

Can wheat self-sufficiency policy improve food security?

An inter-temporal assessment of the wheat value-chain in Uzbekistan

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Abstract

There is a controversial debate about what is the best public policy a government should adopt to achieve affordable and stable supply of staple food for its citizens so to ensure food security. This paper contributes to the debate on the socio-economic impacts of food self-sufficiency policy (SSP) in three ways. First, it thoroughly outlines the costs and advantages of self-sufficiency policy presented in the literature. It argues that self-sufficiency policies are not neutral but have to be assessed for their distributional impacts across the different actors and over time, and in their context-specificity. Second, using the case of wheat self-sufficiency policy in Uzbekistan, it unpacks its effects on the different economic actors and institutions. Third, it reflects on the relevance of wheat self-sufficiency policy for food security in a context of dynamic economic development.

Keywords: commodity value chain; self-sufficiency policy; food security; wheat; Central Asia.

1. Introduction

Policy makers have formulated contradictory recommendations to address food security over history. During the 1950s-1960s, Keynesian food policies aimed at reducing financial speculation, collectivize risks, and stabilize prices through output control and marketing quota (Golay 1950). In the mid-1970s international organizations, by emphasizing the right of self-reliance of nations (Agarwal 2014), declared that national food self-sufficiency (FSS) was an adequate strategy to promote food security in developing countries (FAO 1975). During the Cold War, many countries including the United States considered wheat as a weapon against political and economic pressure. Grain stocks were as high as never before since this food commodity was considered a matter of national security (FAO 1996). Starting from the 1930s and throughout the 1960s, to achieve ‘independence’ from wheat imports in the Soviet Union both Stalin and Khrushchev assigned high wheat output targets to the *kolkhoz* (Harrison 1996). In the 1980s, the Chinese vice-premier Yao Yilin increased wheat production to maintain per-capita grain availability (Yang and Tyers 1989). These examples underline the worldwide political relevance of the FSS approach in the past. However, in the last decades neoliberal policies pushed for trade liberalization, deregulation and privatization (Bernstein 2014; Friedmann 2016). Under these circumstances, FSS disappeared from the agenda of low-income countries (Beauregard 2009; Baines 2015; Clapp 2017). As a result, the International Wheat Agreement ended in the early 1990s, and the control of food-commodities markets shifted from the public to the private sphere (Baines 2015; Friedmann 2016).

Because wheat products are major contributors to human diets, their prices receive a special attention in global politics (Hendrix and Haggard 2015). Developing countries often lack alternatives to substitute wheat with other food, either because of its availability due to trade barriers or affordability (Shiferaw et al. 2013). These unique characteristics explain the political sensitiveness of wheat in many low- and middle-income countries. Indeed, food price crises in 2007-2008 and 2010-2011 contributed to the escalation of food riots and social protests in the ‘Arab Spring’ in North Africa and the Middle East (Bush 2010; Ghosh 2010; Trego 2011). Governments had to respond to the challenge of where and how to procure affordable staple food for their citizens. While the causes and effects of the food crisis have been widely discussed, less attention has been paid to the policy solutions that countries adopted to respond to such crisis.

As a response, food security became again a political objective regulated by the state (Clapp 2017; Schiavoni 2017; Wegren and Elvestad 2018) and countries including Venezuela, Bolivia, Mali, Ecuador, Qatar, Senegal, India, under either authoritarian or progressive drivers, started grain Self-Sufficiency Policies (SSP) (Clark 2016; Pritchard et al. 2016; Clapp 2017). Such experiences, regardless of the political regimes in place, show that SSP is often a combination of trade protectionism and subsidies to domestic food supply. In former or communist countries like Russia or in current ones China state-led SSP remained very strong (Zhan 2017; Wegren and Elvestad 2018).

Food SSP is generally defined as “the ability of a country, region, or household to meet its food needs from its own domestic production” (Clapp 2015). SSP usually focuses on ‘staple food crops’ (Clapp 2015), namely cereals such as wheat, corn and rice (Shiferaw et al. 2013). Wheat-based meals are usually the biggest share of energy and the main source of nutritional needs, especially among the poor. Wheat products provide on average 21% of the daily dietary protein intake worldwide, especially in low-income countries where animal-source protein is unaffordable, diets are mostly based on a low variety of starchy food (Popkin 2004; Shiferaw et al. 2013). Thus, because wheat provides a crucial role in satisfying basic food needs, it has been at the center of the self-sufficiency political debate in many countries.

On the one hand, wheat SSP can increase domestic wheat availability at a stable and affordable price to guarantee access to staple food for consumers. On the other hand, many economists believe that trade protectionism, by lowering competition, might reduce incentives for producers to innovate and improve productivity, and thus hamper the consumption of affordable wheat products of higher quality. In this sense, FSS represents well the delicate balance between the need for stability and distribution for growth, and the need for exchange to sprinkle innovation.

