (reproducing official crop assessment data), NISR's seasonal agricultural surveys, and for earlier years, statistical yearbooks and a report from the Rwanda Environment Management Authority. For most years, statistics from more than one Rwandan source exist, which have been thoroughly cross-checked regarding internal consistency. Therefore, the herein used numbers robustly represent Rwandan sources. A full list of all studied data sources can be found in appendix 2.

[123] NISR dismissed this conclusion referring to official Rwandan GDP data as evidence for growing food crop production (interview A-04). However, strongly growing food crop GDP data rather points to its unreliability than being proper evidence for high food crop production growth (see below).

conduct its CAs in 2008 and reported a 16% *increase* from 2007. As both the sampling and the measurement methods of the NAS were much more sophisticated than those of the early CAs, it is highly likely that the low NAS estimate was more accurate than the high CA result. The 2008 NAS numbers might therefore be understood as a correction of already inflated food crop numbers of 2007 and before. From 2009 to 2014, MINAGRI continued to conduct CAs, which exhibited significant annual growth in production levels (henceforth labelled high-growth path). All government documents, e.g. all annual reports (AR) from MINAGRI from 2008 to 2013/14, the statistical yearbooks 2008-2013, as well as other strategies and reports use these high-growth path numbers. The lower production level measured by the NAS in 2008 was picked up again by the first seasonal agricultural survey in 2013, and subsequent SAS from 2014 to 2018 were in line with it (henceforth labelled low-growth path).

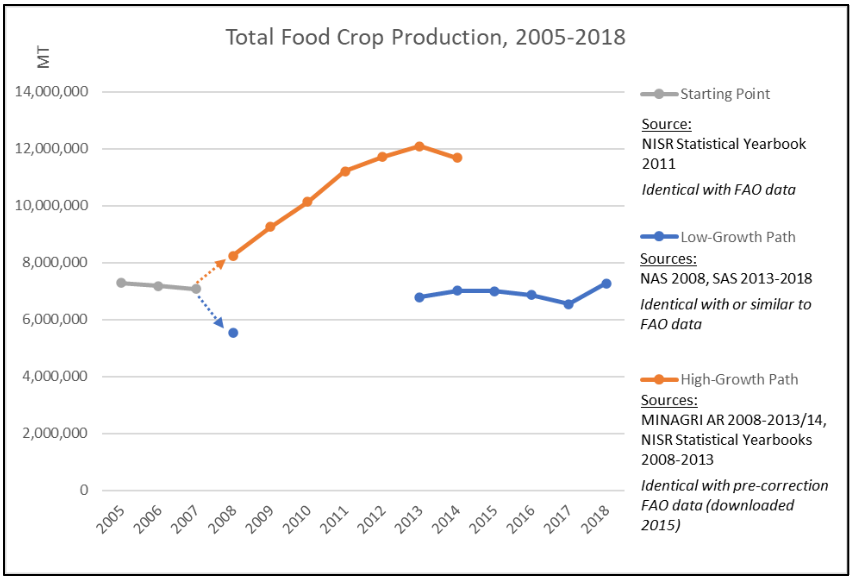

Figure 31: Divergence of low-growth and high-growth paths in Rwandan food crop statistics
Source: see in figure

In its AR 2013/14, MINAGRI still reported the high-growth path CA numbers, while the SAS 2013 and SAS 2014 conducted by NISR already reported much lower production levels. MINAGRI's AR 2014/15 then started to source its data from the SAS, such that numbers for both of its reported years were then much lower. This means that for the year 2014, the two corresponding MINAGRI ARs 2013/14 and 2014/15 document fundamentally different numbers for identical items. Unfortunately, no document mentions or explains the change in methodology or the jumps in production levels. For the purpose of this chapter, high 2013 numbers and low 2014 numbers have been used, making the sharp drop 'occur' from 2013 to 2014. Alternatively, it would appear in the data from 2014 to 2015, but it is clear that a real one-time drop did not happen in this magnitude or at all. Rather, the more sophisticated survey methodology showed that real production and yield numbers were much lower than reported in the crop assessments. However, Rwanda has not adjusted its overestimated 2008-2013 agricultural data so far.[124]

[124] NISR stated that they „advise to use the 2012 onward level of production data for the concerned crops [i.e. from the SAS 2013] and adjust the series backward to adjust the overestimation in previous years" (interview A-04). However, they do not do that in any document.

The analysis at hand established that even pre-2008 reports may have suffered from a fair degree of overestimation, as revealed by the NAS 2008. If taking the still shaky[125] NAS 2008 production estimates as a base, food crop production actually *increased* by 31% from 2008 to 2018, constituting an average annual growth rate of 3.1%. According to this calculation, Rwanda's agricultural reform would at least have produced mediocre output growth. However, a transformational outcome of skyrocketing yield growth, as reported in both academic articles and non-academic reports a few years ago, can be ruled out.

Differences between FAO and Rwandan Data

Discrepancies between FAO and country data are unusual, as the FAO gets its numbers by sending annual questionnaires to country governments asking for production and area data of each crop and then calculates the resulting yield. If data is missing, the FAO imputes these values using an ensemble approach (FAO 2016). However, it does not have a mandate to assess data validity (Desiere et al. 2016).

Initially, the FAO adopted Rwanda's high-growth food crop data from 2008 to 2013. In their comparative analysis, Desiere et al. (2016) used this original FAO data (which was identical to official Rwandan data). However, as confirmed by the FAO statistics department, their interaction with NISR revealed the 2014 break in Rwanda's agricultural time series due to its updated survey methodology (interview A-03). This is why, at some point in time between early 2015 and late 2019, the FAO –based on Rwanda's advice– significantly decreased the country's production and yield data of three food crops from 2008 to 2013 (table 11), thus leading to significant differences between FAO and country data.[126] For cassava, the subtracted amounts lay between almost exactly 1m t in 2008 and almost exactly 2m t in 2012 and 2013. For Irish potatoes, 1m t were subtracted in each of the years 2011-2013. Wheat production levels were corrected downwards by exactly 90% from 2008 to 2013.[127] However, none of the other ten crops listed individually each year by Rwandan sources were changed. According to the FAO, these corrections allowed them to link the pre-2014 and post-2014 Rwandan agricultural time series (interview A-03). Moreover, this significant downwards adaption of Rwanda's agricultural production data confirmed Desiere et al.'s (2016) conclusion about pre-correction FAO data being much too high.

[125] The survey itself states that it did not report yields at all because their measurement turned out to be too unreliable (NISR 2008:19).

[126] FAO data is available for download on the FAOSTAT website. The original FAO dataset on Rwanda containing old numbers already downloaded in February 2015 was gratefully obtained from Sam Desiere, while the updated one was downloaded in December 2019 by the author. The old version is not available anymore and no explanation on the changes made could be found on the website or in the dataset. The only note that a change has occurred was that the data source for some crops and years was 'FAO estimate' instead of 'Official data'. Figure 30 used the updated FAO data.

[127] According to correspondence between NISR and FAOSTAT, the wheat production overestimation in Rwandan data originated from a digit error (interview A-03). While this is highly doubtful (see below), it is remarkable that a significant part of Rwanda's reputation of agricultural success is supposedly based on a typographical mistake.

Cassava Production (MT)	2007	2008	2009	2010	2011	2012	2013	2014
Rwandan data	779,414	1,681,823	2,019,741	2,377,213	2,579,399	2,716,421	2,948,121	900,227
FAO data (downloaded 10/02/2015)	779,414	1,681,823	2,019,741	2,377,213	2,579,000	2,716,421	2,948,121	---
FAO data (downloaded 13/12/2019)	779,414	681,800	819,700	977,200	979,000	716,400	948,100	900,227
Difference b/w FAO datasets	0	1,000,023	1,200,041	1,400,013	1,600,000	2,000,021	2,000,021	
FAO Source (13/12/2019)	*Official data*	*FAO estimate*						*Official data*

Irish Potato Production (MT)	2007	2008	2009	2010	2011	2012	2013	2014
Rwandan data	967,283	1,161,943	1,289,623	1,789,404	2,171,517	2,337,706	2,240,715	719,006
FAO data (downloaded 10/02/2015)	967,283	1,161,943	1,289,623	1,789,404	2,171,517	2,337,706	2,240,715	---
FAO data (downloaded 13/12/2019)	967,283	1,161,943	1,289,623	1,789,404	1,171,500	1,337,700	1,240,700	719,006
Difference b/w FAO datasets	0	0	0	0	1,000,017	1,000,006	1,000,015	
FAO Source (13/12/2019)	*Official data*				*FAO estimate*			*Official data*

Wheat Production (MT)	2007	2008	2009	2010	2011	2012	2013	2014
Rwandan data	24,195	67,869	72,479	77,193	90,684	75,913	70,129	7,886
FAO data (downloaded 10/02/2015)	24,633	67,869	72,479	77,193	90,684	75,913	70,129	---
FAO data (downloaded 13/12/2019)	24,633	6,700	7,200	7,700	9,000	7,500	7,000	7,886
Difference b/w FAO datasets	0%	90%	90%	90%	90%	90%	90%	
FAO Source (13/12/2019)	*Official data*	*FAO estimate*						*Official data*

Table 11: Difference between FAO and Rwandan cassava, Irish potato and wheat production data
Source: FAOSTAT data 2015 and FAOSTAT data 2019

Development of Individual Crops

To assess whether FAO data was made sufficiently reliable by manually correcting production levels of cassava, Irish potatoes, and wheat downwards, production statistics of four other important crops are considered. These are the remaining three priority crops rice, beans, and maize, as well as bananas, which are grown in large quantities in Rwanda. Together, these seven crops accounted for 96% of the rise and 88% of the fall in Rwandan data during the period in question.[128] The production volume patterns of the four selected crops reveal two distinct patterns (figure 32). For rice and beans, annual volumes grew moderately and continuously, and FAO and Rwandan data is almost identical. Consequently, there is no evidence of production overestimation for these two crops. This looks entirely different for maize and banana production. For both crops, there is a massive drop in production levels within one or two years in both datasets, exhibiting the same pattern as identified in overall food crop production. In Rwandan data, maize production fell by 47% from 2013 to 2014, while a two-year drop (2013-2015) of virtually the same size occurred in FAO data. Regarding bananas, the production level decreased by 44% from 2013 to 2014 in Rwandan data, while an almost identical abrupt decline occurred in FAO data from 2016 to 2017. Interestingly, the massive drop in maize production occurred after a fivefold multiplication from 2007 to 2013, thus ending with a net growth of 314%, whereas the large drop in banana production was only preceded by a minor growth spurt, thus resulting in a net decline of 29%.

These graphs illustrate that Rwandan food crop production overestimation was not limited to the three crops manually corrected by the FAO, but also encompassed maize and banana production. Since the FAO did not retrospectively correct the inflated maize and banana production numbers from 2008 to 2013 and since taken together their rapid decline constitutes 29% of the total fall in food crop production, the post-correction FAO dataset is not reliable either. Dissecting the production level data patterns for

[128] Sweet potatoes are the only 'large' crop that is omitted here due to space limitation. However, its production output evolution is very similar to the one of beans and does not provide additional insights.

the most important Rwandan food crops has shown that it cannot be clarified whether there was any overall food crop production growth between 2005 and 2018. Hypothetical real growth was overshadowed by massive overestimation and potential real decline was overshadowed by the massive one-time correction of this overestimation in 2014.

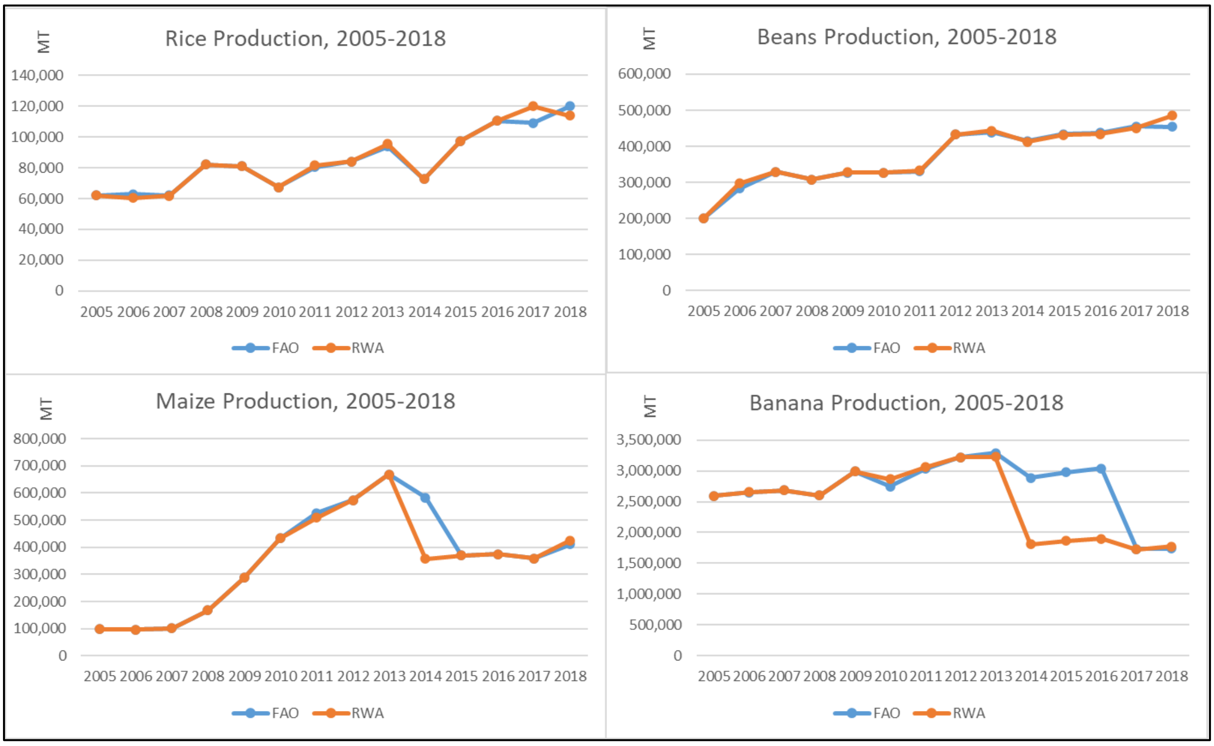

Figure 32: Rwandan production development of rice, beans, maize, and bananas
Source: FAOSTAT data and Rwandan data

Impact on GDP

In Rwandan national accounts, food crops are listed as a sub-category of agricultural GDP. Plotting food crop GDP (as value-added) from 2005 to 2018 against food production (in tons) shows that the two time series are incompatible (figure 33). While the strong rise in production levels from 2007 to 2013 corresponds with food crop GDP growth during these years, the drop of the former must eventually occur in the latter as well, even if the composition of agricultural output shifted towards higher-value crops, relative food prices changed, and input subsidies raised the value-added per output unit. The conducted analysis does not allow any other conclusion than that Rwanda’s food crop GDP (and by definition, also its agricultural and total GDP) has been overreported for several years.[129] Since food crop GDP accounted for 16-19% of overall GDP between 2007 and 2018 and was responsible for 13% of all GDP growth in this period, its manual correction *proportionate* to food crop production development would have a significant negative effect on previous GDP growth, reducing it by 0.7% per year on average, as well as on GDP in absolute values, decreasing it by 7.1% in 2017. This again would reduce GDP per capita in 2017 from 784 USD to 728 USD.

[129] NISR rejected this finding, arguing that GDP data compilation, additionally to production data, requires consumption (household, government), trade (export, import) and inventories data (interview A-04). However, this generic statement about the national accounts system does not refute the argument brought forward here.

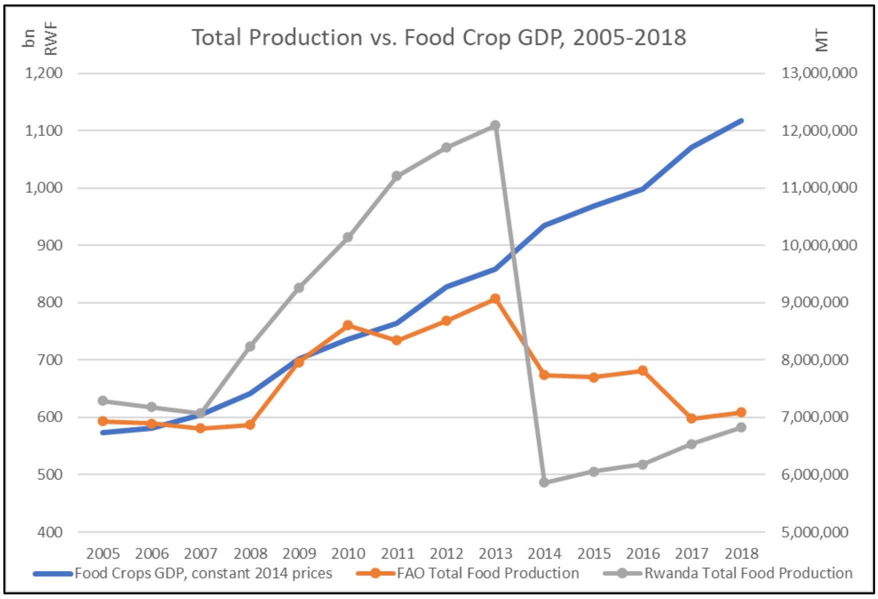

Figure 33: Comparison of Rwandan food crop GDP and total food crop production (2005-2018)
Source: Rwandan National Accounts, FAOSTAT, Rwandan data

Performance Contract Data

As elaborated above, the routine system of agricultural data collection by local agronomists in Rwanda exists in parallel to the agricultural survey system feeding official statistics. It turns out that during the period of massive crop assessment overestimation from 2008 to 2013, performance contract data was even more inflated. Assessing the nine publicly available district *imihigo* from 2012 to 2014 shows that the annual baselines and targets (i.e., referring to 2011-2013) of consolidated area and yields on these aggregated sites for the six priority crops result in a total production volume that is already 21% higher than the grossly overestimated CA numbers.[130] This is, however, a lower bound of production estimation from performance contracts, as they only include production on consolidated sites, while a large portion of farming still occurred on unconsolidated plots. Direct evidence for this deduction is provided by an RAB evaluation, which found that district agronomists overstated consolidated area by 18.3% in season 2013A (Dusengemungu et al. 2013).

