INDIAN FARMERS AND RIGHTS OVER BIOGENETIC RESOURCES: TOWARDS GREATER FOOD SOVEREIGNTY

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PHD ABSTRACT

Biogenetic resources are the foundational building blocks of all agriculture. These include seeds of different plant varieties, germplasm, and traditional knowledge. Their conservation through their in-situ use and cultivation is essential for agroecological sustainability. In the wake of industrialised agriculture, characterised by the use of high yielding variety seeds, technological and resource intensiveness, and monocropping, many traditional variety seeds have become endangered or lost forever. In India, a majority of farmers still use traditional seeds, and many staples such as rice and millets are grown using these varieties. Traditional varieties and farming practices are therefore crucial for food security in the Indian context. However, since the 1960 Green Revolution, seed liberalisation policies, and seed laws that inadequately regulate private players, many farmers have been shifting away from the use of traditional farm-saved seeds to adopt improved and hybrid varieties. Amidst an ongoing agrarian crisis and migration away from the rural countryside, farmers are increasingly losing control over their own biogenetic resources, which has shifted to government and commercial enterprises. The issue of loss of farmers' control over their seeds has not been adequately addressed within the current legal framework. This framework is overwhelmingly occupied by intellectual property law, and legal constructions meant to combat its ill effects, such as farmers rights. These remain cut off from the issue of acute crisis and farmers' distress, and therefore attempts towards conversation of traditional seeds remain weak. In this context, this thesis presents a hypothesis, that food sovereignty has the potential for inspiring and imagining stronger biogenetic rights in India. Food sovereignty, as a concept, has evolved as a counter movement against industrialised agriculture. It emphasises local food systems, greater farmer control, sustainability, and agroecology. As a legal concept, food sovereignty has found utterance in many laws and policies across jurisdictions, as well as within the provisions of the 2018 Peasants Rights Declaration. This thesis argues that in order to propose stronger biogenetic rights for farmers, one has to move beyond the established boundaries of what intellectual property law and farmers rights cover and take a radical approach in addressing farmers' core concerns. Food sovereignty-inspired biogenetic rights can be read and introduced within India using new languages of valuations that go beyond mere productivism, and are centered around food, farmers, and ecology. Empirical research from 2 contrasting sites in India - Gujarat and Sikkim has guided this thesis in developing a biogenetic rights framework in India that is inspired by food sovereignty, that can accommodate the diversities in India without losing its essence.

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TABLE OF ABBREVIATIONS

ABS: Access and Benefit Sharing

AfC: African Charter on Human and Peoples' Rights 1981

AFS: Alliance for Food Sovereignty

ANAFAE: Honduran National Association to Promote Ecological Agriculture

APLM: Agricultural Produce and Livestock Marketing (Promotion and Facilitation) Act, 2017

APMC: Agricultural Produce Market Committee

ASHA: Alliance for Sustainable & Holistic Agriculture

ATMA: Agricultural Technology and Management Agency

BDA: Biodiversity Act 2002 (India)

BGR: Biogenetic Resources

BJP: Bharatiya Janata Party

CACP: Commission for Agricultural Costs and Prices

CBD: Convention on Biodiversity 1992

CEDAW: Convention on the Elimination of All Forms of Discrimination Against Women 1979

CFS: Committee on World Food Security

CIMMYT: International Maize and Wheat Improvement Centre

CPE: European Peasant Coordination

CRC: Convention on the Rights of the Child 1989

CLS: Critical Legal Studies

COPAGEN: Coalition for the Protection of African Genetic Heritage

DBT: Debt Recovery Tribunal

DPSP: Directive Principles of State Policy

DUS: Distinctiveness, Uniformity and Stability

EIA: Environmental Impact Assessment

ECA: Essential Commodities Act 1955

ECVC: European Coordination Via Campesina

FAO: Food and Agricultural Organisation

FCI: Food Corporation of India

FCO: Farmers Cooperative Organisation

FFW: Food for Work

FPO: Farmers Producer Organisation

FR: Farmers' Rights

FFW: Food for Work

GoI: Government of India

GDP: Gross Domestic Product

GMO: Genetically Modified Organism

IARI: Indian Agricultural Research Institute

ICAR: Indian Council of Agricultural Research

ICCPR: International Convention on Civil and Political Rights 1966

ICDS: Integrated Child Development Services

ICESCR: International Convention on Economic and Social Rights 1966

ICRMW: International Convention on Rights of Migrant Workers

IFAD: International Fund for Agricultural Development

IFOAM: International Federation of Organic Agricultural Movements

ILO: International Labour Organisation

ITPGR: International Treaty on Plant Genetic Resources for Food and Agriculture 2001

IP: Intellectual Property

IPR: Intellectual Property Rights

KRRS: Karnataka Rajya Raitha Sangha

KVK: Krishi Vigyan Kendra

LVC: La Via Campesina

MGNREGA: Mahatma Gandhi National Rural Employment Guarantee Act 2005

MoEFCC: Ministry of Environment, Forest and climate Change

MSP: Minimum Support Price

NAM: National Agricultural Market

NABARD: National Bank for Agriculture and Rural Development

NAP: National Agricultural Policy

NBA: National Biodiversity Authority

NFSA: National Food Security Act 2013

NGO: Non-governmental Organisation

NBPGR: National Bureau of Plant Genetic Resources (India)

NSP: National Seed Programme

NBSAP: National Biodiversity Action Plan

NCF: National Commission for Farmers

NIF: National Innovation Foundation

NOFRI: National Organic Farming Research Institute

NSC: National Seed Corporation

OECD: Organisation for Economic Co-operation and Development

OUP: Oxford University Press

PBR: Plant Breeders' Rights

PDS: Public Distribution System

PESA: Panchayat (Extension to Scheduled Areas) Act 1996

PGFRA: Plant Genetic Resources for Food and Agriculture Treaty 2001

PGR: Plant Genetic Resources

PIS: Production Incentive Scheme

PPVFRA: Protection of Plant Varieties and Farmers' Rights Act 2001 (India)

PUCL: Peoples Union of Civil Liberties

REDSAG: Guatemalan National Network for the Defense of Food Sovereignty

RTI: Right to Information

SDG: Sustainable Development Goals

SDP: State Domestic Product

SEARICE: Southeast Asia Regional Initiatives for Community Empowerment

SIMFED: Sikkim State Cooperative Supply and Marketing Federation

TK: Traditional Knowledge

TKDL: Traditional Knowledge Digital Library (New Delhi, India)

TPDS: Targeted Public Distribution System

TRIPS: Trade Related Aspects of Intellectual Property Rights 1994

UDHR: Universal Declaration on Human Rights

UN: United Nations

UNDCD: UN Declaration on Cultural Diversity 2001

UNDEHM: Declaration Eradication of Hunger and Malnutrition 1974

UNDRIP: UN Declaration on Rights of Indigenous People 2007

UNDRM: UN Declaration on Rights of National or Ethnic, Religious and Linguistic Minorities 1992

UNDROP: UN Declaration on Rights of Peasants and Other People Working in Rural Areas 1992

UNESCO: UN Educational, Scientific and Cultural Organization

UNHRC: UN Human Rights Council

UNICEF: United Nations International Children's Emergency Fund

UPOV: International Union for the Protection of New Varieties of Plants (French: Union internationale pour la protection des obtentions végétales)

USA: United States of America

USAID: United States Agency for International Development

USD: United States Dollars

WFP: World Food Programme

WHO: World Health Organisation

WTO: World Trade Organisation

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TABLE OF INTERNATIONAL INSTRUMENTS

UN Declaration on Rights of Indigenous People 2007

UN Declaration on Rights of National or Ethnic, Religious and Linguistic Minorities 1992

The United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas, Resolution adopted by the UN General Assembly, 17 December 2018, A/RES/73/165

Universal Declaration on Human Rights 1948

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CHAPTER I

INTRODUCTION – WHAT IS WRONG WITH FARMERS' BIOGENETIC RESOURCE RIGHTS?

1. INTRODUCTION

Biogenetic resources are the bedrock and blueprint of all agriculture. Conserving a rich array of resources through their in-situ use and cultivation is essential for agroecological sustainability. Biogenetic resources are the biological and chemical materials that make up plants, animals, microorganisms, their cells, and genes.[1] Genetic material comprises plant, animal, microbial or other origin containing functional units of heredity.[2] Genetic resources are the building blocks of all life, different organisms, species in plant and animal life across varied ecosystems, which have actual or potential value. This genetic material forms the basis of agriculture and is crucial for plant resilience to pests, diseases, and changing environmental conditions, and maintaining the overall health and resilience of ecosystems. Genetic resources provide new traits that can be used to develop new varieties with desirable characteristics such as higher yields, better nutritional value, and improved adaptation to local conditions. Biogenetic resources in agriculture have been a subject of heated debate regarding their use, ownership, development, and conservation. Preserving a high level of genetic diversity is essential for securing adequate nutritious food, maintaining an ecological balance, and safeguarding socio-cultural norms surrounding food and agriculture.[3] Globally, this diversity has been in sharp decline since the beginning of the 20th century. In a first-of-its-kind report on the 'state of biodiversity in food and agriculture', the Food and Agricultural Organisation (FAO) in 2019 reported that over 2/3rds of global food consumption needs are met by only 9 food crops, and among thousands of plant varieties cultivated for food, only 200 crops contribute to global food output.[4]

The loss of genetic diversity due to reduced crop varieties is a direct result of the way in which humans produce and distribute food by a 'dominant agricultural model'. This model is characterised by

[1] Graham Dutfield, Intellectual Property, Biogenetic Resources and Traditional Knowledge (Routledge 2004) 1.

[2] Article 2, The Convention on Biological Diversity, 5 June 1992,1760 UNTS 69.

[3] Lori A Thrupp, 'Linking Agricultural Biodiversity and Food Security: The Valuable Role of Agrobiodiversity for Sustainable Agriculture' (2002) 76/2 International Affairs 283.

[4] FAO, *The State of the World's Biodiversity for Food and Agriculture* (FAO Commission on Genetic Resources for Food and Agriculture Assessments, Rome, 2019) 38-41.

the use of hybrid high-yielding variety (HVY) seeds; technological and resource intensiveness such as use of chemical pesticides, weedicides and fertilizers; striving towards economies of scale wherein greater profits accrue from monocropping in large-scale farms than smaller diversified farms, and agriculture is broadly understood to have a productivist purpose in producing agricultural products (as opposed to food) for a globalised commodity trade market. Productivism in agriculture is a commitment to an intensive, industrialised and expansionist agriculture, where the primary output of the agricultural system is increased productivity. Such dominant models that comprise most or all of these features depend on substantially changing land use, overexploiting natural resources and environmental services, and creating pollution.[5] They are chief drivers of agrobiodiversity loss.[6] This is why, amidst such loss, biodiversity concentrations that do survive and thrive are found in diffused small-scale peasant farms, areas where traditional farming or farming by special groups such as indigenous peoples is practiced, and in home gardens;[7] and not on large commercial farms.[8] Genetic diversity and richness has been preserved by such agro-food systems that use traditional seed varieties, and employ agroecological approaches for maintaining soil and plant health and reducing resource-use.[9]

Productivist-oriented systems of agriculture became dominant globally post World War II. In India, these systems made inroads since the 1960 Green Revolution which saw a drastic increase in food production. India achieved food security and became a grain-surplus nation owing to the Green Revolution. The effects of the Green Revolution have been addressed in further detail below, as to its long-lasting legacy. With respect to the usefulness of dominant agricultural systems in achieving food security, there are many counter arguments that food and agriculture scholars have raised against this cause-and-effect binary. First, most dominant agricultural systems cultivate cash crops and not food; these indirectly contribute to food security but are primarily grown for profit-making in global commodity markets.[10] Second, a majority of food is grown on small farms by small peasant farmers,

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[5] Via Campesina, 'The Right to Produce and Access to Land' (Voice of the Turtle, 1996) <http://www.voiceoftheturtle.org/library/1996%20Declaration%20of%20Food%20-Sovereignty.pdf>.

[6] The Small-Scale Farmer and Agricultural Biodiversity Dialogue to Action Series <https://quno.org/sites/default/files/resources/The%20Small-scale%20Farmer%20and%20Agricultural%20Biodiversity%20Dialogue%20to%20Action%20Series.pdf>.

[7] Joan Marull et al, 'Long-term Bio-Cultural Heritage: Exploring the Intermediate Disturbance Hypothesis in Agro-Ecological Landscapes (Mallorca, c.1850-2012)' (2015) 24/13 Biodiversity and Conservation 3217; Kew Royal Botanical Gardens, 'State of the World's Plants and Fungi' Report, (2020) <https://doi.org/10.34885/172>.

[8] D Nyadanu et al, 'Agro-biodiversity and Challenges of On-Farm Conservation: The Case of Plant Genetic Resources of Neglected and Underutilized Crop Species in Ghana' (2016) 63/8 Genetic Resources and Crop Evolution 1397.

[9] Hope Shand, 'Biological Meltdown: The Loss of Agricultural Biodiversity' (*Rural Advancement Foundation International* (RAFI) 2017) <http://www.reimaginerpe.org/node/921>.

[10] FAO, IFAD, UNICEF, WFP and WHO, *The State of Food Security and Nutrition in the World 2019: Safeguarding Against Economic Slowdowns and Downturns* (FAO, Rome, 2019) pg vii.

and a majority of this food is grown using farm-saved seeds, also known as farmers' varieties.[11] Third, people who grow food or work at farms are the most food insecure people.[12] The critique against the food security justification of dominant models is further discussed in detail in Chapter 4.

In India, a majority of farmers use traditional farm-saved seeds to grow food, however seed saving practices are fast diminishing with the adoption of improved and hybrid varieties. Several factors are responsible for this transition, including seed liberalisation policies, seed laws that do not adequately regulate private players, and intellectual property laws that protect only 'new' seeds and not others. The seed legal framework within India's agricultural complex does not encourage the use and conservation of traditional seeds, that may albeit render lower profits, but are environmentally and nutritionally superior, and culturally more appropriate. In the recent past, several peasant farmer organisations and coalitions have mobilised to combat the loss of seeds.

This introductory chapter problematises biogenetic resource rights of Indian farmers. It tries to ask the question – what is wrong with farmers' biogenetic rights? Herein the main issues are flagged include, one, the acute agrarian crisis in India, which is reflective of the state of agriculture globally. The past few decades have seen an onset of severe non-profitability, due to a diminishing productive capacity of the land, rising input costs and changes in agricultural marketing. Two, resulting out of this crisis, India has experienced a wave of depeasantisation, which is also reflective of the global scenario. Set against these 2 background themes – the agrarian crisis and depeasantisation, this thesis explores the question of biogenetic resources. Three, it argues that farmers are losing control over their biogenetic resources, which has shifted to government and commercial enterprises. The issue of loss of resources and control in India has not been adequately addressed by the current legal framework. The current framework surrounding biogenetic resources is overwhelmingly occupied by IPR law, and legal constructions meant to combat the ill effects of IPRs in genetic resources such as farmers rights. This makes for a fragmented framework comprising IPR law, farmers rights, seed laws, biodiversity laws and marketing and trade laws etc. None of these encourage the conservation and sustainable use of genetic resources by farmers, while also combating the pressures they face in the current agricultural system.

The thesis therefore presents a **hypothesis – food sovereignty has the potential in inspiring and imagining stronger biogenetic rights.** This is premised on the fact that in order to propose a stronger biogenetic rights framework, one has to move beyond the established boundaries of what IPR

[11] Vincent Ricciardi, Navin Ramankutty, Zia Mehrabi, Larissa Jarvis, Brenton Chookolingo, 'How Much of the World's Food is Produced by Small Farmers?' (2018) 17 Science Direct 64.

[12] Chris Arsenault, 'Why are Most of the World's Hungry People Farmers?' *Thomson Reuters* (27 May 2015).

law and farmers rights covers. The issues within agriculture run far and deep, and therefore a legal framework that is detached from the core struggles of farmers can never truly strengthen their position vis-à-vis genetic resources.

Finally, this chapter introduces the food sovereignty theme. It offers a refreshing and radical take on the agrarian crisis, depeasantisation, the position of small and marginal farmers and most importantly lays a claim to resources, which include genetic resources such as seeds, traditional knowledge, and germplasm etc that ought to be valued, protected, and used. By doing so, India's post Green Revolution productivist orientation should be replaced by new 'values' such as food, farmers, and ecology. This chapter further lays out the research questions, theoretical and methodological approaches of the thesis, including a note on its scope and limitations.

2. PROBLEM STATEMENT

In India, the rapid depletion of genetic resources and diversity mirrors the global experience. Since 1900, an estimated 1 lakh distinct traditional varieties of rice alone have become extinct.[13] The enormous decline in the cultivation of traditional crops such as sorghum, millets, groundnuts, barley, traditional varieties of pulses and vegetables etc have pushed some of these crops on the verge of extinction. Such 'endangerment' and the mainstreaming of some crops over others have created a crisis of agrobiodiversity loss.[14] It is imperative to examine the Indian seed law framework in the context of its role in driving seed loss and pushing peasant farming systems to the margin. However, the seed law framework cannot be viewed in isolation. It is entrenched within India's broader agricultural context, one that has largely been framed upon the foundational rationale of the 1960 Green Revolution.

The prevailing narrative of the Green Revolution history lauds its own success in increasing food production using high yielding variety (HVY) seeds, chemical inputs, and mechanisation.[15] Quantitatively speaking, per acre per season food production almost tripled between 1960-90.[16] Farmers could sow 2 crops within one year instead of one, and the profitability of the cereals resulted in more land being deployed for cereals vis-à-vis other crops. This also increased the holdings of buffer stocks, thereby removing the need for foreign food imports and food aid. Self-sufficiency with respect

[13] Special Correspondent, 'From 1,10,000 Varieties of Rice to Only 6,000 Now', *The Hindu* (6 April 2012) <https://www.thehindu.com/news/national/karnataka/from-110000-varieties-of-rice-to-only-6000-now/article3284453.ece>.

[14] Ashish Kothari, 'Reviving Diversity in India's Agriculture' (*Grain* 25 October 1994) <https://grain.org/es/article/entries/514-reviving-diversity-in-india-s-agriculture>.

[15] Raj Patel, 'The Long Green Revolution' (2013) 40/1 J Peasant Studies 1.

[16] Michael Lipton and Richard Longhurst, *New Seeds and Poor People* (OUP 1989) 1.

to food staples was achieved, a goal pursued aggressively in the 1960-75 period.[17] National food security that remained a core objective prior to 1980, gave way to new core objectives such as increasing agricultural growth and development.

The government's new goals for agriculture in India focused on making large farms more profitable and reducing the number of small farmers.[18] Other priorities, like land reform and redistribution became less important because technology improvements were meant to benefit all farmers regardless of their land size.[19] The success or failure of agriculture started being measured by how productive it was, and many research organizations were created to replicate the successes of the Green Revolution. As India began exporting more agricultural products, the priority shifted to increasing high-yield production for export crops. The value of agriculture started being measured by its contribution to India's gross domestic product (GDP). Therefore, dominant agricultural models that were needed, celebrated, and justified on the basis of food security in the 1960s have assumed another meaning in today's world. The noble goal of food security was indeed achieved via the Green Revolution, but 60 years past there is a need to examine its environmental impacts and its long-lasting legacy that lives on in India's agricultural research organisations.

With respect to the contribution of large farms in food security, it is important to note that small-scale farmers using traditional farm practices contribute to a third of all food produced globally, while small to medium farmers, not large farms, produce almost two-thirds of all food produced.[20] In India, 75% of all food is grown using farmers' saved varieties.[21] Amidst a Green-Revolution-dominated discourse on food security, the role of small farmers, peasants, and traditional farming including seed saving practices is often forgotten or neglected at best. These seeds are open-pollinated or self-replicating which means that they reproduce naturally generation after generation. Traditional varieties include landraces, that were originally wild plants locally adapted through domestication over time; and seeds saved for subsequent harvests by farming families, communities, or villages. These are plants that tend to adapt to local soil and climatic conditions over time.[22] The in-situ conservation of traditional

[17] Dana G Dalrymple, 'Adoption of High-Yielding Varieties in Developing Countries' (1979) 53/4 Agr History 704, 709.

[18] Arthur Goldsmith, 'Policy Dialogue, Conditionality and Agricultural Development: Implications of India's Green Revolution' (1988) 22/2 J Developing Areas 189.

[19] Mark Rosegrant and Peter Hazell, *Transforming the Rural Asian Economy: The Unfinished Revolution* (World Bank 2001) 10.

[20] Supra n 11, Ricciardi et al (2018).

[21] FAO, 'India at a Glance', <https://www.fao.org/india/fao-in-india/india-at-a-glance/en/>.

[22] Mathieu Thomas et al, 'Seed Exchanges: A Key to Analyze Crop Diversity Dynamics in Farmer-Led On-Farm Conservation' (2011) 58 Genetic Resources & Crop Evolution 321.

seeds through their use and cultivation is fast diminishing. Improved and hybrid seeds are produced by cross-pollinated plants with genetic characteristics that render higher yield, greater uniformity and disease resistance and improved outward appearance such as colour and size.[23] This shift has been enabled by conducive seed laws and policies, that do not contain adequate protections for traditional varieties.

The saving, exchange and cultivation of traditional varieties is a crucial component of maintaining a high degree of agrobiodiversity. The genetic diversity across species and at the sub-species level that has been a result of thousands of localised and diffused small farmers' seed systems has been declining at alarming rates. Following the Green Revolution, agricultural research, seed dissemination, policymaking and a host of other actions have focused primarily on increasing productive value, and it is therefore no surprise that high-yielding varieties (HVYs) are seen as superior to traditional varieties, irrespective of their environmental or health consequences. Seed laws in India have been enacted within this productivist framing of Indian agriculture.

In India the seed market has slowly transformed over the past decades with the increase in private sector share in seed production and concurrent decrease in varietal production of seed by farmers.[24] Seed companies produce hybrids that cannot be replanted after one season. A majority section of the Indian seed market comprises such hybrid seeds for which farmers pay (price including royalty for the IP) every season.[25] Related to the issue of food security of farmers, is the idea of 'sovereignty', a term that is indeed difficult to define, but at a basic level, it means - farmers ought to retain some control over plant varieties, such that they be able to develop, improve and adapt such varieties as per changing conditions of land, climate and resources.[26]

Agricultural and food sustainability is a growing concern under the current model, as market-driven and trade-oriented agriculture is not always aligned with social and environmental value of certain plant species. Farmers have over several centuries bred crop varieties and mastered certain location-specific farming methods closely connected to their socio-cultural traditions that are of special importance. In light of exacerbated effects of climate change, it is crucial to conserve and value these

[23] Lakshman Yapa, 'What are Improved Seeds? An Epistemology of the Green Revolution' (1993) 69/3 Environment and Development 254.

[24] Ken Research, 'Report: India Seed Industry Outlook to FY'2018 - Rapid Hybridization in Vegetables, Corn and Rice to Impel Growth' (2013) <https://www.kenresearch.com/agriculture-and-animal-care/seed/india-seed-industry-research-report/372-104.html>.

[25] Rajshree Chandra, 'Farmers' Rights in India Globally Sui Generis' [2016] 6 South Asia Chronicle 119, 129-131.

[26] Philippe Cullet, 'Intellectual Property Rights and Food Security in the South' (2004) 7/3 J World IP 261, 266.

practices that have developed diverse plant varieties and methods that are naturally resilient to certain conditions and especially the harmful impacts of some transgenic plant varieties.