In this complex picture, scarce empirical exercises were developed to understand the specific mechanisms under which food SSP operates, and whether it has contributed or not to food security. Current studies have given little consideration to the disaggregation of, and relation among involved political and societal actors (Alonso and Swinnen 2016; Schiavoni 2017). Furthermore, there is a lack of understanding of the distributional effects that FSS has across different interest groups and how its objective and necessity changed over time. Last but not least, self-sufficiency policy entails very complex implementations as it is often the result of heterogeneous and changing degrees of support and protections, and thus it should be analyzed as continuum (Clapp 2015). Therefore, the assessment of SSP needs to be conducted by

considering the historical, geo-political and economic reasons and circumstances under which it is pursued and in which forms it is implemented (Clapp 2017).

This article uses the case of Uzbekistan to address these three points by investigating the past and current political and economic impacts of SSP on different economic actors. Uzbekistan, a post-Soviet economy, introduced wheat SSP in the early 1990s and thus provides an insightful showcase to analyze the effects of such policy. The interest focuses on the following questions: Who has benefitted and who has lost from the SSP in Uzbekistan over the past years? Which are instead the implications of this policy today? The paper tries to answer these questions by testing the hypothesis that wheat self-sufficiency has functioned as a national political strategy to ensure staple food access (i.e. food security), political stability, reduce market risk and enable dynamics of surplus transfers. The paper then analyses the effects of wheat SSP in a context of dynamic socio-economic development.

The paper is organized as follows. Section 2 presents wheat SSP in Uzbekistan and reviews the opposite positions on this policy. Section 3 outlines the data, scope and the methodology. Section 4 critically assesses the economic costs and benefits of wheat SSP and, given the changing socio-economic development, its current evolution. Section 5 concludes by discussing the implications of this policy and its effectiveness for food security.

2. The case study: Wheat policy in Uzbekistan

The Uzbek case-study offers a unique lens to analyze SSP for several reasons. First, Uzbekistan was one of the first countries in the post-Soviet space to introduce FSS policy in the early 1990s (Lombardozzi, 2019), and thus has over two decades of consolidated implementation. Second, the country reflects the conditions of many low-income countries such as a growing young population, an agriculture-oriented economy, a wheat-based diet (annually 171 kg per capita, or around 47% of daily calories intake), and a legacy of economic and political dependency from a powerful center, the Soviet Union, for the large part of the last century.

After the collapse of the Soviet Union in 1991, wheat prices soared and newly independent countries witnessed massive shortfalls in production. For a country under economic transformation, geo-political tensions, and pressure of growing population, it is prudent to improve domestic food production and avoid pockets of hunger in the short-medium term (Clapp 2017). Along these lines, the new Central Asian governments sought alternative

sources of wheat to meet domestic demand. As the neighboring wheat exporters were also facing transitions and could not guarantee adequate and prompt wheat exports, the Central Asian leaders introduced wheat SSP and started increasing domestic wheat production (Lerman et al. 2016). The size and magnitude of wheat area expansion in the region was more rapid than any other crop in the history of post-1991 agriculture.

In June 2014, at the international conference “On Vital Reserves in the Realization of Food Program in Uzbekistan” in Tashkent, the former Uzbek President Karimov noted¹ that prior to independence, around 5 million tons of wheat were imported from other regions of the Soviet Union and, as a result of major agricultural reforms over the past 22 years, grain production in Uzbekistan increased from 1 million tons to 7.8 million tons, turning the country into an exporter of wheat and bringing it near the full grain independence in 2003-2004. Therefore, the goal of the Uzbek government at the onset of economic reforms was to reduce the dependency on imports of essential food commodities through SSP.

Furthermore, the financial crisis of 2008 and adverse weather conditions pushed regional exporters like Russia, Ukraine and Kazakhstan to introduce unpredictable restrictions on cereal exports which led to price shocks and supply disruptions in Central Asia (Bobojonov et al. 2017). Therefore, net importers faced even greater challenges in ensuring food security at the national level (Akramov 2011) which incentivized national governments to identify urgent solutions, which further justified the adoption of FSS policy.

Whereas during the Soviet period cotton was the only dominant crop in Uzbekistan (Penati 2011), as a result of SSP, cotton and wheat became the core of Uzbek agriculture. In 1960-1991, Uzbekistan produced about 28 kg of wheat per capita. The consumption of domestic wheat reached 104 kg/capita through the first decade of independence, and 217 kg/capita in 2001-2017 (Figure 1).

Figure 1 here: Wheat production path in Uzbekistan in 1960-2017

The government’s national food security strategy defined for many years wheat as a strategic crop, and regulates the wheat market to maintain affordable and stable market prices, especially for the poor (Mirkasimov and Parpiev 2017). The self-sufficiency policy was

directed at increasing domestic wheat production and at decreasing the reliance on imports via three measures.

First, the government sets wheat production targets because agricultural land in Uzbekistan is state-owned and farmers lease it from the state for crop production and other uses. Farmers have been bound to production contracts with state-owned mills, and required to sell about a half of produced wheat at a government-determined low prices (Zorya et al. 2019). Wheat production targets have been set at higher levels than 50% of actual harvest (Pugach et al. 2016). The parastatal mills belong to the joint-stock company *Uzdonmahsulot*, a state monopoly which procures wheat from farmers at prices below the domestic market price. The fulfilment of wheat production targets determined the continuation of the farm existence.