Interestingly, while the reform of the agricultural survey system led to the detection and correction of overestimated numbers from 2014 onwards, district-level and national agriculture performance contracts continued to report vastly overstated numbers. This can be demonstrated by comparing 2018 food crop data from *imihigo* result reports with official numbers from NISR's seasonal agricultural surveys (table 12). For all six priority crops, area and yield results are much higher in the former than in the latter, resulting in massively overreported production levels (ranging from a 76% excess for rice to a 790% overhang for wheat) in 2018 *imihigo* data.[131] In total, food crop production for these six crops within consolidated sites is reported to be 192% higher than equivalent food harvests as officially indicated.

[130] See Heinen (Forthcoming) for a more detailed analysis and a table of the actual numbers.

[131] Annual *imihigo* targets were set for consolidated area per priority crop and yields on these sites in Joint Agriculture Performance Contracts. MINAGRI's BLJSRR 2017/18 contains actual 2018 yield data for the six priority crops and MINAGRI's annual report 2017/18 depicts realised numbers for consolidated acreage, referring to its *imihigo* report as source.

The continued simultaneous existence of the two distinct and diverging food crop data systems is also evident in MINAGRI's AR 2017/18, which reproduces the incompatible *consolidated* crop area from performance contracts (MINAGRI 2018a:1, table 3) and the *total* crop area from the SAS (MINAGRI 2018a:6-8, table 9), where the former is often higher than the latter, which is by definition impossible.

2018	Performance Contracts (PCs)			Seas. Agricultural Survey (SAS)			*Comparison (PCs-SAS)*			*Overreporting (%)*		
	Consol. Area (ha)	Yield (MT/ha)	Production (MT)	Total Area (ha)	Yield (MT/ha)	Production (MT)	*Area (ha)*	*Yield (MT/ha)*	*Production (MT)*	*Area (ha)*	*Yield (MT/ha)*	*Production (MT)*
Rice	35,867	5.6	200,852	32,780	3.5	113,880	*3,087*	*2.1*	*86,972*	*9%*	*61%*	*76%*
Wheat	52,155	2.3	119,956	12,225	1.1	13,475	*39,930*	*1.2*	*106,481*	*327%*	*109%*	*790%*
Maize	408,586	3.7	1,511,768	296,330	1.4	424,204	*112,256*	*2.3*	*1,087,564*	*38%*	*158%*	*256%*
I. Potatoes	163,525	22.0	3,597,539	111,480	7.5	835,576	*52,045*	*14.5*	*2,761,963*	*47%*	*194%*	*331%*
Cassava	96,575	20.7	1,999,103	92,113	12.2	1,127,199	*4,462*	*8.5*	*871,904*	*5%*	*69%*	*77%*
Beans	767,410	1.7	1,337,442	556,323	0.9	484,729	*211,087*	*0.9*	*852,713*	*38%*	*100%*	*176%*
Total	**1,524,116**	**5.8**	**8,766,659**	**1,101,251**	**2.7**	**2,999,063**	***422,865***	***3.0***	***5,767,596***	***38%***	***111%***	***192%***
Source	*MINAGRI AR 17/18*	*BLJSRR 17/18*	---	*SAS 2019*			---					

Table 12: Difference between data of national performance contracts and agricultural surveys
Source: see table

To summarize, from 2008 to 2013, both the agricultural survey and the administrative data collection system produced grossly overestimated food crop estimates. From 2014, the overhaul of the agricultural survey system led to a correction of inflated numbers that were adopted in official statistics. Simultaneously, the detached administrative data collection system propelled by *imihigo* targets continued to report ever increasing land use consolidation and yield growth within these sites without being seriously questioned. Even more, the completely incompatible results of joint *imihigo* reports (BLJSRR) and seasonal agricultural surveys were depicted next to each other in official ministry reports.

The established findings regarding stagnating and overreported food crop production in Rwanda from 2005 to 2018 raise several questions, of which the following three are discussed in the next sections: first, why Rwandan food crop production stagnated in the examined period in the first place; second, what led to the proliferation and eventual correction of systematic overreporting; and third, how Rwanda acquired and maintained the false reputation of having achieved skyrocketing food crop production and yield growth.

6.4 Causes of Stagnant Food Crop Production

Rwanda's either stagnating (official national and FAO statistics) or mediocrely growing (NAS and SAS data) food crop production levels and yields beg the question which factors held the country back. It is not attempted here to quantify the various causes (and this might not be possible given the availability and quality of evidence). Rather, the particular manifestations of prominent technological, environmental, and human and political economy factors and their likely impact are depicted, leading to a hypothesis of their aggregate effect.

Technological 'Green Revolution' Factors

According to Rwandan government sources, mineral fertiliser application –the most effective ingredient to raise yields (McArthur and McCord 2017)– increased from 0.5kg/ha in 2000 to 43.5 kg/ha in 2019

(MINAGRI 2019). This trend is consistent with Comtrade fertiliser import data. Channelling subsidised fertiliser towards four priority food crops (maize, rice, wheat, and Irish potatoes) was a central pillar of Rwanda's CIP (Kathiresan 2011). Chemouni (2016) painstakingly described how the country's fertiliser distribution system was created and managed quite effectively. Coincidentally, post-correction FAO yield data of the four subsidized crops highly correlates with Comtrade fertiliser data from 2005-2016 (correlation coefficient of 0.76), which however –given the demonstrated unreliability of the FAO's statistics on Rwanda's food crop yields in that period– is spurious, and thus points towards the peril of shallow impact evaluations using a combination of well-fitting datasets.[132] Given the available data, a more sophisticated regression exercise would be futile. In general terms, Rwanda's strong increase of mineral fertiliser import, distribution, and application from 2006 would predict high yield growth.

Considering other technological factors, Rwandan sources indicate high growth of plots being subjected to irrigation, mechanisation, and the application of improved seeds. However, Rwanda's hilly terrain makes the former two very difficult in large parts of the country. As a result, mechanised tillage farming was practised on only 4.2% of the cultivated area in 2019.[133] Similarly, only 3% of agricultural land was irrigated and improved seeds were used on merely 8.5% of cultivated land (NISR 2019:vii). Good agricultural practices, however, have proliferated widely, exemplified by 72% of farm plots being protected against erosion, and almost 50% of plots being fertilised with manure (NISR 2019:vii). In conclusion, all technological variables –most importantly mineral fertiliser application– have evolved very favourably over the last one and a half decades. Thus, they cannot explain but contradict stagnant food crop production and yield numbers.

Environmental Factors

Rwanda's mountainous geography means that it has many micro- and niche climates, making technocratic agricultural engineering inherently difficult (Ansoms et al. 2018; Clay 2017). Annual rainfall in Rwanda decreased by approximately 16% from 2005-2017[134] and is often quite erratic. While floods, droughts and even hailstorms occur regularly, a World Bank risk assessment qualified them as not impacting aggregated agricultural production and yields on a national level (Giertz et al. 2015). According to the Rwandan government's disaster reports 2016-2019, around 10,000 ha of crop area are on average destroyed each year due to rainstorms (50%), floods (24%), hailstorms, and landslides (e.g. MINEMA 2019).

Pests and diseases are having a much larger negative effect on food crop yields. In some years and regions, crop-specific illnesses can have significant impacts on food security. Moreover, the prevalence of pests and diseases was found to be increasing, potentially exacerbated in the future by more drastic

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[132] And indeed, using a different time series of fertiliser inputs from the International Fertilizer Development Center results in a negative correlation coefficient of -0.7.

[133] This number was calculated by dividing the total mechanised land area of 47,060 ha in 2019 (MINAGRI 2019) by total cultivated land of 1.114m ha (NISR 2019).

[134] Annual rainfall in Rwanda was calculated by using the terrestrial precipitation time series of Matsuura and Willmott (2018).

climate change (Giertz et al. 2015). However, in general, diseases and pests occur locally, and therefore, the effects of individual occurrences do not show in national yield data. Rather, their constant presence contributes to yields gaps (Giertz et al. 2015). Acidic and depleted soil is quite common in many Rwandan agro-ecological zones, which is mainly attributed to parent materials and steep slopes (RAB 2021). Soil research, mapping, and fertility management in Rwanda, while on the rise, is considered inadequate (Rushemuka, Bock, and Mowo 2014).

Whereas current climate change models are not able to properly simulate the particular impact of global warming on Rwanda, it has been observed that the country's rainy seasons have become shorter and more intense leading to both more floods and more droughts, and that overall temperature has been increasing rather strongly (Giertz et al. 2015). In sum, Rwanda's environmental situation is understood to be gradually worsening due to, among others, advancing climate change. However, this evolution occurs incrementally and cannot explain yield stagnation in the face of abrupt multiplication of fertiliser application and the proliferation of other Green Revolution technologies, some of which are deployed to counter exactly these austere environmental conditions.

Human and Political Economy Factors

For several decades, Rwanda has been facing extreme and increasing land scarcity and population density. Some authors have seen this factor as one of several causes of the genocide (André and Platteau 1998; Verpoorten 2012; Verwimp 2013). The post-genocide Rwandan government stated that the traditional way of smallholder subsistence agriculture was a dead end and that a fundamental modernisation was required (RoR 2000). Some scholars consider Rwanda's status quo as a neo-Malthusian situation, which justifies the practised vehemence of agrarian reform implementation (Harrison 2016; Van Hoyweghen 1999). Others explicitly warn of using this narrative and bank on the capability of farmers to innovate when induced to do so rather than the government's approach of imposing innovation (Clay 2018; Dawson et al. 2016; Van Damme, Ansoms, and Baret 2014).

The brief summary of thorough micro-level evidence in section 6.1 found that Rwanda's top-down agricultural policy-making ignored the reality on the ground, including agronomic conditions and farmer rationales. Even more, revolutionary, abrupt and strict agricultural reform measures created significant upheaval of rural communities and farmers' livelihoods, leading to multidimensional negative effects such as decreased food security, increased landlessness, and poverty for a large share of the population. In a nutshell, the reforms strongly increased inequality by driving a wedge in rural communities, enabling a few well-situated farmers to profit from modernisation, while the majority lost out. Additionally, these studies argue that agricultural policies did not properly account for agro-ecological micro-zones, thus exacerbating their other negative effects.

Aggregated Effect of the Determinants

Section 6.3 has elaborated in detail that national food crop production levels and yields either stagnated or at most grew very moderately from 2005 to 2018. Given the strong proliferation of Green Revolution technologies, the aggregate of all evidence implies that the turmoil created by the radical reconfiguration of agricultural practices from 2008 has been so high that even macro-level performance was affected such that the presumably large yield-driving effects of mineral fertilizer application and other modernisation techniques were offset by the yield- and production-depressing effects of severe systematic disruption of regional monocropping and other ad-hoc changes.

From a purely technocratic view, it would be a mystery why Rwanda's food production levels and yields stagnated (or only grew very moderately) over the last fifteen years, despite the country's ambitious agricultural transformation programme and its high technocratic capabilities and state effectiveness. However, with the caveat that quantifying any determinant was not possible, taking into account abundant and consistent micro-level evidence of disruptive change leads to a plausible explanation of food crop production stagnation.

6.5 Proliferation and Eventual Correction of Systematic Overestimation

It is well-known that agricultural statistics in developing countries are often of poor quality (Jerven 2014). Depending on the employed data collection methodology (and after assuming a proper sampling method), several biases might be at work. However, this section does not assess or explain general reporting errors and biases in Rwanda's food crop statistics system that existed already before 2008 and might or might not have been eradicated by the introduction of the SAS. Rather, the relevant question is why and how the time- and crop-specific massive production and yield overestimation from 2008 to 2013 did occur. In other words, there must have been reasons for the strongly rising food crop production numbers in these years (irrespective of general biases and errors applying throughout the years), when in fact actual production was (almost) stagnating.

Possible Explanations for Overreporting

The data patterns presented in section 6.3 in combination with the information about the data collection systems and their methodologies illustrated in section 6.2 essentially leave three possible explanations for overreporting. Either farmers reported ever increasing area, yield and production data to crop assessment field enumerators while most numbers were in fact stagnating. Or crop assessment *report* data did not solely come from crop assessment *surveys* but was amended upwards by merging it with MINAGRI's administrative reporting system, and then, that amended data became the official statistics. Or crop assessment report data was deliberately fabricated. The third explanation can be dismissed, as such a fabrication would have required the manual change of thousands of internally consistent individual crop- and district-specific production, yield, and area data points.[135]

[135] Crop- and district-specific production microdata of the crop assessments 2007-2009 could be retrieved by using the internet archive *Wayback Machine* (MINAGRI 2011b). This data fit official aggregated crop statistics quite well. In particular, while season 2007A data was quite off and rice production data deviated for later seasons as well, all other individual crop data added up from all thirty districts fit official national statistics almost perfectly. As a consequence, a deliberate manipulation would have not just required the adaptation of national level data, but of 390 (30 districts × 13 individual crops) data points per season.

Examining the likelihood of the two other outlined possibilities, there is only scarce written evidence regarding the compilation of crop assessment data (i.e. official agricultural statistics) from 2008 to 2013. Of the fourteen undertaken crop assessment surveys from season 2008A to season 2014B, only four corresponding reports (season 2009B, 2010A, 2010B and 2012A) could be found online. According to all of them, sampling occurred by making use of the NAS sampling methodology and surveying a 25% sub-sample (e.g. MINAGRI 2009a). Moreover, the 2012A crop assessment explicitly states that the *reported data* (which is identical to official statistics) is only based on the *surveyed sample* (MINAGRI 2012). Furthermore, two interviewed former MINAGRI employees confirmed this approach. A former intern in the MINAGRI statistics department during the 2008-2013 period, who was responsible for the compilation of crop assessment survey data of a few districts into provincial aggregates, confirmed that they received the original data collection sheets from field enumerators and transferred and added up the microdata in specific spreadsheets (interview A-05). A former MINAGRI senior manager explicitly stated that local administrative agricultural data and crop assessment survey data (i.e. the two distinct data collection systems) were not put together and that official statistics were only based on survey results (interview A-06). While acknowledging the Rwanda-specific cultural environment of secrecy and contortion (Jones 2014), it seems unlikely that the evidence presented above is entirely distorted to conceal a broadly conceived effort of amalgamating crop assessment survey and administrative agronomist data or even complete data manipulation. As a result, these scenarios are dismissed as explanations for massive overreporting.

Two Channels of Farmer Overreporting

This leaves the possibility of the existence of a particular mechanism that led farmers to accidentally overestimate or deliberately overreport their seasonal food crop production on a massive and annually accumulating scale to field enumerators conducting interviews for the biannual crop assessment surveys. There are two (potentially synergistic) channels through how this could have proliferated. As described in chapter 3, the Rwandan ruling elite has very ambitious plans for the complete reconfiguration of rural space and has implemented several far-reaching policies, such as a rural resettling programme (villagization or *umudugugu*) (Newbury 2011) and the introduction of performance contracts that in theory even branch out to the level of individual households (Huggins 2014). Peasants, who are widely affected by various government actions that have increased in number and intensity over the years, might attempt to mitigate state interference by complying with policies wherever deemed harmless and also by telling officials (including crop assessment field enumerators) what they want to hear. As farmers were aware of a strong government interest in raising food crop yields and production levels from 2008 onwards (top-down communication is well organised, occurs regularly, and is effective in reaching people), they might have ‘played along’ by reporting strong food crop growth. As the targeted results were reported to have been achieved each year, there was no incentive for responsible bureaucrats to further investigate whether the findings were correct.[136]

The second channel concerns the distinct agricultural data collection system of local government agronomists and the performance contract system which governs their actions. It was shown above that *imihigo* reports strongly overreported achieved crop-specific land use consolidation and realised yields within these sites and that this continued even after official statistics were adjusted downwards in 2014. This type of false reporting is known to occur due to "perverse incentives […] connecting data to financial incentives without checks and balances" (Sandefur and Glassman 2015:129). In particular, from 2008, district governments were given very ambitious land use consolidation as well as yield growth targets. In order to keep their jobs, local government employees have to perform well (Versailles 2012), which is measured solely in *imihigo* achievement reports. As a result, public officials often only care about quantified *imihigo* targets bar any reasonable deliberations (Kathiresan 2012) and are incentivised to tweak the numbers wherever necessary and possible. While there is a thorough annual district *imihigo* auditing process, auditors have very limited time to check the veracity of reported accomplishments. Both the amount of consolidated land and harvested yields on these sites are hence impossible to verify or falsify. Therefore, district governments had a particularly high incentive to overreport their achievements in this area (and in particular to report full achievement of targets). The Rwandan government was aware of structural problems in the performance contract system, namely unrealistically high targets, inadequate funding and poorly defined indicators, as early as 2010 (RoR 2010a).

Now, local government agronomists were aware of biannually conducted crop assessment surveys that independently estimated food crop production, area and yield, which would allow to compare results of both systems on district level. According to MINAGRI, district and sector agronomists cannot overreport their achieved results (too strongly), as this would be detected when crop assessment surveys found much smaller production in their area (interview A-06). While it is not clear whether there was a mechanism to actually cross-check results and hold local governments accountable for deviations, the general possibility of such an examination provides an incentive for agronomists to influence crop assessment surveys in their area.

Field enumerators of crop assessment surveys relied on rough eye estimates as well as farmer recall and forecasting estimates regarding yields and production. Peasants were also directly asked for the size of their crop-specific area. Local agronomists who visit peasants regularly can easily tell them how large their area of each crop (supposedly) is and what yield and production they have reached or are about to achieve during each season, relying on their 'expert' status.[137] Then, both the well-known tendency in

[136] It appears very implausible that farmers themselves believed production and yield levels to skyrocket over several years while they were in fact not. Thus, accidental overestimation by peasants accumulating over several years can be dismissed.