3. INADEQUACIES OF THE EXISTING FRAMEWORKS OVER BIOGENETIC RESOURCES

Law and policy frameworks are in their early stages of evolution with respect to most categories of biogenetic resources, except for plant genetic resources. Plant genetic resources represent the genetic diversity of plant species that are used or have potential for use in agriculture, horticulture, forestry, or other areas. Biodiversity, on the other hand, refers to the variety and variability of all living organisms and their interactions with each other. Plant genetic resources are therefore a subset of biodiversity. They comprise a diversity of seeds – traditional and modern cultivars, wild plants, including their planting materials.[27] Seeds, other genetic material and knowledge surrounding plant genetic resources have been highly relevant for the intellectual property (IP) law regime, wherein commercial interests in such resources have been on the rise since many decades. Rights in plant genetic resources gave rise to 'farmers rights' as a counter movement to mainstream intellectual property rights (IPRs).[28]

At the international level and among most states, the legal regime vis-à-vis biogenetic resources is inspired by the Trade Related Aspects of Intellectual Property (TRIPS)[29] 1994, the International Union for the Protection of New Varieties of Plants (UPOV)[30] Conventions, and the International Treaty for Plant Genetic Resources for Food and Agriculture (ITPGR) 2001[31]. The Convention on Biological Diversity (CBD) 1992[32] and its Nagoya Protocol on Access and Benefit Sharing 2010[33] are of relevance as well. Yet all these treaties engage with the subject matter only tangentially, and as such the biogenetic

[27] Michael Halewood et al, 'Plant Genetic Resources for Food and Agriculture: Opportunities and Challenges Emerging from the Science and Information Technology Revolution' (2018) 217/4 New Phytologist 1408.

[28] Annie Patricia Kameri-Mbote and Philippe Cullet, 'Agro-Biodiveristy and International Law: A Conceptual Framework' (1999) 11/2 J Env L 257, 265.

[29] Agreement on Trade-Related Aspects of Intellectual Property Rights, 15 Apr 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 UNTS 299 (1994) [TRIPS].

[30] International Convention for the Protection of New Varieties of Plants, 2 Dec 1961 as Revised at Geneva on 10 Nov 1972, 23 Oct 1978 and 19 Mar 1991 (UPOV Doc 221/E 1996).

[31] International Treaty on Plant Genetic Resources for Food and Agriculture, Rome, 3 Nov 2001.

[32] Supra n 2, CBD 1992.

[33] Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, Nagoya, 29 Oct 2010.

legal framework is fragmented and grossly inadequate in promoting conservation.[34] Such fragmentation creates a legal vacuum over some key issues surrounding biogenetic resources. The legal framework pertaining to the use, preservation and trade in biogenetic resources can therefore be found across several fields of study. As a result, the issue of biogenetic conservation remains largely hidden, as 'agriculture' and 'environment' have evolved as somewhat separate and compartmentalised law-policy fields.

(a) OVERWHELMING PRESENCE OF INTELLECTUAL PROPERTY RIGHTS LAW

Since the hard-fought recognition of intellectual property in life organisms in the USA in 1980[35], commercial rights in food and agricultural biogenetic resources have been on the rise. The rapid rise and consequent transformation of agriculture and food systems has been possible mainly through the institutionalisation of IPR within the World Trade Organisation (WTO) framework. As signatories to the WTO's TRIPS Agreement, member states such as India were obligated to extend property rights protection to plant varieties.[36] Article 27.3 (b) of the TRIPS alongside creating this obligation gives a choice to countries to either adopt patents or a *sui generis* system of their own for the protection of plant varieties. This choice has been interpreted as a limited choice between patents of plant breeders' rights.[37] Plant breeders rights are IPRs that are similar to patents yet differ in some key respects. They have been defined and developed by the UPOV Conventions. The UPOV treaty regime aims at incentivising plant breeders through an alternate route, given the reluctance of many countries (especially within the European Union) to introducing patents for plants. However, the 1991 version of the UPOV introduced a crucial amendment which further pushed the boundaries of IPR coverage in food and agriculture. This amendment removed the provision barring the protection of a given variety by more than one type of intellectual property; this has meant that the UPOV and TRIPS can overlap in some situations, that is, a plant variety protected by plant breeder rights may also involve a patented micro-organism.[38]

[34] Craig Borowiak, 'Farmers' Rights: Intellectual Property Regimes and the Struggle over Seeds' (2004) 32/4 Politics & Society 511, 513.

[35] *Diamond* v *Chakrabarty* 477 US 303 (1980).

[36] Art. 27 (3b), TRIPS states that "… *Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof*…"

[37] Philippe Cullet and Radhika Kolluru, 'Plant Variety Protection and Farmers' Rights: Towards a Broader Understanding' [2003] 24 Delhi Law Review 41, 49.

[38] Philippe Cullet, 'Seeds Regulation, Food Security and Sustainable Development' (2005) 40/32 Eco Pol Weekly 3607, 3608.

The expansion of IPR into agriculture marked a major departure from traditional farming practices and beliefs around agriculture and nature as a whole.[39] It posed a threat to farmers' autonomy and established ways of life. The penetration of IPR in developing countries' agricultural sectors have worked in tandem with other neoliberal policies reshaping related sectors of land, water, agricultural inputs, and food markets. In India, the agricultural and food system is based on models developed during the Indian Green Revolution in the late 60s and early 70s and then during the trade liberalisation in 1991.[40] Consequently, India's trade commitments for international food security and its strategies and policies for national food security have also evolved under a neoliberal trade model, where large-scale production of commercially lucrative crops is encouraged over other traditional small and medium-scale farming. This raises questions for food security at the local level for such farmers, who are unable to generate substantial agricultural income for themselves. IPR in biogenetic resources as kinds of property rights is a kind of control over not just the resource itself but also related knowledge, which largely remains diffused among communities or with public domain. Appropriation over the resource by private parties (may they be large multinationals, companies or big farmers/agrobusinesses) leads to private appropriation rather than public access.[41] Furthermore, this is also linked with control of other agricultural input resources such as land and water.

The proliferation of IPRs can stifle innovation rather than promote it, as patents and plant breeders rights can result in a tragedy of 'anticommons'.[42] The accumulation of these rights among a certain class of innovators results is 'upstreaming' within the innovation system that can inhibit innovations 'downstream' if transaction costs are too high or IPRs are aimed at ousting competitors.[43] This raises the issue of equity as IPRs are based on an expansive scope of primary material and associated traditional knowledge that is ordinarily in the public domain.[44] While IPRs reward innovation, they do not account for all the historical contributions to biodiversity and seed development

[39] Craig Borowiak, 'Farmers' Rights: Intellectual Property Regimes and the Struggle over Seeds' (2004) 32/4 Politics & Society 511, 514.

[40] Jack R Kloppenburg, *First the Seed: The Political Economy of Plant Biotechnology, 1492–2000* (University of Wisconsin Press 2004) 336.

[41] Supra n 26, Cullet (2004) 265.

[42] Peter H Feindt, 'The Politics of Biopatents in Food and Agriculture 1950-2010: Value Conflict, Competing Paradigms and Contested institutionalisation in Multi-Level Governance' [2012] 31 Pol and Soc 281, 285. See *Monsanto* v *Schmeiser* [2004] 1 SCR 902 (Supreme Court of Canada).

[43] Shalini Randeria and Ciara Grunder, The (un)Making of Policy in the Shadow of the World Bank: Infrastructure Development, Urban Resettlement and the Cunning State in Cris Shore, Susan Wright & Davide Però (eds), *Policy Worlds* (Pluto Press 2010) 187, 191.

[44] Ali M Nizamuddin, The Patenting of Life, Limiting Liberty and the Corporate Pursuit of Seeds (Lexington 2014) 127-29.

that farmers have made. In this respect, IPs are no more than improvements on available resources and knowledge and are protected by law, while there is no real compensation or benefit accorded to holders of the knowledge.

(b) FARMERS' RIGHTS VERSUS RIGHTS OF FARMERS

Farmers rights were introduced as an attempt to allay some of the issues that IPR in agriculture brought with it. The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRA) in its Article 9 defines 'farmers rights' as rights to save, use, exchange and sell farm-saved seeds.[45] What the ITPGRFA settled with was commendable in one sense, as it framed farmers' privileges under UPOV as 'rights'.[46] Notwithstanding this language of entitlement, the farmers' rights framework is limited in imagination and scope, because it only stands as a response to IPRs. The content of farmers' rights restricts itself to mainly seeds and exceptions to registered innovations that seek credit and gain monetary advantage from such an innovation.[47]

The rise of private commercial interests in seeds has gone hand in hand with the rise of IPR protection over seeds. India joined the WTO in 1995 and acceded to the TRIPS agreement, which required India to provide IPR protection for plant varieties.[48] In 2001, India enacted its *sui generis* legislation, Protection of Plant Varieties and Farmers' Rights Act (PPVFRA) that recognises plant breeders' rights and farmers' rights. This Act makes no distinction between commercial plant breeders and farmers and accords an equal status to register seed innovations and gain benefit therefrom.[49] It also recognises farmers' rights to save, use, exchange and sell farm-saved seeds.[50] Farmers' rights were included as an afterthought due to public pressure to make sure that IPRs do not preclude farmers' rights

[45] Art. 9.1, ITPGRFA recognizes the enormous contribution that local, indigenous communities, farmers have made and will continue to make to the conservation and development of plant genetic resources; Art. 9.2(a): protection of traditional knowledge relevant to plant genetic resources; Art.9.2(b) right to equitably participate in sharing benefits arising from their utilization; Art. 9.2(c): right to participate in making decisions; Art. 9.3: right to save, use, exchange and sell farm-saved seed/propagating material.

[46] Article 15(2) UPOV Convention 1991; Explanatory Notes on Exceptions to the Breeder's Rights Under the 1991 Act of the UPOV Convention, UPOV/EXN/EXC/1, UPOV, Geneva, 22 October 2009.

[47] Stephen A Marglin, 'Farmers, Seedsmen, and Scientists: Systems of Agriculture and Systems of Knowledge' in Frederick Apffel-Marglin and Stephen A Marglin, *Decolonizing Knowledge: From Development to Dialogue* (OUP 1996) 205-6.

[48] Supra n 36, TRIPS.

[49] Karine Peschard, 'Seed Wars and Farmers' Rights: Comparative Perspectives from Brazil and India' (2017) 44/1 J Peasant Studies 144; Anitha Ramanna, 'Farmers Rights in India: A Case Study' (The Fridtjof Nansen Institute, FNI Report 6/2006) 17.

[50] Supra n 45, ITPGR.

to sell unbranded seeds. This is important for a country where a majority of food is produced using farm-saved seeds.

Farmers' rights makes no provision for conservation per se but acknowledge that traditional seed saving and exchanging practices result in conservation of agrobiodiversity.[51] To take India as an example, its farmers rights legislation is being increasingly rendered irrelevant given the current seed market and technology trends. More than 80% of seeds in the market are hybrid varieties, thereby leaving little or no incentive for the farmer to save, exchange and sell his/her own varieties. The rise in hybrid varieties has increased drastically.[52] In this context of rise in scientific methods of breeding replacing traditional ones, rights over traditional knowledge and compensation/benefit for use of such knowledge have increasingly been forgotten.[53] The sustainability of food systems depends on preserving the agro-biogenetic variability, which in turn is possible only through greater empowerment of farmers as decision-makers. Farmers' rights are thus not 'all rights of all farmers', but a highly specialised category of IPR type rights. Rights of all farmers on the other hand include rights that are more pressing for the survival and prosperity of small farmers.

The real question however is whether the PPVFRA has been effective in promoting the use and conservation of farmers' traditional varieties. First, plant breeders' rights can only be granted if the plant variety satisfies the criteria of distinctness, uniformity, and stability (DUS).[54] In most cases, farmers' traditional seeds, especially landraces, do not meet these criteria. Landraces are genetically diverse and locally adapted varieties which are unfit for uniform crop production on a large scale.[55] IPR protection over seeds promotes homogeneity and uniformity, as these are essential for mass agricultural

[51] Peter Halewood, 'Trade Liberalisation and Obstacles to Food Security: Toward a Sustainable Food Sovereignty' (2011) 43/1 University of Miami Inter-American Law Rev 115; Karine E Peschard, 'Farmers' Rights and Food Sovereignty: Critical Insights from India' (2014) 41/6 J Peasant Studies 1085; Marcus Taylor, 'Climate-smart Agriculture: What is it Good For?' (2018) 45/1 J Peasant Studies 89.

[52] Supra n 25, Chandra (2016) at 129-131: Depending on the different sectoral crops, the share of commercial hybrid seeds vis-à-vis open pollinated traditional seeds is 70-88 %. The use (and consequently the incentive to keep using) of traditional varieties is shrinking alarmingly.

[53] Not even one claim for ABS has been filed.

[54] On how most farmers' traditional varieties cannot meet DUS criteria: Stephen A Marglin, 'Farmers, Seedsmen, and Scientists: Systems of Agriculture and Systems of Knowledge' in Frederick Apffel-Marglin and Stephen A Marglin, *Decolonizing Knowledge: From Development to Dialogue* (OUP 1996) 205-6.

[55] Tania Carolina Camacho-Villa et al, 'Defining and Identifying Crop Landraces' (2005) 3 Plant Genetic Resources, Characterization and Utilization 373; Suman Sahai, 'The Way it Always Was', *Development & Cooperation* (29 March 2010) <https://www.dandc.eu/en/article/indias-law-plant-variety-protection-and-farmers-rights>.

production.[56] Second, the implementation data of the Act shows that even though farmers comprise the largest group of applicants (between 45-50% across the years and different applications categories), the proportion of acceptance of their applications (only 7-8% of all applications) is much lower than the proportionate acceptance of other parties such as public/private research organizations or biotech companies.[57] Until 2020, farmers have submitted the highest number of applications but have been issued the lowest number of certificates.[58]

Since the enactment of the PPVFRA, successive governments have been ambivalent over the issue of farmers' control over seeds.[59] The Seed Bill 2004 was drafted as an attempt to regulate private seed developers, which currently fall outside the regulatory parameters of the 1966 Seed Act. This Bill was not passed, *inter alia* due to conflicting provisions with the farmers' rights under the PPVFRA by mandating all seeds sold, including farmers' varieties to be registered. The Biotechnology Regulation Bill 2013 was drafted but not passed due to strong opposition in the same vein, that is, the Bill would jeopardise farmers' interests by ushering biotechnological advances in agriculture. Most recently the 2019 Seed Bill is yet another attempt of the government to regulate private seed developers. This Bill has received similar opposition as its predecessors on the issue of restricting farmers' rights.[60]

Farmers rights have been a result of a hard-won battle against IPRs, yet despite this, its conceptualisation and implementation are severely restricted in scope. First, farmers' rights were conceived as a reactive claim to the recognition of IPRs in biogenetic resources, and as such they were framed as pseudo-property rights. And second, farmers' rights have failed to address socio-economic interests of farmers within its fold. Since the Green Revolution in 1960-70, and especially after the 1991 liberalisation in India, agriculture has undergone rapid commercialisation and globalisation. Farmers rights therefore need to be understood in a larger context of politics of food. It is necessary to frame farmers rights in broader terms to include key considerations of food, farmers, and ecology. Farmers'

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[56] Deborah Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture* (Yale University Press 2003); Pushpa Singh, 'Politics of Knowledge in Development: Explorations in Seed Sovereignty' (2021) 9/1 Studies in Indian Politics 105.

[57] PPVFR Authority, 'Annual Report' (2019-20), 'List of Registered Certificates Issued', updated 28 February 2020 <http://www.plantauthority.gov.in>; previous lists of applications and certificates issued also available under 'Annual Reports' and 'Application Details'.

[58] Data analysed using PPVFR Annual Reports and Journals <http://www.plantauthority.gov.in>; until 2014 data analysed in supra n 25, Chandra (2016) at 129-131.

[59] Supra n 51, Peschard (2014) 1085.

[60] Vandana Shiva, 'The Seed Bill 2019 is a Threat to India's Seed Sovereignty and Farmer's Rights' *Jivad* (4 November 2019), <https://www.navdanya.org/bija-refelections/2019/11/04/the-the-seed-bill-2019-is-a-threat-to-indias-seed-sovereignty-and-farmers-rights/>.

control and autonomy over biogenetic resources must move beyond a discursive frame of rights that stand as exceptions to mainstream property rights.

(c) Sustainability under the Current Model of Agriculture and the Role of Peasant Farmers

The issue of unsustainability of the dominant agricultural model is multi-faceted. 'Sustainability' could simply mean filling the food demand gap for current as well as future generations, or filling in the resource gap while preparing for lesser availability of land and water etc, or from a climate change perspective, sustainability could entail reducing emissions from the agricultural sector.[61] In all cases, today's dominant model of agriculture encourages and perpetuates major environmental costs that remain unaccounted for.[62] Sustainability can also include effective management of agrobiodiversity for current and future generations as well as conservation. Traditional farming practices involve sustainable management and conservation of biological resources as farmers stand to benefit the most from them. Farmers are also custodians of traditional knowledge associated with several plants which are crucial for maintaining an agro-ecosystemic balance. Under the current legal system, farmers are not incentivised or rewarded for sustainable use and conservation of agrobiodiversity.

At the international level, the CBD and the ITPGR both make references to sustainable management and conservation of biological genetic resources, and the special role that farmers play in achieving this.[63] Even though the CBD mentions IPR in connection with conservation of such resources,[64] neither the CBD nor the ITPGR create any rights for farmers' traditional knowledge nor entrust any specific party with the obligation to conserve. Furthermore, IPR treaties like the TRIPS and UPOV make no reference to sustainable management and conservation. This creates a vacuum at the national level, as environmental obligations are hardly prioritised vis-à-vis other obligations under the IPR system.[65] For instance, India's farmers rights legal framework does not include a conservation

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[61] Tim Searchinger *et al*, 'Creating a Sustainable Food Future: A Menu of Solutions to Fee Nearly 10 Billion People by 2050', (World Resource Institute, Synthesis Report, Dec 2018) <https://wriorg.s3.amazonaws.com/s3fs-public/creating-sustainable-food-future_0.pdf?_ga=2.86318621.44103645.1546801391-672308040.1546801391>.

[62] William R Cline, *Global Warming and Agriculture* (Centre for Global Development, Peterson Institute for International Economics 2007) 90-94.

[63] Art.s 8(j) and 15, CBD; Art.1, ITPGR.

[64] Art. 16, CBD.

[65] Vandana Shiva, *The Violence of the Green Revolution: Third World Agriculture, Ecology and Politics* (Zedbooks 1991); MS Swaminathan - pioneer of the Green Revolution in India, calling it a failure: Sandhya Jain, 'Orphaning the Green Revolution', *Daily Pioneer* (28 Dec 2018) <https://www.dailypioneer.com/2018/columnists/orphaning-green-revolution.html>.

component, while the Biodiversity Act 2002 (passed in ratification of the CBD) does not refer to farmers and agriculture in any way.

India's dominant model of agriculture has created several negative environmental and health impacts. Most varieties introduced by the Green Revolution were water-intensive crops such as rice and wheat. Agricultural research since then has focused on developing higher-yielding varieties in these crops, and at the same time, these crops have comprised the lion's share of government procurement every season. Hence, farmers have an enormous incentive to grow HVY cereals rather than traditional cereals such as millets and sorghum, that have been in decline since the 1960s. Rice and wheat require an extensive irrigation infrastructure and have created water stress in many parts of India. Approximately 91% of all freshwater in the country is used in the agricultural sector.[66]

Pesticides weedicides and chemical fertilizers must be used in large quantities in combination with most HYV seeds. Since 1960s, the use of fertilizers in Indian agriculture has increased at an average 8.1% compound growth rate every year.[67] This leads to long-term health risks for farmers who have a high exposure to such chemicals. Pesticides permeate into water bodies, aquifers and the soil and significantly increase toxicity, which is harmful to biodiversity. High chemical use to produce high yields and reduce crop failure has led to depletion in soil nutrients across different crops and geographical contexts. This has led to a decline in soil fertility, thereby creating a self-fulfilling cycle of high chemical use leading to loss of organic matter, in turn requiring more chemical inputs to sustain yield. Farmers that grow BT cotton for its high value in global commodity markets report that if they wished to hypothetically switch to no-chemical farming, their soil would need to stay fallow for almost 3 years to regenerate enough organic matter before they could grow anything organically.

One of most profound impacts of the dominant agricultural model is the loss of traditional farm-saved seeds. The Green Revolution popularised some cereals such as wheat and rice and following the 1960s agricultural research focused on developing high-yielding hybrids for vegetables and pulses. Under the shadow of the Green Revolution, agricultural law and policymakers have routinely dubbed traditional self-replicating seed varieties as inferior vis-a-vis improved or hybrid varieties owing to their low productive value.[68] This attitude runs as a common thread within India's seed law and policy

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[66] Yoshihide Wada, LPH van Beek, Marc Bierkens, 'Nonsustainable Groundwater Sustaining Irrigation: A Global Assessment' (2012) 48/6 Water Resources Research.

[67] Research and Markets, 'Indian Pesticides Market: Industry Trends, Share, Size, Growth, Opportunity and Forecast 2021-2026', IMARC Report (April 2021) v.

[68] C Subramaniam, *A New Strategy in Agriculture: A Collection of the Speeches by C. Subramaniam* (ICAR, 1972) 31; MS Swaminathan, *50 Years of Green Revolution: An Anthology of Research Papers* (World Scientific 2017) 33-36.

framework, where the push towards using superior varieties has led to massive seed loss and consequent control over seeds out of farmers' hands and into the hands of the state and private corporations.

4. FOOD SOVEREIGNTY'S POTENTIAL IN IMAGINING STRONGER BIOGENETIC RESOURCE RIGHTS

Food sovereignty is the 'right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.'[69] Food sovereignty is a concept developed by La Via Campesina (a grassroots movement comprises farmers organizations from Europe, Latin America, Asia, North America, Central America, and Africa) as an alternative to neoliberal agricultural policies. Neoliberalism refers to market-oriented reform policies such as eliminating price controls, deregulating capital markets, and lowering trade barriers and overall reducing state influence in the economy. It was discussed internationally during the World Food Summit in 1996, and since then, the concept has become a major issue within the international agricultural discourse. At the core, food sovereignty is the right of peoples and countries to define their own agricultural and food policy. It includes among many different aspects: prioritizing local agricultural production in order to feed the people; ensuring access by peasants and landless people to land, water, seeds, and credit; the right of farmers, peasants to produce their own food; the right of people to take part in agricultural policy choices; and the right of countries to reject genetically modified organisms (GMOs) and guard against low-priced agricultural imports.

This thesis explores the concept of food sovereignty at an individual/community level for farmers in India. The position of farmers as stewards of agriculture has been jeopardised as breeders' rights and patenting have curtailed access to genetic resources that sustain farmers' livelihoods. Concern over livelihoods of marginalised and poor farmers due to their restricted access to genetic resources was raised at the time of negotiating the ITPGR. Movements and organizations like La Via Campesina, GRAIN and Navdanya see farmers rights to land, crops, seeds, traditional knowledge etc as foundational claims which pre-empt plant breeders' rights. Via Campesina articulated its stand on farmers' rights during the revision process of the 1983 International Undertaking on Plant Genetic Resources (which preceded the ITPGR) in the UN Commission on Genetic Resources for Food and Agriculture. Via Campesina stressed the need for farmers to be in full control of genetic resources and to decide their future.

[69] Declaration of the International Forum for Agroecology (Nyéléni Declaration), World Forum for Food Sovereignty, Mali, 27 February 2015, <https://nyeleni.org/IMG/pdf/DeclNyeleni-en.pdf>.

Radical movements such as the food sovereignty movement have rejected both the IPR and the farmers' rights frameworks and have advocated for a more holistic approach towards agriculture and genetic resource management.[70] The 2018 Declaration on Rights of Peasants[71] is a culmination of the efforts of numerous organisations and social movements involved in advocating for food sovereignty for peasants. Here too, the focus is not genetic resources, but peasants, which it recognizes as a special category of right-holders. However, the Declaration is unique in trying to re-frame agricultural governance itself by orienting itself around small farmers and peasants. In doing so it has the potential to fill the vacuum by providing an innovative policy option to think differently about these resources.

In India, there is a history of venerating farmers as food providers, as well as a history of peasantries that are comparable to other parts of the world. Several farmers' movements, mobilisations and recent protests show that food sovereignty ideals and principles resonate within the Indian context in a tremendous way. It is social movements that shape and reshape human rights. The present rights-based food security apparatus pulls away from realising food sovereignty rights. This thesis first problematises India's current food and agricultural complex, to argue that the legal framework surrounding biogenetic resources is inadequate in fostering sustainable management of these resources. In this part, the influences of the Green Revolution and the effects of productivist agriculture in diminishing small farmers' control over biogenetic resources is discussed. There is a need to value more than high yields. The thesis divides potential aspects of valuations into 3 themes – food, farmers, and ecology. Empirical data collected from the field builds on this premise to suggest that food sovereignty and the articulation of food sovereignty rights in the UNDROP provide an answer to the law and policy question for improving biogenetic resource conservation by recognizing unique rights of peasants to produce food using their own seeds.