Second, the government provides to wheat farmers subsidized inputs such as of water, fertilizers, diesel, machinery services and cheap loans. To reduce dependence on imports in wheat supplies, the government maintained a 15% import tariffs on wheat flour (Lerman et al. 2016) until late 2017. The effects of this recent policy shifts will be discussed in section 4.1.

The third policy measure embedded into the wheat SSP was the bread subsidy programme. To limit wheat price volatility the government controlled the distribution of domestically produced wheat and flour. It also set ceiling prices of wheat flour and bread to support poor households. The procured wheat was processed in state-owned mills into flour and bread and destined to poor urban and rural consumers (Mirkasimov and Parpiev 2017). Uzbekistan produces soft wheat, cheaper but considered of lower quality and poor baking quality compared to hard wheat (Kienzler et al. 2011). According to experts, only about a half of domestic wheat is used for food, while another half is used as livestock fodder (Lerman et al. 2016).

Figure 2 shows that in 1996-2017, the nominal assistance to wheat farmers was negative, indicating that wheat farmers were taxed through the wheat policy. The difference between the procurement price and domestic market prices shows that government taxed wheat producers by about a half of wheat price. Despite wheat policy taxes wheat farmers, public investments into wheat research resulted in high-yield domestic varieties which lifted per capita-production of wheat from 118 kg in 1996 to 211 kg in 2017 (Figure 2).

Figure 2 here: NRA for wheat farms, wheat self-sufficiency level and production per capita in Uzbekistan in 1996-2017

The Uzbek SSP has been the object of a contested debate. The arguments in favor or against the wheat SSP present in the literature, and summarized in Table 1, shows a multifaceted trade-off of such a policy, which is applicable to many other countries in the process of economic development where market forces and state policies are closely intertwined (Friedmann 2016).

Table 1 here: Arguments in favor and against wheat SSP in Uzbekistan

In conclusion, although many argued in favor of SSP, others note that SSP is not a sufficient or necessary condition to ensure food security (Clapp 2015). An increase in national food supply does not automatically translate in an improved access to food for the poor, an adequate nutrients intake, or a satisfactory quality of staple food. Yet, a complex matrix of factors including the domestic productive capacity, geo-political power, economic strategies to tackle food insecurity, trade, and international market trends count in the decision on where to allocate resources to reach a stable and affordable supply of staple food nationally. We are now going to investigate the implications of such policy in the context of Uzbekistan.

3. Materials, scope and methodology

The empirical exercise unpacks the economic costs and benefits of the wheat policy in Uzbekistan and shows the socio-political impacts over time on five economic actors involved in the value chain: the state, wheat farmers, poor and non-poor consumers and mills. These are the representative stakeholders considered when analyzing the impact of policy distortions in wheat value chain (Alonso and Swinnen 2016) and which have been already identified in other works (Mirkasimov and Parpiev 2017) on Uzbekistan. We will investigate how such state-planned expansion of wheat production held important implications for the state budget and for consumers. The flow of wheat SSP among its actors in Uzbekistan is presented in Figure 3.

Figure 3 here: Actors in the wheat value chain

We analyze the impact of SSP in relation to their interests: the state's objective has been to minimize public expenses on wheat import, and to ensure a stable provision of wheat to rural and urban poor consumers. The state budget gains from wheat export revenues and by taxing the milling sector, while incurring losses from the input subsidies provided to wheat producing farmers.

The state mills are interested in recovering the operation and procurement costs, and are required to produce cheap bread within the bread subsidy programme. Private mills, which have been growing in number but still quite small in size in comparison to state mills, specialize in mixing Kazakh wheat, of higher quality, with domestic wheat purchased from farmers and from *Uzdonmahsulot* to target higher prices to non-poor urban and rural consumers (Lyddon 2015). The state and private types of mills benefit from wheat SSP by having access to cheaper domestic wheat, thus we consider them as one actor. The milling sector has been benefiting from the price differentials by procuring wheat from farmers at the state-determined procurement prices (72 US\$/ton in 2003, and 77 US\$/ton in 2017), as well as from exporting blended wheat flour at the price of 124 USD/ton in wheat equivalent. Their losses are from implementing the bread subsidy programme through which they had to sell bread loaf at prices of 88 USD/ton in 2003 and 130 US\$/ton in 2017 in wheat equivalent. These prices were below the potential market price of 124 USD/ton in 2003 and 166 USD/ton in 2017 in wheat equivalent. The milling sector also exports wheat (flour) to neighboring countries, e.g. Afghanistan (Pugach et al. 2016; Bobojonov et al. 2017). However, Uzbekistan remains a net importer, and only in 2003-2004 it almost reached full self-sufficiency in grains (Figure 6).

Wheat farmers maximize their returns subject to fulfilling the production target, and their own self-consumption. They lost from the wheat policy by selling half of their wheat harvest to the mills at the low procurement price, which was up to 50% lower than the market price. Part of these losses was compensated through the input subsidy policy.

To unpack the impacts of wheat SSP on consumers, our analysis distinguished between two groups. Non-poor consumers is the population living with more than US\$ 1.9 a day, while poor consumers are those living below the poverty line of US\$ 1.90 a day. We calculated the number of non-poor and poor consumers using the World Bank's poverty and equity database, which for 2003 shows that 62.1% of Uzbek population in 2003 was living below the poverty line of US\$ 1.90 a day (World Bank 2019).