[137] Their estimation results might have been partially driven by a semi-conscious bias based on the expectation of rising yields due to the increased application of inputs (Desiere, Staelens, and D'Haese 2016).

Rwanda to not question authority and farmers' self-interest in telling the government what it wants to hear (and what the local government wants them to say) would result in peasants strongly overreporting (consolidated) area, yield and production.

Additionally, it is easy for district and sector agronomists (and some of their representatives on lower administrative levels) to be informed in real-time about which farmers are visited by field enumerators. This is because of the very high population density and the particularity of rural political and societal structures in Rwanda, described by Prunier as exhibiting an "almost monstrous degree of social control" (Prunier 1997:3). In particular, there are informal government representatives on the local level that are responsible for the administration of ten households, which means that virtually any relevant event occurring in any rural place can always be known instantaneously by someone connected to the government. This would allow agronomists to remind peasants about their estimates of crop-specific area, yield and production before they answer to the questions of field enumerators.

Potential Driver Exacerbating Overreporting

It is obvious and hardly accidental that the start of the structural overestimation in 2008 coincided with the start of the CIP in season 2008A. Furthermore, it is possible that parts of the programme were not carefully planned in agricultural strategies beforehand but arose rather spontaneously from the President himself. A special auditor general report on the CIP illustrates that in 2007, Rwanda was suffering from severe food insecurity, and that as a result, the President demanded from all ministers involved in rural development to "launch […] the green revolution in Rwanda" and to "immediately end hunger" (Auditor General 2010:8). There appear to exist a few internal government documents describing specific agricultural plans but only in 2011, i.e. four years after the launch, and only as a result of the auditor general's lament about the lack of any written text, a CIP strategy document was produced by an external consultant and published by MINAGRI (Kathiresan 2011). Even more, PSTA II, which was finalised in December 2008 and published in February 2009, hardly mentions the CIP (which started in late 2007) and its main rationales of regional crop specialisation and land use consolidation but sets different priorities and goals instead (MINAGRI 2009c). Therefore, it might well have been the case that the President (possibly together with some advisors) made an ad-hoc decision about extremely ambitious goals and potentially about some measures to achieve them, and that the Rwandan governance apparatus rushed to both implement land use consolidation and other reform pillars as thoroughly as possible (thus causing much disruption and damage as captured in micro-level studies cited above) and to tweak the result reports where necessary.

Eventual Detection and Correction

In an ideal world, agricultural statistics and performance monitoring would have immediately detected that reform measures were not effective in raising production and yields. However, the data output of both systems created the illusion that priority crop production levels and yields skyrocketed. Only the introduction of seasonal agricultural surveys by NISR in 2013 revealed massive overestimation. Official statistics were eventually corrected in 2014, meaning that grossly false numbers proliferated for ‘only’ six years. This revision was a result of the transformation of the agricultural data collection and compilation system from a simplistic crop production forecasting exercise highly vulnerable to manipulation into a state-of-the-art seasonal agricultural survey with a sophisticated sampling technique, satellite area measurement, produce weighing, and very timely questionnaires for yield metering. This development was arguably propelled by continuous improvement efforts based on the pursuit of technocratic excellence. Even more, despite all secretiveness and deception deployed in external communication, the inconvenient truth of failing to engineer an Asian-style Green Revolution was internally accepted. Notwithstanding the parallel existence of an *imihigo* system that still had not adjusted massive overreporting in land use consolidation and yields by 2018 as well as continuously rising food crop GDP numbers, official Rwandan agricultural statistics can be deemed reliable and sufficiently accurate since 2013. The FAO adopts all Rwandan numbers without changing them manually since 2014, and overall as well as crop-specific production, area, and yield numbers have all converged and are now identical for most indicators in Rwandan and FAO datasets.

Without having access to internal communication, the exact process of detection and correction cannot be traced. However, a few interesting things can be pointed out. First, the results of NISR’s initial SAS 2013 were not included in any other document, neither in official MINAGRI numbers (reported to the FAO) nor in the statistical yearbook (even though it is published by NISR as well). Even more, the SAS 2013 report itself tiptoed around the meaning of its results. In its foreword and executive summary, it omits its most important results (i.e. production levels and yields) and concentrates on less relevant summary statistics such as the relative share of different crops across seasons. It also never compares its results with the NAS 2008 or official statistics of 2012. Second, when MINAGRI accepted the SAS 2014 numbers as official, leading to a major break in the time series, this was mentioned nowhere. On the contrary, both MINAGRI annual reports and NISR statistical yearbooks, both of which had published easily comparable time series of the evolution of food crop production and yields in tables and graphs for years, abruptly discontinued them. In its annual report 2014/15, MINAGRI reported low SAS 2015 numbers and compared them to low SAS 2014 numbers, while the statistical yearbooks stopped to contain production numbers at all. Third, Agnes Kalibata, the widely celebrated agriculture minister whose tenure as full minister started in July 2009 after having been state minister since March 2008, was sacked in July 2014 (around the time the meaning of SAS results would have become clear) and the Rwandan government newspaper associated the firing with dismal performance (Munyaneza 2014). Kalibata briefly held a post as university administrator that represented a strong decline in responsibility before then becoming the managing director of the prestigious Alliance for a Green Revolution in Africa in September 2014 (National Academy of Sciences 2021) and a UN Special Envoy in 2021 (UN 2019).

6.6 Emergence and Maintenance of False Agricultural Success Reputation

While the Rwandan government was not able to sustainably raise food crop production levels and yields, it proved capable of creating and maintaining a robust reputation of having done so. The original emergence of the country's agricultural success story was obviously based on the overreported production and yield growth numbers, which were accepted by FAOSTAT, academics, and donors. Rwanda's massive increase in mineral fertiliser imports, its well-formulated agricultural transformation strategies, its general technocratic capabilities, and the observable zeal with which agricultural reforms were implemented made its agricultural growth statistics plausible. The real question is how it was possible that the public image of Rwanda's highly successful agricultural transformation was upheld after it adjusted its official agricultural statistics strongly downwards in 2014 and officially exhibited low production and yield growth from then on.

The first ingredient was certainly its silence on these developments in any document or communication as described above. A second factor that should not be underestimated is the willingness of parts of the international community and donors to believe in Rwanda's success, to which they feel to have substantially contributed with various development cooperation projects. Closely connected to this is the psychological mechanism known in marketing as Halo effect, which describes the "tendency for an impression created in one area to influence opinion in another area" (Lexico 2021). In particular, someone witnessing many truly remarkable developments in post-genocide Rwanda and having seen both physical evidence and statistics of rapidly improving agriculture, might (unconsciously) ignore, dismiss or explain away new evidence of agricultural reform failure.

Unfortunately, even the knowing complicity of international organisations cannot be ruled out, as exemplified by the allegations of some researchers (Anonymous 2019; Desiere 2017) and a Financial Times article (Wilson and Blood 2019) that the World Bank deliberately covered for Rwanda's dubious 2011-2014 poverty number measurement methodology changes. In the case of agricultural statistics, there are some recent reports that suspiciously bypass key performance indicators of yield growth or remain oddly generic in their formulations.[138] The 2019 flagship report *Future Drivers of Growth in Rwanda* by the World Bank and the Government of Rwanda states that "productivity in agriculture has increased strongly" (World Bank 2019:221). A recent FAO report reviewing Rwanda's food and agriculture policy succeeds in largely avoiding any substantial figures on production level and yield growth. One graph shows the 2013-14 yield drop in rice without discussing it and the CIP is described in a way as if it was just starting and no results were available yet (Tuyishime et al. 2020). A comprehensive IMF report states that "interventions [in the agricultural sector] have focused on increasing yields […]. Productivity has improved through expanded irrigation and fertilizer use, the use of improved seeds, and consolidation of land used for larger-scale agriculture" (Redifer et al. 2020). As evidence for both food crop stagnation and temporary overreporting is easily accessible, it is hard to not

[138] This is on top of FAOSTAT not issuing a publicly available note regarding its significant retrospective data correction.

conclude that reports of international organisations continued to tell the Rwandan agrarian success story against their better knowledge.

A final and arguably central determinant of Rwanda's continued agricultural success reputation are the brand-building capabilities of its government.[139] On the one hand, regular contributions on websites of international organisations (Thomas 2014; UNCTAD 2014; World Bank 2015) as well as occasional articles in widely read international media promote Rwanda's agricultural success story. Most prominently, a 2015 Guardian article co-authored by Agnes Kalibata details how Rwanda excelled in eradicating food insecurity and strongly decreased poverty by raising agricultural productivity and deploying Green Revolution measures (Kalibata and Roy 2015). This article was published at a time when stagnating yields and massive overreporting were already well known to the Rwandan government. A more recent article written by Kalibata in the Financial Times (Kalibata 2017) and an interview with her in Time magazine (Baker 2021) mention Rwanda's agricultural success as a well-established fact in passing.

On the other hand, Rwanda's brand-building occurs via the government's skilful navigation of international efforts to raise agricultural productivity on the African continent. This can be illustrated by looking at Rwanda's top performance in the Comprehensive Africa Agriculture Development Programme (CAADP), a major African Union initiative to boost agricultural transformation in its member states. Key goals include increased agricultural investment of 10% of governments' annual budgets and 6% of agricultural growth per year. Rwanda was the first country to sign the compact in 2007 and designed its agricultural transformation strategy in close alignment with CAADP (Golooba-Mutebi 2014). In both the first and second review exercise in 2017 and 2019, Rwanda ranked first out of 47 and 49 participating African countries, respectively. However, the detailed results for 2017[140] reveal that Rwanda's remarkable scoring was strongly based on procedural and input indicators and sub-indicators, and less so on output or development indicators. For instance, Rwanda ranks first and third respectively on the two procedural indicators "Re-committing to CAADP Process" and "Mutual Accountability for Actions and Results". While these milestones are certainly important and Rwanda did also perform quite well in more substantial indicators such as "Enhancing Resilience to Climate Variability" (ranked first), in the key outcome "Doubling Agricultural Productivity", which was only a sub-indicator, Rwanda ranked 31st out of 47 (African Union 2018).[141] In sum, Rwanda topped the list because of its ability and willingness to satisfy procedural metrics.

[139] See Pottier (2002) and Reyntjens (2013, ch.5) for an illustration of the RPF's ability to effectively communicate on the international level.

[140] A comprehensive internet search could not find detailed 2019 results.

[141] The Africa Agricultural Transformation Scorecard used by CAADP uses seven equally weighted indicators, which consist each of two to five sub-indicators (21 in total), to come up with a final score. For each sub-indicator, there is a benchmark score to be reached until a given year and every country is shown to be on track or not for each target. Unfortunately, the performance measurement system suffers from a severe arithmetic weakness. For example, indicator 3 "Ending Hunger by 2025" has five sub-indicators which go from 0-10 and are all weighted equally. However, the respective benchmarks, i.e. expected achievable targets, vary between 1 and 10. Actually, three of the five sub-indicators have targets of 1.00 ("Doubling agricultural

In a nutshell, the Rwandan government was able to maintain its image as a successful agricultural transformer by banking on the international community's need to believe in major African success stories (or even 'growth miracles') and possibly even the intentional selectiveness of international development organisations regarding evidence consideration, and by communicating effectively and using its technocratic capabilities to excel at globally renowned frameworks. This has so far sufficed to be universally recognised as a continental Green Revolution paragon with skyrocketing yields, while the evidence demonstrating the opposite has been mounting since 2013.

6.7 Sector Case Study Conclusion

Rwanda's agricultural reform was not a general or total failure. According to the low-growth path composed of NAS 2008 and SAS 2013-2019 numbers, food crop production volumes and yields *were* increasing moderately after all. And even the most scathing critiques agree that –given the country's general situation and demographic trends– profound structural change was (and still is) necessary to develop the country in general and its agrarian sector in particular (Ansoms 2020). The Rwandan government designed and implemented its agricultural transformation programme based on its modernisation ideology and by applying performance contracts as a military-style enforcement instrument that does not allow failure or discretion. While this approach was tremendously successful in several other domains, it turned out to be inappropriate to handle the complex intricacies of transforming traditional intensive hill-side subsistence agriculture.

Nevertheless, the particular practices of the government led to the development of a state-of-the-art agricultural statistics system that endogenously discovered massive food crop overreporting, which, however, was an endogenous product of the Rwandan governance system itself. The authorities built strategic food reserves, heavily invested in and constructed infrastructure for post-harvest storage, transport and logistics, built agro-processing factories, and devised and implemented value-based export strategies regarding the traditional cash crops coffee and tea as well as the new agrarian sub-sectors of horti-, flori-, and sericulture. Several of these endeavours have not (yet) worked out, but the genuine and enormous efforts of an institutionalised state system to make them work are clearly discernible.[142] Furthermore, administrative and decentralisation reforms, the universal land titling programme, and other measures did make the Rwandan countryside more 'legible', which –despite all justified critique

productivity", "Reduction of post-harvest loss" and "Improving food security and nutrition"), while one has 5.53 ("Access to agriculture inputs and technologies") and one has 10.00 ("Strengthening social protection"). This means that a country that manages to double its agricultural productivity and reaches 90% of its social protection targets is given the same points for these two sub-targets (1+9) as a country that achieves no productivity growth and achieves 100% of its social protection target (0+10). As a result, the scorecard contains major implicit and highly questionable assumptions about which measures are most important to bring about an agricultural transformation as well as which development indicators best capture success.

[142] While personal priorities of the President remain the strongest driver for government action in Rwanda, even without direct Presidential scrutiny, the institutionalised governance system of annual budget planning and supervision, performance contract design, monitoring and evaluation, and a culture of hard work in ministries and local governments (Chemouni 2019) ensures that continuous work to improve the agricultural sector does take place. This might not be particularly efficient and sometimes not very effective, but sincere attempts are being made.

on the overzealous high-modernist social engineering of the country's ruling elite– *is* a necessary ingredient of holistic socio-economic development.

Most importantly, there are some signs that the government has understood and internalised that developing the agricultural sector requires more nuance, both in allowing local agronomists and farmers more discretion in their production and technology decisions, and including their knowledge to build better general strategies (Ansoms 2019). This was at least partially driven by increasing resistance and complaining of peasants, presumably exacerbated by food shortages coinciding with the 2017 Presidential election (Ansoms 2020). Both growing more food security crops (sorghum, sweet potatoes) and intercropping practices are allowed again under official policies (Ansoms 2020). Moreover, in recent years, the Rwandan parliament has critically assessed the Ministry for Agriculture, and demanded written or in-person answers to its concerns (Kwibuka 2019; Mbonyinshuti 2018).

Even though the political will for a structural transformation for agriculture was particularly strong and despite the Rwandan government having the political power to force through even clearly unwanted policies in rural areas, elaborate policy programmes on agricultural modernisation and intensification failed spectacularly. The food crop sector turned out to be an excellent example of how the governance system's systematic weaknesses can impede economic development and how a 'transformation by force' approach can be inappropriate. Its top-down nature coupled with its over-rigidity and the difficulty to evaluate actual progress in the agrarian domain even led to systemic performance overreporting. The transformation of subsistence smallholder peasants into commercial farmers –arguably one of the most complex development tasks– could not be achieved with the current governance system. It remains to be seen whether the government is sufficiently reflective and flexible to produce transformational agricultural reforms that will eventually lead to the necessary explosion in food crop yields. The challenge's complexity and the control rationale of the RPF's governance mode are likely to significantly impede future success.

Chapter 7: Manufacturing

This chapter on Rwanda's manufacturing industry constitutes the last sector case study of this thesis. As the previous ones, it analysis evidence in order to first assess this arguably crucial and so far much underdeveloped Rwandan economic sector on its own and second to connect this industry's evolution with the overall argument on Rwanda's political economy of development that helps to answer the overall research question on varied economic performance across sectors.

However, this chapter does not provide a holistic sector analysis but rather a truncated illustration of several attempts to build up thriving product-specific manufacturing sub-sectors (see chapter 1.7 for methodological details). It makes use of the evidence collected in 26 interviews as well as several academic and report assessments and newspaper articles.[143] The chapter is structured as follows. First, a brief quantitative overview of the evolution of Rwanda's manufacturing industry and its sub-sectors is provided (7.1). Then, the country's industrial policies over time are depicted (7.2). Next, three brief case studies on product-specific manufacturing policy practices are summarised (7.3). Finally, a chapter conclusion is drawn (7.4).

7.1 Recent Evolution of Rwanda's Manufacturing Industry

As shown in chapter 3.6, Rwanda's manufacturing sector exhibited a decent growth rate of 6.5% per year from 1999 to 2019. However, this was smaller than the country's overall GDP growth rate (7.7%) and industrial growth rate (8.7%), which is why the manufacturing sector's share in the economy shrank from 10.3% in 1999 to 8.4% in 2019 and its contribution to the value-added of Rwanda's industry decreased from 55% to 44%. However, given its still large share in the industrial sector, manufacturing contributed 40% of the sector's overall growth (with another 40% driven by the smaller but rapidly growing construction sector). The growth performance of manufacturing activities can be broken down further, as the Rwandan national accounts system classifies manufacturing in eight sub-sectors and provides data on them despite their small size. In 2019, the largest manufacturing sub-sector was food-processing (32.9%), followed by beverage- & tobacco-processing (24.3%). Together, these two sub-sectors, which mostly consist of agro-processing, accounted for almost 57% of manufacturing, while the remaining six sub-sectors ranged between 4.3% and 10.2% each (figure 34). In the graph, it can be seen that food-processing's share increased by more than 23%, driven by an average annual growth rate of 9.3%, while the shares of beverage- & tobacco-processing as well as textiles, garments & leather decreased by almost 10% and 17%, respectively, since their growth rates remained below 4% p.a. The other five sub-sectors hardly moved in their relative size despite some of them exhibiting double-digit

[143] A definitional note on industry and manufacturing is in order. Rwanda's national accounts categorize the industrial sector into mining & quarrying, construction, manufacturing, electricity, and water & waste management. This chapter concentrates on the manufacturing industry and its sub-sectors, and the term 'industrial policy' (in a narrower sense) refers to manufacturing only, not to the other economic activities clustered in the industrial sector. Agro-processing can be situated on the definitional border of agriculture and manufacturing, demonstrating that global guidelines on national GDP accounting are in need of revision (Cramer, Di John, and Sender 2022; Whitfield et al. 2015:55–58). In Rwanda's national accounts, much of agro-processing value addition is presumably captured in the manufacturing sector. In its strategy documents, a distinction is made between agro-processing, and (actual) manufacturing. This chapter provides policy analysis and case studies on both.

growth rates.[144] From this analysis follows that the sole growth engine of all manufacturing sub-sectors has been food-processing. Unfortunately, it is not possible to map these sub-sectors onto those that have been designated as priority industries by the Rwandan government at various points in time (as illustrated in the next section).