5. RESEARCH METHODOLOGY

(a) OBJECTIVES AND RATIONALE

This thesis seeks to develop stronger and more progressive biogenetic resource rights using the food sovereignty approach. In doing so, it rejects the restrictive framing of biogenetic resource rights under the current legal framework. As explained above, the current framework comprises an overwhelming presence of IPR law. This was contested and followed by advocating and implementing farmers' rights, which albeit laudable in many ways, continue to restrict the scope of these rights. Thus, this research is also premised on critiquing the current scope and nature of farmers' rights in India. The

[70] Supra n 51, Peschard (2014) 1083-7.

[71] United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas, UN General Assembly Resolution adopting the UNDROP, UN Doc. A/RES/73/165 (17 December 2018) [UNDROP].

international and the Indian farmers' rights discourse is limited as it only stands as a response/ alternative to mainstream IPR. At the international level, farmers' rights were articulated under the ITPGR, which chart out only some broad characteristics of farmers' rights and leave it upon states to devise their own laws and policies in this respect.

The elements that make up farmers' rights include protection of traditional knowledge, equitable benefit sharing and the right to participate in decision-making for the management of genetic resources. The treaty seeks to strike a balance between access/use of plant genetic resources and their protection through IPR. In spite of some significant achievements of the ITPGR, it fails to translate its goals in a clear legal framework. This compared with clear legal rights and obligations and policy goals articulated in the UPOV or TRIPS show that countries are always drawn towards something that can be emulated rather than conceptualizing something new. As a result, in most countries, IPR over genetic resources in the form of patents and plant breeders' rights are better defined and enforced, while farmers' rights are comparatively vague and open to multiple interpretations. Furthermore, understanding the ITPGR as a response to IPR in food and agriculture raises the need for better coordination and complementarity among different international regimes that have evolved in separate silos. The ITPGR and the UPOV/TRIPS systems address similar subject matter yet are not well-coordinated or complementary to one another;[72] resultantly at the national level also these systems remain mutually exclusive of one another resulting in fragmented governance even when dealing with similar subject matters.

At the national level in India, the farmers' rights discourse is restricted in its imagination. First, farmers rights were included as an afterthought after the first draft of the PPVFR Act was already prepared. The PPVFR Bill initially aimed at introducing only plant breeders' rights in pursuance of India's TRIPS obligations. However, after immense civil society opposition legislative drafters decided to include farmers within its ambit.[73] Second, the Act makes no distinction between farmers' rights and plant breeders' rights, as it recognizes farmers as plant breeders. While on the one hand this is a bold move towards valuing the innovations of farmers, on the other this has confined the legal space that farmers rights continue to occupy. However, the content of farmers rights which restricts itself to mainly seeds and innovations therein, with little or no reference to biodiversity conservation, traditional knowledge, and benefit-sharing measures within the PPVFR Act.

Given the inadequacy of the current farmers' rights framework, this research identifies 3 objectives. These issues although premised on a critique of the current system, are aspirational as to what biogenetic resources rights under the food sovereignty approach ought to cover:

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[72] Anja Christinck and Morten Walløe Tvedt, 'The UPOV Convention, Farmers' Rights and Human Rights: An Integrated Assessment of Potentially Conflicting Legal Frameworks', Report of Study commissioned by Deutsche Gesellschaft für Internationale Zusammenarbeit (2015) 17-19.

[73] Rashmi Venkatesan, 'TRIPS and Plant Variety Protection In India: Complicating the Globalisation Debate' (2018) 9/1 Indian J Intl Economic L 44.

- Developing food systems that focus on ‘food’ (and not commodities)

- Developing food systems that are oriented around farmers (and not markets)

- Developing food systems that work with nature – ecology-centric (and not profit-centric)

Food, farmers, and ecology are 3 legs upon which the food systems of tomorrow need to stand. Currently, all 3 are highly undervalued, and often sacrificed at the altar of productivist and profit-seeking agricultural systems. Within this productivist context, the discourse on biogenetic resources and farmers’ rights has remained limited. The ‘law’ has engaged with the issue of biogenetic rights as far as IPRs and its critiques are concerned. There is a conspicuous absence of the ‘law’ in other realms of agriculture that have a direct impact on biogenetic rights. The issue of control and management of biogenetic resources is not the most pressing concern of most Indian farmers who are coping with much bigger challenges such as the lack of adequate and appropriate food; access to resources, inputs, and agricultural implements; and ecological stresses such as the water, soil depletion and climate change. Therefore, the legal response in evolving biogenetic rights cannot be restricted to its current framing and must move beyond this so as to enhance the position of farmers vis-à-vis biogenetic resources. Food, farmers, and ecology stand as different parameters for improving food systems and the position of farmers within them. It is against this objective that the choice of appropriate theoretical and methodological approaches has been made. This research draws from food sovereignty literature, critical legal studies, and legal sociology in its attempt towards reframing biogenetic rights in India.

- *Developing Food Systems that Focus on Food*

Food security means the reliable access to a sufficient quantity of nutritious food. The FAO definition of food *in*security is: “A situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and an active and healthy life”. The question of access includes physical access to the distributive network of food and affordability to buy foodstuffs. Since several decades the overall availability of food at a global scale is not the real concern, as the world produces more than enough food for the world population. However, the real concern is access and availability in certain locations and by certain classes of people.

India passed its own Food Security Act or Right to Food Act in 2013 with a view of eradicating hunger in the country. The Act creates a legal entitlement for two-thirds of the population to subsidised grain via the public distribution system and entitles all women and children to gain benefit under extant schemes that did not provide 100% coverage prior to the Act. This Act is significant mainly in the change of legal status of food and nutrition, as these are now legal entitlements rather than state largesse. The right to food recognized in 2001 by the Indian Supreme Court now has an institutional implementation framework through this Act. The Act however is not particularly relevant for farmers,

as it does not delve into any production-side details. Food security of farmers, especially poor farmers can claim food grains under the Act much like any other person entitled under the Act.

This thesis argues that dominant agricultural models in the world, as well as in India focus on producing agricultural commodities for profits rather than 'food'. Food is not the primary output of agriculture, but rather 'successful' farmers are those that have moved away from producing subsistence food, food for their families and communities, into producing cash crops meant for trade in national and international markets. Furthermore, the food security framework does not challenge or address this orientation of dominant agricultural models. Food security remains highly consumer-focused and treats farmers and non-farmers alike as consumers of food, while failing to engage with the systems of production of food, and how farmers are increasingly leaving farming due to its non-profitability.

The food security legislation in India on the one hand recognizes innovation-related property rights in plant varieties, while on the other neglects conventional property rights attached to food security. The right to food of farmers and other related legal rights to livelihood, land, water, property rights in productive assets and source materials (seeds, plants, grain, crops) and rights over associated/ traditional knowledge are not covered under the current ambit of food security. Given the vagaries of international trade and agricultural market pressures, farmers cannot make a sufficient income to purchase food or are unable to feed themselves directly by growing their own food. Developmental approaches to farmers' rights draw a direct link between poverty and food security. Thus, this thesis will analyse different rights of farmers to advocate for their possible inclusion within the food security framework. Biogenetic rights need to evolve to include hard rights of control over agricultural production, where farming for food should have a special or higher status than farming for cash.

- *Developing Food Systems that Focus on Farmers*

Dominant agricultural systems have evolved to cater to consumer interests, mainly a growing urban population that is interested in cheap, aesthetically pleasing, and tasty food. This has shifted the focus away from farmers as food producers. Food systems serve consumers first and farmers second, and therefore a range of benefits and guarantees that food producers ought to be entitled to are pushed to the background. Biogenetic rights are one of them, wherein farmers have little to no interest in saving seeds, preserving landraces, and developing new local varieties at the community level, since these actions are not rewarded adequately within the current system. Every successive government has used farmers as a politically significant vote bank by granting different largesse such as subsidised inputs, recognition awards, price supports etc without going further to provide hard rights over resources such as land, water, traditional knowledge etc.[74]

Natural resources and biogenetic resources have been largely framed as entitlements at the national level. The CBD asserts 'national sovereignty' on biological resources yet maintains that such

[74] Simin Fadaee, 'Politics of Alliance in the Farmers' March to Parliament in India' (2021) 37/1 International Sociology 31, 39-41.

resources are 'common concern' of mankind. This is a shift from the position of the 1983 International Undertaking on PGR which asserted the principle of 'common heritage of mankind' over PGR. The ITPGR followed the CBD approach instead that of its predecessor by asserting the national sovereignty principle alongside common concern over them. India passed the Biological Diversity Act 2002 one year after it passed the PPVFR Act. The Biological Diversity Act (BDA) creates a National Biodiversity Authority (NBA) to oversee the implementation of the Act and more specifically to regulate the access and use of biological resources in India. The National Bureau of Plant Genetic Resources (NBPGR), part of the Indian Council of Agricultural Research (ICAR), is responsible for the exchange, quarantine, collection, conservation, evaluation and systematic documentation of plant genetic resources. It is through these bodies that India asserts its national sovereignty over its biological and genetic resources and related knowledge by imposing strict conditions of access by foreigners.

In the food and agricultural context, India's law, policy and public institutions fix their gaze on a concept of national food sovereignty, whereas food sovereignty at a local subsistence level for farmers has not been mooted. India's track record over upholding the interests of its farmers has been extremely contradictory. After the passing of the PPVFR Act, the positions of successive governments have been unclear regarding farmers' rights. In 2002, the government signalled that it wished to join the UPOV which many saw as inherently inconsistent to efforts to devise a sui generis legislation. The proposed Seed Bill 2004 and the Biotechnology Regulatory Authority of India (BRAI) Act 2013 contain provisions that favour and promote the commercial seed industry while undermining the interests of farmers. The recent National Food Security Act 2013 although aimed at securing food security from a national perspective has failed to link with farmers' rights in any way or address local food production systems.

The issue of food sovereignty of farmers and its absence in the farmers' rights law and policy framework in India needs to be addressed. Using conceptions of the food sovereignty approach as advanced by La Via Campesina and many other prominent organisations this research hopes to identify how such local and community based legal concepts can be applied to India. Here it hopes to draw attention to farmers' roles in the agricultural market, their diminished bargaining capacities, socio-economic disadvantages that lead to a debt-trap, farmers' representation and positions in public-sector institutions such as agricultural universities, gene banks, research institutions, government bodies such as the NBA and NBPGR etc, NGOs that work in the sector of farmers rights that advocate for farmers' autonomy and control. Dominant agricultural models offer farmers the opportunity to register their varieties and, in this sense, offer this right as the only means of exercising 'control' over their assets. Which, as implementation data shows, presents its own follies.

- *Developing Food Systems that Work with Nature (Ecology)*

Modern-day agriculture causes severe environmental impacts. Productivist agricultural systems depend on intensive inputs and create severe ecological stresses. Impacts range from soil degradation, water pollution and depletion of the water table to release of toxins and biodiversity loss. High intensity

agriculture involves monocropping of hybrids for maximising profits. This style of agriculture does not utilise ecological services, but rather goes against them. 'Working with nature' is an integral component of food sovereignty, and this thesis argues that it is only when food systems work with nature, do they truly enhance biogenetic resource protection and sustainable use. Arguing for biogenetic rights within a context that is ecologically destructive is both fatal and futile. Biogenetic rights of farmers should include a vast range of entitlements over local landraces, wild foods, farm saved seeds, and support for creating systems such as seed/gene banks that conserve them. These are arguably lofty and largely unattainable targets without first re-orienting our agricultural systems to work with nature and be accountable for its destruction.

Questions around the sustainability of agriculture have been raised at global and national levels, without delving deeper into local contexts. This research argues that some of the solutions to this issue lie in localization of food production, by developing food systems that are localised, small-scale, and autonomous, as advocated by the food sovereignty approach. The current agricultural law and policy framework in India does not adequately engage with the environmental/conservation/sustainability dimensions of agriculture. It is only recently that concerns over climate change have led to some government initiatives like climate smart agriculture and zero budget farming. While the international farmers rights movement has premised itself on farmers as stewards and custodians of nature, as they have, through centuries, stewarded, sustained, and innovated agricultural production, it has not ushered an impactful change towards empowering them or recognising their contributions towards conserving and sustainably managing agrobiodiversity, or reducing the environmental impacts of agriculture.

Even though farmers are not the *only* actors in agrobiodiversity management, they are best placed to control its sustainable use and conservation. First, farmers have traditionally saved seeds, selecting specific characteristics suited for the local climatic and land conditions. Even though this share is shrinking overall and varies drastically crop to crop, re-plantation of traditionally saved seeds is still a significant proportion (60-70%) of all seeds planted and contributes to a majority of food production. In some parts of India there is a tradition of exchanging seeds among farmers who share high quality seeds after a harvest. This ensures a location-specific enhancement of the genetic variety of seeds planted. In some places, there are community-controlled seed banks/collectives which ensure the conservation, documentation (of the resource and surrounding knowledge) and supply of seeds among farmers. Furthermore, India has seen many instances spearheaded by civil society or NGOs that evince the important role that farmers play in conservation and sustainable management of biological resources.

The issue on ecological depredations of agriculture has not been adequately raised within the realms of both agricultural law and policy on the one hand, and environmental law on the other. Linkages between the agro-food legal frameworks and environmental implications thereof have been largely lacking within the legal discourse around agriculture or environment. Sustainability of

agriculture depends on preserving variability in genetic resources, recognizing, and fostering seed sharing and saving practices of farmers, empowering of farmers as decision-makers with respect to choosing seeds and farming methods in their specific locations, and much more. The International Market Analysis, Research and Consulting Group (IMARC) has recently published reports on the growth of 'seed markets' and how the industry is poised for greater growth in India. It states that the Indian seed market has reached a value of $3.6 billion comprising a compound annual growth rate of 17% since 2010. In this research open-pollinated seeds (non-hybrid seeds) that are traditionally conserved and exchanged by farmers have been termed 'outmoded' and 'inferior'. This parallel discourse where scientifically modified seeds are considered superior to farm-saved varieties and a panacea to many problems creates a dichotomy in conceptions of agriculture and food sustainability and pushes agricultural systems further away from working with nature.

(b) RESEARCH QUESTIONS

This research is premised on a broader conception of biogenetic resource rights in India using the food sovereignty approach that helps in radically reframing the problems with the current law and policy framework. Research questions of this thesis include:

1. What are the features that characterise post-Green Revolution agriculture in India? How is 'success' defined under this model?
2. How has agricultural law and policy in India led to biogenetic resource depletion?
3. Over the past few decades, why has control over biogenetic resources shifted from farmers to other entities such as the government or private players?
4. How are biogenetic resource rights framed within the food sovereignty approach?
5. Can food sovereignty-inspired biogenetic resource rights be introduced in India?
6. How can food systems in India become more food sovereign by orienting themselves around food, farmers, and ecology? Can 'success' be redefined as per food sovereignty principles?

(c) THEORETICAL APPROACH

The thesis endeavours to devise new biogenetic rights based on the food sovereignty approach. It uses food sovereignty theory to inspire a food-farmer-ecology based framework for biogenetic resources in agriculture. The thesis starts by problematising the absence of environmental law in the food and agricultural policy domains. This is a conspicuous absence, such that India's dominant agricultural models have developed over the past decades with little to no regard for the environment. Agricultural research has been dominated by scientists and economists, that has resulted in a highly technical framing of issues around natural resources. The thesis provides a new insight into food and agriculture, by focusing specifically on biogenetic resources within this realm. It critiques the presence of IPRs in these resources and farmers' rights to push for a radical interpretation of existing fundamental rights of farmers, and the development of new food sovereignty rights. Using this radical approach, this

thesis hopes to strengthen farmers' control over biogenetic resources, and move towards food systems that focus on food, farmers, and ecology.

It uses socio-legal approaches to critically analyse the current farmers rights regime in India and hopes to propose possible solutions to the conceptual and practical infirmities of this law. By engaging in doctrinal, empirical, comparative and socio-legal methodologies of research, this thesis hopes to explore avenues for a reconceptualization of farmers' rights in India. The thesis begins by describing the larger value conflict between liberal market and exceptionalist conceptions of agriculture over the role of IPR in the breeding and production of food crops. This is juxtaposed against the background of the Green Revolution1960 that ushered in a productivist, technology and input intensive style of agriculture. Following the Revolution, the idea of a 'successful' farmer has comprised one that can make windfall profits by selling agricultural commodities in national or international markets. Given the pressures of the agrarian crisis, small and medium-scale farmers in India have been pushed to the margins, to either leave the farmlands in search of urban jobs or practice a highly intensive and environmentally destructive style of agriculture. In this context, plant breeding rights of farmers, control over traditional knowledge, and the conservation of plant varieties are hardly the top concerns of farmers and are therefore pushed to the background.

First, this thesis focuses on small and medium-scale farmers, who are the most vulnerable sections within the agro-social hierarchy. Since the 1970s, India's neoliberal turn of agriculture has benefitted mainly large-scale farmers and agrobusinesses.[75] Subsistence farming, farming of varietal crops instead of mono-cropping and farming without agricultural inputs such as irrigation, pesticides, fertilizers, and seeds has become increasingly non-profitable over the years. Added to this the introduction of IPR in agricultural biogenetic resources has shrunk the proportion of traditional seed saving and sharing practices among small and medium-scale farmers. Their loss of control over these resources is a result of a multitude of factors, including the advent of the Green Revolution and the non-uniform and almost haphazard liberalisation of the food and agricultural sectors. Thus, a very clear socio-economic fault-line can be observed when analysing whether farmers' rights in India has benefitted 'farmers' at large. Farmers are not a homogenic group, and farmers are usually represented by a powerful land-owning elite section among all farmers. In a country as diverse as India, farmers' lobbies, cooperatives, governmental and non-governmental agricultural organisations are based on (and ergo perpetuate) a certain type of power dynamic. Critical legal studies therefore is a useful theoretical tool when critiquing the existing biogenetic rights framework. Some farmers are winners while others are losers under this system. This can be studied more closely under the lens of critical legal studies.

Second, this thesis draws upon legal sociology. The basic assumption of this thesis is that the current law and policy framework cannot be allowed to operate in ways detached from social life and the realities of agriculture today. Without addressing the more pressing problems, that affect the very

[75] See Philippe Cullet, *The Sardar Sarovar Dam Project: Selected Documents* (Routledge 2007) 2-3.

survival of farmers, advocating for a niche area of law such as biogenetic resource rights is futile. Therefore, a more holistic approach towards radically re-orienting food and agricultural systems is needed. For instance, the term 'farmers rights' itself seems like a contradiction, as its specific legal meaning goes only so far as to recognize certain innovations of farmers. Its more grounded meaning ought to include rights that are more pressing for the survival and prosperity of small farmers. The Indian agricultural sector has spiralled recently into distress and thousands of farmers have taken their lives owing to the severity of socio-economic hardships they face. In this light, restricting the discussion of farmers' rights to only the international and national frameworks and the extent of their implementation seems grossly inadequate and restricted. This thesis hopes to engage with the sociology of the farmers rights law by advocating for food sovereignty rights that would include rights over natural resources, rights over biogenetic resources, traditional knowledge rights and more.

Finally, through the entry points of critical legal studies and legal sociology, the thesis delves into food sovereignty and peasants rights literature to churn out a new rights framework for the Indian agricultural context. It uses food sovereignty to reinterpret existing rights in India, such as the right to life, right to livelihood (farming), right to freedom of expression and assembly (mobilise against dominant agricultural systems etc) and so on. Furthermore, it proposes 'new' rights that are novel in the Indian context such as right to food sovereignty, right to traditional knowledge, marketing and regulation rights etc. Using the food sovereignty approach and its expressions within the Peasants Rights Declaration, the thesis aims at inspiring new biogenetic resource rights, as well as, placing them in a wider context where food systems are more food-farmer-ecology friendly. This reorientation can only be possible through the adoption of radical approaches.

(d) METHODOLOGICAL APPROACH

- Doctrinal method for studying the agricultural law and policy in India, the features of dominant agricultural models in India and the world, the history of peasantries and resistance movements against dominant agrarian classes, the current legal framework pertaining to biogenetic resources and farmers rights, analyzing its linkages with food systems and agriculture and its potential to be framed within different set of human rights or outside the realm of human rights altogether.
- Comparative methodology to critique the current framework versus traditional agriculture and role of farmers as breeders and managers of biogenetic resources.
- Socio-legal methods and legal pluralism in framing the issue of biogenetic resources in local versus international and national legal spaces: how environmental values differ and therefore, solutions for agrobiodiversity conservation also differ based on the context. Law is understood as an expression of values cherished within any social context. Values of capitalistic productivism have been cherished owing to a particular historical context, which can be replaced by radical approaches like food sovereignty that is based on a different set of values such as working with nature, and increasing farmers' control over their food systems and farming implements.

• Empirical methods in conducting fieldwork in 2 sites – Patan, Gujarat and West Sikkim, Sikkim (India). Farmers, farming cooperatives, seed actors, marketing agents, government officials including officers at the district Krishi Vigyan Kendras, officials within the central, state and district level agricultural administration etc have been interviewed to gain a more location-specific application of food sovereignty rights and biogenetic protection in India. These include small and marginal farmers, and agricultural workers who are either dependent on commercial seeds and commercial farming practices, in comparison to those who are completely detached from the agricultural grid. Fieldwork has been conducted to better understand the roles of seed banks and open-source seed systems, the role of the state, via the National Bureau of Plant Genetic Resources, National Seed Association of India, National Biodiversity Authority, National Gene Bank and the Traditional Knowledge Digital Library, and the role of other organizations, such as NGOs and farmers cooperatives in conservation of germplasm, seeds and improving biogenetic access to farmers.

6. SCOPE AND LIMITATIONS OF RESEARCH

This thesis focuses on biogenetic rights in the Indian context and explores the applicability of the food sovereignty approach in India. It sets the agricultural law and policy context in India to critique it vis-à-vis biogenetic rights. The thesis also argues that environmental law in India has not adequately dealt with the environmental impacts of agriculture, including especially the loss of agrobiodiversity. It's India-focused conclusions can be used for applying in other jurisdictions or can be applied internationally for the world at large. Temporally, this thesis focuses primarily on the post-1960 Green Revolution era of Indian agricultural history. It uses recent literature on themes of agrarian crisis, agro-ecological stresses, climate change and struggles of peasant farmers, while acknowledging that each of these themes have a detailed pre-Green Revolution history and meaning. Furthermore, this thesis is not an advanced research statement on food sovereignty, its complexity, breadth and overall critique of the current agricultural model. Food sovereignty literature has been used with some specific objectives in mind, and therefore a lengthy analysis of the movement and its legal approach itself has not been done. For example, fisheries and pastoralism are important areas of struggle within the food sovereignty movement, but the focus of the thesis is biogenetic resources - primarily seeds. The same can be said about peasants rights, which has a rich history both in the Indian and international contexts. Much of its substantive content comes from the food sovereignty movement, and therefore, only those aspects intersecting with seeds and other genetic resources have been referenced.

This thesis has been written and will be disseminated in English. English is not the author's mother tongue, but the author has gained fluency in this language owing to her school and college education. Yet, the research participants interviewed especially in the empirical fieldwork in Patan and Sikkim are not fluent in English, and it will be challenging to share the results and publications that come out of this research in English. Their views, responses and perspectives have been translated by

the author and represented in the thesis in the fieldwork chapters. The author hopes to make the thesis results available in Gujarati, Hindi and Nepali in the respective fieldwork districts.