Rural and urban non-poor consumers can afford consuming high-quality wheat products, such as imported blended flour and bread. In this category, urban non-poor consume only non-blended high-quality bread from imported wheat flour. Rural non-poor consumers buy wheat blended with domestic wheat at domestic market price. Urban poor consumers purchase domestic wheat products blended with imported wheat by state mills at a subsidized price. Rural poor consumers mainly consume wheat produced on their own household plots,

and buy additional non-blended domestic wheat from state mills as subsidized food. The gains and losses for each actor in the wheat supply chain are summarized in Table 2.

Table 2: Distribution of gains and losses across different actors in wheat supply chain

The price differentiation helps us to estimate the gain and losses of each economic actor. Therefore, we distinguish the following four wheat prices along the wheat supply chain. First, the procurement price at which farmers sold half of their harvest to the state mill is the lowest in the wheat chain. Second, the subsidized price at which poor consumers purchase wheat products (in wheat grain equivalent) is slightly higher than the procurement price. Third is the non-subsidized price of blended flour (both in wheat grain equivalent). Finally, the price of high-quality imported flour, which is the highest, consumed by non-poor consumers. Based on this information, in the next section we will discuss the results, namely the gains and losses of each actor of the wheat value chain.

4. The costs and benefits of the wheat policy

In the previous section we have identified the five major actors involved in the wheat value chain in Uzbekistan, namely poor consumers (both rural and urban), non-poor consumers (both rural and urban), wheat farmers, mills and the state, and outlined their interests. In this section we are going to assess the costs and benefits of the wheat policy. Figure 4 shows the assessment of the gains and losses of the five actors involved in the wheat value chain in 2003 based on information presented in Table 3.

Table 3: Main model parameters and assumptions

Note: Prices in US\$ are calculated using the annual average of unofficial (parallel) exchange rates of 2003 and 2017.

Figure 4 here: Distribution of gains and losses across actors in the wheat chain in 2003, current million US\$

Taking into account that the SSP was justified for being a pro-poor policy because it aimed at guaranteeing stable price of subsidized bread, results suggest that the benefits directed to the urban and rural poor consumers seem to be in place. Poor consumers indeed gained from the

wheat SSP. They benefitted from the access to cheaper bread through the bread subsidy programme. Moreover, such quantifiable monetary benefit has to be contextualized complementarily to other qualitative benefits that food access to poor consumers entails. Those, as pointed out in the literature (Spoor 2000; Ghosh 2010), are the reduction of risks linked to social, economic and political instability both in rural and urban areas linked to food price stability.

The milling sector also benefited from the wheat SSP, although less than the poor (Figure 4). As already noted, mills are mostly state-owned and coordinate closely with the central government for the provision and distribution of domestic wheat. Indeed, the gain occurred through the implementation of the wheat procurement policy which obliged farmers to sell half of their harvest to the parastatal mills at the state-determined prices. The mills benefit from the wheat policy also by selling blended wheat to non-poor consumers. The mills nevertheless had to bear the costs of the bread subsidy programme through which they sold bread loaf at a price below the commercial one to poor consumers. Rural and urban non-poor consumers faced a loss represented by the higher price of imported wheat products, because subject to import tariffs.

The state budget gained from the tariff payments imposed on traded wheat and flour and from the taxes on the milling sector. As the wheat policy comes with input subsidies to farmers, the implementation of the latter has been creating a burden to the state budget. Yet, as the wheat SSP is an import substitution policy, the biggest gain to the state budget came from producing wheat domestically instead of importing from the neighbors.

On the opposite side, wheat farmers were the net losers of the wheat policy. Although benefiting from input subsidies for fertilizers, seeds, diesel and machinery services, wheat farmers were required to sell half of their wheat harvest to the parastatal mills through the procurement system at a price below the market price (Zorya et al. 2019), thus are being taxed, and face a net loss.

Finally, despite accessing cheaper high-quality wheat products produced from blending low quality domestic wheat with high quality imported wheat, urban and rural non-poor consumers lost from the wheat policy due to the import tariffs imposed on imported high quality wheat, which became more expensive.

In absolute monetary terms, the wheat SSP in the Uzbek socio-economic context of post-independence could be considered a successful policy because the quantifiable gains were

bigger than the losses occurring. However, these calculations do not account for other inefficiencies which are listed in Table 1 such as the low quality of the domestic wheat product, sectorial efficiency losses and underutilized export capacity in high-value crops.

It could be argued that the policy has contributed to the objective of food security. In fact, data shows that between 2002 and 2014 the population undernourished in Uzbekistan declined from 4.3 million people to 1.6 million people (FAOSTAT 2019). It is also undeniable that the government relied less on wheat global trading networks which, as a result, generated a domestic rent in the production and processing of the wheat value chain and in the economy at large. In the following section, we are now going to discuss the wheat SSP in the current context of decline in the national poverty level.