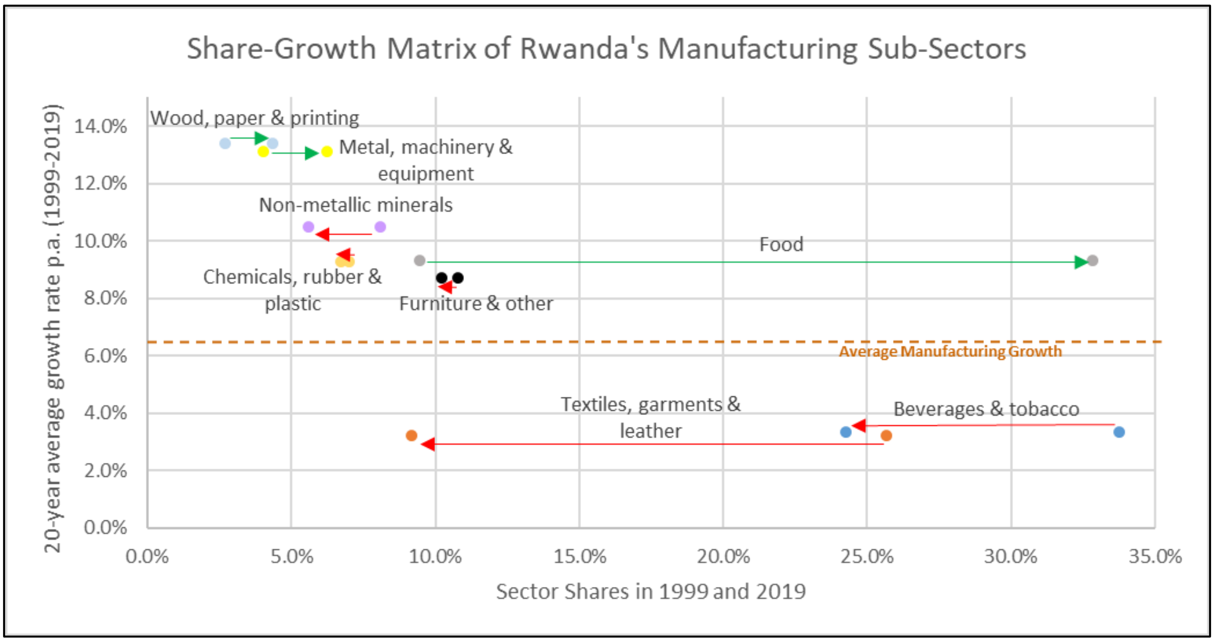

Figure 34: Share-Growth Matrix of Rwanda's Manufacturing Sub-Sectors
Source: Rwandan National Accounts 2019

7.2 The Rwandan Government's Industrial Policies from 2000 to 2019

The Rwandan government organisation with primary responsibility for manufacturing and the industrial sector is MINICOM. RDB, whose profile and jurisdiction has been sharpened over the years, has been charged with acquiring all types and scales of investment, including manufacturing (RDB 2020a:8). The National Industrial Research and Development Agency (NIRDA) was resurrected and rebranded in 2013 and is responsible for driving targeted industrial interventions as well as conducting applicable research into manufacturing and agro-processing value chains (NIRDA 2017a, interview M-25).

Horizontal Industrial Policy

Regarding industrialisation and the manufacturing sector, Rwanda's early post-genocide economic transformation strategies (RoR 2000) as well as its first National Industrial Policy in 2011 (MINICOM 2011b) and Private Sector Development Strategy in 2013 (RoR 2013b) focused on creating an enabling business environment, including substantial improvement of infrastructure, trade regulations, human resources, access to finance, and access to raw materials. Given the country's devastation, initially

[144] The reported proportions appear to be partially crude, which results, firstly, from the use of current numbers for sector shares and constant numbers for growth rates, and secondly, because 1999 absolute numbers are partially tiny, leading to enormous high sub-sector growth rates that are not reflected in a significant change of the respective sub-sector's share in overall manufacturing. For example, wood, paper & printing exhibited the highest average growth rate (13.4%) over the two decades, while its share in total manufacturing only increased by 1.6% (from 2.7% to 4.3%). This is because its absolute numbers grew from 3 bn RWF to 37 bn RWF.

concentrating on horizontal measures made sense. One structural constraint was the lack, unreliability, and high costs of electricity, which was given a very high political priority with the personal involvement of the President. Consequently, installed electricity capacity skyrocketed from 40 Megawatts (MW) in 2003 to 100 MW in 2011 and 220 MW in 2017 (Chemouni and Dye 2020). However, this did not translate into substantially more reliable electricity provision or lower costs for (business) consumers due to a number of policy failures. As a consequence and despite progress being made, for the time being, electricity issues remain significant obstacles for generating further investment in the manufacturing sector (Chemouni and Dye 2020).[145]

In a tiny country such as Rwanda, building up the manufacturing sector is inevitably connected with an export orientation. Hence, a second major constraint was the bad condition of transport infrastructure in combination with various tariff and non-tariff trade barriers between Rwanda and Uganda, Tanzania, and Kenya, which resulted in prohibitively high transport time and costs to the ports in Mombasa and Dar es Salaam. Within Rwanda, where the Ugandan border is less than 90 km and the Tanzanian border is less than 150 km away from industrial production in Kigali, proper road infrastructure was incrementally erected all over the country (NISR 2012a:107–13, 2022:93–94). However, decisive breakthroughs in decreasing costs and time to export required East African political agreements and their implementation. Rwanda joined the free trade area of the Common Market for Eastern and Southern Africa in 2004 and the East African Community in 2007, which later included a customs union and common market (COMESA 2021; EAC 2021). Data on actual export costs and time is patchy and contradictory due to differing definitions and sources. The World Bank Doing Business report 2010 quotes costs of exporting a container from Rwanda as 3,275 USD and time as 38 days (IFC 2009). In later years, their methodology changed and numbers are not comparable anymore. Other sources state that it cost 4,800 USD to transport a container from Mombasa to Kigali in 2013, which decreased to 3,625 USD in 2016. The route from Dar es Salaam exhibited costs of 4,200 USD in 2013 and 3,700 USD in 2016 (World Bank 2019). Transport time supposedly decreased from 21.1 days to 6.3 days for the Mombasa route within these four years, while for Dar es Salaam, they reportedly increased from 3.1 days to 3.8 days (World Bank 2019), which appears unrealistic. The Rwandan government stated that transport time reduced from 17 days in 2010 to 3-5 days in 2018 and transport costs reduced by 56% (MININFRA 2019). Even a detailed trade analysis of the International Growth Center (Shepherd and Twum 2018) and a detailed evaluation of Trademark East Africa's intervention programmes (Scott et al. 2018) do not provide coherent data on these simple metrics. It is clear though that much effort has been put into both agreeing on political trade deals and streamlining trade processes and that some (potentially even substantial) improvements have been achieved.

[145] General firm surveys in Rwanda, such as the World Bank Enterprise Survey (IFC 2011, 2019) and the Rwandan Integrated Business Enterprise Survey (NISR 2018) do not capture the concerns of manufacturing firms and (potential) investors well, since they interview a sample of all existing firms, most of which are operating in other sectors and do not require much energy.

Increasing Rwanda's human capital has been a key strategic pillar for the government since at least 2000 (RoR 2000). Similar to the tourism sector (see chapter 5), skills in any economic activity bar intensive smallholder agriculture were in short supply in Rwanda, which also included the manufacturing sector (RDB 2012a). There have been large efforts, in cooperation with donors, to create a proper technical and vocational education training (TVET) system and framework in the country (MINEDUC 2008; RDB 2019b). In 2017, 31% of secondary students were enrolled in TVET schools and the government targeted this share to increase to 60% until 2024. As in general education (Williams 2017), the quality of TVET, particularly in teaching practical skills, has been quite poor (GIZ 2020) and companies consider a poorly educated workforce a major obstacle (World Bank 2019:75). In manufacturing activities, most knowledge, skills, and competencies are tacit in their nature and can only be acquired via learning-by-doing (Polanyi 1966). Therefore, inadequate skills and even decreasing labour productivity in the manufacturing sector (RDB 2019b:7) are a chicken-and-egg problem, as investors and entrepreneurs shun manufacturing in Rwanda because of many constraints, which prevents workers from acquiring the necessary skills that would drive up labour productivity.

Access to finance is a major constraint for most businesses (both SMEs and larger ones alike) in developing countries and it is consistently listed by Rwandan firms as the largest obstacle in enterprise surveys (IFC 2011, 2019). In the late 2000s, the Rwandan government liberalised the country's financial sector to a considerable degree, but it retained ownership of several strategic financial organisations to act as 'functional substitutes' in lieu of a state-owned financial sector (Behuria 2018b). These include the Rwandan Development Bank (BRD), the Rwanda Social Security Board, and Bank of Kigali as the country's largest commercial bank. Apart from investing in large strategic government-initiated projects already discussed above (e.g. high-end hotels, KCC, Bugesera airport, etc.), these financial organisations also devised various programmes to finance private sector investments. For example, BRD set up a Business Development Fund (BDF) to support SMEs and an Export Growth Facility to fund export-oriented firms. These and other projects offer concession loans, matching grants, guarantees as collateral, training, and other support instruments to Rwandan start-ups and established companies (BDF 2021; BRD 2021). However, auditor general reports have lamented numerous irregularities in the allocation of BDF resources (Auditor General 2018:45–47, 2019:102–8, 2021:56). More generally, there are many structural problems in the Rwandan financial sector, including high non-performing loan ratios and resulting high interest rates to cover loan defaults, lack of professionalism, and low service quality, while many banks simultaneously earn high profits. In the end, while established programmes created some progress, existing structures have been insufficient to overcome the corporate finance bottleneck, which was, among others, due to remaining management, allocation, and efficiency issues (Behuria 2018b).

While industrial zones had existed for some time in Rwanda, a special economic zone in Kigali was only established in 2013 (Steenbergen and Javorcik 2017). A special economic zone policy was drafted in 2010 and updated in 2018 (GoR 2010; MINICOM 2018b). In this zone, the government provided free or low-cost space and even paid for factory construction of some firms (Behuria 2019b). In 2019, both of its phases were nearly completed with almost 100% of infrastructure developed and nearly all plots booked in both adjacent areas. 96 companies were operational, while 44 firms were still in their construction phase (RDB 2020a). Companies located in the now defunct Gikondo Industrial Park were required to move to the Kigali SEZ. Firms located in this SEZ can apply for export processing zone status, which so far was granted to four companies (RDB 2020a). While some companies conduct their primary or sole production in the zone (e.g. Rwanda Trading Company and Volkswagen), many firms use their premises as warehouses (Behuria 2019b). Kigali SEZ is operated by Prime Economic Zones, owned by the Rwandan government via various entities as well as Crystal Ventures (MINICOM 2018b). Additionally, nine further SEZs are being constructed all over the country, with the one in Bugesera located next to the new airport being the largest and most advanced one (RDB 2020a).

There exist some advanced environmental regulations in Rwanda, which particularly affect the manufacturing sector. The most prominent one is a total ban of plastic bags whose swift implementation in 2008 surprised industrial producers and forced some to interrupt or even permanently stop their operation (Behuria 2021). While manufacturing firms can request exemptions for their company, for example regarding the important of goods wrapped in plastic or plastic raw materials for the packaging of their own export goods, the severity of regulations and punishments in combination with their strict enforcement discouraged applications. Even more, manufacturers remarked that the entire sector is discouraged to further invest in production expansion or new projects (Behuria 2021). In one example, a planned project to establish a pasta factory in Rwanda was abandoned by a domestic entrepreneur because the finished pasta would be packaged in plastics and getting a permission was deemed too complicated. At the same time, several brands of foreign pasta are imported, which all have plastic packaging (interview M-02). Different government priorities –being recognized as a continental environmental leader to acquire service sector investments and tourist revenues *versus* establishing an enabling business environment for manufacturing companies and building up a thriving industrial sector– were hard to reconcile, but on several occasions instead of proper coordination, one concern fully trumped the other (in this case environmental protection pushed by the President) such that the other lost out (ease of plastic raw materials import) and the stakeholders had to suffer the consequences (Behuria 2021).

Sector-specific Industrial Policy

Various strategy documents in the early 2010s listed several manufacturing-related export sectors and products to be specifically supported without providing proper plans or goals. The national industrial policy of 2011 depicted a cluster progression ladder for 2011-2020 with coffee and tea (among others) at the bottom, textiles, construction materials, and agro-processing on the second step, pharmaceuticals and chemical products on the third step, and building materials and bioplastics at the top. However, on the same page (MINICOM 2011b:26), similar but not identical clusters are listed and structured in three steps (short, medium and long term). Moreover, all planned policy actions were focused on horizontal measures except the conduction of feasibility studies for these clusters. While no priority sector listed in the national export strategy of the same year can be counted as manufacturing (MINICOM 2011a), its successor in 2015 assigned a budget to manufacturing development and listed the Kigali SEZ as a concrete measure, which was supposed to focus on garments and electronics assembling (MINICOM 2015b). Only in early 2015 did the Domestic Market Recapturing Strategy (DMRS) put substantial weight (i.e. political capital and actual budgets) on the country's industrialisation efforts (MINICOM 2015a), born out of two dire and recently identified needs: to create a large number of off-farm jobs each year and to decrease the rapidly widening negative trade balance. The latter effectively made the document an import substitution strategy in all but name (Behuria 2019b). It structured sectoral interventions in three overall parts: construction materials, light manufacturing, and agro-processing. Within these categories, sub-sectors on product level were selected. Cement and steel & iron were given highest priority within construction materials, textiles & garments, pharmaceuticals, soaps & detergents, and packaging materials were picked as light manufacturing domains, and sugar, fertiliser, edible oils, rice, and maize were seen as focus areas in agro-processing. Concrete measures for existing and planned priority projects in these and several more product sectors were listed (MINICOM 2015a). The strategy's granularity as well as quantified budgets and targets made the document the Rwandan government's first vertical industrial policy document. In mid-2015, a "grand plan to drive the country's manufacturing sector […] anchored on district industrial projects dealing in various aspects of industrial production" was devised by NIRDA referring to DMRS as the parent strategy (Nuwagira 2015). It rolled out several rural, government-owned community processing centres as pilot measures to develop the hinterland and create off-farm jobs that would eventually be handed over to private sector entrepreneurs (see next section). Specific sectors included dairy-, potato-, and leather-processing as well as banana wine making and ceramics production (Nuwagira 2015). Finally, the 2017 Made in Rwanda policy (MINICOM 2017), and two-commissioned sub-sector master plans drafted by consultancies on agro-processing and construction materials operationalised and specified these recent industrialisation efforts. The former focused, aside from some horizontal measures, on staple foods, fruits and vegetables, dairy, and fisheries products, and the erection of a community processing centre was planned for each (KPMG 2014). The latter identified specific processed products based on the raw materials clay, wood, sand, and stone (all of which exist in Rwanda in significant amounts), which were seen as having the potential to substitute for imports and become competitive for exporting, including clay ceramics, bricks and tiles, cement, engineered wood, and granite and building stones (MINICOM et al. n.d.).

Investment Policy and Individual Deals

One of the most important goals of the Rwandan Development Board is to raise immense levels of foreign (and domestic) investment. To that end, several policy instruments regarding financial incentives, such as tax exemptions or holidays, utility subsidies, and low-interest loans exist. First, there are across-the-board exemptions for some taxes for manufacturing, mining, and financial companies, which have been criticised as being expensive and ineffective in several assessments (Chemouni 2020).

Second, most companies qualify for reduced electricity tariffs (interview M-16). Third, RDB avails of much discretion regarding the unilateral provision of investor- and deal-specific tax holidays or other subsidies to secure investment, which sometimes creates inner-governmental tension with the Rwanda Revenue Authority (Chemouni 2020). There is a Chief Investment Officer (2 full-time equivalents (FTEs)) in RDB with departments for investment marketing (12 FTEs planned), deal acceleration & transactions (34 FTEs planned), reinvestment & investor aftercare (15 FTEs planned), and strategy & competitiveness (8 FTEs planned). Thus, with 71 FTEs, the investment office within RDB trumps its tourism (28 FTEs) and skills (23 FTEs) department. Additionally, there is a department for SEZ & export facilitation, a division for business facilitation, and a one stop centre (jointly encompassing 36 further FTEs) (RDB 2018b). While classic investment marketing, such as roadshows and investor pitches (interview M-26), as well as classic export promotion, e.g. exhibitions and trade missions (interview M-22), is duly executed, an investment accelerator was recently introduced that conducts very specific research on individual products' value chains and pro-actively approaches individual firms to convince them of Rwanda's attractiveness for doing business. The focus is put on productive investments that are scalable and create thorough forward and/or backward linkages (interview M-24). It appears that the accelerator project was started to operate on top of existing departments with a high-level mandate and with higher-skilled employees. Finally, much effort has been put into making daily life for investors easier by handling all their regular government touching points in a one-stop centre (interview M-17) and by having an extra unit to aid companies with any upcoming problem, such as quarrels with the city council or local authorities, different interpretations of laws, specifically tax laws, and land issues (interview M-16).