Finally, the reliability of secondary data, statistics, survey results and other data around food and agriculture is questionable, especially when some of the data used is more than a decade old, reports of other jurisdictions are based on research conducted outside India and the UK with their own limitations and biases, and some sources are the only available research studies available on that topic, making it very hard to verify its results using corroboration and methodology checks. The scope of this thesis is to contribute to the field of law by drawing from fields of food, agriculture, genetics, and food sovereignty – which have traditionally fallen within the purview of the law only in limited ways. Using interdisciplinary methods, this thesis hopes to expand this purview, such that there is a greater presence of the law in these fields.

7. CHAPTERISATION

The first half of this thesis discusses the different arenas of law to which this thesis hopes to contribute to. This includes on the one hand established areas of biogenetic resource rights in the IPR and farmers rights domains, agricultural law and policy in India including seed law, human rights law in India with a special focus on the right to food, and finally food sovereignty and peasants' rights literature, from which this thesis draws inspiration to develop a new rights framework in India. The second half comprises fieldwork experiences from diverse Indian contexts, followed by a synthesis of findings. Findings of this research brings together the different threads of law described in the first half.

The second chapter situates biogenetic resource rights within the food sovereignty approach. It introduces food sovereignty, seed sovereignty and peasants' rights, and explains the overlap and linkages between them. This chapter explores the implementation of food sovereignty by analysing its operation in Venezuela, Ecuador and Bolivia. Understanding what food sovereignty in action looks like before it can be proposed in the Indian context is vital. Further, this chapter engages with critical food sovereignty, by exploring the different critiques presented by food sovereignty scholars. This chapter introduces the Nyeleni Six Pillar framework that characterizes food sovereignty, which has been used as an analytical tool throughout this thesis. These are the aspirational ideas towards which India's food systems, agricultural law and policy, and rights of farmers should be shaped. By framing food sovereignty claims in a language of rights, the approach has allowed itself to be replicated in diverse settings through the vehicle of rights. Biogenetic rights within food sovereignty include plant genetic resource rights, right to seeds and other assertions of seed sovereignty, rights to define one's own food system, and the right to biodiversity.

The third chapter introduces India's agricultural law and policy framework, to show how farmers have been gradually estranged from this complex. This chapter argues that India's law and policy framework has evolved out of the legacy of the 1960 Green Revolution. There has therefore been a fundamental change in the way in which agriculture is practiced. Dominant agricultural models that were born out of the Revolution are highly productivist, technologically intensive, input-intensive, environmentally destructive and have most importantly failed to provide food security to thousands of small and marginal farmers and agricultural workers. This chapter sets out the thesis definition of who is a farmer as per the 2007 National Policy for Farmers. It compares this with the definition of farmer within the food sovereignty and peasants' rights approaches. Within the current Indian legal context, Indian seed law is discussed to show how this framework also encourages productivism, while pushing the agenda of food, farmers and ecology to the side lines. The chapter ends by highlighting how laws and policies in India create and perpetuate food systems that are not geared to produce food as their primary output, or cater to farmers' needs as their primary objective, or work with nature as their primary mode of operation.

The fourth chapter joins the themes of chapters 2 and 3 to explore what are food sovereignty rights in the Indian context. It premises itself on gaps and problems existing in the Indian food and agricultural law framework and tries to fill these with food sovereignty rights. Here, the logic of food sovereignty rights is explained. These are read as human rights of farmers to further push towards 'rights of farmers' rather than the restrictive conceptualisation of 'farmers rights'. India has a rich tradition of rights-based advocacy and the development of new rights through creative interpretation or enactment. India's rights-based claims in the realms of food, farmers and ecology are explored to show that food sovereignty has a process or pathway for being invoked and implemented in India - through rights. Given how environmental law and food security law have progressively grown via the medium of rights, 3 main themes are explored within this context – one, existing environmental rights with the potential of including agroecological rights; two, existing food security rights (the right to food) with the potential of arguing for farmers' food sovereignty rights; and existing farmers rights moving towards a wider range of socio-economic rights of farmers. This chapter also explores different seed mobilisations, again to show that there exists a basis for food sovereignty and food sovereignty-inspired biogenetic rights in India, that have an immense bearing on the control and management of biogenetic resources. This sets the stage for reimagining food systems for the protection of farmers' human rights. Changes in farmers' food systems towards more localisation and crop diversity can result in the realisation of their food security, conservation and other rights, and cover environmental aspects – which correspond to the food, farmer, and ecology aspirational orientation.

The fifth and sixth chapters report from the 2 sites where the author has carried out empirical fieldwork – Patan, Gujarat and West Sikkim, Sikkim (India). Both these sites are highly diverse and at different stages, and trajectories of agricultural development. The agricultural model of Patan in North

Gujarat has evolved out of the Green Revolution productivist logic, comprising commercial cash crops and a corporatized market around these commodities. Farmers rely wholly on the market for their own food, as agricultural produce is hardly grown for subsistence. Bt cotton is the dominant crop in this area, wherein farmers who albeit wish for greater food sovereignty cannot practically stop cultivating this crop. This is juxtaposed to the agricultural model in Sikkim, a state that turned fully organic in 2016, and has claimed to follow an agroecological pathway towards development rather than the Green Revolution model. Here too, some dominant crops such as large cardamom have been cultivated and marketed using the same methods, productivist logics and agricultural ideals of the Green Revolution. Farmers do cultivate for subsistence, however at the same time, farmers' plant varieties and landraces are under severe threat, calling for more radical measures to preserve Sikkim's genetic heritage.

Chapter 7 consolidates the takeaways and lessons from both these diverse sites. Here, the Bernstein versus McMichael debate within critical food sovereignty is used as an analytical device to show how different versions of food sovereignty can and do thrive in both Patan and Sikkim. Both these contexts provide a microcosm of the agrarian diversity in India, such that the new rights framework proposed by this thesis can be shaped and tailored to specific contexts. The 6-pillar framework is used to propose new languages of valuations, that is, valuing food, farmers, and ecology. The law is arguably the expression of values within any given social context. And a food sovereignty rights framework for India is proposed based on these new languages of valuations.

Chapter 8 uses the comparative lessons from Chapter 7, and the new values upon which agricultural law and policy should be grounded to propose for a new rights framework. This is not limited to only biogenetic resources, as explained above, the thesis argues for a more holistic approach towards biogenetic resource protection and utilization. Thus, the rights framework proposed includes a wide range of rights, some that can be churned out of existing rights through creative interpretations, and others that can be introduced in the Indian framework afresh, through statutory enactment, policy framing and appropriate rule-making, or reading them into the right to life, or implementing them within Schedules V and VI of the Indian Constitution. The concluding chapter provides a way forward from the insights and suggestions in the thesis. It also outlines the limitations of this research and the opportunities of future research studies.

CHAPTER II

SITUATING BIOGENETIC RESOURCE RIGHTS WITHIN THE FOOD SOVEREIGNTY APPROACH

1. INTRODUCTION

In the quest towards situating more progressive biogenetic resource rights, food sovereignty and peasants rights can act as guiding literature. Food sovereignty has argued that the existing food and agricultural paradigm is limited in imagination. It pushes for a more holistic conceptualisation of food and agriculture that puts farmers at the centre of food systems and opposes the commodification of food. For instance, most food sovereignty scholars have pointed out the inadequacy of the food security paradigm (if not completely rejected it), as it focuses too much on food consumers, rather than food producers.[1] Food security asks whether everyone consumes enough nutritious food, and is therefore not incompatible with demanding more production, allowing more corporate controlled production, and encouraging international trade in commodities. Food security does not pose any objection when farmers receive their daily nutritive calory intake from the state public distribution system instead of from their farms. Food sovereignty on the other hand strongly rejects such a model, wherein farmers find no alternative other than growing cash crops on every inch of their farm and have therefore no control over their own food.

Peasants rights have evolved as a special class of rights within the larger spectrum of food sovereignty. Grassroots voices that have helped shape the food sovereignty movement lent their voices to advocate for peasants rights too.[2] Peasants rights are concrete manifestations of food sovereignty's aspirations, and thus have many commonalities. Both the food sovereignty and peasants rights approaches have a lot to say in the context of biogenetic rights. As they both endeavour towards greater centrality of farmers and peasants, biogenetic rights imagined herein are more encompassing, progressive and meaningful. For instance, Article 19 of the 2018 Peasants Rights Declaration[3] calls for the right to maintain, control, protect and develop their own seeds and traditional knowledge. Food sovereignty calls peoples' right to define and control their food systems, which includes sovereignty

[1] Gustavo Gordillo and Obed Mendez Jeronimo, 'Food Security and Sovereignty: Basic Document for Discussion' (FAO 2013) <http://www.fao.org/3/a-ax736e.pdf>.

[2] Priscilla Claeys, 'From Food Sovereignty to Peasants' Rights: An Overview of La Via Campesina's Rights-Based Claims over the Last 20 Years' (Paper presented at Int'l Conf on Food Sovereignty: A Critical Dialogue, Yale University, 13-14 September 2013) <https://www.tni.org/files/download/24_claeys_2013-1.pdf>.

[3] United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas, UN General Assembly Resolution adopting the UNDROP, UN Doc. A/RES/73/165 (17 December 2018) [UNDROP].

over genetic resources. These articulations go much further than conceptualisations of farmers' biogenetic rights under the International Union for the Protection of New Varieties of Plants (UPOV),[4] the International Treaty for Plant Genetic Resources and Farmers Rights (ITPGFR),[5] or the Convention on Biological Diversity (CBD)[6].

This chapter hopes to clarify what are the biogenetic rights Indian farmers should and could enjoy. By drawing from the food sovereignty and peasants rights approaches, this chapter lays out the parameters or basic elements of food sovereignty. It then shows how this content has been expressed in the rights language. Food sovereignty rights and peasants rights therefore have the potential of being implemented via the existing rights framework in India. This chapter also clarifies concepts such as food sovereignty, peasants rights and seed sovereignty and what the linkages between these concepts are. It hopes to set the tone for implementation of food-sovereignty-inspired biogenetic rights.

2. FOOD SOVEREIGNTY – OVERVIEW OF CONCEPTS, INTERLINKAGES AND ITS SIX PILLAR FRAMEWORK

Food sovereignty is the 'right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.'[7] The peasants rights framework on the other hand, argues that in order to achieve environmentally sustainable agriculture, agriculture needs to be peasant-oriented. Thus, conserving the environment is an important objective of these movements which is at par with peasants' claims. The UNDROP therefore promotes agroecological conservation through the recognition and realisation of peasants rights.

(a) OVERVIEW OF CONCEPTS AND THEIR INTERLINKAGES

The Peasants Rights Declaration recognizes the contributions of peasants and rural populations to food production, and the 'special relationship' they have with land and resources; and recognizes their vulnerabilities to dispossession, unfair working conditions and their political repression. By using the rights language, the Declaration identifies a special category of right-holders and sets new standards for their individual and collective rights to land, natural resources, seeds, biodiversity and food

[4] International Convention for the Protection of New Varieties of Plants, 2 Dec 1961 as Revised at Geneva on 10 Nov 1972, 23 Oct 1978 and 19 Mar 1991 (UPOV Doc 221/E 1996).

[5] International Treaty on Plant Genetic Resources for Food and Agriculture, Rome, 3 Nov 2001.

[6] The Convention on Biological Diversity, 5 June 1992,1760 UNTS 69.

[7] Declaration of the International Forum for Agroecology (Nyéléni Declaration), World Forum for Food Sovereignty, Mali, 27 February 2015, <https://nyeleni.org/IMG/pdf/DeclNyeleni-en.pdf>.

sovereignty. The Declaration assumes a holistic vision in protecting the rights of peasants, which most significantly includes their rights over seeds. With specific reference to environmental rights and provisions pertaining to agrobiodiversity conservation, Articles 18 and 19 of the Declaration contain wide-ranging rights to seeds, conservation and protection of the environment, and protection of traditional knowledge. The Declaration imagines conservation of agrobiodiversity to be done in the peasant-way.

Peasants rights over seeds include rights to save, exchange, donate, sell, use and reuse farm-saved seeds of peasants' varieties, and to maintain, control, protect and develop these seeds and property over these seeds.[8] States are obliged to respect, protect and support peasant seed systems, through supporting research, ensuring the participation of peasants in research and development, and by investing more into research on and development of orphan crops[9] and seeds that respond to the needs of peasants in developing countries.[10] The current system described above with respect to rights to save, use, exchange and sell seeds are protected by IPR, and are not human rights. The coming of the Peasants Rights Declaration has changed this, as it has been framed within the human rights system.

Peasants rights advocacy finds its ancestry in the food sovereignty movement, and as such many core claims overlap in both these movements. Seed rights, right to define one's food system and the right to reject a certain model of agriculture are common to both movements.[11] Food sovereignty itself has been framed in the language of rights, and so has the Peasants 'Rights' Declaration. Food sovereignty is the 'right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.'[12] Food sovereignty has been developed by Via Campesina as a countermovement that aims to counteract the negative outcomes of neoliberalism in food and agriculture, such as, agricultural commodification, environmental degradation, decreasing control of farmers over their biogenetic resources, water stress, land fragmentation and diminishing rural livelihoods.[13] La Via Campesina (Spanish for 'the peasants' way') is an international farmers' organization founded in 1993. Today it

[8] Art.s 18 and 19, UNDROP.

[9] Orphan crops are a wide variety of crops like finger millet, tef, yam, roots and tubers that tend to be locally or regionally important but are not traded around the world and have received little attention in agricultural or biological research.

[10] Art. 19 (7), UNDROP.

[11] Priscilla Claeys, 'The Creation of New Rights by the Food Sovereignty Movement: The Challenge of Institutionalizing Subversion' (2012) 46/5 Sociology 844, 847.

[12] Declaration of the International Forum for Agroecology (Nyéléni Declaration), World Forum for Food Sovereignty, Mali, 27 February 2015, <https://nyeleni.org/IMG/pdf/DeclNyeleni-en.pdf>.

[13] Emma Larking, 'Mobilising for Food Sovereignty: The Pitfalls of International Human Rights Strategies and An Exploration of Alternatives' (2019) 23/5 Int'l J HR 758, 759.

comprises over 182 organisations spread across 81 countries and coordinates peasant organizations of small and medium farmers, agricultural workers, rural women, and indigenous communities from all over the world.

In the past, Via Campesina did make efforts to institutionalise food sovereignty rights by demanding an international convention on food sovereignty in 2003[14] and 2004[15], however since the 2007 Nyéléni Declaration, this attempt has more-or-less been abandoned.[16] Food sovereignty rights were since channelized in new directions. In 2008 Via Campesina proposed a draft Declaration on the Rights of Peasants, Men and Women in the UN Human Rights Council, upon the initiative of and building upon previous work done by the Indonesian peasant union, Serikat Petani.[17] In 2012, the Council adopted a resolution to establish a working group to negotiate a draft Declaration on Peasants Rights. Several peasant organisations participated in the negotiations of the working group. In December 2018, years of negotiation and preparations led to the final draft of the UNDROP being adopted by the UN General Assembly.

The adoption of the Peasants Rights Declaration has for the first time paved the way for identifying some of the concrete rights that a food sovereignty convention might have articulated. These rights are heavily debated,[18] yet their location has been made more certain. The framing of several food sovereignty claims such as preserving traditional and indigenous food systems, preserving the peasant 'way' of cultivation, resources rights over land, seeds, and traditional knowledge etc in a language of human rights is significant. Activist claims made routinely within the food sovereignty movement have now found a space within the human rights framework via the UNDROP.[19]

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[14] Via Campesina, 'Our World is Not for Sale: Priority to Peoples' Food Sovereignty: WTO out of Food and Agriculture', <https://viacampesina.org/en/peoples-food-sovereignty-wto-out-of-agriculture/>.

[15] Via Campesina, 'Jose Bove meets Kofi Annan: Civil Society Raises Food Sovereignty Issue' https://viacampesina.org/en/jose-bove-meets-kofi-annan-civil-society-raises-food-sovereignty-issue/>.

[16] Priscilla Claeys, 'Food Sovereignty and the Recognition of New Rights for Peasants at the UN: A Critical Overview of La Via Campesina's Rights Claims over the Last 20 Years' (2015) 12/4 Globalizations 452, 456.

[17] Priscilla Claeys, 'From Food Sovereignty to Peasants' Rights: An Overview of La Via Campesina's Rights-Based Claims over the Last 20 Years', paper presented at Food Sovereignty: A Critical Dialogue (14-16 September 2013) <https://www.tni.org/ files/download/24_claeys_2013-1.pdfaccessed 7 April 2021.

[18] Marc Edelman, 'Food Sovereignty: Forgotten Genealogies and Future Regulatory Challenges' (2014) 41/6 J Peasant Studies 959; Haroon Akram-Lodhi, *Hungry for Change: Farmers, Food Justice and the Agrarian Question* (Halifax 2013); Henry Bernstein, 'Food Sovereignty Via the "Peasant Way": A Sceptical View' (2014) 41/6 J Peasant Studies 1031.

[19] Robin Dunford, 'Human Rights and Collective Emancipation: The Politics of Food Sovereignty' (2015) 41 Rev Int'l Studies 239.

(b) FOOD SOVEREIGNTY'S SIX PILLAR FRAMEWORK

The food sovereignty movement has evolved from a grassroots to global socio-political movement, making its way in the constitutional apparatus of some countries. It is vital to explore what led to this radical movement with a rich literature and local-level mobilisation, to translate into a formal crystallised legal framework in different political settings. In order to do so, it is first vital to introduce the 'Six Pillar' Framework adopted in the Synthesis Report of the 2007 Nyeleni Declaration. These pillars can serve as a basic standard for food sovereignty, and an analytical device to articulate food sovereignty principles in different geographical settings.[20] The Nyeleni Declaration is arguably the most widely accepted articulation of food sovereignty, and its 6-pillar framework has been applied to test the essence of food sovereignty, despite significant room for interpretation in each of the pillars.[21] These pillars are used in subsequent chapters to analyse the presence and potential of biogenetic rights in the field sites, and in the country at large. The 6-Pillar Framework comprises:

(1) a focus on food for people;

(2) valuing food providers;

(3) localizing food systems;

(4) placing control locally;

(5) building knowledge and skills; and

(6) working with nature.

These pillars are not a rigid checklist, they are a guideline that add more meaning to food sovereignty's basic definition – the right to define one's own food system. The pillars also signify how food sovereignty is not only about farmers, their struggles and social justice in food production systems, but also a wide range of aspects related to food and agricultural systems.[22] Different actors within food and agricultural systems are connected, and decisions of policy makers in New Delhi or the research agronomists conduct in agricultural universities affects the choices farmers make and the options they have at the grassroots level. Furthermore, the 6-Pillar Framework expounds the concept of food

[20] World Forum for Food Sovereignty, Declaration of the International Forum for Agroecology 2007 (Nyeleni Declaration), Mali; World Forum for Food Sovereignty, 'Synthesis Report' (23-27 February 2007, Mali) <https://nyeleni.org/IMG/pdf/31Mar2007NyeleniSynthesisReport-en.pdfNyéléni>.

[21] Christina M Schiavoni, 'The Contested Terrain of Food Sovereignty Construction: Toward a Historical, Relational and Interactive Approach' (2017) 44/1 J Peasant Studies 1.

[22] Sam Grey and Raj Patel, 'Food Sovereignty as Decolonization: Some Contributions from Indigenous Movements to Food System and Development Politics' (2015) 32/2 Agr & Human Values 431.

sovereignty beyond the normative content of the term 'sovereignty'. Sovereignty is politically charged and legally loaded with ideas of self-determination, autonomy of governance and independence from the state.[23] These pillars can guide peasants, small and marginal farmers, indigenous people, agricultural workers and even consumers in designing food systems free from the ill effects of industrial agrobusiness and free trade.

The first pillar focuses on food for people – that is, food sovereignty puts people at the centre of food systems. It is the right of people(s) to sufficient, healthy and culturally appropriate food, that include farmers, peasants, food insecure people (a majority of whom are those who work on farms), and so on. It connects with the basic right to food but moves beyond this to reorient food systems themselves around 'people' – who should be served by food systems. This pillar rejects the idea that food is just another commodity, and therefore another profit-making item for agribusinesses, especially multinational enterprises.[24] The second pillar values food producers. Food systems should value the contributions and respect the rights of women and men small farmers, peasants, agricultural workers, migrant workers, forest dwellers, indigenous peoples, food collectors and other persons (fishers, pastoralists etc) who produce, access and supply food. These people should not be considered market 'inefficiencies' of the neoliberal agricultural model that values a small number of large monocropping commercial farmers over a large number of small subsistence farmers.[25] In framing the food-farmer-ecology nexus, this thesis relies on this pillar for its second leg – 'the farmer'. This thesis also espouses a wide range of recognitions and 'new' rights to be exercised by food producers, including the right to produce food and the right to food sovereignty.

The third pillar localises food systems. It brings farmers and food producers closer to consumers, rather than relying on long supply chains, the control of which is situated outside the local community context. This is at the heart of the food sovereignty movement, that rejects inequitable international trade of commodities controlled by corporations that are often unaccountable to local farmers. This pillar also makes food sovereignty applicable and replicable in urban, semi urban and changing rural landscapes, where small scale, autonomous and localised food systems are set up and controlled by local residents.[26] Localisation is key to the food-farmer-ecology nexus, as local systems

[23] 'The etymology of food sovereignty' in Raj Patel, 'What does Food Sovereignty Look Like' (2009) 36/3 J Peasant Studies 663.

[24] European Coordination Via Campesina, 'Food Sovereignty Now – A Guide to Food Sovereignty' (2018) 14, <https://viacampesina.org/en/wp-content/uploads/sites/2/2018/02/Food-Sovereignty-A-guide-Low-Res-Vresion.pdf>.

[25] Claire Kremen Alastair Iles and Christopher Bacon, 'Diversified Farming Systems: An Agroecological, Systems-Based Alternative to Modern Industrial Agriculture' (2012) 17/4 Ecology and Society 44.

[26] See 'grounded manifestations of radical democracy' in Ashish Kothari, 'The Flower of Transformation-Alternatives for Justice, Sustainability and Equity' *Wall Street International* (13 March 2022).

are more likely to attend to the needs of food producers and consumers, to be adaptive and resilient to local soil and climatic conditions, and be geared towards 'food' as their primary output rather than an item of trade. The fourth pillar puts control locally. The question of control is the crux of the food sovereignty movement. This pillar places control over natural resources and agricultural inputs such as land, water, seeds, livestock and biodiversity in the hands of local communities as a matter of right. Placing control locally opposes conflicts around property rights, eviction of small farmers and peasants, their divestment of control over farming methods, implements and means, and the irrelevance of their conservation efforts.[27] The third and the fourth pillars emphasise the importance of local contexts in a world that is highly globalised, where resources and commodity prices are determined across geopolitical borders rather than at the local levels.

The fifth pillar builds knowledge and skills, builds on traditional knowledge. It uses research to support and not supplant local knowledge systems and rejects technology that undermines local food systems. This also entails the existence of local organisations and institutions that conserve, develop and manage knowledge and technology locally.[28] The increasing adoption of HYV seeds that are replacing farmers saved varieties and local landraces is a clear instance of dominant agricultural models failing to build local knowledge and skills, such that they can be passed down to the next generations. The sixth pillar works with nature, which connects with the third element of the food-farmer-ecology nexus. Food sovereignty aims at using ecological services in the farming process and rely on a low external inputs for food production. While there is a drive towards agroecology in many parts of the world, and in India, these cannot be termed as instances of food sovereignty without its conjunction with other pillars.[29] The effects of climate change on agriculture are being experienced most drastically by small and marginal farmers who do not have the means to cope with lowering productivity of increasing input costs. Agroecology is therefore vital in improving resilience and adaptation to climate change, but also outside this frame. Energy intensive monocultures, input intensive farming and industrial agribusinesses have been highly destructive to soil, groundwater and biodiversity and have polluted the atmosphere through the release of toxins. This makes up today's dominant models of agriculture that define 'success' in terms of productive output. Working with nature therefore pulls away from this impulse by focusing on the value of ecological services.

[27] Michael Windfuhr and Jennie Jonsen, *Food Sovereignty: Towards Democracy in Localised Food System* (ITDG Working Papers 2005).

[28] Michel Pimbert, *Transforming Knowledge and Ways of Knowing for Food Sovereignty* (International Institute for Environment and Development 2006).