4.1 The wheat self-sufficiency policy: Current assessment and way forward

Whereas so far we have assessed the impact on different economic actors of the SSP, in this section we assess the relevance of the wheat SSP in the current context characterized by rapid socio-economic changes. Along with poverty decline, the main indicators of undernourishment, average dietary energy supply adequacy and availability improved over the last decades (UNDP 2010; Lerman et al. 2016). Although the improvements of nutrition might not have been exclusively caused by SSP, such policy has contributed to meet such objectives and avoid supply disruptions. However, in a situation of GDP growth and per capita income increase, as a result of industrialization, poverty reduction and urbanization, it is common to observe a transition of diets from cereals staple food to protein-rich food (Kearney 2010). Indeed, Seitz estimated that “in 2018 the poverty rate measured at the \$3.2/day line stood at only 9.6% of the population [of Uzbekistan]” (2019, 13), suggesting a sharp decline in comparison to the early 2000s. In addition, a study on bread consumption in Uzbekistan (Parpiev and Yusupov 2011) showed that per-capita wheat consumption was higher among poorer consumers. Hence, combined changes in income levels and consumption preferences are shaping new trends in the demand of wheat which relieves pressure on domestic wheat production. In other words, although the population is growing, the share of poor and non-poor consumers has changed, thus more wealthy consumers demand more high-quality bread produced from imported wheat.

We are going to analyze the SSP by considering the new poverty figures. Figure 5 shows that because in Uzbekistan between 2003 and 2017 poverty declined from 62.1% to 9.6%, wheat FSS policy seems to have lost most of its relevance.

Figure 5 here: Distribution of gains and losses across actors in the wheat chain in 2017, current million US\$

Rural and urban poor would still benefit from the presence of the subsidized bread policy, but their absolute gains are now lower than in 2003 when they were one of the major gainer from the wheat SSP policy. In turn, the rural and urban non-poor consumers still lose due to the import tariff applied to high-quality wheat, despite the presence of differentiated prices for imported and domestic wheat and wheat products from blended flour.

As the share of the poor declined, mills have grasped major monetary benefits in 2017 due to the increased business opportunities. The wheat procurement policy has been providing the milling sector with cheap inputs. The milling sector has expanded the blending of domestic wheat with imported high-quality wheat to address the demand of the growing share of non-poor Uzbek consumers. In turn, the blended and cheaper Uzbek wheat flour has increasingly been finding its niche in neighboring countries, such as Afghanistan and Tajikistan.

The state budget has gained from the revenue coming from the import tariffs and from the fiscal imposition on the export-oriented businesses, and by taxing the milling sector. This import tariff was abolished in October 2017 which led to the increase of wheat imports by 52% in 2018 (ITC 2019).

As of 2017 wheat farmers faced net-losses because of the differentiation between market and procurement prices and the mandate to sell half of their harvest to the state mills.

As the structure of the society and the economy rapidly changed, so did the wheat trade pattern. Uzbekistan remained Kazakhstan's largest wheat importer making almost one third of its wheat product exports. However, the destinations of such imported wheat have shifted. Furthermore, as noted from Figure 6, after the independence until the implementation of the wheat SSP, Uzbekistan's import of Kazakh wheat was in the form of grains to be processed in the public mills, and in 2003 it was kept to a minimum. After the implementation of the SSP in the early 2000s, as outlined in the previous section, Uzbekistan increased the imports of quality flour from Kazakhstan to address the demand of non-poor consumers. However, in

more recent years, due to the rise in the amount of domestic mills, Uzbekistan has increased the import of wheat grain even further, while decreasing the imports of wheat flour.

Figure 6 here: Dynamics of wheat grain and flour imports by Uzbekistan, 1000 tons

In this context, as the new president Shavkat Mirziyoyev took office in late 2016, a wave of reforms was implemented in the wheat supply chain addressing each component of the wheat SSP, namely, bread subsidy policy, state procurement and import substitution.

To realize the export potential of cheap blended flour to neighboring markets, in August 2018, a governmental decree allowed the export of up to 75% of wheat flour produced through imported wheat grains (previously restricted). This reform is complementary to the liberalization of imported wheat grain, which was freed from custom duties until 2020. As a result of these two reforms, the production and trading activities of the milling sector, both private and public, has boomed. Hence, the private business sector has become the main player of wheat-related products. Uzbek blended wheat competes well with the Kazakh products due to cheaper prices and lower transportation costs². As a response, Kazakh businesses have been investing in the milling sector in Uzbekistan in order to better reach Afghan and Tajik markets. The milling industry has abandoned the role of subsidized local producer and started to become a regional player in the industry³.

Complementary, to reform the wheat procurement policy, in October 2019 a governmental decree⁴ allowed producers under *Uzdonmahsulot* to sell wheat grain directly at commodities exchange prices, which signals the end of the procurement price system in place over the past two decades, and shows a further spin to private activities in the sector⁵. In the early 2020, a further liberalization of wheat producers as part of Uzbekistan's Agricultural Development Strategy for 2020-2030 was declared with the abandonment the mandatory sale to the state mills, and granting farmers with freedom to select market channels. Instead of the wheat procurement, it is planned to introduce a state reserve system to curb wheat price fluctuations⁶.

In September 2018 price regulation on bread (i.e. bread subsidy program) was abolished⁷ and price rose by 30%. This short-term price shocks should have had new impacts for consumers, especially the poor. To compensate for such price inflation, caused by the recent price liberalization, in October 2018, a monthly financial compensation (equivalent to 10% of the

minimum wage) to poor households was introduced to cover additional costs for the purchase of flour and bread.