Occasionally, the President himself as well as RDB as the high-level agency in charge of securing FDI and making high-impact deals, reeled in impressive, often large, and publicity-raising manufacturing investments. These included laptop manufacturing by Argentinian producer Positivo BGH, a Volkswagen assembly plant, smartphone production by Asian-Rwandan Mara, Chinese apparel producers (see next section), and German BioNTech vaccine manufacturing (Mugisha 2020; Nkurunziza 2021a). While these flagships projects might be good country marketing and lead to further investments, at least one project (Positivo BGH) exhibited substantial problems leading to the suspension of production activity and several others were criticised as lacking any connection to the local economy (Bishumba 2020; El-ganiny 2019; Iliza 2022).

7.3 Three Brief Case Studies on Product-specific Manufacturing Policy Practices

Textiles and garments

The textiles and garments sector is well known as a beginner's export industry for late developers due to it being labour intensive and requiring little capital and only simple technologies (Behuria 2017). Therefore, building up a competitive garments industry was part of the earliest plans to shift Rwanda's focus from a purely service-driven development strategy to one that also encompasses manufacturing, announced in the national industrial policy in 2011 (MINICOM 2011b) and indicated by the fact that a used clothing ban was already considered in the same year (Wolff 2020). The only existing industrial factory for textiles and garments back then was Utexrwa that had been founded in 1984 by an Asian Ugandan trader and had gone through several ups and downs since after the genocide, including substantial government support as well as neglect (Behuria 2019b). In July 2014, Chinese-owned C&H Garments was won as a large manufacturing investor with plans to invest 10m USD and create 30,000 jobs within five years (Times Reporter 2014a). Owned by two garments- and Africa-experienced female entrepreneurs, the company started producing clothes in Kigali's SEZ in March 2015 with 800 employees, five production lines and a capacity of 15,000 pieces per day, and expanded to 1,500 employees, a second production floor, and the equipment to produce 70,000 pieces per day in 2017. The expanded capacity was however never utilised and the number of jobs to be created was downsized to 4,000 until 2019 (Eom 2018).

In September 2017, NIRDA published a commissioned high-quality textile and garments value chain analysis, which found that 25 textile and garments firms officially existed in the country, several of which were not yet operational or were rather merchandisers merely selling apparel (NIRDA 2017b). In other words, textile and garments production in Rwanda barely existed beyond a handful of actual companies (besides Utexrwa and C&H, there were only two others with more than 50 employees) and many individual tailors, sometimes organised in cooperatives. Nonetheless, the sector was targeted for policy support by one of NIRDA's first two open calls in 2018 and 75 firms applied in the first phase of the open call (business project ideas were eligible, too), fourteen made it to the second phase, and six were selected for government support (NIRDA 2018a).

Also in September 2017, a second Chinese textile manufacturer, Huajian Group, signed a memorandum of understanding (MoU) with RDB to establish a footwear factory (and later other manufacturing plants) with 20,000 jobs within a ten-year investment plan in Rwanda (Bizimungu 2017). The firm's engagement was likely acquired via links to one of the two C&H Garments owners, as she had been a senior manager for Huajian in Ethiopia (Eom 2018). However, there have been zero mentions of the project in the Rwandan media since then. In May 2019, RDB signed yet another MoU with a Chinese investor, this time C&D Products, usually referred to by its brand name Pink Mango. Even though it was reported by Rwandan sources to be an additional garments producer (Bizimungu 2019b; RDB 2019c), it is evident that they rather bought 100% of C&H Garments and/or were already (co-)owners of the original investor (C&D Garments 2021; Pink Mango 2021).

Overall, the arrangement of the Rwandan government and the Chinese garments producer resembled a miniature version of the well-known South Korean-Bangladeshi Daewoo-Desh deal that arguably initiated Bangladesh's apparel boom (Khan 2013b). Similarities included the possibility of C&H Garments to profit from a preferential trade agreement with the United States (African Growth and Opportunities Act (AGOA)), the intense training of Rwandan workers and mid-level managers in the foreign investor's home country, the subsequent establishment of new garment firms by trainees in

Rwanda, as well as the serious commitment of both parties to make the investment work (Eom 2018). However, the decisive differences were Rwanda's adverse geographic conditions translating to very high transport costs, the lack of a Rwandan private sector partner, and critically, the suspension of Rwanda's AGOA trade terms by the US government in mid-2018 in response to the country's tariff hike on used clothes imports (Times Reporter 2018). There are contradictory reports on the latter's impact on garments production in Rwanda. According to one newspaper article, C&H Garments laid off "thousands" of workers in mid-2018 due to cancelled orders from the US (Gahigi 2018), while another one reported that the company had not been "affected by AGOA [suspension] at all" (Bizimungu 2019a). Additionally, while MINICOM's trade data claimed an 83% increase in apparel exports from 5.9m USD in 2018 to 34.6m USD in 2020, including a decline in exports to the US from 2.5m USD to 225,000 USD but a surge in exports to the DRC from 640,000 USD to 30.4m USD (Bizimungu 2020c), UN Comtrade and OEC datasets convey incompatible numbers. In particular, UN Comtrade data reports garments exports of 4.8m USD in 2018 and 5.2m USD in 2019 (2020 numbers are not available yet), while OEC data exhibits a decreasing pattern of 6m USD in 2018 and 3.4m USD in 2020. Furthermore, Rwanda's GDP in the 'textiles, clothing and leather goods' sub-sector grew only slightly from 63m USD in 2018 to 65m USD in 2020.

According to two interviews with expatriate advisors at RDB, textiles and garments has been de-prioritised by the Rwandan government in mid-2019 (interviews M-11, M-24). This was decided after talking to further potential investors for six months and realising that the sector could not become competitive in the foreseeable future (interview M-11). In particular, as argued by one sector export, while textiles and garments are very attractive in theory due to enormous export volume and employment potential, net exports are quite small due to the need to import almost everything. Moreover, to assess a country's competitiveness potential in this sector, cost blocs need to be studied, as the industry is strongly cost-driven. These blocs are raw material, transport, factory operation, and effective labour costs. While raw material costs are equal for all countries, even if Rwanda was able to create a productive labour force over time and became competitive vis-à-vis Kenya and Ethiopia in this regard, it would be impossible to match up to these countries in terms of transport costs (interview M-24). As a result, Rwanda's only niche appears to be in fast-moving fashion that is transported via airfreight and high-end sustainable fashion that can be sold for substantial premiums. The latter has been targeted by a Rwandan supplier to American luxury brand Kate Spade, which has probably suffered under Rwanda's AGOA suspension (Behuria 2019b), as well as a handful of Rwandan fashion design houses (interview M-10). It is not entirely clear though, whether concerted efforts to develop the Rwandan textile, garments and leather sector have been stopped, as a large tannery park was opened in 2021 (Nkurunziza 2021b) and several government employees still list apparel as a priority sector (interview M-22, M-26).

Construction materials: cement and other products

A focus on the domestic manufacturing of certain construction materials made sense because needed raw materials existed in sufficient amounts and local demand was estimated to remain very high due to the booming construction sector. DMRS mainly targeted cement, clay bricks and tiles, various stone-based products, and timber (MINICOM 2015a), of which only the first one is reviewed here. Three cement companies have existed in Rwanda over the last years. First, there has been Kigali Cement Company, which has not been operational for most of the time, has struggled with legal and ownership issues, and was in the course of being liquidated in mid-2021 (Anyanzwa 2021). Second, Prime Cement Company, owned by Angolan Milbridge Group, only started operations in late 2020, and it is unclear how fast it can ramp up actual production volumes (Bizimungu 2020b). This means that the third one, Cimerwa, has been the only major cement producer in the past.[146] Cimerwa started operating in 1984 as a joint venture between the Chinese and Rwandan government. It was then first fully acquired by RIG in 2006, until the Rwandan government bought 80% of the company in 2011 (Behuria 2019b). In late 2012, South African Pretoria Portland Cement (PPC) bought 51% of the company (Times Reporter 2012a). The remainder, still belonging to the government, has been put up for sale on the Rwandan stock exchange in August 2020 (Ashimwe 2020). Until PPC's takeover, Cimerwa's annual production capacity was 100,000t and it struggled with various issues, including the failure to invest in growing its capacity, which had been planned for years and for which a final contract had already existed in 2008. PPC then built a new production plant with a theoretical production capacity of 600,000t per year that became operational in mid-2015 (Times Reporter 2015). Cimerwa was able to incrementally increase its production volume from 115,000t (capacity utilisation of 19.2%) in 2015 to 350,000t (58%) in 2017, 412,000t (68.6%) in 2019, and 429,000t (71.5%) in 2021, with an expected output of 530,000 (88.3%) in 2023 (Behuria 2019b; Cimerwa 2021).

Due to Rwanda's persistent construction boom, cement demand significantly outstripped domestic production, and therefore cement imports steeply increased for years until they plateaued in 2013-2015 (figure 35). In 2016, when Cimerwa managed to increase its production threefold, cement imports sank for the first time in years and this trend continued in 2017. However, domestic cement demand grew strongly again from 2018, such that cement imports rose again, even though Cimerwa continued to raise its production levels. In 2019, Cimerwa exported around 12% of its production and had a domestic market share of 48%. Despite these positive developments, there have been two severe cement shortages in mid-2018 and mid-2020. The first one was caused by a two-month production stop at Cimerwa's plant for maintenance and upgrading that led to a months-long price hike of up to 49% (Behuria 2019b; Bizimungu 2018). The second one occurred when an urgent government request to build 20,000 classrooms within a few months led to cement shortfalls for many other construction projects in the country and price hikes of partially over 50% (Nsabimana 2020). Overall, it can be registered that after

[146] Additionally, it is the only one that also produces its own clinker, the main intermediary product of cement and a major value-adding step, while both other companies have been / are relying on clinker imports.

years of struggling to build up a national champion in cement production, the government finally succeeded to do so from 2015 onwards, when a foreign investor with the relevant know-how and financial muscle was brought in. It remains an open question whether the second foreign company will succeed and increase domestic cement production beyond Rwandan demand in the upcoming years (even though Prime Cement's local value creation will be much lower due to it having to import clinker).

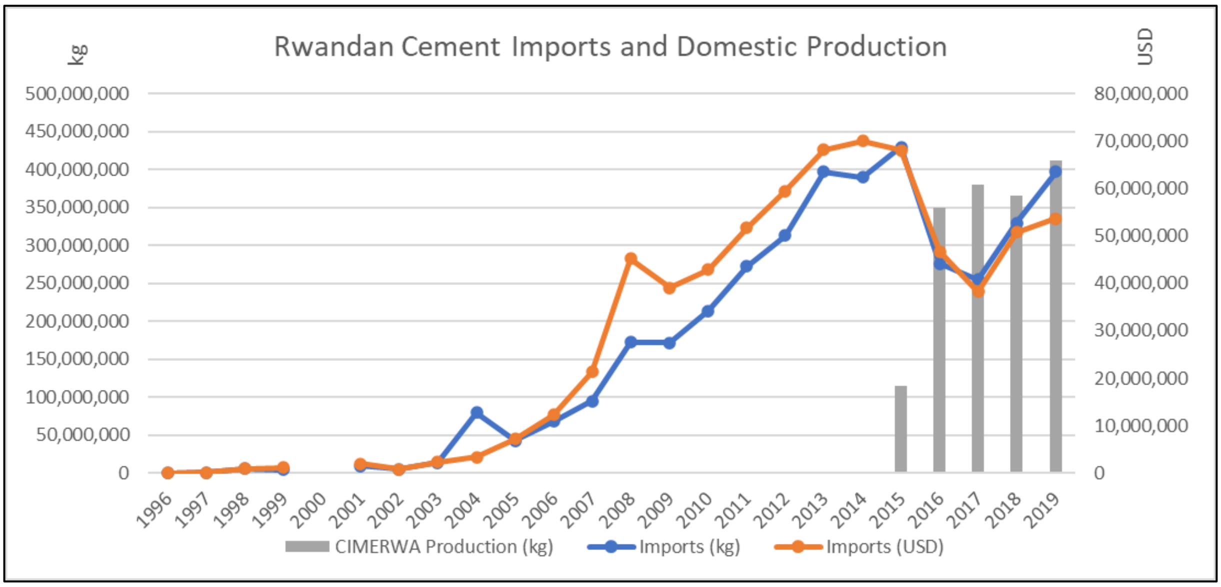

Figure 35: Rwandan Cement Imports and Domestic Production
Source: UN Comtrade Data, Behuria (2019), Cimerwa Annual Report 2020

The main advantage for the Rwandan government that helped it succeed in fostering the emergence of a successful domestic cement sector is that it required only a very small number of firms (here: two) with a quite simple value chain to thrive. The production of clinker requires only limestone, clay, and a few other minerals (PCA 2019), all of which are locally available in Southwestern Rwanda, where Cimerwa's production plant is located. To transform clinker into finished cement, only gypsum needs to be added (PCA 2019). Therefore, building up a Rwandan cement sector, while still requiring substantial efforts in recruiting capable investors, providing finance, and ensuring a smooth production process including access to all necessary raw materials as well as sufficient and reliable electricity, is easier than creating a complex product-specific manufacturing sector that consists of dozens or hundreds of smaller companies at various stages of the value chain with profound backward- and forward-linkages or accessing global or regional value chains that demand high standardised quality, reliability, and punctual delivery. In other construction material products, Rwanda has so far had less success. Building up a fully-integrated granite producer, East African Granite Industries, co-owned by the government and CVL, has been difficult, even though learning from failure did partially occur (Behuria 2018a). The domestic production of clay bricks and tiles also relies on one national champion, Ruliba Clays, which is also co-owned by the government and CVL. While there have been large efforts to professionalise this producer as well as build up several more firms that may eventually grow to a similar size, progress is slow and local production covers only a small amount of the huge demand (interview M-03). Finally, in 2018, CVL established Sawmill East Africa Limited as a potential national champion in timber production (CVL 2021b).

Agro-processing: community processing centres

Apart from traditional agro-processing (coffee, tea, and pyrethrum)[147], the Rwandan government designed a highly tailored agriculture-based manufacturing programme that aimed to establish rural, product-specific factories, known as community processing centres (CPCs). This endeavour has not yet been discussed in academic literature, so evidence is entirely taken from interviews, Rwandan newspaper articles, and a handful of reports. Initiated by MINICOM in 2013 and managed by NIRDA, the programme established a total of six pilot CPCs: Burera Dairy CPC, Rutsiro Honey CPC, Gatsibo Leather CPC, Nyabihu Potato CPC, Rwamagana Banana Wine CPC, and Nyanza Ceramics CPC. Additionally, two Kigali-based processing centres (Gasabo Wood and Nyarugenge Tailoring) may be understood as unofficial CPCs (interview M-23). Plans for other CPCs producing essential oils and medicine (using an already existing idle factory in Huye) were not put into practice. The decisions which products to process in which district were at least partially based on a district-specific SME cluster study from 2010 (MINICOM 2010).[148] Additionally to these CPCs, there already existed a few other crop-processing plants in Rwanda, e.g. maize mills (van der Laan 2011) and cassava-processing factories (IITA 2020). While CPCs were technically set up as public-private partnerships with shares owned by the government, BDF (i.e. a state organisation), and local farmer cooperatives or existing small companies (understood as anchor firms already possessing some knowledge on the respective raw materials), the responsible government agencies dominated decision-making on all levels (interview M-23). The government provided land for the processing plants and co-financed the factory construction, machines, and working capital in conjunction with various donors (interview M-23). The plan was to follow a 'design, build, and pass on' model, where the government would hand over ownership to anchor firms within a few years (Nuwagira 2015).

However, all six CPCs experienced various significant challenges from the start (table 13). The construction works of several plants were delayed, and some did not start operations after factories and equipment was ostensibly in place and ready for use (Ntirenganya 2021a). During operational times, capacity utilization was very low, reported to be around 1% for some and 5-13% for others, and CPCs made substantial losses. Nyanza Ceramics CPC never became operational. For many, it turned out that installed machinery and equipment were inadequate, proper maintenance was not possible, and working capital was lacking. Prompted by an investigation of the auditor general in 2019 and 2020 (Auditor General 2019:110–11, 2020:72,110), the Rwandan parliament officially ascertained in 2021 that the

[147] The coffee sector was discussed at length in chapter 4. See Behuria (2015b) for tea-processing, and Huggins (2017b) and Behuria (2015a) for the pyrethrum sector.

[148] This claim was made by the minister of trade and commerce in a parliamentary hearing in October 2021 (Sabiiti 2021). The CPCs in Rwamagana, Rutsiro, and Gatsibo were indeed focused on the most competitive SME clusters in the district. In Nyabihu, potatoes were the third most competitive one. However, milk or dairy were not in the top five products in Burera, while Nyanza did not entail clay or ceramics as promising sectors (MINICOM 2010).

entire CPC programme had failed. The minister of trade was questioned by legislators and admitted that "no planning or feasibility studies [had been] done" and in total, the government lost 4.8bn RWF (Sabiiti 2021). As a consequence, it decided to look for buyers for some CPCs. So far, only Burera Daily and Nyanza Ceramics were sold to a Zimbabwean and Angolan company, respectively, both for substantially lower prices than initial investment expenditures (Mwai 2020; Ntirenganya 2020).