[29] For example: Peter Rosset and Maria Elena Martínez-Torres, 'Rural Social Movements and Agroecology: Context, Theory, and Process' (2012) 17/3 Ecology and Society 17.

In the Indian context, these pillars help with expanding the agenda of food and agricultural systems, which currently operate in silos disconnected to health, environment, farmers' rights to food, livelihood and resources etc. The food sovereignty lens provides a multidimensional approach towards creating food systems that adhere, in essence, to all the 6 pillars. The food-farmer-ecology nexus introduced by this thesis are presented as 'new priorities' of food systems and have been churned out of the 6 pillars as potential areas of re-orientation of food systems. Amidst a global interest in creating linkages between climate change, agriculture, food systems, health, and control over natural resources such as land and seeds etc,[30] it is essential to device legal responses to such emergences. The 6-Pillar Framework and the food-farmer-ecology nexus are used to assess the potential for food systems to respond to such linkages, and for food sovereignty narratives to be applicable and implementable in the Indian context. This is done using empirical evidence from the field sites of Patan and West Sikkim (in Chapters 5 and 6) elucidate these linkages, critically examine the working of dominant models that refute these linkages, and finally propose a new rights framework that based on the new priorities to further the food sovereignty agenda.

3. RIGHTS-BASED ASSERTIONS OF FOOD SOVEREIGNTY

Food sovereignty provides an alternative strategy to counteract the negative outcomes of agricultural commodification, such as environmental degradation, decreasing control of farmers over their biogenetic resources, water stress, land fragmentation and diminishing rural livelihoods. It highlights the value of small-scale farming, promotes localised food systems and upholds agroecological practices,[31] in contrast to the productivism and the food security paradigms. The food sovereignty movement has mobilised several grassroots organisations, farmers' cooperatives, local communities, indigenous peoples groups and so on. Its different regional networks have focused on the 'peasant way' of food production.[32]

Food sovereignty has been developed by Vía Campesina using a multi-pronged strategy, that includes local and national campaigns, protests, and political mobilisations at every level.[33] Via Campesina's participation in fora such as the UN's Committee for Food Security, the FAO and the

[30] See Erin C. Betley et al, 'Assessing Human Well-Being Constructs with Environmental and Equity Aspects: A Review of the Landscape' (2021) 10 People and Nature 1002.

[31] Via Campesina, 'The Right to Produce and Access to Land' (Voice of the Turtle, 1996) <http://www.voiceoftheturtle.org/library/1996%20Declaration%20of%20Food%20-Sovereignty.pdf> .

[32] La Via Campesina, 'What is Food Sovereignty', 15 Jan 2013 <https://viacampesina.org/en/food-sovereignty/> accessed 15 May 2019. See also: Priscilla Claeys and Marc Edelman, 'The United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas' (2019) 47/1 J Peasant Studies 1

[33] Emma Larking, 'Mobilising for Food Sovereignty: The Pitfalls of International Human Rights Strategies and An Exploration of Alternatives' (2019) 23/5 Int'l J HR 758, 759.

Human Rights Council Working Group while advocating for the Peasant's Rights Declaration has required a balancing act between engaging in the international institutional politics and pursuing its grassroots operations.[34] Yet, through this engagement, food sovereignty while being advocated from Via Campesina's internal bottom-up network, has entered and occupied in an institutional space where there is little room for innovation. Thus, food sovereignty, albeit a contested and still evolving counter-globalisation movement, has largely translated itself into a language that the UN and its members operating within this institutional space understand well.

Via Campesina did make efforts to institutionalise food sovereignty rights within the human rights framework in 2003[35] and 2004[36] by demanding an international convention on food sovereignty. Since then and especially after the 2007 Nyéléni Declaration, this attempt has been abandoned.[37] However, advocacy for the right to food sovereignty has channelized itself in new directions. On the one hand, Via Campesina has been involved in framing public policies for food sovereignty at different levels of government, including putting food sovereignty on the agenda of the UN Committee on World Food Security. On the other hand, it's efforts brought about the Peasants Declaration. The rights under the Declaration although do not include a specific 'right to food sovereignty' yet are a species of food sovereignty rights. Peasants rights to define their food systems, preserve their 'way' of cultivation, and wide-ranging rights over land, seeds, and traditional knowledge etc are manifestations of food sovereignty. These have now found a space within the human rights framework.[38]

Via Campesina seeks to challenge the existing food security paradigm and replace the 'right to food' with food sovereignty rights.[39] The right to food has been articulated in Article 11 of the International Covenant on Social, Economic and Cultural Rights.[40] The UN Committee on Economic, Social and Cultural Rights in its Twelfth Comment has elaborated upon the right to food by

[34] Priscilla Claeys, 'The Creation of New Rights by the Food Sovereignty Movement: The Challenge of Institutionalizing Subversion' (2012) 46/5 Sociology 844, 847.

[35] Our World is Not for Sale, 'Priority to Peoples' Food Sovereignty: WTO out of Food and Agriculture', <https://viacampesina.org/en/peoples-food-sovereignty-wto-out-of-agriculture/>.

[36] Via Campesina, 'Jose Bove meets Kofi Annan: Civil Society Raises Food Sovereignty Issue' https://viacampesina.org/en/jose-bove-meets-kofi-annan-civil-society-raises-food-sovereignty-issue/>.

[37] Priscilla Claeys, 'Food Sovereignty and the Recognition of New Rights for Peasants at the UN: A Critical Overview of La Via Campesina's Rights Claims over the Last 20 Years' (2015) 12/4 Globalizations 452, 456.

[38] Robin Dunford, 'Human Rights and Collective Emancipation: The Politics of Food Sovereignty' (2015) 41 Rev Int'l Studies 239.

[39] Ibid; Saturnino Borras, Marc Edelman and Cristóbal Kay, 'Transnational Agrarian Movements Confronting Globalization' (2008) 8/2-3 J Agrarian Change 169, 173-5.

[40] UN General Assembly, International Covenant on Economic, Social and Cultural Rights, UNTS 993/3 (16 December 1966).

explaining its multiple dimensions.[41] The Committee has defined each term in the definition of food security, most relevant here, 'availability' and 'accessibility' of food. The General Comment describes 'availability' as the possibility of either feeding oneself directly from productive land or other natural resources, or through a well-functioning distribution, processing and market system.[42] Accessibility of food pertains to physical and economic access that are sustainable and that do not interfere with the enjoyment of other human rights. Such a wide-ranging conceptual understanding of the right to food has been articulated in the FAO Right to Food Guidelines,[43] Olivier de Schutter, former Special Rapporteur on the Right to Food has also stressed the alternate understandings of food availability and accessibility, through direct access by farmers.[44] Yet, despite these facets of food security, the food sovereignty movement has maintained its criticism against the broad discourse, based on the fact that it focuses its attention on 'consumers' rather than 'producers' of food.[45]

Food security, albeit has undergone changes, has consistently retained a core idea of 'availability at all times of adequate of basic food stuffs.'[46] Subsequently, additional layers of adequate nutrition, and food's contribution towards health and wellbeing of an individual were embossed. The 1996 World Food Summit in Rome, headquarters of the FAO expanded this conception even further to declare: 'Food Security at the individual, household, regional, national and global levels exists when all people, at all times, have physical and economic access to *sufficient, safe and nutritious* food to meet their dietary needs and food preferences for an active and healthy life.'[47] The Via Campesina movement has read into this conception a 'traditional' expectation from food security, thereby interpreting food

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[41] UN Committee on Economic, Social and Cultural Rights, 'General Comment No. 12 on the Right to Adequate Food', E/C.12/1999/5.

[42] Ibid, paragraph 12.

[43] Intergovernmental Working Group for the Elaboration of Voluntary Guidelines, FAO, 'Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of the National Food Security', Report of the 30th Session of the Committee on World Food Security (CFS), Supplement, FAO Doc. CL 127/10-Sup.1, Annex 1 (2004).

Adopted by the 127th Session of the FAO Council, November 2004.

[44] Olivier De Schutter, 'Report of the Special Rapporteur on the Right to Food - Final Report: The Transformative Potential of the Right to Food', A/HRC/25/57, 24 January 2014.

[45] Joe Wills, 'Food Security vs. Food Sovereignty: The Right to Food and Global Hunger', *in Contesting World Order?: Socioeconomic Rights and Global Justice Movements* (Cambridge University Press) 94.

[46] This is one of the first definitions of food security. United Nations, *Report of the World Food Centre 1975* (UN 1975).

[47] World Food Summit, 'Plan of Action' (Rome, 17 November 1996) <http://www.fao.org/docrep/003/w3613e/w3613e00.htm>.

security as an interlinkage of subjective cultural food traditions and habits with the objective access and availability of adequate nutritious food.[48]

The standard conceptualisation of food security measures 'security' at the point of consumption, and ergo, tilts towards demanding more food production to facilitate greater consumption.[49] Over the years, the answers to what needs to be produced has changed, as experts realise that high nutritious value crops need to be grown and distributed over and beyond only high yielding staple crops.[50] This has shifted the narrative from 'enough food for all' to 'enough nutritious food for all'. However, such a framing still maintains a fixed gaze on consumption and production without capturing the broader social and environmental dynamics of food systems. The critique against food security is further explained in Chapter 4 below. A suitable policy approach needs to ask the questions of who produces food, under what conditions, who gains or loses within this paradigm and how will our current system affect food security for the future.[51]

The adoption of the Peasants Rights Declaration has for the first time paved the way for identifying some of the concrete rights that a food sovereignty convention might have articulated. The Declaration has clarified and expanded the normative content of food sovereignty rights.[52] These rights are heavily debated,[53] yet their location has been made more certain. Peasants rights have evolved under the shadow of food sovereignty and thus are a good source of locating the substantive content of food sovereignty rights.

4. BIOGENETIC RESOURCE RIGHTS WITHIN FOOD SOVEREIGNTY RIGHTS

Food sovereignty rights include a host of rights such as the rights to life, livelihood, against discrimination, right to participate, rights over traditional knowledge, environmental rights, land rights,

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[48] Via Campesina, 'Nyeleni Declaration' (Mali, Forum for Food Sovereignty, 2007), <http://www.foodandwaterwatch.org/world/global-trade/NyeleniDeclarationen.pdf/view>.

[49] Purabi Bose and Bernd van der Meulen, 'The Law to End Hunger Now: Food Sovereignty and Genetically Modified Crops in Tribal India—A Socio-Legal Analysis' (2014) 118/4 Penn State Law Review 894, 896.

[50] Deepanwita Gita Niyogi, 'India's Millets Policy: Is it Headed in the Right Direction?', *Mongabay Series: Conserving Agro-biodiversity* (27 July 2020). Recent millet production promotion policy (inclusion of millets in MSP, and other incentives to revive the crop) is evidence for even governmental thinking moving towards nutritional security and not just quantitative food security (while activists, experts and NGOs have been advocating this since many decades).

[51] The failure of any food security paradigm to address these questions. Annette A Desmarais, *La Via Campesina: Globalization and the Power of Peasants* (Fernwood 2007) 134-41.

[52] Florence Kroff and Angélica Castañeda Flores, 'Right to Adequate Food and Nutrition, and to Food Sovereignty', FIAN International UNDROP Series (December 2020).

[53] Supra n 18, Edelman (2014) at 962; Haroon Akram-Lodhi, *Hungry for Change: Farmers, Food Justice and the Agrarian Question* (Halifax 2013); supra n 18, Bernstein (2014) at 1031.

and other resources.[54] Rights in biogenetic resources are the backbone of food sovereignty, as these resources are at the very core of all food production. Plant genetic resources have already gained prominence through their governance under the IPR legal framework and farmers' rights regimes. However, these regimes have proven inadequate in addressing the concerns and interests of small farmers and local communities. Many grassroot organisations that participated in the development of the farmers rights discourse were advocating for something much more than what was delivered by way of the ITPGFR Treaty. Seed sovereignty, a foundational component of food sovereignty, was at the heart of many of farmers' campaigns. Hence, in constructing farmers' biogenetic resource rights, there is a need to move beyond farmers' rights to more broadly seed sovereignty.

FAO defines biodiversity in food and agriculture as a variety of life 'including domesticated plants and animals raised in crop, livestock, forest and aquaculture systems, harvested forest and aquatic species, the wild relatives of domesticated species, other wild species harvested for food and other products, and the vast range of organisms that live in and around food and agricultural production systems, sustaining them and contributing to their output [known as associate biodiversity].'[55] Biogenetic resources in food and agriculture thus include plant, animal, forest, aquatic and associated biodiversity genetic resources.

International policy frameworks are in their early stages of evolution with respect to most categories of genetic resources, except for plant genetic resources. 'Global Plans of Action'[56] on animal and forest genetic resources were adopted by FAO in 2007 and 2013 respectively,[57] that lay out a sustainable use and conservation policy overview for these resources. Plant genetic resources have been relevant for the intellectual property law regime, wherein commercial interests in such resources has been on the rise since many decades. The increasing coverage of IPR protection has given rise to controversies on biopiracy, terminator genes and genetic modification of food crops. Rights in plant genetic resources gave rise to 'farmers rights' as a counter movement to mainstream IPRs.[58]

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[54] Devon Samson, 'Food Sovereignty and Rights-Based Approaches Strengthen Food Security and Nutrition Across the Globe: A Systematic Review', *Frontiers in Sustainable Food Systems* (17 September 2021).

[55] FAO, *The State of the World's Biodiversity for Food and Agriculture* (FAO Commission on Genetic Resources for Food and Agriculture Assessments, Rome, 2019) xxxvii.

[56] GPAs are framed by FAO's member states through reporting and negotiating processes on any topic of international concern, charting out the policy framework which acts as a guide for future action. These are then adopted by relevant Governing Bodies of FAO. The GPA for plant genetic resources was framed and adopted in 1996, which charted out a path towards the PGFRA Treaty 2001.

[57] FAO, *Global Plan of Action for Animal Genetic Resources and the Interlaken Declaration* (FAO Commission on Genetic Resources for Food and Agriculture Assessments, Interlaken, 2007), <http://www.fao.org/3/a-a1404e.pdf>; *Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources* (FAO Commission, Rome, 2013) <http://www.fao.org/3/a-i3849e.pdf>.

[58] Annie Patricia Kameri-Mbote and Philippe Cullet, 'Agro-Biodiveristy and International Law: A Conceptual Framework' (1999) 11/2 J Env L 257, 265.

International bodies like the WTO, WIPO, FAO and CBD Secretariats etc are heavily invested in shaping the policy framework governing PGR.

When farmers' rights were conceptualised for the first time in the early 1980s, the concept was wrought with many unresolved questions, such as, its relationship with plant breeder rights, its content and scope and the ability of governments to implement such rights etc.[59] The concept evolved from plant genetic resources being 'common heritage' in the 1983 International Undertaking on Plant Genetic Resources, and then following the CBD route of 'national sovereignty' in the PGFRA Treaty, also known as the Seed Treaty. The actors involved in advocating for the Treaty had emerged out of several agrarian and especially seed activism movements.[60] Mooney's work, *The Law of the Seed* that laid the foundations of farmers' rights,[61] explains underlying motivations behind the concept. Today, this history can be read as a history of farmers' rights and more broadly, a history of seed sovereignty, a term that was not coined yet at the time.

Activism focused on the framing and passing of the Seed Treaty comprised several regional and transnational coalitions that campaigned on seed issues.[62] By the mid-1990s several of these actors joined forces with the Via Campesina and channelled their efforts towards seed sovereignty within the food sovereignty movement. In different continents, a plethora of organisations have contributed towards shaping the seed and food sovereignty discourse. In India, the Alliance for Sustainable and Holistic Agriculture (ASHA), Navdanya and Gene Campaign; in southeast Asia, SEARICE (Southeast Asia Regional Initiatives for Community Empowerment) and Third World Network; in Africa, among several organisations, the AFS (Alliance for Food Sovereign, especially its Seed Working Group), the African Center for Biodiversity, COPAGEN (Coalition for the Protection of African Genetic Heritage) (COPAGEN) and West African Committee for Peasant Seeds (French acronym: COASP); in Europe, the European Peasant Coordination (French acronym: CPE, active 1986-2008), since 2008, the ECVC (European Coordination Via Campesina), and coalition Let's Liberate Diversity (EC-LLD); in the

[59] Craig Borowiak, 'Farmers' Rights: Intellectual Property Regimes and the Struggle over Seeds' (2004) 32/4 Politics & Society 511; Karine Peschard, 'Farmers' Rights and Food Sovereignty: Critical Insights from India' (2014) 41/6 J Peasant Studies 1085.

[60] Marc Edelman and Saturnino M Borras, *Political Dynamics of Transnational Agrarian Movements* (Fernwood 2016).

[61] Patrick Mooney and Cary Fowler after all coined the term 'farmers rights' in 1983. Patrick Mooney, *The Law of the Seed: Another Development and Plant Genetic Resources* (Development Dialogue, vols I and II, Dag Hammarskjöld Foundation, 1983) 172; Patrick Mooney, 'International Non-Governmental Organizations: The Hundred Year (or so) Seed war – Seeds, Sovereignty and Civil Society – A Historical Perspective on the Evolution of The Law of the Seed' in Christine Frison, Francisco López and Jose T Esquinas-Alcázar (eds), *Plant Genetic Resources and Food Security* (FAO, Biodiversity International and Earthscan) 135.

[62] Karine Peschard and Shalini Randeria, 'Keeping Seeds in Our Hands: The Rise of Seed Activism' (2020) 47/4 J Peasant Studies 613, 617; Clare O'Grady Walshe, *Globalization and Seed Sovereignty in Sub-Saharan Africa* (Palgrave MacMillan 2019); Karine Peschard, Christophe Golay and Lulbahri Araya, 'The Right to Seeds in Africa', Geneva Academy Research Brief (2023).

Americas, US Food Sovereignty Alliance and Food Secure Canada, the Network for a GM-Free America (Spanish acronym: RALLT), GRAIN's Latin American Seeds Collective, which comprises many organisations such as Honduran National Association to Promote Ecological Agriculture (Spanish acronym: ANAFAE), Guatemalan National Network for the Defense of Food Sovereignty (Spanish acronym: REDSAG), Costa Rican Biodiversity Network, Ecuadorian Ecological Action, Brazilian National Articulation of Agroecology and Argentinian Action for Biodiversity etc are organisations that represent smallholder farmers, agricultural workers, indigenous peoples and civil society. Such organisations have been advocating for seed sovereignty, within the farmers rights paradigm until the adoption of the Seed Treaty, and now within the food sovereignty paradigm. In this sense, the underlying activism behind both movements has many commonalities.

Despite commonalities, farmers' rights has been heavily criticised by food sovereignty advocates. Transnational organisations such as GRAIN and the ETC Group (Action Group on Erosion, Technology and Concentration, formerly RAFI) have been involved in several forms of seed activism. However, La Via Campesina while launching several campaigns and slogans for democratising seeds, have clearly rejected the farmers rights discourse.[63] While many other organisations have adopted different stances on seeds being 'common heritage' or subjects of 'national sovereignty', Via Campesina asserts that seeds neither belong to everyone (and no one), nor do they belong to the state, instead they belong to the communities that cultivate them.[64] The essence of seed sovereignty involves the 'complete autonomy' over any and all seed activities, including breeding.[65] While farmers rights seek to secure seed-saving and exchange, they shy away from challenging the dominant agricultural paradigm and are hence incapable of making a 'a radical change in farming practices'.[66] Via Campesina has described the Seed Treaty as 'a contradictory and ambiguous treaty, which in the final analysis comes down on the side of theft'.[67] On the specific issue of benefit sharing, it has stated, 'We do not want to be offered the proceeds from the theft of our seeds; we do not want benefit sharing because we

[63] Elise Demeulenaere, "'Free our Seeds!' Strategies of Farmers' Movements to Reappropriate Seeds" in Fabian Girard and Christine Frison, *The Commons, Plant Breeding and Agricultural Research: Challenges for Food Security and Agrobiodiversity* (Routledge Earthscan 2018) 210, 213.

[64] Via Campesina, 'Peasant Seeds: Dignity, Culture and Life: Farmers in Resistance to Defend their Right to Peasant Seeds' (Bali Seed Declaration, 16 March 2011) <https://viacampesina.org/en/peasant-seeds-dignity-culture-and-life-farmers-in-resistance-to-defend-their-right-to-peasant-seeds/>; 'Global Campaign for Seeds, A Heritage of Peoples in the Service of Humanity', Press Release (16 October 2018) <https://viacampesina.org/en/16-october-la-via-campesina-relaunches-global-campaign-for-seeds-a-heritage-of-peoples-in-the-service-of-humanity/>.

[65] Supra n 63, Demeulenaere (2018) at 213.

[66] Elisa Da Vià, 'Seed Diversity, Farmers' Rights, and the Politics of Repeasantization' (2012) 19/2 Int'l J Sociology of Agr and Food 229, 231.

[67] Supra n 64, Via Campesina (2011).

do not want industrial property rights on seeds.'[68] It considers farmers rights as a corollary to IPRs that do not pay attention to inherent power imbalances its actors, wherein local and indigenous communities do not enjoy 'autonomous legal status required to defend these rights themselves.'[69]

Farmers' rights not being capable of addressing the wide gamut of peasants' grievances has led to disillusionment among many who contributed to the farmers rights movement, only to achieve disappointing results.[70] A Colombian activist describing this: 'We have grown tired of legal activism. Even when we win, the state manages to turn things in their favour'.[71] For the core interests of small farmers and peasants, seed sovereignty is a more relevant and encompassing idea, rather than the limited and discursive farmers rights discourse. The ongoing erosion of agrobiodiversity and the socio-economic plight of agricultural peasantry has been recognized by thousands of seed organisations that demand urgent redressal of these issues. For most of these organisations/ movements/ groups etc, mobilisation around seeds and pushing for seed sovereignty is the only way towards food sovereignty.[72] Seed sovereignty has been understood as including 'the planting, tending, harvesting, storing, eating and replanting of seeds [and other planting materials], as well as the attendant processes of exchanging and knowledge-building.'[73]

Rights of communities over their seeds are foundational to food sovereignty. The seed and food sovereignty movements have on the one hand evolved conjointly, they share a common philosophy,[74] they have been advocated simultaneously by many farming communities, and scholars have placed seed

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[68] Ibid.

[69] Simon West, 'Institutionalized Exclusion: The Political Economy of Benefit Sharing and Intellectual Property' (2012) 8/1 LEAD J 19, 22.

[70] Supra n 62, Peschard and Randheria (2020) at 618.

[71] Diego Silva Garzón, Protecting the Vital: Analysing the Relationship Between Agricultural Biosafety and the Commodification of Genetically Modified Cotton Seeds in Colombia (IHIED 2017) 155.

[72] Sofia Monsalve Suárez, Maryam Rahmanian and Antonio Onorati, 'Seeds and Agricultural Biodiversity: The Neglected Backbone of the Right to Food and Nutrition' (RFN Watch Consortium 'Keeping Seeds in Peoples' Hands', Issue 8, 2016) 18-27, <https://www.righttofoodandnutrition.org/files/R_t_F_a_N_Watch_2016_ENG_WEB.pdf>; Alimata Traoré, 'The Dematerialization of Plant Genetic Resources: A Peasant's Perspective' (RFN Watch Consortium 'When Food becomes Immaterial', Issue 10, 2018) 13-17, < https://www.righttofoodandnutrition.org/files/rtfn-watch-2018_eng.pdf>.

[73] Catherine Phillips, *Saving More Than Seeds: Practices and Politics of Seed Saving* (Ashgate 2013) 3.