All these policy reforms seem justified by the recent waves of economic liberalization. However, they also raised new risks linked to affordability and rising inequality due to the higher food prices. The creation of business opportunities for the milling sector risks to be inconsistent with the objective of food security and with the government's objective to reduce poverty by half and become an industrialized, upper-middle income country by 2030 (UNDP 2010). Maintaining low staple food prices is considered a crucial aspect of industrial policy of a developing country to guarantee stable prices and to avoid risks of wage inflation (Amsden 2008). Considering that poverty declined, arguably also because of the SSP, the government seems now inclined to adopt policies which target under-consumption rather than under-production.

5. Conclusions

In this paper we investigate, through the case of wheat in Uzbekistan, the rationale and operationalization of food self-sufficiency policy over time. We have systematized the different theoretical and policy positions within the long-standing SSP debate, and identified its tensions. Drawing from the work of Alonso and Swinnen (2016), Clapp (2015, 2017), Schiavoni (2017), Zhan (2017), it has been underscored the needs to understand SSP for its economic impacts among different economic actors but also for its inter-temporal social and political objectives. Through the empirical exercise, it has been highlighted the fact that consumers, by having diverse income, express different types of demand for wheat.

The analysis proposed in this paper, by untangling the operational mechanisms behind wheat SSP in Uzbekistan, has confirmed that this policy can provide net-benefits in low-middle income countries. The SSP in Uzbekistan met its objective of pro-poor policy by increasing the domestic availability and price stability of wheat-related products for rural and urban poor at the costs of wheat producers. The access to cheap wheat through such policy has allowed the milling sector to grasp significant economic benefit.

However, the current policy reforms implemented Uzbekistan suggests a new scenario in which the FSS policy has to be understood. Over time the socio-economic benefits of SSP, namely the subsidized access to wheat by poor consumers, are being offset because consumers, having higher income, are increasingly demanding high quality wheat.

Uzbekistan is an increasing importer of high-quality wheat and flour from Kazakhstan (USDA 2018), and its wheat milling industry is increasingly focusing on reaching consumers in the regional markets.

Nonetheless, considering that wheat remains the most important food source in the developing countries (Shiferaw et al. 2013), a policy which ensures both the stability of supply and seeks to buffer price volatility seems still a desirable option. A rapid price ‘liberalization’ reform will certainly impact poor consumers.

The farmers’ status in the wheat supply chain in Uzbekistan has improved through the recent agricultural reforms. Yet, further cross-sector analysis will be needed to understand whether the long-term efficiency gains from liberalizing domestic wheat sector will outweigh these losses.

In conclusion, since the agro-processing sector holds strategic potential for export, employment creation and economic growth, it is reasonable to assert that the shift in the national patterns of wheat consumption created a further opportunity to consider strengthening the production of high-value crops as an alternative to the current crop portfolio. This can imply the development of fruit and vegetable industries commodities in which Uzbekistan has comparative advantage and large neighboring markets (Spoor 2000). Indeed, once countries achieve a good level of economic development, diversification towards agricultural products beyond staple crops becomes reasonable (Chang 2009).

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The Authors declare that there is no conflict of interest.

Notes:

1. Islam Karimov addresses international conference in Tashkent. Ministry of Foreign Affairs <https://mfa.uz/en/press/news/2014/06/1954/>
2. What flour mills hope for: In geopolitical competition, Kazakhstan flour mills are losing to their Uzbek counterparts. Published in Russian in <https://inbusiness.kz/ru/news/na-chto-nadeyutsya-mukomoly> (12 July 2019).
3. Mills of Kazakhstan transfer business to Uzbekistan. Published in Russian in https://forbes.kz/finances/markets/mukomolyi_kazahstan_perenosyat_biznes_v_uzbekistan/ (7 September 2019).
4. Resolution of the Cabinet of Ministers #866 “On measures for the implementation of market mechanisms in delivery system of grain, flour and bread” from 14 October 2019.
5. State regulation of prices for flour has been ceased. Why did the government take this step? Published in Russian in <https://www.gazeta.uz/ru/2019/10/15/flour-liberalization/> (15 October 2019).
6. Since October, the state will start grain interventions to curb prices. Published in Russian in <https://kun.uz/ru/news/2020/01/29/s-oktyabrya-gosudarstvo-pristupit-k-zernovym-intervensiyam-dlya-sderjivaniya-tsen>
7. Producers of bread loaf from domestic flour will be exempted from VAT. Published in Russian in <https://www.gazeta.uz/ru/2019/10/01/bread/> (1 October 2019).

References

- Agarwal, B. 2014. “Food sovereignty, food security and democratic choice: Critical contradictions, difficult conciliations.” *Journal of Peasant Studies* 41 (6): 1247-1268. doi:10.1080/03066150.2013.876996.
- Akramov, K.T. 2011. “International food prices, agricultural transformation, and food security in Central Asia.” *Development in Practice* 21 (4-5), 741-754. doi:10.1080/09614524.2011.562283.
- Alonso, E. B. and J. Swinnen. 2016. “Who are the producers and consumers? Value chains and food policy effects in the wheat sector in Pakistan.” *Food Policy* 61: 40-58. doi:10.1016/j.foodpol.2016.02.001.
- Amsden, A. H. 2008. “The Wild Ones: Industrial Policies in the Developing World.” In *The Washington Consensus Reconsidered: Towards a New Global Governance*, edited by N. Serra and J. E. Stiglitz, 95-118. Oxford: Oxford University Press.
- Baines, J. 2015. “Fuel, feed and the corporate restructuring of the food regime.” *Journal of Peasant Studies* 42 (2): 295-321. doi:10.1080/03066150.2014.970534.