Community Processing Centres (CPC)						
No.	1	2	3	4	5	6
District	**Burera**	**Gatsibo**	**Rutsiro**	**Nyanza**	**Nyabihu**	**Rwamagana**
Product	**Dairy**	**Leather**	**Honey**	**Ceramics**	**Potato**	**Banana Wine**
Product Details	Yoghurt, cheese, butter	Shoes	Honey wine	Clay as raw material	Crisps, fries	Banana beer and juice
Investment (RWF)	798,000,000	Jointly: 1,163,000,000		439,000,000	1,200,000,000	1,200,000,000
Sales Price	270,000,000	not yet sold	not yet sold	89,000,000	not yet sold	not yet sold
Sales Loss	528,000,000	---	---	350,000,000	---	---
Accum. Op. Loss	*n.a.*	*n.a.*	124,000,000	*n.a.*	99,000,000	*n.a.*
Fully Established	April 2015	*n.a.*	*n.a.*	February 2017	Late 2015	January 2019
Operational	After mid-2018	April 2014	March 2018	never	March 2016	Late 2020
Capacity Utilization	Low	Very low	6-13%	0%	<1% / 5-10%	1% / <23%
Other Problems	Idle for some years; Underutilization due to lack of milk supply	Inadeqaute machinery, lack of machine maintenance, only manual production	Only producing one product (liquid honey) instead of eight	Inadeqaute machinery, lack of working capital, lack of machine maintenance	Only producing one product instead of 8; wasted packaging material	Stalled construction, idle for 2 years, unusable banana 'porridge' produced by accident

Table 13: Overview of Community Processing Centres (CPCs) in Rwanda
Source: Interview M-23; MINICOM 2014; Auditor General Reports 2018, 2019, 2020; Nuwagira 2015; Ntirenganya 2021a, 2021b

In late 2021, it was decided to first upgrade the remaining CPCs, which included the acquisition of standard certification, before they were to be sold off (Ntirenganya 2021b). Obviously, the CPC pilot project was discontinued, and the overall approach to fostering agriculture-based manufacturing was changed. In this regard, the direction of NIRDA as the responsible implementation agency was changed and an annual open call programme was launched, where existing SMEs within a few selected value chains per year could apply to win targeted technical and financial assistance (interviews M-23, M-25). In particular, support was threefold: first, grants or favourable loans for the acquisition of needed technology (equipment, software, etc.) were provided[149]; second, technical expertise was available for free; and third, staff training was also supplied for no costs (NIRDA 2018b). In its initial year 2018, the focus was put on the banana wine and garments value chains, in 2019 on wood-processing and fruits and vegetables, and in 2020/2021 on 'cow in the car'[150], clay and stone construction materials, and piggery, poultry, and animal feeds value chains (NIRDA 2021). In parallel, complementary, high-quality analyses on the currently existing Rwandan value chains in these sectors were commissioned and provided substantial applicable knowledge. In general, NIRDA was considered a highly capable government agency (also compared to much weaker and less generously staffed MINICOM) with the very competent Kampeta Sayinzoga as managing director (Interview M-11), corroborated by the fact that she was appointed CEO of BRD in late 2019 (NIRDA 2019). However, a general critique by an expatriate senior advisor was that Rwandan government circles sometimes do not consider scalability, as demonstrated by a prioritisation of banana wine (interview M-24).

[149] In the 2018 open call, financial assistance took the form of grants, in 2019 and 2020/2021, it was provided as a 0% interest loan, and in 2022, 8% interest loans were on offer for firms engaged in agriculture and urbanization, which, compared with common rates of roughly 20% p.a., still constituted decent subsidies.

[150] This open call's peculiar name refers to usually little considered ways how cow products are utilised (e.g. for car leather seats) and stands for the entire bovine value chain.

7.4 Sector Case Study Conclusion

Several Rwandan government officials responsible for manufacturing conveyed the narrative that many structural constraints held Rwanda back for years in this domain but that these have now been solved, and, therefore, the time has come to actually engage in the manufacturing of products, increase domestic value-addition, and thereby drive growth (interviews M-17, M-25). In particular, a large variety of horizontal measures, including the construction of a special economic zone, the reduction of tariff and non-tariff barriers to trade, the improvement of infrastructure, the reduction of transport costs, and very generous investor incentives were successfully implemented. Sector experts reason that investors really liked these incentives but indicate that internal surveys found that almost all would have made these investments without them (interviews M-10, M-24).

Reflecting on the identified manufacturing successes, it is remarkable that the government eventually found an arrangement that led to increased domestic cement production as well as managed to build up manufacturing capabilities for other construction materials in its party-and military-owned enterprises. Equally, given Rwanda's extremely adverse geographical circumstances, the initial attraction of international garments producers is impressive. When evaluating less successful product-specific manufacturing sub-sectors, the short duration of present attempts needs to be taken into account. However, appraising both the status quo of the country's manufacturing sector in general and looking into some sub-sectors in more detail reveals that Rwanda still is at the very beginning of building up any substantial value-adding production systems or value chain nodes that could eventually become a growth engine. The very low level of firm capabilities, the hardly existing backward and forward linkages of current manufacturers, and the weakness of the actual private sector (i.e. domestic entrepreneurs, where the state is not involved) are not promising.[151]

The government has correctly realised that at least a partial focus had to be put on manufacturing, as traditional industrialisation remains the strategy that can generate a large number of low-skills, off-farm jobs and is therefore a necessary step in transforming into a wealthy nation. So far, the Rwandan state is far from being able to conduct complex policy-making in manufacturing, including setting up a bureaucracy that is very close to firms, listens to their valid concerns, and incrementally adapts policy instruments, while at the same time being sufficiently autonomous to withdraw subsidies when necessary. Even more, it appears that the tiny domestic private sector is not seen as a genuine ally but as a further group that needs to be controlled. Given the limited capabilities of MINICOM, the adverse exogenous conditions, the tendency of the higher ruling elite levels to focus on shiny flagship projects, and the current top-down governance mode prioritising control over potentially disorderly and unpredictable but promising private sector innovation, an actual turnaround of the manufacturing sector, whose share in the country's overall economy is shrinking, appears unlikely.

[151] An additional factor, omitted in the analysis and whose impact is unclear, is the power of trade cartels. There are narratives that some production lines, which domestic investors would be both willing and capable to enter, such as toothpaste manufacturing, do not emerge because powerful Rwandan importers prevent this from happening (interview M-02).

Chapter 8: Conclusion

In some sense, conducting a holistic analysis of Rwanda's post-genocide political economy of development during the years 2020 to 2022 was an almost ideal point in time. First, a sufficiently long interval from the earnest beginning of governmental long-term strategies had already passed, which allowed to observe successfully completed or preliminarily failed transformations in some sectors. In particular, the implementation period of Vision 2020 (2000-2020) neatly encompassed this phase. Nevertheless, it is evident that other developments need several decades to fully unfold and can only be comprehensively appraised then. Second, fieldwork was completed in late 2019, which coincidentally happened to be briefly before Covid-19 became a global pandemic in March 2020, causing a deep rupture of life and the economy also in Rwanda. Therefore, the time frame 2000-2019 may be understood as an enclosed era of post-conflict and pre-Covid economic transformation in Rwanda, but this is of course up to future assessments to decide. While the impact of Covid is not included in the analysis, it is possible to say that in September 2022, there are no signs that the overall political situation in the country has changed. Third and most importantly, this work could be built on a decade of high-quality academic research on Rwanda's post-genocide economic transformation path, which is synthesised in the following first section of this concluding chapter and provides the frame for placing the thesis within the wider literature as well as illustrate its contribution (8.1).[152] Equipped with these synthesised research findings plus the evidence depicted and analysed in the chapters 4-7, it is then possible to answer the research questions posed in the beginning of the thesis. The contextualisation of the previous section allows to elicit how this thesis combined the findings of various authors to create the base of the argument, and how the propositions and reasoning were then advanced based on the collected empirical evidence (8.2). Furthermore, a reflection of how well the political settlements framework has been able to make sense of Rwanda's economic transformation is provided and this work's contribution to political settlements theory is highlighted (8.3). Finally, a brief outlook into Rwanda's possible future is made, highlighting the likely binding constraints and challenges the country may face over the next years, including the implications for policy-making (8.4).

8.1 Placement in and Contribution to the Literature

Propelled by continuous research progress regarding the political economy of sustained economic development in Africa (e.g. Booth 2012; Levy 2014; Whitfield et al. 2015)[153], a small new branch within Rwanda scholarship emerged that tried to capture the nature of the country's economic development. Analyses in this sub-field of Rwanda studies have become more sophisticated over the last years and produced remarkable insights into the country's transformation path in spite of both the scarce political inside information being obtainable by researchers and the bifurcation of academic and non-academic

[152] While a few key points of chapter 3 on Rwanda's political economy are repeated, here the content is outlined in chronological order and by author, showcasing the intellectual history of this topic.

[153] See Booth (2021:242) for a longer list of formative sources.

debate on Rwanda's politics. Still, the majority of social science research on Rwanda is not primarily concerned with development as understood in this thesis, even if it explicitly uses this terminology. As pointed out by Harrison (2020), researchers who approach developmental questions from a human rights perspective are not development scholars but human rights scholars.[154] Focusing on development requires the neutral acknowledgement of the historic nature of capitalist transformation processes including the transformation of rights that can have adverse impacts on many individuals and communities. Taking into account all academic scholars producing detailed knowledge on post-genocide Rwanda from a perspective *other* than the political economy of development, that is the vast repertoire of historians (e.g. Desforges 1999; Newbury 1988; Prunier 1997, 2009), political scientists (e.g. Beloff 2018; Beswick 2010; Jones 2014; Purdeková 2011a; Reyntjens 2013), multidisciplinary books (Campioni and Noack 2012; Straus and Waldorf 2011), and other social scientists (e.g. Ansoms 2008, 2010, 2013; Ansoms et al. 2018; Ansoms and Rostagno 2012; Gökgür 2012; Hasselskog 2015, 2018; Huggins 2017a; Ingelaere 2010, 2014), the small field of economic development research within Rwanda studies has applied various general political economy frameworks, including developmental states literature and political settlements analysis, to make sense of the country's exciting post-2000 economic transformation.

This academic journey was arguably initiated by David Booth and Frederick Golooba-Mutebi's seminal 2012 article on developmental neopatrimonialism in Rwanda published in African Affairs. The duo continued their work in subsequent years (Booth et al. 2014; Booth and Golooba-Mutebi 2014; Golooba-Mutebi and Booth 2013) and probably developed the first holistic political economy explanation of the country's post-genocide economic development path. From then on, a couple of further authors joined and substantially shaped the debate on Rwanda's recent economic transformation. The main contributors were Pritish Behuria (2015b, 2015a, 2016a, 2016b, 2017, 2018b; Behuria and Goodfellow 2019), Benjamin Chemouni (2014, 2016, 2017b, 2019, 2021), Laura Mann and Marie Berry (2016), and Graham Harrison (2016, 2017). All of these authors have been referenced multiple times in this thesis. Naturally, other scholars contributed to this research stream as well, for example Tim Kelsall (2013), whose book chapter closely resembles Booth and Golooba-Mutebi's work, and Tom Goodfellow (2012, 2014, 2017), who approached the topic through the lens of urban studies, but those listed above are the ones whose works I consider most formative and holistic, in the sense that they applied grand economic transformation theories, exhibited own theory-building ambitions, and collected ample primary empirical evidence from interviews with ruling elite members and other important Rwandan stakeholders as well as by conducting sector case studies. Furthermore, they analysed the whole spectrum of political motivations, resulting policy actions, and economic outcomes. This triad (what was done, why it was pursued, and what the results were) is used as a structuring devise below when

[154] This is not to say that development scholars do not take human rights questions into account. However, they do make it a second-order category, as, by definition, they are primarily concerned with analysing and understanding development. See Harrison (2020:48–88) for a more elaborate discussion of this complex normative problem.

their findings are depicted. Finally, a handful of other scholars, whose primary objective is not the comprehensive assessment of development processes but for instance the documentation of rights violations and injustices have contributed via the collection of in-depth empirical evidence and profound theorising on the nature of the Rwandan ruling elite (e.g. Ansoms 2009; Ansoms and Cioffo 2016; Gökgür 2012; Hasselskog 2018; Purdeková 2013).

Making use of the analytical tools newly developed by the research consortium Africa Power and Politics Programme, of which they were also a part, Booth and Golooba-Mutebi (2012) provided the analytical starting point by discerning Rwanda's political economy structure from what they called the African modal pattern of unproductive neopatrimonialism. They postulated that the Rwandan ruling elite had been able to centralize economic rents via its party- and military-owned enterprises (Crystal Ventures and Horizon) as well as by pooling private domestic investments of loyal Rwandan entrepreneurs (RIG). As a consequence, the government minimised individual enrichment and rent capture, political corruption and kickback payments, and built up a merit-based bureaucracy. Furthermore, these rents were then used productively to kickstart entire economic sectors (most prominently high-end hotels and mobile telecommunication). They provided substantial evidence for their propositions and concluded that Rwanda may be categorised, by and large, as exhibiting 'developmental patrimonialism'. Subsequent work by them and other authors gathered further evidence and thereby buttressed their explanations on how rents were centralised and then used strategically by the ruling elite to develop the country. As a consequence, this part of their research concerning economic practices and outcomes is now widely accepted.

Regarding political motivations that drove the Rwandan ruling elite to act the way they did, their deliberations are less convincing. Conceptually, this might be connected with their application of the political settlement concept as agency-driven elite bargains instead of structure-driven organisational power configurations. While they sketched some initial ideas in the working paper version of the article discussed above (Booth and Golooba-Mutebi 2011), they properly developed this part of their argument in a study commissioned by the Swedish Embassy in Rwanda (Golooba-Mutebi and Booth 2013), which they then reformulated in a report on the political economy of several East African countries (Booth et al. 2014) and a journal article in the Development Policy Review on Rwanda's agricultural policies (Booth and Golooba-Mutebi 2014). In particular, they asserted that Rwanda's post-2000 political settlement (understood as an implicit understanding among all power holders) consists of three interdependent elements: a commitment to power-sharing and political decision-making by consensus, the view that genuine reconciliation can only be achieved via development, and the search for an alternative to clientelistic politics (Golooba-Mutebi and Booth 2013:11–15). While they mentioned some structural factors as relevant, such as the enormous impact of the critical juncture of civil war and genocide that created the political space for the emergence of a strong regime, and the first systemic vulnerability condition, i.e. a lack of natural resources, they explicitly rejected their primacy in determining the country's political economy. They highlighted both the uniqueness of the RPF's historical evolution, which made it an exceptionally strong and institutionalised party that had the capacity to build an entire state, and the character of President Kagame, whom they described as being determined to the point of ruthlessness. In general, they identified individual and collective agency as the decisive driver of the political settlement by asserting first that the President's personal conviction that long-term peace, reconciliation, security, and stability can only be achieved by profound development led to the formulation and execution of the country's overall strategic direction (manifested in Vision 2020) and second that the ruling party's long-standing tradition of consensus-based decision-making and power-sharing carried over to formal and informal institutions of politics in post-genocide Rwanda.[155]

Concerning their central argument of effective and centralized rent utilization for economic development, Booth (2021) recently remarked that it was now evident that other conflicting government needs trumped capitalist development and effective private sector support, and that learning from policy failure was much weaker than the ostensibly solid implementation and practice of the performance contract system had implied (the latter point having been laid out in more detail in Booth and Golooba-Mutebi (2014)). Nonetheless, while some of their assessments turned out to be too stylized (and their explanation of political motivations must be largely rejected), their basic characterisation of post-genocide Rwanda as developmentally neopatrimonial, that is exhibiting effective rent centralization and utilisation, still stands and is a highly useful way of understanding key political economy processes in the country. Moreover, the duo brought up a few other themes that were later explored in more detail by other authors, for instance "difficult questions about trade-offs between liberal freedoms and human rights" (Booth and Golooba-Mutebi 2012:384) as picked up by Harrison (2016, 2017, 2020), the *imihigo* system as decisive for compelling state discipline and performance but also susceptible to dangerous over-rigidity (Booth and Golooba-Mutebi 2011:16–17) elaborated by Behuria (2018a, 2019b), Chemouni (2019, 2021), and this thesis, as well as the ruling elite's rationale that long-term reconciliation can only be achieved via wealth creation (re-formulated in chapter 3 of this thesis).

Pritish Behuria and Benjamin Chemouni, virtually simultaneously, specified the nature of Rwanda's political settlement, provided further detailed and varied empirical evidence on economic transformation, and thereby substantially advanced the scientific understanding of Rwanda's development path. The main theme in several of their publications was that the Rwandan ruling elite is driven by fundamental vulnerability regarding their legitimacy. Thus, they were able to fill the gap in the literature on structural factors driving the Rwandan ruling elite to adopt a certain survival strategy and act the way they do. In his PhD thesis, Behuria (2015b) stressed the government's need to simultaneously respond to the demands of three 'constituencies', i.e. donors, domestic elites, and the general population. He demonstrated that the ruling elite was hence driven by fundamental vulnerability

[155] Both assertions have already been discussed in chapter 3. While the second one was rejected in light of substantial counterevidence, the first assertion is an important piece of the puzzle and was picked up and rearranged by other authors a few years later (see below).

stemming from competing compelling forces and that this in general spurred but also at times impeded economic development. Furthermore, he sketched a few more characteristics of the Rwandan political settlement and their impact on the country's trajectory, which he further elaborated in subsequent journal articles. In particular, Behuria (2015a) provided further evidence and therefore confirmed Booth and Golooba-Mutebi's proposition of the ruling elite's effective rent centralisation via party- and military-owned investment groups. Moreover, he worked out that varying development strategies across sectors (party capitalism vs. market-led reforms) can be explained by the competing demands of the three stakeholders (donors, domestic elite, and general population) and thus by the ruling elite's systemic vulnerability. He provided examples of the pyrethrum sector, where the government attempted state-led development, and the much larger mining sector, where market reforms were favoured because international capital was needed. Behuria (2016a) identified substantial elite frictions and then showed how party-, military-, state-, and private investment group-owned enterprises fulfilled a second purpose (in addition to rent centralisation and utilisation) of dispersing political and economic power across a multitude of organisations. Behuria (2016b) focused on the application of ideological concepts and narratives addressing all three constituencies in order to fight substantial elite vulnerability and legitimacy concerns. In particular, the concept of *agaciro* (self-reliance) was promoted to strengthen nation-building. Behuria (2018b) advanced the earlier argument of incoherent development efforts stemming from competing stakeholder demands by providing two further case studies. In the financial sector, liberalisation efforts contradicted the strategy to conduct developmental lending, while the establishment and evolution of the Rwanda Development Board was caught between signalling governance reforms and other best practices to the international community and actually driving sectoral development. He concluded that these contradictions (even within sectors) made Rwanda a neoliberal developmental state with unclear priorities that sometimes produced transformative growth and often prevented just that. Behuria (2018a) contributed three further case studies, this time examining three party-owned enterprises (in flowers, dairy, and construction materials), which showed that learning from failure on various levels (governmental policy learning, capability-building of firms, and reciprocal learning of state-business collaboration) has often been weak. Finally, Behuria and Goodfellow (2019) examined the Rwandan government's overall development strategy of leapfrogging manufacturing and directly focusing on service-led economic transformation. They found that there was a disconnect between the so far successful roll-out of high-end service sectors (finance, real estate, conference tourism) and basic service sectors (health and education), that domestic linkages are missing, and that there is a profound mismatch of the rather few high-level jobs created by these sectors and the low skill level of the growing mass of young job seekers. They saw the recent re-focusing of the Rwandan government towards a mixture of manufacturing- and service-led growth as essential to achieve its overall goals.