[74] Coline Hubert, *The United Nations Declaration on the Rights of Peasants - A Tool in the Struggle for Our Common Future* (CETIM 2019).

sovereignty within the larger framework of food sovereignty.[75] Notwithstanding its many complexities and uncertainties, at its core, it has consistently upheld the idea that without farmers' control over seeds, there is no real food sovereignty.'[76] Food sovereignty has been rallied around preserving the 'peasant way', while 'peasant seeds' being managed in a collective and autonomous manner has been a mooting point for seed sovereignty.[77]

5. CRITICAL FOOD SOVEREIGNTY

Many radical ideals and concept have evolved and gained clarity owing to the efforts of activism and advocacy of La Via Campesina and food sovereignty scholars. Alongside food sovereignty's mainstream literature however, critical perspectives have emerged to quell its 'considerable dose of idealistic righteousness'.[78] Critical scholars have challenged some of the underlying premises, policy implications and even the very idea of food sovereignty itself. Food sovereignty's critical dialogue in 2013/2014 received several conference paper submissions – all of which raise important questions for the food sovereignty movement and its implementation in any jurisdiction. Critical scholars do not expect immediate or easy answers for these questions, yet they prove essential in capturing the full breadth of the debate and the problems associated with mobilizing food sovereignty's frame, policy, and plan. This section considers some questions, that it uses for the Indian context in thesis.

The first question pertains to the origins of food sovereignty, and whether it can be reconciled with forces of globalisation, such as long-distance trade, foreign commodity trade, and import-export of food beyond the question of deficiency. If these are reconcilable, then under what terms should these carried out? La Via Campesina articulated 'food sovereignty' as a demand for the first time in 1996 at the Rome World Food Summit, even though its origins date much prior to this event.[79] As a radical movement with many different versions that emerged out of a diversity of national, regional, and cultural experiences and identities, providing clarity to its concept posed a challenge to its advocates. Food sovereignty views long-distance commodity trade in a negative light – because of its postcolonial connotations; and two, because of its impacts on smallholders. Smallholders are negatively affected as

[75] Philip McMichael, 'Food Sovereignty in Movement: Addressing the Triple Crisis' in Hannah Wittman, Annette Desmarais and Nettie Wiebe (eds), *Food Sovereignty: Reconnecting Food, Nature and Community* (Fernwood 2010) 178; supra n 62, Peschard and Randheria..

[76] La Via Campesina, 'Seed Heritage of the People for the Good of Humanity', Report of the Women Seed Forum in South Korea, 2008, <https://viacampesina.org/en/seed-heritage-of-the-people-for-the-good-of-humanity/>.

[77] Elise Demeulenaere, 'A Political Ontology of Seeds: The Transformative Frictions of a Farmers' Movement in Europe' (2014) 69 J Global and Hist Anthrop 45, 49.

[78] Marc Edelman et al, 'Introduction: Critical Perspectives on Food Sovereignty' (2014) 41/6 J Peasant Studies 911.

[79] Supra n 18, Edelman (2014) at 959.

an agro-export oriented economy exacerbates land and social inequities, ushers an influx of cheap food that drives smallholders out of farming and forces them to trade in a highly volatile global market, which can prove very risky for their financial and overall wellbeing.[80] Furthermore, global supply chains that are set up to make food supply and consumption more efficient are predicated on destructive forms of fossil energy extraction and usually never factor ecological costs within the equation of efficiency.[81]

Different advocates of food sovereignty have envisioned a different kind of reconciliation. For instance, Van der Ploeg's vision of food sovereignty being a mutually exclusive alternative to the market economy is idealistic yet the two cannot be fully detached from another, as market innovations are used by small farmers too as is the case with other elements of the market economy such as credit and collective bargaining.[82] Thus, administering food sovereignty involves 'a dynamic and balanced relationship between society, state and market, in harmony with Nature.'[83] Critical scholars take the discussion further to argue that if this were the case, then what are the challenges vis-à-vis plurality in a food sovereign society – when its different administrators have different versions of food sovereignty?

This issue is especially relevant for balancing market and globalisation elements with agroecology and nature-oriented farming. This is because organic farming can and does coexist with export-oriented and commodities-based agriculture, as do localised farming systems which may be more industrial and technologically intensive than non-localised systems. Some food sovereignty scholars have called for explicitly qualifying the movement as 'agroecology-based food sovereignty';[84] while others find this an unnecessary tautology, as food sovereignty essentially should be agroecological and nature-based.[85]

The second major question is – who will administer food sovereignty? And what does it take to administer it? This includes, what kinds of resource relations characterise a food sovereign society –

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[80] Kim Burnett and Sophia Murphy, 'What Place for International Trade in Food Sovereignty?' (2014) 41/6 J Peasant Studies 1065; Martin Khor, 'Globalization and the South: Some Critical Issues', United Nations Conference on Trade and Development, Discussion Paper No. 147 (Geneva, April 2000).

[81] Tony Weis, *The Global Food Economy: The Battle for the Future of Farming* (Zed Books 2007).

[82] Jan Douwe van der Ploeg, 'Peasant-Driven Agricultural Growth and Food Sovereignty' (2014) 41/6 J Peasant Studies 999.

[83] Isabella Giunta, 'Food Sovereignty in Ecuador: Peasant Struggles and the Challenge of Institutionalization' (2014) 41/6 J Peasant Studies 1201, 1215.

[84] Eric Holt-Giménez and Miguel Altieri, 'Agroecology, Food Sovereignty, and the New Green Revolution' (2013) 37/1 Agroecology & Sustainable Food Systems 90, 96.

[85] Mark Martínez-Torres and Peter Rosset, 'Diálogo de Saberes in La Vía Campesina: Food Sovereignty and Agroecology' (2014) 41/6 J Peasant Studies 979.

such as what are land relations, seed rights, access to water and other agricultural inputs? Several scholars have raised concern regarding the role of the state in administering food sovereignty.[86] This rests on the moot question of what is meant by sovereignty, and sovereignty from whom. Trauger argues that food sovereignty is a kind of 'civil disobedience' that can overlap with other (overlapping) sovereignties of the state.[87] Thus, food sovereignty can use the existing structures of the modern liberal state with its administrative and juridical structures. Desmarais, Wiebe and Wittman however take a more critical view of the state's role in promoting food note how the question of the state's role has divided different types of organisations based on political affiliations, promoting producers' control as a proxy for state control, thereby leading to the state co-opting the food sovereignty agenda.[88] The section below on food sovereignty in action expands on this idea, regarding how food sovereignty principles can be incorporated in national constitutions and can prove effective to varied degrees in reimagining the country's agro-food systems. Yet in most cases where food sovereignty has been legally recognized it has followed major political changes such as constitution-making, decisive electoral shifts towards leftist regimes or historic public protests and mobilisations.[89] The increasing use of the rights language in articulating food sovereignty claims leads to the assumption that the state cannot be bypassed or ignored in implementing food sovereignty, and that the term sovereignty does not belie the fact that the state is the ultimate guarantor of rights.

The third question is closely linked to discussion above on 'sovereignty'. It asks who the beneficiaries of food sovereignty are, or in other words, who is the 'sovereign' in food sovereignty? It is important to unpack the term 'sovereignty' in the food sovereignty context; understand what its different elements are; and who the beneficiaries are vis-à-vis whom. Many food sovereignty scholars and communities trying to implement it have tackled the question of 'sovereignty' and the questions it raises.[90] Their analyses cover 2 broad aspects – one, food sovereignty's relationship within the structural

[86] Otto Hospes, 'Food Sovereignty: The Debate, the Deadlock, and a Suggested Detour' (2014) 31/1 Agr & Human Values 119.

[87] Amy Trauger, 'Toward a Political Geography of Food Sovereignty: Transforming Territory, Exchange, and Power in the Liberal Sovereign State (2014) 41/6 J Peasant Studies 1131. Trauger gives an example of rice gathering communities of the Anishinabe indigenous people in northern Minnesota.

[88] Supra n 75, Wittman, Desmarais and Wiebe (2010) 1-7. Examples of this include the state's efforts in dividing farmer organizations in Québec, with some vouching for greater producers' control, while others wishing for state-led food sovereignty. Another example is that of Kloppenburg's call towards 'seed sovereignty' through an open-source licensing system that relies on contract law and state authority for its smooth running.

[89] Supra n 83, Giunta (2014) 1216.

[90] Tina Beuchelt and Detlef Virchow, 'Food Sovereignty or the Human Right to Adequate Food: Which Concept Serves Better as International Development Policy for Global Hunger and Poverty Reduction?' (2012) 29/2 Agr & Hum Values 659; *supra* n 84, Hospes (2014) at 120.

context of the state, and food sovereignty's relationship with the structural context of the market.[91] Communities in Bolivia and Venezuela that pushed for food sovereignty have ended up with very different versions of it – some advocating state led food sovereignty while others arguing that state control is synonymous with big producers' control. Some scholars have observed these trends and argued that food sovereignty can be implemented within the state structure, with the state's judiciary interpreting and applying renewed meanings of sovereignty.[92] For instance, Trauger explains that the idea of 'overlapping' sovereignties exists in many settings, as in the case of territorial and autonomous governance rights of indigenous communities within the territory of a state. Therefore, it is possible to negotiate sovereignties as in the case of 'civil disobedience' against a government.

In this vein, scholars such as Kloppenburg have argued for 'seed sovereignty' through an open sourcing, similar to the systems used in case of software. This kind of open-source licensing for seeds is based on contract law – which relies on the state for its recognition and implementation.[93] Other scholars such as Bernstein have sharply critiqued the food sovereignty approach owing to the use of the term 'sovereignty' – stating that sovereignty outside the state mechanism is both improbable and unworkable.[94] Even within the state polity, the effective implementation of food sovereignty depends on the level of commitment of its government; that is, in cases where food sovereignty has reached a constitutional status, even then agro-industrial interests continue to thrive.[95] Edelman argues for the need for land redistribution and limits on land ownership for food sovereignty to be effective.[96] In the Indian context, the term sovereignty is not commonly used in the context of indigenous peoples and their territories. Their autonomous governance structures have operated within the confines of the Indian state. Officially, India does not recognise the right to self-determination of its peoples.[97] India has voiced its discomfort with the issue of self-determination in many international for a, as well as domestic settings, ranging from constitutional assembly debates on the issue, to courtroom arguments

[91] Supra n 18, Edelman et al (2014) at 920.

[92] Supra n 87, Trauger (2014) at 1145.

[93] Jack Kloppenburg, 'Re-purposing the Master's Tools: The Open Source Seed Initiative and the Struggle for Seed Sovereignty' (2014) 41/6 J Peasant Studies 1225, 1230.

[94] Supra n 18, Bernstein (2014) at 1033.

[95] Ben McKay, Ryan Nehring and Marygold Walsh-Dilley, 'The 'State' of Food Sovereignty in Latin America: Political Projects and Alternative Pathways in Venezuela, Ecuador and Bolivia' (2014) 41/6 J Peasant Studies 1175.

[96] Supra n 80, Burnett and Murphy (2014) at 46.

[97] Lindsey Kingston, *Fully Human: Personhood, Citizenship, and Rights* (OUP 2019) 98-112.

in recent cases.[98] Despite international recognition of the right to self- determination of indigenous peoples, and India's endorsement of the UN Declaration on the Rights of Indigenous Peoples, India has only gone so far to recognise self-governance and tribal autonomy in tribal regions.[99] Therefore, tribals are 'granted' autonomy within the confines of the Indian Constitution and from the point of view of the government, they are recognised as Indian citizens and their territories do not constitute sovereign nations.

Food sovereignty in the Indian context, therefore, must follow the limited idea of sovereignty – that is one within the realm of the Indian state and constitution. It is one, unnecessary to reinvent a constitutional machinery for food sovereignty, when India's constitution already recognizes local self-government, autonomy of tribal regions that constitute areas of rich biodiversity, and a fundamental rights framework that overlaps many of food sovereignty's themes – such as the right to life, dignity, and livelihood. These provisions can be read in the respect of farmers.[100] Second, new rights and new laws that support food sovereignty can be introduced within the framework of the Indian legal system. Therefore, the term food sovereignty has indeed been the cause of debate within the movement, yet this should not be a cause for rejecting or impeding the implementation of food sovereignty in India.

The fourth question pertains to how does food sovereignty feature within larger political-economic transitions induced by climate change? Will a post-petroleum economy be a post-capitalist economy? There is a lot of emphasis on transitioning towards climate-smart food systems and agriculture. Yet, how does climate-oriented agriculture reconcile with food sovereignty, where one can develop within the other's fold? While devising answers to these questions, other issues surrounding complex agrarian transitions – such as, unstable livelihoods owing to lowering productivity and farmers and workers who do not wish to continue with agriculture.[101] Most significantly, Bernstein has critiqued this concept by stating that if farmers as food producers were truly sovereign then it is impossible for them to serve their own interests and those of consumers without being incorporated into a variety of social, economic and political fora that go well beyond food itself.[102] For food sovereignty to thrive, a

[98] Ajai Malhotra (India's Representative to the UN) stated that "the right to self-determination applies only to peoples under foreign domination and that the concept did not apply to sovereign independent States or to a section of people or a nation, which was the essence of national integrity… the resolution does not define indigenous peoples… India's tribal people may not qualify for such rights because they were not technically iIndigenous", country representative press release at the General Assembly at the adoption of the Declaration on Rights of Indigenous Peoples, UN Press Releases and Meetings Coverage (13 September 2007), <https://press.un.org/en/2007/ga10612.doc.htm>.

[99] IWGIA, 'India: Indigenous Rights in Practice', International Work Group for Indigenous Affairs (IWGIA, 2017), <https://www.iwgia.org/en/india.html>.

[100] *Delhi Transport Corporation v DTC Mazdoor Congress*, AIR 1991 SC 101 [Indian Supreme Court]. Reading into the constitution to provide greater clarity or qualifications to a certain provision.

[101] Supra n 87, Trauger (2014) at 1136.

[102] Supra n 18, Bernstein (2014) at 1033-4.

healthy, sustainable and diverse rural economy is required that is not solely concerned with food production. Industrial and capitalistic developments of the 19th and 20th centuries that indeed have an urban bias cannot be delinked from rural economies especially given the rapid transition that rural spaces are undergoing at the moment, and the wave of rural to urban migration that the world has seen in these past decades.[103] Agarwal further indicates that this migration has less to do with rejecting agriculture as a vocation, and more to do with greater livelihood stability and ease of living in urban areas.[104] Thus, an attempt to revalorize small farms should not be embroiled in romanticised ideas of smallholder and localisation values, that can put off farmers from rural areas even further.

The last question is that of the relationship between urban agriculture and food sovereignty. Urban agriculturalists are increasingly contributing to the aggregate food supply, and most of these city dwellers are among the poorest quintile of cities.[105] How can food sovereignty engage with urban food movements and represent their claims to land, resources, market access etc? Amongst other ideals, food sovereignty hopes to build solidarity relationships between producers and consumers. It hopes to localise food systems with the idea of fortifying direct relations between different actors, while opposing long supply chains that 'distance' them from one another.[106] Bernstein points out however that the relationship between producers and consumers is not always marked by solidarity, symbiosis and synergy, but also comprise deep tensions, competing interests and contradictions.[107] Even in an urban setting, the divisions traditionally seen among rural producers and urban consumers can play out. There is hence no guarantee that urban agriculture will necessarily adhere to the principles of food sovereignty. All these questions raised by critical scholars have been addressed to some degree in the section below that describes how food sovereignty has manifested in different countries that have adopted food sovereignty as a state policy. Each case study presents a different scenario of food sovereignty with its own local and statal interpretations. Among the critical debates within the food sovereignty discourse, the points raised by Bernstein and later answered by McMichael are also referred to in this thesis in Chapter 7 as a guide to navigate through food sovereignty's varied location-specific meanings, that on the one hand adhere to some core principles yet unfold in distinct ways.

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[103] Ben White, 'Who Will Own the Countryside? Dispossession, Rural Youth and the Future of Farming', International Institute of Social Studies, Valedictory Lecture (The Hague, 13 October 2011).

[104] Bina Agarwal, 'Food Sovereignty, Food Security and Democratic Choice: Critical Contradictions, Difficult Conciliations' (2014) 41/6 J Peasant Studies 1247.

[105] Alberto Zezza and Luca Tasciotti, 'Urban Agriculture, Poverty, and Food Security: Empirical Evidence from a Sample of Developing Countries' (2010) 35 Food Policy 265.

[106] Jennifer Clapp, 'Financialization, Distance and Global Food Politics' (2014) 41/5 J Peasant Studies 797.

[107] Supra n 18, Bernstein (2014) at 1037.

(a) FOOD SOVEREIGNTY IN ACTION IN COUNTRIES

The concept of food sovereignty has made its way to several legal systems of the world – in some cases via constitutional recognition, or in other cases, via statutory enactment, judicial pronouncement or local level governance and regulations. These are forms of state-sponsored food sovereignty, wherein principles of food sovereignty are introduced with the backing of the state, rather than via claims of sovereignty against the state, or the state-corporate combine.[108] Food sovereignty is widely known in the world, and especially in the South American context. Owing to decades of La Via Campesina's activism, supported by other global organisations, civil society groups in different countries and grassroots peasant farmers mobilisations, it has transformed from being only a 'vision statement' or 'rallying cry', to a policy statement inspiring action through the political and legal machinery of the state.[109] The food sovereignty campaign has spurred action in countries such as Bolivia, Brazil, Ecuador, Nicaragua, Mali, Venezuela, and Senegal. Each of these case studies have manifested different versions of food sovereignty, and via different routes. What is common and clear however is that legal recognition does not guarantee the operation of food sovereignty in practice.[110]

The food sovereignty campaign has spurred policy and legal change in some countries. This was sparked partly because of global phenomena such as agrarian crises, instances of land grabbing, resource control by local elites, multinational corporations and foreign states; and location-specific phenomena such as loss of land at heavily discounted prices, loss of biodiversity, shifts away from agroecology.[111] In most countries, national-level peasant and farmers' organisations struggle to balance the interests of their members with the economic viability of small-scale farming, and the demands of land reform with the pressures of globalisation and industrialisation of food and agriculture.[112] The uptake of food sovereignty in different countries has been a result of major political changes such the coming to power of leftist leaders, a new regional shift in anti-US imperialism and a renewed interest in planning, welfare, social justice and innovative policymaking catered to the interests of the specific country rather than foreign interests.[113] The late 1990s to early 2000s saw the adoption of new

[108] Supra n 95, McKay et al (2014) at 1175.

[109] Emma Larking, 'Mobilising for Food Sovereignty: The Pitfalls of International Human Rights Strategies and an Exploration of Alternatives' (2017) 23/5 Int'l J Human Rights 758.

[110] Priscilla Claeys, 'The Creation of New Rights by the Food Sovereignty Movement: The Challenge of Institutionalizing Subversion', (2012) 46/5 Sociology 844, 852.

[111] Human Rights Council, 'Final Study of the Human Rights Council Advisory Committee on the Advancement of the Rights of Peasants and Other People Working In Rural Areas', A/HRC/19/75 (24 February 2012) paras 9, 16, 25–28.

[112] Patrick Clark, 'Can the State Foster Food Sovereignty? Insights from the Case of Ecuador' (2016) 16/2 J Agrarian Change 183.

constitutions that ushered a wave of 'new Andean Constitutionalism' characterised by nationalisation of key industries, increasing social spending, and introducing legal reforms with the intent to promote social justice and fulfilment of human rights.[114]

Food sovereignty demands the changing the very nature of food systems, their size, control aspects, and measures of success – that is, the very basis of value within them. It also demands changes in relations of access to and control over decision-making and productive resources within food systems. In this sense, Bernstein's critique on approaching food sovereignty, not as a food and agricultural systems debate, but as changing 'social relations of production and reproduction, of property and power' is pertinent.[115] The latter is much harder to achieve, and requires a longer time frame to manifest, rather than a black letter legal recognition of food sovereignty.[116] It is therefore no surprise that state commitments to food sovereignty have gone hand in hand with major politico-social transitions that made way for major changes with food systems. Yet the moot question of analysis while observing food sovereignty in action in different countries is whether state commitments have facilitated the shift in direct control over food systems to peasants and farmers or have these strengthened the control and power of a developmentalist state in defining state-society relations and maintaining a keener oversight over rural actors. In most cases, the latter may be truer than the former.[117]

In most countries listed above, food sovereignty rights have not been accompanied with structural changes that are necessary to truly empower peasants to gain and exercise control over local food production and consumption systems.[118] McKay, Nehring and Walsh-Dilley argue that only in Venezuela have rights been accompanied by partial structural changes that radically re-envision the role and functions of local community institutions, the power of the state over these institutions, and empowering local producers and consumers to participate and lead these institutions.[119] In most other cases, food sovereignty rights and recognition without meaningful land reform and reform of local

[113] For instance, the election of Hugo Chavez in Venezuela, Rafael Correa in Ecuador, Evo Morales in Bolivia, Daniel Ortega in Nicaragua, Fernando Lugo in Paraguay and Luis Inácio 'Lula' da Silva in Brazil in the late 1990s – early 2000s comprised a significant leftist and anti-imperialist bloc in the region.

[114] Almut Schilling-Vacaflor, 'Bolivia's New Constitution: Towards Participatory Democracy and Political Pluralism?' (2011) 90 Eur Rev Latin American and Caribbean Studies 3.

[115] Henry Bernstein, Ben Crow, and Hazel Johnson (eds), *Rural Livelihoods: Crises and Responses* (OUP 1992) 24.

[116] Supra n 83, Giunta (2014) 1201.

[117] Supra n 95, McKay, Nehring and Walsh-Dilley (2014).

[118] Jean Ziegler et al, *The Fight for the Right to Food - Lessons Learned* (Palgrave Macmillan 2011) 38.

[119] Supra n 95, McKay, Nehring and Walsh-Dilley (2014) 1181-85.

governance structures have not been 'genuinely transformative'.[120] Overall, La Via Campesina's advocacy has provided intellectual, political and legal alternatives to market-led and productivist-oriented food and agricultural systems, yet the campaign has made a limited impact on national land reform policies, structural changes in local governance, and a radical change in state-society relations.

(b) ISSUES WITH PUTTING FOOD SOVEREIGNTY INTO ACTION - LESSONS FOR THE INDIAN CONTEXT

In India, local governance institutions that hold the potential for acting as the grounds for food sovereignty are Schedule V and VI institutions, and local governance institutions established via the 43rd and 44th amendment of the Indian Constitutions, and the Panchayats (Extension to Scheduled Areas) Act, 1996 and the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. India has a remarkable diversity of tribal communities which share similar traits across many regional variations, such as, living in relative geographical isolation, and being relatively more homogenous and more self-contained than the non-tribal social groups. As a result, India's state polity has endeavoured to balance the dichotomy between assimilation of tribal peoples into the mainstream and the preservation of their independent identity; this means that, the contours of special provisions in the Constitution and certain special laws allow tribal communities to preserve their way of life without compromising development. While tribal communities are given a fair deal of autonomy when their grouping and organisational structure is crystallised (in other words, when they are seen as capable of self-government), their integration or mainstreaming are seen as desirable eventualities of this political process.[121] A desired outcome or endgame of such multiplicity of laws and legal systems is to grant legal recognition on the one hand, but eventually bring them within the fold of state law. Due to this contradiction, many scholars have argued that autonomy in governance was given to certain groups only so as to ensure the most convenient and efficient form of administration, and as such, such autonomy is no more than an innovative system of decentralised administration, rather than evidence of true self-government. This is so, because, the State continues to have a looming presence through certain Constitutional functionaries like the Governor and the State

[120] Madeleine Fairbairn, 'Framing Resistance: International Food Regimes and the Roots of Food Sovereignty' in supra n 75, Wittman, Desmarais and Wiebe (2010) at 15.

[121] For detailed analysis on the extent of autonomy exercised by tribal governance structures, and their interaction with the state legal system, see: Crispin Bates, 'Lost Innocents and the Loss of Innocence: Interpreting Adivasi Movements in South Asia', in R.H. Barnes, Andrew Gray & Benedict Kingsbury (eds), *Indigenous Peoples of Asia* (American Association for Asian Studies, 1995) 103-114; Bengt G. Karlsson, 'Anthropology and the Indigenous Slot: Claims to and Debates about Indigenous Peoples Status in India' (2003) 23 Critique of Anthropology 10.

Council of Ministers.[122] Furthermore, the State always has the last word, in terms of adjudication of disputes and resolving administrative conflicts.