Beauregard, S. 2009. Food Policy For people: Incorporating Food Sovereignty Principles into State Governance. Senior Comprehensive Report. Los Angeles: Urban and Environmental Policy Institute, Occidental College.

Bernstein, H. 2014. "Food sovereignty via the 'peasant way: A sceptical view.'" *Journal of Peasant Studies* 41 (6): 1031-1063. doi:10.1080/03066150.2013.852082.

Bobojonov, I., Djanibekov, N. and P. Voigt. 2017. "Future Perspectives on Regional and International Food Security: Emerging Players in the Region: Uzbekistan." In *The Eurasian Wheat Belt and Food Security: Global and Regional Aspects*, edited by S. Gomez y Paloma, S. Mary, S. Langrell and P. Ciaian, 195-213. Cham: Springer.

Bush, R. 2010. "Food riots: Poverty, power and protest." *Journal of Agrarian Change* 10 (1): 119-129. doi:10.1111/j.1471-0366.2009.00253.x.

Chang, H.-J. 2009. Rethinking Public Policy in Agriculture: Lessons from Distant and Recent History. Rome: FAO.

Clapp, J. 2015. Food Self-sufficiency and International Trade: A False Dichotomy? Technical Note prepared for The State of Agricultural Commodity Markets 2015-16, Rome: FAO.

Clapp, J. 2017. "Food self-sufficiency: Making sense of it, and when it makes sense." *Food Policy* 66: 88-96. doi:10.1016/j.foodpol.2016.12.001.

Clark, P. 2016. "Can the state foster food sovereignty? Insights from the case of Ecuador." *Journal of Agrarian Change* 16 (2): 183-205. doi:10.1111/joac.12094.

FAO. 1975. *The State of Food and Agriculture 1974*. Rome. Available at: <http://www.fao.org/docrep/017/f3350e/f3350e.pdf>

FAO. 1996. Declaration on World Food Security. World Food Summit. 13-17 of November 1996, Rome. http://www.fao.org/wfs/index_en.htm (accessed from FAO Corporate Document Repository, 7 December 2019).

FAOSTAT. 2019. Statistical Database on Agriculture and Food.

Friedmann, H. 2016. "Commentary: Food regime analysis and agrarian questions: Widening the conversation." *Journal of Peasant Studies* 43 (3): 671-692. doi:10.1080/03066150.2016.1146254.

Ghosh, J. 2010. "The unnatural coupling: Food and global finance." *Journal of Agrarian Change*, 10 (1): 72-86. doi:10.1111/j.1471-0366.2009.00249.x.

- Golay, F. 1950. "The International Wheat Agreement of 1949." *Quarterly Journal of Economics* 64 (3): 442-463. Retrieved from <http://www.jstor.org/stable/1884559>
- GosKomStat. 2018. State Committee on Statistics of Uzbekistan. Wheat grain prices for 1996-2017. Tashkent.
- Harrison, M. 1996. "Soviet Agriculture and Industrialization." In *Agriculture and Industrialization*, edited by P. Mathias and J.A. Davis, 192-208. Oxford: Blackwell.
- Hendrix, C.S., Haggard, S. (2015). "Global food prices, regime type, and urban unrest in the developing world." *Journal of Peace Research* 52 (2), 143-157.
doi:10.1177/0022343314561599.
- ITC. 2019. International trade in goods statistics by product group. <http://www.intracen.org/itc/market-info-tools/statistics-import-product-country/> (Last accessed on 4 November 2019).
- Jeon, Y. and B. I. Ahn. 2017. "Effects of a tariff reduction on grain self-sufficiency: Evidence from country-level panel data." *Sustainability* 9 (10): 1838. doi:10.3390/su9101838.
- Kearney, J. 2010. "Food consumption trends and drivers." *Philosophical Transactions of the Royal Society B: Biological Sciences* 365 (1554): 2793-2807. doi:10.1098/rstb.2010.0149.
- Kienzler, K. M., Rudenko, I., Ruzimov, J., Ibragimov, N. and J. P. A. Lamers. 2011 "Winter wheat quantity or quality? Assessing food security in Uzbekistan". *Food Security* 3 (1), 53-64. doi:10.1007/s12571-010-0109-9.
- Lerman, Z., Sedik, D., Yusupov, Y., Stanchin, I. and I. Kazakevich. 2016. "Wheat Production and Regional Food Security in CIS: The Case of Belarus, Turkmenistan and Uzbekistan." *FAO Policy Studies on Rural Transition* No. 2016-1.
- Lombardozzi, L. 2019. "Can distortions in agriculture support structural transformation? The case of Uzbekistan". *Post-Communist Economies* 31 (1): 52-74.
doi:10.1080/14631377.2018.1458486.
- Lyddon, C. 2015. Focus on Uzbekistan. WorldGrain.Com, July 14. <http://www.world-grain.com/Departments/Country-Focus/Country-Focus-Home/Focus-on-Uzbekistan-2015.aspx?cck=1>