Chemouni (2014) started with describing and explaining the nature of Rwanda's decentralization processes. Decentralization was implemented with the purpose of consolidating political power, i.e.

impeding local political entrepreneurship and rent capture, and to advance development, which resulted in local participation being strongly limited. District governments could barely set policies but were bound to implement central directives. Furthermore, it was the fundamental vulnerability of the ruling elite, mostly driven by its security and legitimacy concerns in the aftermath of the genocide and the configuration of Rwandan society, but exacerbated by international pressures, that drove the way decentralization was realised. In his PhD thesis, Chemouni (2016) elicited that Rwanda's superior state effectiveness in comparison with Burundi originated in the former's ruling elite feeling the constant need to prove their legitimacy by delivering both immediate social services and long-term economic development. Thus, structural elite vulnerability featured again as a key variable. However, his more recent work highlighted the importance of historically grown ideological convictions in shaping the particular political decisions taken when several options existed that were all in line with material interests. In particular, whereas the general wide-spread provision of health services was driven by the need to improve the ruling elite's legitimacy among the general population, its actual manifestation could only be explained by understanding the RPF's ideology (Chemouni 2018). Even more, Chemouni and Mugiraneza (2020) argued that there were important instances where policies and government actions contradicted direct material interests and that these could only be explained by the occasional primacy of ideas. For example, the coercive top-down implementation of some development projects demonstrably produced deep and broad resentment that ran diametrically opposed to the ruling elite's main goal of long-term political survival. It only made sense when incorporating the idea of Rwandan national unity transcending ethnic divisions. Finally, more research into the inner working mechanisms of the Rwandan bureaucracy provided detailed insights in the country's political settlement, concluding that the ruling elite exhibited both the political will (driven by its vulnerability) and the political power (driven by the country's particular historical trajectory) to pursue economic transformation and that it did so with a remarkable degree of success (Chemouni 2017b, 2019, 2021).

The two remaining sources listed above are first Laura Mann and Marie Berry (2016), who provided an interpretation of Rwanda's post-genocide evolution via the lens of Michael Mann's concept of the state's deepening infrastructural power, and second Graham Harrison (2016, 2017), who developed an alternative and mostly complementary rendition of the country's recent trajectory through the prism of capitalist transformation. Mann and Berry (2016) identified the same structural vulnerabilities as Behuria and Chemouni (i.e. scarce resources, elite frictions, and limited legitimacy among the general population) as driving the ruling elite's development programme that encompassed economic growth, a reordering of the physical layout, a social transformation of mindsets, and the provision of social services and infrastructure. The ruling party's ultimate goal was to "stabilise and legitimise political control while pursuing a longer term political transformation that would diminish its reliance on more violent forms of coercion" (Mann and Berry 2016:138). They interpreted the development trajectory implemented by the RPF as deepening both state infrastructure and capitalist relations and argued that transformative economic growth and political and social control go hand in hand. However, they registered the rigidity and absoluteness of policy-making that bears the risk of not learning from failure and losing touch of reality. Harrison (2016, 2017) confined himself to Rwanda's capitalist transformation in the agricultural sector but argued –in line with Brenner (1976)– that this is where the transition to capitalism in an agrarian society takes place. Regarding political motivations, he found the political survival of the ruling elite to be fully dependent on its ability to deliver sustained economic development (Harrison 2017). He judged this to be only possible by imposing an agricultural transformation 'from above', which would almost be certain to involve severe human rights violations. However, he concluded that embarking on this path may be necessary and in fact less risky than following a rights-centred development approach given Rwanda's particular circumstances. Due to the ostensible grand Rwandan agricultural success on a macro-level, as widely reported by all available sources and only recently proven wrong (see chapter 6), he argued that Rwanda's approach holds substantial potential to succeed.

Aggregating the assessments of these authors leads to a partial consensus. All scholars agreed that there was something distinct about post-genocide Rwanda's political economy in comparison to most other contemporary African countries, and that it was driven by the country's recent and quite particular history. The Rwandan ruling elite availed itself of extraordinarily high political power and was driven to pursue economic development by strong compulsions to legitimise itself and overcome its severe long-term vulnerability. The resulting long-term political survival strategy was a maxim of fundamentally transforming the country's society and economy to escape systemic vulnerability without comprising total political control at any point in time. This gave rise to a particular governance system that revolved around the policy implementation instrument of performance contracts.

The PhD thesis at hand built very strongly on this decade of research into the political economy of economic development in post-genocide Rwanda, but went beyond it in two important ways. First, several new sector case studies as well as extensions and updates on existing industry-specific analyses were provided. While the Rwandan coffee sector's development had already been the subject of academic research in the past years, scholars have chosen very different foci and thereby assessed distinct aspects of the sector. This study's chapter 4 updated Behuria's (2015b) PhD chapter with new data and interview evidence regarding the sector's more recent trajectory, provided new details on CWS consolidation and zoning, and contrasted successful coffee-processing transformation with the policy failure of stagnating coffee production. Based on this analysis, the chapter arrived at the conclusion that Rwanda's coffee sector did not hold the potential to serve as a relevant growth engine for the country. Chapter 5 provided a detailed new case study of the country's tourism sector, depicting hotel ownership structures and developmental processes that had not been described before. It assessed the industry's enormous contribution to Rwanda's economic growth and discussed upcoming challenges to maintain the sector's dynamic. The analysis of statistical data of Rwanda's food crop production and its political economy interpretation in chapter 6 provided conclusive evidence to resolve a profound puzzle on conflicting findings from micro-level fieldwork and macro-level statistics about the agricultural transformation results in the country. A brief analysis of some manufacturing sub-sectors in Rwanda provided new evidence about the difficulties to make Rwanda a thriving production location. The thesis' second overall novelty is that by synthesising the collected sector evidence and bringing it together with the findings of the literature on Rwanda's political economy in general it draws overall conclusions about the causal drivers of sectoral economic transformation as outlined in the next section.

8.2 Answering the Research Questions

Answering the secondary as well as the overall research question is now possible. In the following, first, the salient factors that led to successful or failed economic outcomes in the Rwandan coffee-processing, tourism, food crops, and manufacturing sectors are synthesized. Then, striking similarities and differences across these sectors are depicted by relating the four propositions formulated in chapter 1 to the case studies. Finally, the varied sector performance of policy success in coffee-processing and tourism and policy failure in food crops and manufacturing is explained.

The coffee-processing sector was shaped by a strong and complementary alliance of well-funded and high-capability American donors and a determined Rwandan government. The existing agricultural stock and expertise to produce an initially sufficient amount of coffee cherries was paramount. The low-technology and -capability nature of the value-adding process allowed donor-supported Rwandan cooperatives and firms as well as a small number of large foreign companies to acquire the necessary know-how quickly. Acquiring buyers of high-quality green coffee beans was made possible by donor contacts and the public relation skills of the Rwandan ruling elite. The extension and professionalisation of coffee cultivation failed due to insufficient and unenforceable attempts to compel farmers to take better care of their coffee trees, when it was unlucrative to do so. The tourism sector succeeded because the government invested overproportional amounts of their scarce resources into boosting the industry from almost zero to a level of international competitiveness within a decade. This risky strategy paid off and further investments, both domestic and foreign, were forthcoming. Two key endowments, a unique wildlife attraction and a safe and clean environment within a sea of relatively chaotic peer countries, helped to attract leisure tourists and large conference organisers. For now, large parts of the sector could be and actually were run by the government and the number of professional medium-sized private sector companies was small.

The food crops sector's composition of several million smallholder peasants cultivating a broad crop variety on tiny hillside parcels made a reform towards modern agriculture an incredibly complex task, which was not appreciated by the ruling elite and its technocratic policymakers. The enormous pressure to perform that was created by the rigid *imihigo* system actually only required the *reporting* of ever-rising consolidated hectares of land and yields within these sites, which turned out to not be verifiable. As a consequence, systematic overreporting occurred, reform measures were dodged wherever possible, and transformational change did not occur. The Rwandan peasantry's delicate and sophisticated system of minimising agricultural risk by engaging in diversification was resilient to the forceful and otherwise effective implementation system of the government. The manufacturing sector's structural disadvantages mainly coming from Rwanda's landlockedness was a key factor in its non-existent take-off so far. A second aspect was that many manufacturing product-specific value-adding processes required the emergence of an entire eco-system of small, medium-sized, and larger firms, which are connected via multidimensional backward and forward linkages and/or are integrated in regional or global value chains. The incremental evolution of such a structure would have to be properly supported and steered by the government, whose primary interest in keeping political control maximal prevented it from doing so.

Recurring patterns across all studied economic sectors could be identified as well. Looking at political will, all four sector case studies of the thesis demonstrated that the respective responsible government organisations put high efforts into achieving their clearly defined developmental goals. NAEB worked relentlessly to increase coffee production and the share of fully-washed coffee, RDB put in great efforts to attract domestic and foreign investment into the hospitality sector and continuously pushed hotels to improve their service standards, MINAGRI and district governments effected numerous measures to increase food production, and RDB and MINICOM worked very hard to raise manufacturing investment levels and improve industrial infrastructure, while CVL, Horizon, and other government-affiliated firms continuously developed its manufacturing firms' capabilities. Turning to the political power of the Rwandan government, in all four economic sectors, the government could and has implemented all sorts of strategies and policy directives, some of which required immense force and/or the mobilisation of large numbers of people. In the coffee sector, farmers were de-facto compelled to continue coffee cultivation and to deliver their harvests to wet mills, while established trader networks were effectively disbanded. In the tourism industry, hotel construction was centrally steered and construction and hotel operation rents were centralized. In food crops, massive re-engineering of agricultural practices was implemented regarding land property laws and land consolidation, villagisation, terracing, crop prioritisation, fertiliser distribution and utilisation, and value-adding through processing. Finally, in the manufacturing sector, centralized rents from other endeavours were strategically utilised for investment into promising manufacturing firms and sectors. Thus, all four sector case studies are in line with the finding of chapter 3 that the Rwandan government had both the political will for transformative economic development and the political power to effectively implement its policies (i.e. that the first proposition is true). However, as established in chapters 4-7, some development strategies have failed and thus, political will and political power have been necessary but not sufficient variables to explain varied sectoral developmental outcomes.

Regarding the Rwandan government's need to maximize its political control over the country's society at any point in time, the case studies provided some additional evidence for this second proposition to hold true. The introduction of the zoning policy as well as an advanced digital tool to register all farmers and centrally organise fertiliser distribution and other extension services were two complementary measures out of several options to deal with existing challenges. Both are fully in line with expanding control through infrastructural power. In the tourism sector, all high-end hotels are owned by the inner circles of the ruling elite, while many of them are managed by professional international hotel brands. Many other central value-adding activities, mostly gorilla-tracking and conference hosting and organisation, are run directly by government entities. In the food crop sector, even the details of the entire reform programme were dictated from the centre and the disciplining transformation of individual peasants into modern farmers can be understood as both a control and a development measure. Finally, the main manufacturing activities were either conducted by government-affiliated investor conglomerates (CVL, Horizon, RIG, etc.) or foreign companies. There is evidence of direct government interventions to dilute or even break the power of actual or potential business tycoons. In sum, the ruling elite's maxim of increasing political control can be observed in action in all studied sector cases.

Concerning post-2000 Rwanda's governance system, the coffee-processing and tourism sector case studies provided examples, where the country's state apparatus worked very well to steer these industries' growth trajectories. This was the case because these sectors required straightforward and rather simple industrial policies, which could be handled by a top-down governance mode. In coffee, processing, farmers could be compelled to deliver their harvest to CWSs. Organisational learning and the acquisition of technological capabilities by domestically-owned wet mills (by both entrepreneurs and cooperatives) was strongly supported by donors. Accurate performance measurement was guaranteed, as all green coffee went through NAEB's warehouses and almost all of it was exported. In tourism, the construction of high-end hotels and conference venues was a lucrative business. Foreign expertise was imported for their operation. Pooling enormous amounts of domestic and foreign investment in promising sectors may be seen as a special capability of the Rwandan ruling elite, as it was able to centralize and then reallocate vast rents, compel domestic entrepreneurs to commit their resources, and woo foreign investors. In general, both economic sectors showed that the second proposition, i.e. that the Rwandan government built up a fairly effective state and governance system with a meritocratic bureaucracy, holds true.

At the same time, the food crops and manufacturing case studies have revealed important new evidence on the significant weaknesses of Rwanda's governance system. As elaborated in chapter 6, if development strategies and their goals are too ambitious, inflexible, and occasionally simply misconstrued, which was the case for the agricultural domain, the responsible government organisations (in this case foremost district governments) rather tweak the numbers than admit to their failure to accomplish indicators or to flag these indicators to be unrealistic or not forthcoming in the first place. It follows that the governance system of objective performance indicators cannot work if failure or partial fulfilment is not a realistic option. As a consequence, the Rwandan government failed in more complex sectors, where experimental tinkering and learning from failure were crucial to eventually succeed. Its top-down governance mode was not up to that job. These two sector case studies hence provided substantial evidence for the fourth proposition, i.e. that the Rwandan governance system's structural weaknesses impeded its ability to handle complex processes of advanced industrial policy.

Now, the overall research question, that is why the Rwandan government succeeded in developing some sectors, while it failed to create and transform others, can be answered. The Rwandan ruling elite was driven to pursue a full-scale transformation of its entire economy and society, while maximising political control at any given point in time. This ensured a high political will and led, in combination with other historical circumstances, to high political power for the country's political leadership, which engaged in thorough state-building and created an effective governance system. As a result, state effectiveness was high, and many goals of the government, including economic growth and development in many sectors could be achieved in the past twenty years. At the same time, the ruling elite's need for maximal political control and its historical trajectory led it to develop a top-down command-and-obedience governance mode, which is built into the structure of its governance system of performance contracts. The current design of the system is inherently inapt to foster the emergence of advanced state capacity and to handle the complex processes of more sophisticated industrial policy, as this would require more bureaucratic discretion, which by definition entails less centralistic control. In a nutshell, the Rwandan government succeeded with its economic development strategy in sectors where its control-maximising governance system was sufficient to enforce transformational change, while it failed in more complex sectors, where experimental tinkering and learning from failure were crucial to eventually getting things right.

Therefore, there is the danger that at some point in time most low-hanging fruits of economic growth will have been harvested and the upcoming, more profound challenges become too hard to solve, thus leading to decreasing growth and stalled transformation. Luckily for the Rwandan government, its political power is so high that it was able to withstand its failures so far without the emergence of popular resentment or other dangerous challenges to its reign. Therefore, the decisive question for the future is whether the very core of the government's governance system, that is its top-down governance mode, can be reformed and made fit for purpose.

8.3 Evaluation of the Analytical Framework and Theoretical Contribution of the Thesis

The analytical framework developed in chapter 2 can be understood as an attempt to structure and synthesise Khan's political settlements theory, which is spread out over several works, and then to add a few crucial components that were deemed underemphasized or missing from his conceptualisation. In particular, six of the framework's eight building blocks come directly from Khan's work, while building block 6 (Production transformation) appears to be an implicit presumption in PST. Only building block 5 (Political survival strategy and governance mode of ruling elite) has been added here, largely following the work of Whitfield et al. (2015). However, while they explicitly model a government's political survival strategy as one key driver of economic transformation and connect the three conditions of successful industrial policy with Khan's work to produce their elaborated political settlements theory, they do not consider a ruling elite's governance mode and the resulting institutional governance system as a decisive determinant of development policy outcomes. This variable is added in this PhD thesis' analytical framework and thereby constitutes a theoretical contribution to PST.

As it turns out, the analytical framework stood up to the test of making sense of Rwanda's economic transformation, precisely because the governance mode variable was added. While both the RPF's general top-down governance mode as well as the resulting institutionalised performance contract system have already been analysed to some degree by a few scholars (as reviewed in chapter 3), working out their relation to sectoral economic performance in Rwanda has been a key contribution of this thesis. In particular, assessing the collected evidence revealed that policy success did not only depend on compelled political willingness and policy enforceability coming from high political power (both of which were present in virtually all sectors) but also on whether the ruling elite's governance mode and the resulting performance-governing institutions were compatible with the political and mechanical requirements of economic development in a given sector. Specifically, the requirements of transforming domestic coffee-processing towards massive value addition and creating a high-end tourism sector fit with top-down governance and a few exogenous conditions (such as donor support in coffee and natural endowments in tourism) and therefore, sector transformation was forthcoming. At the same time, the intricate demands of reforming unproductive smallholder farming and building up a thriving manufacturing sector turned out to be, so far, irreconcilable with the ruling party's need to maximise its political control and the resulting rigidity of its *imihigo* system.

The limits of political settlements theory in general and this study's analytical framework in particular to explain economic sector transformation come from salient exogenous conditions (such as global economic factors and donor support) as well as sector idiosyncrasies (such as each industry's economics of production) that can play important roles in determining sectoral outcomes. Nevertheless, it became clear that Khan's original political settlements theory, Whitfield et al.'s elaborations, and this study's modified framework provide a very useful lens through which sectoral development processes in Rwanda and presumably in other late-developing countries can be observed and assessed.