The other form of local self-governance in the Indian legal framework comprises '*panchayati raj*' at the village level. India has a rich history of village-based and community-level organisation. These organisations were typically socio-political in nature that carried out several public functions, and yet, also served as centres for the preservation of socio-cultural traditions and practices of local habitations.[123] They also carried out mediation and adjudication of disputes among members of the village community. Charles Metcalf in his Report submitted to the House of Commons in 1832 stated that: "*The village communities are little republics, having nearly everything they can want within themselves… They seem to last where nothing else lasts… The union of the village communities, each one forming a separate little state, in itself, has I conceive, contributed more than any other cause to the preservation of the people of India… and is in a high degree conducive to their enjoyment of a great portion of freedom and independence*."[124]

These village institutions (*sabhas* or assemblies) came to be known as '*panchayats*' (an assembly of five respected elders) around the 2nd-3rd centuries CE. Villages continued as self-governing village republics till the British brought about major changes in restructuring the administrative hierarchy in Birtish India.[125] Article 40 of the Indian Constitution in the chapter on 'Directive Principles of State Policy' speaks of establishing local self-government bodies at the local level. Following the adoption of the Constitution in 1950, several official committees delved into the issue of effective rural governance. In 1992, the 73rd (Panchayat Raj) and 74th (Municipalities) Amendment Bills introduced local self-government.[126]

In 1996, the Panchayat (Extension to Scheduled Areas) Act (PESA) in 1996, Part IX of the Constitution was passed, and this extended *Pachayat Raj* (local self-government) to the Fifth Schedule territories (not to Sixth Schedule territories). As a result, state governments had the power, much like

[122] Special powers of the Governor in Tribal Areas – Article 244, Indian Constitution 1950.

[123] Charles Metcalfe, 'Report of the Select Committee of House of Commons', Vol.III in Radhakumud Mukerji, *Local Government in Ancient India* (Motilal Banarsidas Publishers 1958) 2; Mukul, 'Transition to Self-Governance' (1997) 32/18 Eco Pol Weekly 928.

[124] Ibid at 3.

[125] James Jaffe, 'Layering Law upon Custom: The British in Colonial West India' (2014) 10/1 FIU Law Review 85, 87.

[126] Part IX was inserted in the Indian Constitution, wherein Articles 243, 243A to 243O expound in detail the nature of mandated panchayati raj in India. Articles 243G and H read with the Eleventh Schedule of the Constitution lay down the subject areas upon which panchayats exercise power and authority. See Mani Shankar Aiyar, 'Local Government in Indian & China' (2012) 8/1 Brown Journal of World Affairs 221, 226-7.

in the case of areas, to foster tribal self-government through Panchayati Raj institutions. The Fifth Schedule was not amended following the enactment of PESA and this has resulted in a unique scenario of conflicting constitutional mandates, wherein one prescribes autonomy to manage one's own affairs and the other imposes a state-controlled scheme of administration with the intent to introduce concepts of democracy, accountability, and state-styled governance.[127] In order to retain the spirit of the fifth schedule, state governments were to ensure that (1) the laws applicable to panchayats conformed with the customary law, social and religious practices as well as traditional access and management of community resources , and (2) that the Gram Sabhas (village assemblies not understood in the traditional sense but comprising those members whose names are included in the electoral rolls for electing the Panchayat at the village level) were competent to preserve the customs and traditions of the people, their cultural identity, community resources and the customary mode of dispute resolution."[128]

The effect of Panchayat Raj in 1992 produced mixed results: in some states it worked well to strengthen and democratise local institutions, in others it failed (in a way that the programmatic state-supervised development competed with the already established village administrative system), and in many states it never was implemented to be anything more than a penetration of state party politics at the village level. The PESA is seen by many activists and scholars as a prime example of the state's attempt to monopolize power, rather than share it with its populace.[129] After almost 3 decades of PESA's operation many tribal regions previously administered by traditional councils and organisational structures have now had to cope with an entirely new power dynamic within them; they have also settled into a state-styled mode of governance that is predicated on the belief that state-initiated development. Furthermore, states that did make attempts to devolve decision-making powers upon tribal communities have also largely been unsuccessful, owing to the fact that at the end of the day, the primary responsibility for implementing PESA via distribution of funds and allocation of resources remains the prerogative of the state government.

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[127] Apoorv Kurup, 'Tribal Law in India – How Decentralized Administration Is Extinguishing Tribal Rights and Why Autonomous Tribal Governments Are Better' (2008) 7/1 Indigenous L J 87, 97-9.

[128] PESA, s.4 (a), (c) and (d) - the specific powers of the village governments are set forth in clauses (e) through (m) under s.4 of PESA.

[129] Two reasons can be provided for this: one, many states with large tribal populations and scheduled territories did not adopt PESA for a long time since the Centre passed it in 1996, and two, over and above the procrastination, many of such states passed a highly toned-down versions of the PESA that ignored customary practices and traditional law prevalent among tribal populations. See Avinash Samal, 'Institutional Reforms for Decentralized Governance and the Politics of Control and Management of Local Natural Resources: A Study in the Scheduled Areas of India', Conference Paper - Foundation to Aid Industrial Recovery (Bangalore, 9 March 2003).

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights Act), 2006 (FRA) provides another avenue of insight with respect to land reform and a restructuring of access to resources. This Act came into force in 2008 and aspires to undo the "historic injustice" meted out to communities dependant on the forest by recognizing their customary forest land rights; that is, their legal right to hold forest lands upon which they have been residing on and cultivating, and by extension recognizing their rights to use, manage and conserve forest resources as accruing thereto.[130] The Act unequivocally acknowledges (in its Preamble) that forest dwellers are "integral" to the survival and sustainability of forests owing to their role in biodiversity conservation. Interestingly, this legislation stands to signify the culmination of decades of wrongful land alienation and eviction of forest dwelling communities from their ancestral homes. Furthermore, it is a combination of the environmental and sustainability agenda but also the struggles that tribal communities have suffered surrounding the insecurity of tenure and lack of established rights over forests, which has in turn led to their marginalisation and displacement.

This Act provides the opportunity to tribal and other forest dwelling communities to furnish a 'claim' of ownership of forest land. Under the FRA process, a claimant can only submit a claim if it can be shown (via official records, geographic and cultural landmarks, testimony of elders etc) that they have resided in that area for at least 3 generations. These claims can be for either individual or community tenures or rights. Different groups can have a collective claim over a land, or other rights such as fishing, grazing and most importantly, access to forest products. This Act marks a major shift in the relationship the state and forest dwellers. It forges a new dynamic where historical injustice meted out to them. At first glance it might seem as though it has become much harder for private parties or the government itself to bully their way into acquiring land from forest dwellers. However, formalisation of rights can also mean that these parties can enter into formal, 'legal' transactions and buy these lands without any added duties of resettlement and fair compensation.

Another question that the FRA raises is operates alongside all other forest laws. Thus, forest laws and policies that promote exclusion and eviction of forest communities operate alongside the Act.[131] This has seriously affected the scope and implementation of FRA. Rights and settlements granted under previous Acts have not been extinguished by the FRA. An overlap of institutions created under different laws can give rise to a situation where a single village can have a Joint Forest

[130] Tushar Dash & Ashish Kothari, 'Forest Rights and Conservation in India', in Holly Jonas et al (eds), *Implementing the Forest Rights Act: Addressing a Historical Injustice* (Natural Justice and United Nations University, Institute of Advanced Studies, Oxfam India 2013) 151.

[131] Shankar Gopalakrishnan, 'Access to and Control over Environmental Resources – The Case of the Forest Act, 2006, India', in Philippe Cullet & Sujith Koonan (eds), *Research Handbook on Law, Environment and the Global South* (Edward Elgar 2019) 249.

Management Committee, Eco-Development Committee, *Van* (forest) Panchayats, Forest Rights Committee (under the FRA) and even self-initiated community forest protection institutions. Furthermore, the FRA itself contains a mechanism for notifying certain "inviolate areas for wildlife conservation", such as tiger reserves. Since the Act came into effect, several notifications have exempted large tracts of forests from the implementation of the Act.

There are other substantive legal issues with the Act, however FRA's biggest weakness is its feeble implementation. This Act has now been operative for almost 20 years, and several studies conducted on its impact show that it has managed to achieve little success due to poor implementation at the grassroot level.[132] Out of a total 4.4 million claims received all over the country, only 1.7 million resulted in titles.[133] There have several instances where even after getting titles, community members have been disallowed entering their lands or from accessing any substantive rights. For instance, in some states titles have only been given to tribal groups and not to other communities, while in some states, community claims have not been granted at all. The problem of implementation has been assigned to the lack of political will within the state's forest ministries and bureaucracy.[134]

The transition from traditional village councils to formal Panchayats, and the bold recognition of forest rights and historical injustices against tribal populations and forest dwellers are exemplary of ongoing trends in increasing state's role in the judicial and political systems to not just a large horizontal sphere of subject areas, but also a vertical top to bottom impact that has today reached the last frontier of 'subsidiarity'.[135] The 'panchayat ideology', a term coined by Baxi and Galanter, symbolises a combination of the formality of official law with the political malleability of village institutions.[136] Local self-governance institutions further entrench the state's modus operandi into the rural pockets that otherwise thrive on informality and autonomy.[137]

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[132] Kalpavriksh and Vasundhara, 'Promise & Performance: Ten Years of the Forest Rights Act in India' (Citizens' Report as part of Community Forest Rights-Learning and Advocacy (CFR-LA) Process, 2016) 26-31 <http://www.kalpavriksh.org/images/LawsNPolicies/CITIZENSREPORT2015.pdf>.

[133] Kalpavriksh and Natural Justice, 'Forest Governance at the Interface of Laws Related to Forest, Wildlife & Biodiversity with a Specific Focus on Conflicts & Complementarities with Forest Rights Act' (Report, 2017) <http://kalpavriksh.org/images/Documentation/Advocacy/ForestGovernanaceatInterfaceLaws.pdf>.

[134] Madhusudan Bandi, 'Implementation of the Forest Rights Act: Undoing Historical Injustices' (2015) 31 Eco & Pol Weekly 21.

[135] The same can be seen in other formalisation processes, such as - from nyaya panchayats to Gram Nyayalayas and from traditional village-based lok adalats to formal permanent Lok Adalats.

[136] Upendra Baxi and Marc Galanter, 'Panchayat Justice: An Indian Experiment in Legal Access' (1979) 3 Access to Justice: Emerging Issues & Perspectives 343.

[137] See Rajshree Chandra, 'India's Forest Rights Act – Righting indigeneity, subverting property', in Satvinder Juss (ed), *Human Rights in India* (Routledge 2019) 230.

This experience holds valuable lessons for the design of rural political and legal reform in the direction of food sovereignty in India. First, there must be a clarity over the substantive content of food sovereignty rights. As seen with the shortcomings of the PESA, local bodies are often controlled by state governments and as a result do not realise their true potential as self-governing bodies. Food sovereignty must avoid this error by clearly laying the nature and content of rights. Structurally, PESA administrative bodies can be tapped for the implementation of food sovereignty, but if control is retained at the central and state levels then the very essence of food sovereignty can be lost. This can be avoided through creating and securing independent funding channels within local food systems.[138] For more in-depth changes at the local level, a long-term vision of law and policy must take shape to realise food sovereignty. Local actors must be consulted and the food sovereignty implementation policy should be initiated by them. A top-down approach as seen with the FRA and PESA may not yield deep and long-lasting change. Furthermore, research and bureaucratic institutions must also change to incorporate a change of attitudes. As seen with the application of the FRA on granting forest titles, deeply entrenched biases against forest dwelling communities became a barrier to implementation. Therefore, a change in what is deemed as successful agriculture based on valuations of food-farmer-ecology must be taught, researched and inculcated as has been done with eh Green Revolution-productivst ideal. The legal recognition of food sovereignty within India's rights framework will not be sufficient unless structural changes at the village level are made, either via the Schedule V, VI, PESA and FRA architecture, or outside it.

6. CONCLUSION

This chapter has tried to situate biogenetic rights within a larger spectrum of food sovereignty and peasants rights. Food sovereignty challenges the dominant food and agricultural paradigm, and places farmers and peasants as controllers and definers of their food systems. Biogenetic resource rights distilled from such a counter movement are not constrained by the limitations that the dominant model places on them. Thus, it is imperative to conceptualise biogenetic resources rights that are much more far sweeping and wide-ranging than mere exceptions to the mainstream intellectual property rights. This chapter has constructed a rights framework espoused by the food sovereignty and peasants rights approaches. It has shown the distinctions between this rights framework and the conventional human rights frameworks internationally and in India. Within this framework, biogenetic rights shall be discussed and built upon in subsequent chapters, so as to construct them in the spirit of food sovereignty.

[138] For food systems in South America that endeavour to be self-sufficient, see: Pedro Cango, Jesús Ramos-Martín and Fander Falconí, 'Toward Food Sovereignty and Self-Sufficiency in Latin America and the Caribbean: Opportunities for Agricultural Complementarity' (2023) 61/1 Rev Eco Soc Rural 52.

The following chapter is the next foundational chapter of the thesis. It throws light on key Indian agricultural law and policies that have helped create and perpetuate a productivist model of agriculture. Food sovereignty's origins within the South American context should therefore not act as a limitation for its applicability in India and other parts of the world, where the need for a counter movement or alternative paradigm remain relevant.

CHAPTER III

ESTRANGEMENT OF FARMERS WITHIN A PRODUCTIVIST AGRICULTURAL FRAMEWORK

1. INTRODUCTION

Farmers have constituted an important category for socio-economic and political purposes of the Indian state. Yet, there are definitional challenges regarding who is a farmer, and how this normative category fits within the food sovereignty and the peasants rights discourse. This chapter focuses primarily on the Indian context, and lays down the agricultural legal framework, within which biogenetic rights, seed law and more broadly the political economy of seeds in India is described. This is done to set the stage for a discussion in the following chapter regarding food-farmer-ecology rights in India. By merging the concepts of Chapter 2 and 3, which are currently siloed in 2 different frames – right to food and other human rights on the one side, and agricultural and seed law on the other. To build a rights framework around the food-farmer-ecology nexus in the latter portion of the thesis, it is imperative to first establish the prevailing presumptions, parameters of success and motives underlying India's current agricultural legal framework.

The edifice of Indian agricultural law and policy has been built upon the foundational building blocks of the Green Revolution. A standard retting of the Green Revolution history lauds its own success in increasing food production using HYV seeds, chemical inputs and mechanisation. These successes emboldened the government to promote technologically intensive agriculture by framing its national policy on the lines of the Revolution's characteristics. The basic assumptions and motives upon which the project of the Green Revolution was built continue to be perpetuated through the institutions the Green Revolution gave birth to.[1] For instance, the PPVFR Act read with National Seed Policy 2002 has created opportunities for state and private entities in claiming a lion's share in the seed market. As high production was an ideal of the Green Revolution, over time, traditional self-replicating varieties have been dubbed as inferior vis-a-vis 'improved' or 'hybrid' varieties owing to their relatively low productive capacity.[2]

The progression of policymaking following the Green Revolution has moved in a direction of enhancing agricultural production. An increased emphasis on productivism within agriculture is a result

[1] Raju J Das, 'Geographical Unevenness of India's Green Revolution' (1999) 29/2 J of Contemporary Asia 167.

[2] Rajshree Chandra, Farmers' Rights in India: 'Globally Sui Generis' (2016) 6 South Asia Chronicle 119.

of many factors, such as the rise of globalised trade and consequent commodification of food. Added to this, a neoliberal wave of development ideals that inspired development within agriculture and within the rural economy have also contributed towards idealising high-yield production.[3] Production-oriented policies understood agriculture in terms of its contribution to national GDP. This is evinced by the fact that the government has controlled some key sectors over others, such as, agricultural pricing and marketing, fertilizer and other chemical inputs, electricity, water and seeds etc. Policies framed within this productivist paradigm have been imagined by a research infrastructure, and executed by an agricultural bureaucratic structure, both of which are gifts of the Green Revolution.

Within the productivist paradigm, farmers have been slowly losing control over biogenetic resources. This widening gap can be attributed to mainly three reasons: one, farmers are no longer the chief knowledge-bearers of biogenetic knowledge. Productivism manifests hand in hand with the centralisation of knowledge. Two, small, marginal, tribal and women farmers who are often the frontline managers of biogenetic resources do not neatly fit within the metrics of success in the productivist paradigm. When productivism is prioritised, other factors such as crop diversity, environmentally sustainable farming, conservation of crop varieties and knowledge keeping are not rewarded. This has led to a further distancing of farmers from their resources. Third, drastic changes in local food systems. Crops grown are linked to local cuisines and food traditions. A productivist system dissociated the home from the farm. Agricultural-nutritional linkages are important in maintaining control and a sense of ownership over one's biogenetic heritage. Recipes and food traditions that involve certain grains, vegetables and fruits are being lost due to changes in the countryside, which goes hand in hand with the loss of plants itself.

The construction of a productivist agricultural framework however has followed a non-linear trajectory. This means that Indian government has enacted laws for farmers rights, access and benefit sharing from use of agro-biogenetic resources and created schemes, institutions, and mechanisms such as farmers awards to *recognize* and perhaps *strengthen* the control farmers have over their biogenetic resources. In this sense, it may be argued that the Indian state has played an ambiguous role, whose stance and action is neither weak nor strong, but strategic enough to be able to 'capitalize on their perceived weakness in order to render themselves unaccountable both to their citizens and to international institutions'.[4] While acknowledging the ambivalence in agricultural law and politics, I

[3] Sweta Saini and Ashok Gulati, 'Price Distortions in Indian Agriculture' International Bank for Reconstruction and Development & World Bank (2017), available at <https://icrier.org/pdf/Price_Distortions_in_Indian_Agriculture_2017.pdf>.

[4] Karoline Peschard, 'Farmers' Rights and Food Sovereignty: Critical Insights from India' (2014) 41/6 J Peasant Studies 1085, 1087; Shalini Randeria, 'The State of Globalization: Legal Plurality, Overlapping Sovereignties and Ambiguous Alliances between Civil Society and the Cunning State in India' (2003) 24 Theory, Culture & Society 1, 3.

argue in this section that rights of farmers vis-à-vis biogenetic resources have largely stood as *exceptions* to other mainstream rights. This has resulted in a fringe positioning of farmers with respect to management, innovation and conservation of biogenetic resources.

This is not an attempt to oversimplify the subject by mere reductionist analysis, rather an attempt to move beyond some already consistent policy goals such as attaining food security, increasing agricultural production, positioning India strategically within the global food system, and improving farmer welfare. At an even deeper level, the logic of value creation in agriculture stands on some core principles, which informs the state in taking certain actions geared towards its goals. It is therefore impossible and futile to list and explain India's numerous agricultural policies. Attention thus needs to shift to *how* the state's actions are explained, *why* they assume the form and shape they do, and what are the implications of this.

This chapter delves into the Indian context surrounding biogenetic resources. It is imperative to understand this context, based on which subsequent chapters argue that the current biogenetic legal framework is fragmented and limited, and therefore the food sovereignty approach could provide a more comprehensive and encompassing solution. This chapter begins with defining a 'farmer' in India, which will be used as a normative category for the rest of the thesis. Herein, the relevance of the term 'peasant' under the Peasants Rights Declaration 2018 is also explored to look for overlaps. The chapter then delves into the 1960 Green Revolution and its lasting legacy that has guided agricultural thinking, research and policymaking in India. The Green Revolution's productivist ideal is discussed, as to how even after India's quantitative food security needs were met, high production continues to be the most important goal. This chapter then moves into describing India's seed laws within this productivist paradigm to show how high-yielding varieties, including improved varieties, hybrids and genetically modified seeds have been replacing traditional varieties. This has led to a shift in control over seeds from the hands of farmers to other entities. In the end, this chapter highlights the twin themes of 'agrarian crisis' and 'depeasantisation'. Farmer distress owing to the low productivity crisis in India has led to a mass migration from rural to urban areas. Therefore, stronger biogenetic rights proposed in the subsequent chapters must speak to these major issues rather than be detached therefrom.

2. 'WHO IS A FARMER' VERSUS 'WHO SHOULD BE A FARMER' IN INDIA?

The term 'farmer' which has been comprehensively defined in the National Policy for Farmers 2007. This Policy incorporated the recommendations made by the National Commission on Farmers

(NCF) under the chairmanship of MS Swaminathan. The Commission wished to define not just the term more holistically, but also frame a more comprehensive policy that was 'not merely on agriculture'. [5] The 2007 Policy defines 'farmer' as:

> "*A person actively engaged in the economic and/or livelihood activity of growing crops and producing other primary agricultural commodities and will include all agricultural operational holders, cultivators, agricultural labourers, sharecroppers, tenants, poultry and livestock rearers, fishers, beekeepers, gardeners, pastoralists, non-corporate planters and planting labourers, as well as persons engaged in various farming related occupations such as sericulture, vermiculture, and agro-forestry. The term will also include tribal families / persons engaged in shifting cultivation and in the collection, use and sale of minor and non-timber forest produce.*"

The term farmer has been referenced in numerous legislations, welfare programmes and scheme, such as the PPFVRA. Yet it has been defined exhaustively only in the 2007 Policy. In theory, while this is the only definition that exists in the Indian legal and policy framework, in practice however, different legislations, programmes, and schemes while employing the term 'farmer', refer to only a small class of landed cultivators.[6] For example, the agricultural census categorises 'farmers' into different categories based on their landholding size – a marginal farmer is one who holds less than 1 hectare of land; a small farmer is one who holds between 1 to 2 hectares; a medium scale farmer holds 2-4 hectares; while non-landholding 'farmers' are categorised as landless labourers or agricultural workers. Numerous central and state legislations, programmes, and schemes apply to only to land owners, or benefits accrue to only those who are engaged in growing crops (rather than gathering forest produce or are pastoralists).[7] Another example is the 2019 PM-KISAN programme, which is the largest ever central government scheme aimed at providing financial assistance to small and marginal farmers, applies only to farmers who can prove their formal land rights along with other parameters such as citizenship.

The food sovereignty approach has used the term 'farmer' in varied contexts. However, its most clear and widely accepted normative category can be read within the definition of a 'peasant' in the

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[5] Ministry of Agriculture, Government of India, 'National Policy for Farmers' (2007) <http://extwprlegs1.fao.org/docs/pdf/ind169057.pdf>.

[6] Priscilla Jebaraj, 'Who is a Farmer? Government has no Clear Definition' *The Hindu* (New Delhi, 2 December 2019).

[7] Such as the Pradhan Mantri Krishi Sinchai Yojana (PMKSY), Paramparagat Krishi Vikas Yojana (PKVY), getting a Soil Health Card, Rainfed Area Development under National Mission for Sustainable Agriculture (NMSA), Pradhan Mantri Fasal Bima Yojana (PMFBY), National Agriculture Market scheme (e-NAM) and the National Food Security Mission (NFSM), <https://pib.gov.in/Pressreleaseshare.aspx?PRID=1562687>; under the Pradhan Mantri Kisan Samman Nidhi Yojana (PM-Kisan Yojana) all small and marginal farmers are promised up to Rs 6,000 p/a as minimum income support. Rs 75,000 crore (USD 10,000 million) has been allocated to the scheme, but here too, aims to cover 125 million farmers who are landed. <https://pmkisan.gov.in/>.

2018 Peasants Rights Declaration.[8] The category-creation of peasants or peasantries is an example of new human rights norms emerging out of pluralisation. Pluralisation is 'the phenomenon whereby human rights, as law and ideology, has increasingly recognized the needs of specific groups or categories within humanity as worthy of a specific human rights protection.'[9] Group-specific rights are born out the unique circumstances and experiences of its members that warrant a call for unique protections in the way of new human rights. Women's rights, child rights, and rights of indigenous peoples etc are examples of such pluralisation. The Peasants Rights Declaration has introduced a new category of right-holders. Along with an affirmation of the rights of peasants to enjoy already recognized and existing human rights, the Declaration calls for a reformulation of human rights of peasants specifically. Reformulation involves identifying barriers that group members, in this case peasants, face in realising affirmed rights, and then spelling out further obligations upon states such that group members may enjoy previously obstructed rights.[10]

There has been little consensus over what the term 'peasant' means, and who it includes. However, this is also the case for other forms of pluralisation, wherein, group definitions are heavily contested.[11] Within the food sovereignty movement, the term has been defined from historical, sociological, anthropological, activist, and normative perspectives.[12] The Peasants Rights Declaration describes a peasant as:

> "*Any person who engages or who seeks to engage alone, or in association with others or as a community, in small-scale agricultural production for subsistence and/or for the market, and who relies significantly, though not necessarily exclusively, on family or household labour and other non-monetized ways of organizing labour, and who has a special dependency on and attachment to the land*."[13]

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[8] United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas, UN General Assembly Resolution adopting the UNDROP, UN Doc. A/RES/73/165 (17 December 2018) [UNDROP].