- Martin, M. and J. McDonald. 1986. "Food grain policy in the Republic of Korea: The economic costs of self-sufficiency." *Economic Development and Cultural Change* 34 (2): 315-331. doi:10.1086/451530.
- Mirkasimov, B. and Z. Parpiev. 2017. "The Political Economy of Wheat Pricing in Uzbekistan". Eurasian Center for Food Security, Lomonosov Moscow State University.
- Mori Clement, Y., Bhaduri, A., Djanibekov, N. 2014. "Food Price Fluctuations in Uzbekistan: Evidence from Local Markets in 2002-2010." In *Restructuring Land Allocation, Water Use and Agricultural Value Chains: Technologies, Policies and Practices for the Lower Amudarya Region*, edited by J.P.A. Lamers, A, Khamzina, I. Rudenko and P.L.G. Vlek, 275-294. Bonn: V&R unipress.
- Parpiev, Z. and K. Yusupov. 2011. "Testing household economies of scale in Uzbekistan." *Eurasian Journal of Business and Economics* 4 (7): 25-51.
- Penati, B. 2011. "Le Comité du Coton et les autres". *Cahiers du Monde Russe* 52 (4): 555-589.
- Platteau, J.-P. 1995. "The Food Crisis in Africa: A Comparative Structural Analysis." In *The Political Economy of Hunger – Selected Essays*, edited by J. Dreze, A. K. Sen and A. Hussain, 445-553. Oxford: Clarendon Press.
- Popkin, B. M. 2004. "The nutrition transition: An overview of world patterns of change." *Nutrition Reviews* 62 (suppl_2): S140-S143. doi:10.1111/j.1753-4887.2004.tb00084.x.
- Pritchard, B., Dixon, J., Hull, E. and C. Choithani. 2016. "Stepping back and moving in: The role of the state in the contemporary food regime." *Journal of Peasant Studies* 43 (3): 693-710. doi:10.1080/03066150.2015.1136621.
- Pugach, I., Yusupov, Y. and Z. Berdinazarov. 2016. *Agricultural Policy in Wheat Production and Crop Diversification in Uzbekistan*. IAMO Discussion Paper No. 157, Halle (Saale).
- Schiavoni, C. M. 2017. "The contested terrain of food sovereignty construction: Toward a historical, relational and interactive approach." *Journal of Peasant Studies* 44 (1), 1-32. doi:10.1080/03066150.2016.1234455.
- Seitz, W. 2019. *Where They Live: District-level Measures of Poverty, Average Consumption, and the Middle Class in Central Asia*. Policy Research Working Paper 8940. Washington, DC: World Bank.

- Shiferaw, B., Smale, M., Braun, H.-J., Duveiller, E., Reynolds, M. and G. Muricho. 2013. “Crops that feed the world 10. Past successes and future challenges to the role played by wheat in global food security.” *Food Security* 5: 291-317. doi:10.1007/s12571-013-0263-y.
- Spoor, M. 2000. “ ‘White Gold’ Versus ‘Food Self-sufficiency’ in Former Soviet Central Asia.” In *Agricultural Markets Beyond Liberalization*, edited by A. van Tilburg, H. A. J. Moll and A. Kuyvenhoven, 57-75. New York: Kluwer International.
- Trego, R. 2011. “The functioning of the Egyptian food-subsidy system during food price shocks.” *Development in Practice*, 21 (4–5): 666-678. doi:10.1080/09614524.2011.562879.
- UNDP. 2010. “Food security in Uzbekistan after 2010: New challenges ad policy responses.” Policy Brief 2010/06.
- UNDP. 2018. “About Uzbekistan” (accessed on 9 November 2019) <http://www.uz.undp.org/content/uzbekistan/en/home/countryinfo.html>.
- USDA. 2018. “Kazakhstan Grain and Feed Update Report.” USDA Foreign Agricultural Service. GAIN Report KZ03.
- Wegren, S. K. and C. Elvestad. 2018. “Russia’s food self-sufficiency and food security: An assessment.” *Post-Communist Economies* 30 (5): 1-23. doi:10.1080/14631377.2018.1470854.
- World Bank. 2019. Poverty and Equity database of the World Bank. <https://datacatalog.worldbank.org/dataset/poverty-and-equity-database>. Last accessed 4 December 2019.
- Yang, Y. and R. Tyers. 1989. “The economic costs of food self-sufficiency in China.” *World Development* 17 (2): 237-253. doi:10.1016/0305-750X(89)90248-9.
- Zhan, S. 2017. “Riding on self-sufficiency: Grain policy and the rise of agrarian capital in China”. *Journal of Rural Studies* 54: 151-161. doi:10.1016/j.jrurstud.2017.06.012.
- Zorya, S., Djanibekov, N. and M. Petrick. 2019. *Farm Restructuring in Uzbekistan: How Did it Go and what is Next?* Washington, D.C.: World Bank Group.