8.4 Rwanda's Future

To conclude this thesis, a brief outlook into Rwanda's potential future is provided. At the end of 2020, the timeline of Vision 2020 ended and a new overarching development strategy, Vision 2050, was launched. It is even more ambitious than its predecessor and aims for Rwanda to become an upper middle-income country by 2035 (GDP p.c. of 4,036 USD) and a high-income country by 2050 (12,476 USD), even though the goal of becoming a lower middle-income country by 2020 (1,036 USD) was not achieved (816 USD). It would require astronomical GDP p.c. growth rates of 11.2% until 2035 and 7.8% until 2050 (RoR 2020e). Other goals, such as increasing life expectancy from 67.8 to 73 years, appear more realistic.

As capitalist development is a complex, non-linear process, it may be the case that many projects, reform steps and processes in Rwanda that have been undertaken successfully were prerequisites for economic growth and transformation to fully take off in the near future. These include but are not limited to restoring peace and law and order, eliminating military threats from DRC, continuous state-building and improvements in state effectiveness, constructing basic infrastructure (roads, housing, utilities, etc.), generating sufficient energy, improving the population's health, raising the general education level, forming sector- and activity-specific skills (technical and vocational education), and reforming the agricultural sector.

However, it may also be the case that many of these developments provide improvements for many sections of the population on their own, but do not lead to a real economic transformation for various reasons. For example, if insufficient investment can be raised because not enough foreign investors can be attracted, domestic private capital is simply too small, and insufficient public capital generated by economic activities of the various state-affiliated companies is reinvested efficiently but rather used for various other purposes, the economy cannot transform. Similarly, if firms cannot be supported and compelled adequately to become more productive because foreign investors cannot be disciplined, and domestic firms are largely public, which, despite being subject to performance contract goals, may become lenient because they earn sufficient profits in non-competitive markets, then productivity growth will be slow. Furthermore, it may be the case that Rwanda's local disadvantage of landlockedness as well as global economic conditions –in the form of highly integrated and very efficient global production networks– are so adverse that it turns out to be virtually impossible for the country, no matter how well it is organised and governed, to develop as long as East Africa as a whole remains poor.

The presented evidence on serious flaws in the Rwandan performance contract system showcased that the current Rwandan governance system does not constitute a political economy where organisations, companies and individuals are encouraged or compelled to learn through failure and adaptation, but rather to pretend to have succeeded. This, however, would be a necessary requirement to govern complex processes of economic transformation (including agricultural modernisation and industrial development). Whether the important but so far cautious developments concerning less rigid policy implementation will transform into a necessary structural reform of Rwanda's governance and performance contract system that allows more deliberation and entails a more effective policy correction mechanism, including the possibility to discuss and criticise processes and goals and to allow occasional failure in order to learn, is uncertain. This thesis argued that nothing less is needed if Rwanda wants to achieve its ambitious target of becoming a middle income country within a generation. However, the evidence and reasoning brought forward in the text at hand supports the viewpoint that maximizing political control and therefore not allowing the necessary tinkering is ingrained in the ruling elite's practices.

The key contradiction of how the Rwandan ruling elite governs the country is that it aims to pursue full-scale economic and social transformation by any means necessary except those that require a loosening of tight and direct political control. However, as it turns out that this is required to achieve capitalist transformation in more complex sectors such as agriculture and manufacturing, the development path is blocked by the ruling elite's inability to loosen control. The conclusion brought forward here, admittedly in the form of a conjecture, is that Rwanda’s future success depends on the ruling elite’s realisation that a thorough reform of its governance mode is needed, one which involves less control and more discretion and trust. This certainly bears significant risks and it is therefore unclear whether this path will be taken. As the current model has led to a (supposedly) ever increasing degree of political stability, the aging inner circle of the RPF including the President may opt to maintain the course of maximal political control, even if it compromises the country’s chances of maintaining its high growth rates. It may even be the case that if the country starts to run into trouble (coming from economic slow-down or political challenges due to a loss of international reputation and a better organised and united opposition), the leadership may double down on their current course of political repression and the application of violence, as this is what they know and what has worked in the past.

On the other hand, capitalism as a system has proved to be much more dynamic and flexible than its critics imagined, which is why it survived over centuries, has become the dominant and only global system, and has allowed a rising number of countries to acquire broad-based wealth and social stability. Similarly, individual countries in their recent capitalist transformation and economic catching-up journey fundamentally changed their governance mode and even political system. South Korea and Taiwan both became functioning democracies and China was able to incrementally reform its unproductive communist system into a thriving state capitalist authoritarianism, which despite massive challenges could become the world’s top power. It is therefore not inconceivable that Rwanda succeeds over the long-term by successively reforming its governance mode and overcoming its structural weaknesses. It is imaginable that a reformed performance contract system could be piloted and then launched in the foreseeable future that would produce more successful reforms in agriculture, create moderately successful manufacturing sub-sectors, and lead to more forward and backward linkages within the Rwandan economy. While this change is probably required to commence already under the current leadership, it is likely that the decisive critical juncture will occur when President Kagame’s succession takes place. From the present point of view, virtually any scenario appears possible, ranging from a long, potentially violent leadership contestation to a smooth transition of power that leads to political reforms towards more democracy and governance reforms towards more flexible and apt economic transformation policies.

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Appendix

Appendix 1: List of Conducted Interviews in Rwanda

No.	Date	Position	Organisation
a) Coffee-Processing			
C-01	16/01/2019	Former Production Manager	Coffee Washing Station
C-02	25/01/2019	Senior Manager	Coffee Shop
C-03	31/01/2019	Owner and Senior Manager	Coffee Shop
C-04	20/02/2019	Senior Advisor	NAEB
C-05	25/02/2019	Senior Manager	NGO
C-06	26/02/2019	Senior Manager	NAEB
C-07	27/02/2019	Senior Manager	NAEB
C-08	27/02/2019	Senior Manager	NGO
C-09	01/03/2019	Senior Consultant	Consultancy
C-10	29/03/2019	Senior Manager	NGO
C-11	29/03/2019	Former Production Manager	Coffee Washing Station
C-12	01/04/2019	Senior Manager	Coffee Exporter
C-13	02/04/2019	Senior Manager	NAEB
C-14	08/04/2019	Senior Manager	NGO
C-15	13/04/2019	Consultant	NGO
C-16	14/04/2019	Researcher	University
C-17	22/05/2019	Manager	Coffee Washing Station
C-18	08/07/2019	Senior Manager	NAEB
C-19	12/07/2019	Researcher	University
C-20	16/07/2019	Manager	NAEB
C-21	17/07/2019	Consultant	NGO
C-22	01/08/2019	Senior Advisor	NAEB
C-23	05/08/2019	Senior Advisor	NAEB
C-24	16/08/2019	Manager	NAEB
C-25	19/08/2019	Senior Manager	Coffee Exporter
C-26	19/08/2019	Senior Manager	Coffee Exporter
C-27	20/08/2019	Managers	Coffee Exporter
C-28	21/08/2019	Senior Manager	Coffee Exporter
C-29	22/08/2019	Senior Manager	Coffee Exporter
C-30	04/10/2019	Senior Manager	NAEB
C-31	04/10/2019	Manager	NAEB
C-32	05/10/2019	Consultant	NGO
C-33	07/10/2019	Senior Manager	Coffee Cooperative
C-34	07/10/2019	Manager	Huye District
C-35	08/10/2019	Senior Manager	Coffee Washing Station
C-36	08/10/2019	Senior Manager	Huye District
C-37	08/10/2019	Owner and Senior Manager	Coffee Washing Station
C-38	09/10/2019	Senior Manager, Members	Coffee Cooperative
C-39	09/10/2019	Senior Manager	Coffee Exporter
C-40	10/10/2019	Senior Manager	Coffee Cooperative
C-41	10/10/2019	Senior Manager	Coffee Cooperative
C-42	10/10/2019	Senior Manager, Managers	Coffee Washing Station
C-43	11/10/2019	Manager	Huye District

C-44	11/10/2019	Consultant	Sector in Huye District
C-45	21/10/2019	Manager	NAEB
C-46	22/10/2019	Senior Manager	Coffee Cooperative
C-47	22/10/2019	Senior Manager	Coffee Washing Station
C-48	23/10/2019	Managers	Coffee Cooperative
C-49	23/10/2019	Senior Manager	Coffee Cooperative
C-50	23/10/2019	Consultant	Gakenke District
C-51	24/10/2019	Senior Managers	Coffee Washing Station
C-52	24/10/2019	Coffee Farmer	---
C-53	24/10/2019	Consultant	Sector in Gakenke District
C-54	06/11/2019	Owner and Senior Manager	Coffee Trader
C-55	07/11/2019	Senior Manager	Coffee Exporter
C-56	07/11/2019	Senior Manager	Coffee Exporter
C-57	08/11/2019	Former Senior Manager	NAEB
C-58	08/11/2019	Senior Manager	Coffee Exporter
C-59	08/11/2019	Senior Manager, Manager	NAEB
C-60	11/11/2019	Senior Manager	Coffee Exporter
C-61	11/11/2019	Owner and Senior Manager	Coffee Exporter
C-62	11/11/2019	Manager	Coffee Association
C-63	12/11/2019	Owner and Senior Manager	Coffee Trader
C-64	12/11/2019	Former Senior Manager	Coffee Washing Station
C-65	13/11/2019	Senior Manager	Coffee Exporter
C-66	13/11/2019	Senior Manager	Coffee Exporter
C-67	13/11/2019	Senior Manager	Coffee Exporter
C-68	13/11/2019	Senior Manager	Coffee Exporter
C-69	14/11/2019	Senior Manager	Coffee Exporter
C-70	18/11/2019	Former Senior Manager	Coffee Exporter
C-71	19/11/2019	Senior Manager	NAEB
C-72	22/11/2019	Senior Manager	Coffee Exporter
C-73	26/11/2019	Senior Manager	Coffee Exporter
C-74	26/11/2019	Senior Manager	Coffee Exporter
b) Tourism			
T-01	04/02/2019	Advisor	Tourism Association
T-02	21/02/2019	Senior Consultant	Consultancy
T-03	22/02/2019	Manager	RDB
T-04	28/02/2019	Advisor	Tourism Association
T-05	29/03/2019	Consultant	Consultancy
T-06	10/06/2019	Senior Consultant	Donor
T-07	28/06/2019	Senior Consultants	Donor
T-08	04/07/2019	Senior Manager	Hotel
T-09	05/07/2019	Senior Manager	Hotel
T-10	08/07/2019	Senior Manager	Hotel
T-11	08/07/2019	Senior Manager	Hotel
T-12	09/07/2019	Owner & Senior Manager	Hotel
T-13	09/07/2019	Senior Manager	Hotel
T-14	09/07/2019	Senior Manager	Hotel
T-15	10/07/2019	Senior Manager	RDB
T-16	11/07/2019	Senior Manager	Hotel
T-17	15/07/2019	Senior Manager	Hotel

T-18	17/07/2019	Senior Manager	Hotel
T-19	18/07/2019	Senior Manager	Hotel
T-20	23/07/2019	Senior Manager	Hotel
T-21	24/07/2019	Manager	Hotel
T-22	25/07/2019	Manager	Hotel
T-23	25/07/2019	Senior Manager	Hotel
T-24	25/07/2019	Owner & Senior Manager	Hotel
T-25	30/07/2019	Senior Manager	Hotel
T-26	31/07/2019	Manager	Hotel
T-27	01/08/2019	Senior Manager	Hotel
T-28	05/08/2019	Senior Consultant	Donor
T-29	05/08/2019	Consultant	Consultancy
T-30	07/08/2019	Senior Manager	RDB
T-31	07/08/2019	Senior Consultant	Donor
T-32	09/08/2019	Senior Manager	RDB
T-33	14/08/2019	Manager	Hotel
c) Food Crops			
A-01	21/01/2019	Senior Manager	Agriculture Association
A-02	05/02/2019	Former Manager	RCA
A-03	24/06/2020	Senior Statistician	FAOSTAT
A-04	22/05/2021	Senior Manager	NISR
A-05	07/05/2021	Former Intern	MINAGRI
A-06	08/05/2021	Former Senior Manager	MINAGRI
d) Manufacturing			
M-01	18/01/2019	Advisor	RDB
M-02	27/01/2019	Owner and Senior Manager	Manufacturing Firm
M-03	08/02/2019	Senior Manager	Consultancy
M-04	08/02/2019	Consultant	Donor
M-05	15/02/2019	Consultant	NGO
M-06	18/02/2019	Consultant	Consultancy
M-07	18/02/2019	Senior Consultant	Consultancy
M-08	26/02/2019	Senior Consultant	Donor
M-09	13/03/2019	Advisor	RDB
M-10	19/03/2019	Advisor	RDB
M-11	29/04/2019	Advisor	RDB
M-12	18/06/2019	Senior Manager	RDB
M-13	20/06/2019	Consultant	Consultancy
M-14	24/06/2019	Advisor	RDB
M-15	05/07/2019	Consultant	Consultancy
M-16	15/07/2019	Senior Manager	RDB
M-17	15/07/2019	Senior Manager	RDB
M-18	18/07/2019	Senior Advisor	MINICOM
M-19	26/07/2019	Senior Managers, Advisor	MINICOM
M-20	28/07/2019	Senior Manager	RDB
M-21	01/08/2019	Manager	RDB
M-22	05/08/2019	Manager	RDB
M-23	06/08/2019	Manager	MINICOM
M-24	07/08/2019	Senior Advisor	RDB
M-25	07/08/2019	Managers	NIRDA
M-26	07/08/2019	Manager	RDB

Appendix 2: List of Analysed Documents and Data on Rwandan Food Crops

Bugesera District Imihigo 2011-2012
Bugesera District Imihigo 2012-2013
FAOSTAT Dataset Rwandan Agricultural Production, Area & Yield Data 2000-2018 (downloaded 10 February 2015)
FAOSTAT Dataset Rwandan Agricultural Production, Area & Yield Data 2000-2018 (downloaded 13 December 2019)
Gakenke District Imihigo 2011-2012
Gakenke District Imihigo 2012-2013
Gakenke District Imihigo 2013-2014
Huye District Imihigo 2011-2012
Huye District Imihigo 2012-2013
Huye District Imihigo 2013-2014
Kicukiro District Imihigo 2011-2012
Kicukiro District Imihigo 2012-2013
Kicukiro District Imihigo 2013-2014
MINAGRI Annual Report 2007
MINAGRI Annual Report 2008
MINAGRI Annual Report 2009/10
MINAGRI Annual Report 2010/11
MINAGRI Annual Report 2011/12
MINAGRI Annual Report 2012/13
MINAGRI Annual Report 2013/14
MINAGRI Annual Report 2014/15
MINAGRI Annual Report 2015/16
MINAGRI Annual Report 2016/17
MINAGRI Annual Report 2017/18
MINAGRI Annual Report 2018/19
MINAGRI Backward Looking Joint Sector Review Report 2008-2009
MINAGRI Backward Looking Joint Sector Review Report 2014-2015
MINAGRI Backward Looking Joint Sector Review Report 2015-2016
MINAGRI Backward Looking Joint Sector Review Report 2017-2018
MINAGRI Backward Looking Joint Sector Review Report 2018-2019
MINAGRI Crop Assessment 2009B
MINAGRI Crop Assessment 2010A
MINAGRI Crop Assessment 2010B
MINAGRI Crop Assessment 2012A
MINAGRI Imihigo 2017-2018
MINAGRI PSTA I
MINAGRI PSTA II
MINAGRI PSTA III
MINAGRI PSTA IV
MINECOFIN EICV I
Muhanga District Imihigo 2011-2012
Muhanga District Imihigo 2013-2014
NISR Agricultural Household Survey 2017
NISR EICV II
NISR EICV III
NISR EICV IV
NISR EICV V
NISR National Agricultural Survey 2008
NISR Seasonal Agricultural Survey 2013 version 1
NISR Seasonal Agricultural Survey 2013 version 2
NISR Seasonal Agricultural Survey 2014
NISR Seasonal Agricultural Survey 2015
NISR Seasonal Agricultural Survey 2016
NISR Seasonal Agricultural Survey 2017

NISR Seasonal Agricultural Survey 2018
NISR Seasonal Agricultural Survey 2019
NISR Statistical Yearbook 2008
NISR Statistical Yearbook 2009
NISR Statistical Yearbook 2010
NISR Statistical Yearbook 2011
NISR Statistical Yearbook 2012
NISR Statistical Yearbook 2013
Nyabihu District Imihigo 2012-2013
Nyabihu District Imihigo 2013-2014
Nyamagabe District Imihigo 2011-2012
Nyamagabe District Imihigo 2013-2014
REMA Agricultural Report (n.d.)
Republic of Rwanda Agriculture Joint Imihigo 2015-2016
Republic of Rwanda Agriculture Joint Imihigo 2016-2017
Republic of Rwanda Agriculture Joint Imihigo 2017-2018
Republic of Rwanda Agriculture Joint Imihigo 2018-2019
Republic of Rwanda Districts Imihigo Evaluation Report 2009-2010
Republic of Rwanda Districts Imihigo Evaluation Report 2010-2011
Republic of Rwanda Districts Imihigo Evaluation Report 2011-2012
Republic of Rwanda Districts Imihigo Evaluation Report 2012-2013
Republic of Rwanda Districts Imihigo Evaluation Report 2014-2015
Republic of Rwanda Districts Imihigo Evaluation Report 2015-2016
Republic of Rwanda Districts Imihigo Evaluation Report 2016-2017
Republic of Rwanda Districts Imihigo Evaluation Report 2017-2018
Ruhango District Imihigo 2011-2012
Ruhango District Imihigo 2012-2013
Ruhango District Imihigo 2013-2014
Rusizi District Imihigo 2011-2012
Rusizi District Imihigo 2012-2013