[9] Frédéric Mégret, 'The Disabilities Convention: Human Rights of Persons with Disabilities or Disability Rights?' (2008) 30/2 HR Quart'ly 494, 495.

[10] Christophe Golay, 'Legal Reflections on the Rights of Peasants and Other People Working in Rural Areas', Background Paper, 1st Session of Working Group on the Rights of Peasants and Other People Working in Rural Areas (Geneva, 19 July 2013) 10-2, <https://www.ohchr.org/Documents/HRBodies/HRCouncil/WGPleasants/Golay.pdf>.

[11] Julia Bello-Bravo, 'When is Indigeneity: Closing a Legal and Sociocultural Gap in a Contested Domestic/International Term' (2019) 15/2 Int'l J of Indigenous Peoples 87.

[12] Marc Edelman, 'What is a Peasant? What are Peasantries? A Briefing Paper on Issues of Definition', prepared for the First Session of the Intergovernmental Working Group on a United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas (Geneva, 15–19 July 2013).

[13] UNDROP, art I.

The definition encompasses a wide range of people.[14] The economic vulnerability and disenfranchisement of peasants under the current economic system has been framed as rights-violations. This is premised on the dominant agricultural model leading to peasants facing discrimination in their rights to livelihood, food, health, environment and other social and economic rights. Peasants comprise 70 percent the population living in extreme poverty, and 80 percent of the most food insecure people.[15] They face multi-fold threats such as low standards of living, reduced spending in agriculture and rural development, insecure land tenures and displacement without adequate compensation etc.[16]

In India, the term peasant has been extensively used in academic traditions of anthropology, sociology, and human geography, however it is absent in Indian law. The Indian law and policy framework recognises socially, educationally and economically 'backward' sections of society, and accords a special status to tribal groups, but there is no specific category for the peasantry.[17] The term 'farmer' as defined by the 2007 National Policy coincides with the term 'peasant', with some exceptions. Upon comparing these definitions, the term farmer is found to be more wide-ranging as it goes beyond the ambit of 'agriculture' and 'attachment to land'. Farmers are not a socio-economic or cultural class of persons, whereas peasants are characterised by the economic disadvantage they face because of small-scale subsistence and/or market-oriented farming, and reliance on non-monetized labour. Activists and scholars who deny that peasants comprise a 'class' owing to legal and social scientific meanings underpinning the term,[18] have nevertheless admitted that peasants are an 'economically defined grouping'.[19] This is deliberately vague owing to the wide range of rights violations peasants face, that are diverse in terms of resources, economic sectors, and production relations.[20]

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[14] The definition consciously does not mention 'land', which usually features in many previous Via Campesina descriptions of peasants. Supra n 8, Edelman (2013) at 9-11.

[15] FAO, IFAD, UNICEF, WFP and WHO, 'The State of Food Security and Nutrition in the World 2019: Safeguarding Against Economic Slowdowns and Downturns' (FAO, Rome, 2019) pg vii.

[16] Christophe Golay, 'Negotiation of a United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas' Geneva Academy In-Brief No. 5, 2015.

[17] Indian Constitution, art 15 (1): The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them. Clause (3) allows the state to make special provisions for the advancement of any socially and educationally backward classes of citizens or for the Scheduled Castes and the Scheduled Tribes. The 103rd Constitutional Amendment introduced a new category of 'economically weaker sections.'

[18] Henry Bernstein and Terrence Byres, 'From Peasant Studies to Agrarian Change' (2001) 1/1 J Agrarian Change 1; Deborah Bryceson, Cristobal Kay and Jos Mooij, *Disappearing Peasantries: Land and Labour in Africa, Asia and Latin America* (Immediate Technology Publications 2000).

[19] Marc Edelman and Carwil James, 'Peasants' Rights and the UN System: Quixotic Struggle? Or Emancipatory Idea whose Time has Come?' (2011) 38/1 J Peasant Studies 81, 82.

[20] Ibid.

While ‘peasant’ includes agricultural workers and landless people, it fails to include multiple complex and evolving identities of contemporary rural families and communities.[21] The Peasants Rights Declaration, unlike the Declaration of the Rights of Indigenous Peoples[22], does not rely on self-identification. It therefore runs the risk of essentialising ‘peasantry cultures’ through its insistence on ‘people of the land’,[23] ‘traditional food cultures’[24] and ‘the existence of values and of a way of life that are based on household and community’[25]. Transnationally such attributes have helped different organisations and groups in finding common ground while advocating for the Declaration, however, at the rural level, these demands have not resonated with all actors. During the peasants rights negotiations, a meeting in 2014 meeting held in Geneva stands out as a unique instance that started a dialogue with pastoralists, nomadic people, fisherfolk, and agricultural workers, acknowledging that such rural constituencies’ concerns were not adequately reflected in the draft Declaration.[26] It is hence clear that food sovereignty rights are indeed more wide-ranging in terms of the policy imagination they conjure as well as the varied people and peoples it seeks to touch.

The term ‘farmer’ as per the 2007 National Policy includes but not limited to ‘peasants’ within the meaning of the Peasants Rights Declaration. The people that food sovereignty rights targets are ‘farmers’ under this broad definition but may also share some other socio-economic or cultural distinction such as a common tribal identity or ethnic identity. This thesis hence employs the term ‘farmer’ within the meaning of the 2007 Policy and seeks to advocate for the rights over their biogenetic heritage. The term peasant as long as it creates a socio-economic distinction of small farmers, agricultural workers etc is useful, however, within the Indian context, the term farmer with such a socio-economic qualification will still render a more wide-ranging meaning that peasant fails to convey. Yet the term peasant and peasant farmer are not absent from this thesis, because in some instances it is important to focus the discussion on a particular type of farmer, those that overlap with the category of peasants. The next section delves into the Green Revolution and its productivist legacy that has resulted in the loss of biogenetic control by Indian farmers.

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[21] Priscilla Claeys, ‘Food Sovereignty and the Recognition of New Rights for Peasants at the UN: A Critical Overview of La Via Campesina's Rights Claims over the Last 20 Years’ (2015) 12/4 Globalizations 452, 460.

[22] United Nations Declaration on the Rights of Indigenous Peoples, UN General Assembly Resolution adopting the UNDRIP, UN Doc A/RES/61/295 (2 October 2007) [UNDRIP].

[23] UNDROP, art 1.

[24] Ibid, art 3(5).

[25] Ibid, art 10(4) and (5).

[26] Marc Edelman, ‘Dispatch from Geneva: A Treaty on Transnational Corporations? A Declaration on Peasants’ Rights?’ *Allegra: A Virtual Lab of Legal Anthropology* (blog) (October 15, 2014).

3. GREEN REVOLUTION LEGACY

The 1960 Green Revolution is a watershed moment in Indian agricultural history. Despite its outreach being limited to some parts of India and not all, it managed to create an enduring skeleton for policymaking in the decades to come. Behind the background of the historical developments around the 1960s, this section highlights the role of the state in aggressively promoting and endorsing this rapid agricultural transformation. In doing so, the Indian state's core policy priorities of achieving national food security and self-sufficiency come to the fore. The 1991 economic liberalisation marks a second watershed, which built upon these national ambitions by steering policymaking towards growth and development through increases in yields. The construction of this productivist paradigm has only been possible upon the foundations of India's Green Revolution institutions. State policy has procedurally expressed itself through the infrastructure bequeathed by the Revolution, and substantively reflected a continual reiteration of the Revolution's 'success story'.

(a) TECHNOLOGY TRANSFER AND THE ENTHUSIAST INDIAN STATE

India's Green Revolution journey is one chapter among many in the global context. The standard history of the world's Green Revolution starts in 1941, when biologist Norman Borlaug at the International Maize and Wheat Improvement Centre (CIMMYT), a Rockefeller Foundation funded a research programme, developed 'miracle wheat' in 1954. This variety, along with some notable others (such as rice) was promoted and propagated by the Rockefeller and Ford Foundations and the US government across the world.[27] William Gaud, who coined the term 'Green Revolution' in 1968, described the agricultural transformation as a result of American philanthropic actions through research, funding and state-support for seeds, fertilizer and irrigation.[28] At a global scale, the adoption of the new technology more than doubled the agricultural production during 1960-85.[29]

India was the second Asian country after Philippines where the Green Revolution found a foothold. The eagerness of the first post-independence Indian government in fostering scientific research in agriculture was evident in the rapid establishment of India's brand-new agricultural research infrastructure. With funding from primarily the United States Agency for International Development (USAID) and the Ford and the Rockefeller Foundations, the first land-grant university contract was signed in 1952 to establish a university in Pant Nagar. This institute was modelled after the University of Illinois. Over 1952-65, 44 other agricultural universities, notably the Indian Agricultural Research

[27] Mark Dowie, *American Foundations: An Investigative History* (MIT 2001) 113.

[28] William Gaud, 'The Green Revolution: Accomplishments and Apprehensions' Speech given before the Society of International Development, 8 March 1968, Washington DC, 1.

[29] Gordon Conway, *The Doubly Green Revolution: Food for All in the Twenty-First Century* (Penguin 1997); Michael Lipton, 'Plant Breeding and Poverty: Can Transgenic Seeds Replicate the 'Green Revolution' as a Source of Gains for the Poor' (2007) 43/1 J Devp't Studies 31.

Institute (IARI) in New Delhi, were established in partnership with US universities.[30] Thousands of Indian scientists and agronomists were trained in a fashion resembling that of US universities. These institutes therefore not only played a pivotal role in the transfer of technology that ushered the Green Revolution, but also paved the way for agricultural innovation in the decades to come.

During the first decade that followed Indian independence, India experienced dire food shortages with an imminent threat of famine.[31] This served as a trigger for setting into motion the scientific research infrastructure in several of India's agricultural universities.[32] 'Miracle wheat' developed by Borlaug was tested under Indian conditions at Pant Nagar in 1962, followed by high-yielding rice in 1964. After being convinced that these seeds would exponentially increase the food production in India at a scale unparalleled in history,[33] the Indian government decided to import 18,000 tonnes of high-yielding variety (HYV) wheat, and within a very short time the seeds were distributed among farmers at subsidized rates for sowing during the 1965-66 wheat season.

The 1962-67 period saw a drastic overhaul and reform of Indian agricultural bureaucracy to facilitate the transfer and diffusion of the HYV seeds and agricultural technology. Several demonstration drives and awareness building campaigns via press, radio and cinema were initiated by the government to convince farmers to adopt the new technology.[34] The combined effects of successful high yields of HYV wheat and the government's role in aggressively promoting the diffusion of new technology led to a 10.4% increase in land area covered by HVYs within the first 10 years.[35] The use of HYV seeds set off a chain reaction, further research into other HYVs, high yielding technologies that

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[30] These universities include: Punjab Agricultural University (Ohio State University), Haryana Agricultural University (Ohio State University), University of Udaipur (Ohio State Unviersity), Madhya Pradesh Agricultural University (University of Illinois), Orissa University of Agriculture and Technology (University of Missouri), Maharashtra Agricultural University (Pennsylvania State University), Andhra Pradesh Agricultural University (Kansas State University) and the Mysore University of Agricultural Sciences (University of Tennessee). Albert H Moseman, *Building Agricultural Research Systems in the Developing Nations* (Agricultural Devp't Council, 1970) 110.

[31] SR Sen, 'Growth and Instability in Indian Agriculture' 21 Agricultural Situation in India 10: Between 1901-47 the annual food grain increased by a meagre 0.3 percent, while the Indian population rose by 5.79 percent. Even from a global perspective, in the 1960s, the person-to-agrarian land ratio was as dismal as one-fourth of the world population was dependent on only one-sixteenth of its agrarian land area.

[32] Govindan Parayil, 'The Green Revolution in India: A Case Study of Technological Change' (1992) 33/4 Technology and Culture 737, 744.

[33] C Subramaniam, *The New Strategy in Agriculture* (Vikas, 1979) 5.

[34] Ibid at 47.

[35] Government of India, Directorate of Economics and Statistics, 'Area under High Yielding Varieties Programme (HVP) All India 1966-67 and 1968- 69' (Ministry of Food and Agriculture 1969), Statements I and II; Dana G Dalrymple, *Development and Spread of High-yielding Wheat Varieties in Developing Countries* (USAID 1986) 34-7, 44-6; PK Mukherjee and Brian Lockwood, 'High Yielding Programme in India: An Assessment' in Richard T Shand (ed), Technical Change in Asian Agriculture (ANU Press 1966) 54-5.

matched consumer preferences were carried out.[36] The Green Revolution being projected as a story about technological triumph over hunger underwrites the role of the state in promoting and advancing its objectives.

(b) PROMOTING HIGH YIELDING TECHNOLOGY PACKAGES

The introduction of HYV seeds was only one component of a larger technological package that farmers adopted. 'Miracle seeds' did not produce high yields on their own, however, their responsiveness to chemical fertilizers ensured a quick maturation period, less sensitivity to local climatic factors, which therefore produced higher yields.[37] High yields and consequent high profits could be made only by the sowing HYVs and using superior plant nutrients, effective plant protection and adequate water supply.[38] Thus, the technological package comprised new seeds, chemical fertilizers, pesticides and irrigation.

During the 1960s, the use of chemical fertilizers was a controversial element in the package, as at the time India would have to import it in large quantities.[39] At the time, India's then Prime Minister, Jawaharlal Nehru cautioned against the propagation of chemical fertilizers. He believed that traditional farming that used organic manure would become less competitive; and even though chemical fertilizers were used by some large farmers prior to the 1960s, the active advancement of chemical fertilizers by the government[40] would mean that farmers would switch from one type to another, without truly knowing its permanency or irreversibility. These concerns were countered by a more technocratic and scientific approach promoted by the then Food and Agriculture Minister, C Subramanium who pushed for importing fertilizer while simultaneously incentivising and managing the domestic production.[41]

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[36] The IR-8, the most popular rice variety, for example, was found to be chalky and was not liked by consumers. Indians preferred the amber and white wheat varieties, while Mexican consumers preferred reddish varieties. Indian agricultural scientists developed new seeds to satisfy these tastes and cultural preferences while also retaining the genetic quality that guaranteed high cereal productivity. Indian scientists took feedback from the farmers and consumers seriously and developed different wheat lines that "performed better in the field and the kitchen". Uma Lele and Arthur A Goldsmith, 'The Development of National Research Capacity: India's Experience with the Rockefeller Foundation and its Significance for Africa' (1989) 37 Eco Devp't and Cultural Change 305, 327.

[37] Dana G Dalrymple, 'Adoption of High-Yielding Varieties in Developing Countries' (1979) 53/4 Agr History 704, 709.

[38] C Subramaniam, *A New Strategy in Agriculture: A Collection of the Speeches by C. Subramaniam* (ICAR, 1972) 31.

[39] DS Sidhu and JS Sidhu, 'Demand for Fertiliser and Foodgrains Production in India' in Vidya Sagar (ed), *Fertiliser Pricing: Issues Related to Subsidies* (Concept Publishing 1993) 115, 121.

[40] For the major shifts in Indian fertilizer policy around the Green Revolution years: Arthur Goldsmith, 'Policy Dialogue, Conditionality and Agricultural Development: Implications of India's Green Revolution' (1988) 22/2 J Developing Areas 189.

[41] Vijay Paul Sharma and Hrima Thaker, 'Demand for Fertilisers in India: Determinants and Outlook for 2020' (2011) 66/4 Ind J Agri Eco 638.

Subramanium, dubbed as the father of India's agricultural development policy, was the chief architect in embedding the goals and ideals of the Green Revolution in the institutional, academic and bureaucratic infrastructure that was built during the time and under his supervision. Aside from seeds and fertilizers, India invested heavily in irrigation. By 1980 around 25 to 33 percent of the agricultural land was covered under some form of irrigation.[42] Thus, by the 1980s funding institutions such as the USAID, Ford and Rockefeller Foundations, and India's own institutional apparatus wielded immense power in imposing a neoliberal technological package of policies.

(c) CONSTRUCTION OF THE GREEN REVOLUTION SUCCESS STORY:

The successes in increasing food production, solving a looming threat of famine, and empowering poor farmers are the core elements of the Revolution's dominant narrative. Claims put forth by some of its staunchest advocates have been countered on several grounds. These include the transformation of rural spaces, increasing inequalities, ignoring environmental impacts and ecological destructiveness, and subverting the role and knowledge of women, traditional farming communities and indigenous peoples. Therefore, arguments that make up the Green Revolution success story can be refuted on their own terms. However, at a even deeper level, such a debate falls prey to discussing the achievements or failures of the Green Revolution on the terms set by its defenders. To advance the discussion beyond mere myth-busting, a reconstruction of the socio-ecological context in which the agrarian transformation placed itself is needed. This involves identifying the motives and assumptions of the transformation and acknowledging their foundational role in shaping India's agricultural policy paradigm.

This transformative period saw the establishment of a certain kind of agricultural research system in India.[43] In the absence of such a system, HYV seeds and agricultural technology would have not found a footing in India. Furthermore, the high-yield driven successes of the Green Revolution formed the basis for agricultural research and knowledge creation through the medium of this system. It could therefore be argued that the Green Revolution is still unfolding,[44] as government psyche around agricultural policies have been founded on its legitimization.[45]

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[42] Mark Rosegrant and Peter Hazell, *Transforming the Rural Asian Economy: The Unfinished Revolution* (World Bank 2001) 10.

[43] Chandrika Prasad, *Elements of the Structure and Terminology of Agricultural Education in India* (UNESCO 1981) 4.

[44] Raj Patel, 'The Long Green Revolution' (2013) 40/1 J Peasant Studies 1, 2.

[45] For example, during a 2005 state visit, Prime Minister Manmohan Singh remarked: "We owe our green revolution to America… Now we can herald a second green revolution with American assistance". In a 2006 visit to India, George W Bush said: "The United States worked with India to help meet its food needs in the 1960s, when pioneering American scientists like Norman Borlaug shared agriculture technology with Indian farmers.

Quantitatively speaking, per acre per season food production almost tripled between 1960-90.[46] Farmers could sow 2 crops within one year instead of one, and the profitability of the cereals resulted in more land being deployed for cereals vis-à-vis other crops. This also increased the holdings of buffer stocks, thereby removing the need for foreign food imports and food aid. Self-sufficiency with respect to food staples was achieved, a goal pursued aggressively in the 1960-75 period.[47] National food security that remained a core objective prior to 1980, gave way to new core objectives such as increasing agricultural growth and development.

A rhetoric of assured agricultural profitability through high yields was a product of the Green Revolution reasoning. Growth and development pushed other policy agendas such as land reform and redistribution to a backseat because the technological transformation was to benefit all farmers irrespective of size of landholding.[48] Hence, a re-conceptualisation of agriculture in terms of its value addition in India's growth story became a focal point for policymaking. Productive capacities of agriculture became a unit of measurement of success or distress.

In the decades following the Green Revolution, HYVs and agricultural technologies had started being used to grow crops other than staple cereals, as well as in different regions outside North India (where the Green Revolution started and matured).[49] Agricultural productivity increased through complementary policies of price control, interventions and subsidisation within irrigation, fertilizer and pesticide sectors.[50] The 1991 economic liberalisation wherein many sectors of the Indian economy were deregulated left agriculture and the rural sector largely untouched. This was so, partly because liberalisation could not displace existing state-level regulations in agriculture, but more importantly, agriculture did not feature in the then government's conception of a growth-driven economy.[51] The lack of serious consideration for agriculture showed which sectors really mattered (and which did not) for

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Thanks to your hard work, you have nearly tripled your food production over the past half-century… By working together the United States and India will develop better ways to grow crops and get them to market, and lead a second Green Revolution (applause)…"

[46] Michael Lipton and Richard Longhurst, *New Seeds and Poor People* (OUP 1989) 1.

[47] During the 1950-60s India was a major recipient of food aid from the US; for the US, this disbursement was important as it sought a Cold War ally in India. However, in 1965, India suffered a late arrival of the monsoon and record low agricultural output, alongside the Second Indo-Pakistan War. This was followed by US-imposed trade sanctions on India, where all military and food assistance were cut off, creating a food emergency, and an urgent need for devising ways to become self-sufficient.

[48] PS Appu, 'Ceiling on Agricultural Holdings', Ministry of Agriculture, Government of India (1972).

[49] Kathryn Sebby, 'The Green Revolution of the 1960's and Its Impact on Small Farmers in India' (2010) Environmental Studies Undergraduate Student Theses, 10.

[50] Ashok Gulati and Sudha Narayanan, *The Subsidy Syndrome in Indian Agriculture* (OUP 2003) 53-7.

[51] Abhijit Sen, 'Economic Liberalisation and Agriculture in India' (1992) 20/11 Social Scientist 4, 5.

bolstering Indian economic growth.[52] It was only in 2000 that the central government rolled out its first 'National Agricultural Policy (NAP)' which was formulated to enhance the growth within this sector through efficient use of resources and conservation of soil, water and biodiversity.[53] The policy prioritised increasing cropping intensity, dissemination of agricultural technologies and improving rural infrastructure to gear towards higher agricultural growth and productivity.

The growth orientation of agricultural policymaking exacerbated by the 1991 liberation has created an agricultural productivist framework that prioritises national self-sufficiency with a constant push towards efficiency and a scaling up of grain production.[54] Simultaneously, the productivist framing of agriculture has been normalised by an international agricultural trade and food supply system that commodifies food, which has contributed towards its perpetuation.

4. PRODUCTIVIST FRAMING OF AGRICULTURAL POLICY

Agricultural policy in India has been shaped by a complex discourse over land, class, state power, technology, national and international relations, national and grassroots politics, culture, education, and ecology.[55] In this universe of policy articulations this section explores productivism as a consistent ideal or goal at the core of agricultural policymaking. Productivism was a natural offspring of the Green Revolution success story, wherein success meant high yields. This trend was accentuated through neoliberal agricultural policies that pushed for higher production and equated higher production with higher farmer income. India was not alone among several developing countries which saw a 'seismic neoliberal shift' in agricultural approaches.[56] In India these policies were expressed and implemented through the institutions born out of the Green Revolution.

From a broad perspective, laws, and policies across several categories such as land, irrigation, seeds, agricultural inputs, farmers wellbeing and livelihood etc make up the substantive content of agricultural legal and policy framework. Procedurally, Indian agricultural policy is formulated and executed by an intricate web of institutions. While constitutional power to legislate upon agriculture

[52] Narsimha Reddy and Srijit Mishra, 'Agriculture in the Reforms Regime' in Reddy and Mishra (eds), *Agrarian Crisis in India* (OUP 2009) 3-13.

[53] Government of India, 'National Agricultural Policy' Press Information Bureau, 1 July 2003, available at <http://pib.nic.in/infonug/infmore/infoagri.html>.

[54] Ishwari Bisht et al, 'Farmers' Rights, Local Food Systems, and Sustainable Household Dietary Diversification: A Case of Uttarakhand Himalaya in North-Western India', (2017) 42/1 Agroecology and Sustainable Food Systems 77.

[55] Henry Bernstein, *Class Dynamics of Agrarian Change* (Fernwood 2010).

[56] Supra n 44, Patel (2013) at 31.

rests with states, the central government develops national policies, enacts laws and introduces model legislations for agriculture. Central-state dynamics often suffer from problems of fragmentation, overlapping and ambiguous allocation of responsibilities.[57]

Within this complex landscape, the Indian government has tried to realise the productivist ideal by controlling and managing some core sectors over others. When trying to increase agricultural productivity, the government has managed prices of agricultural produce, controlled marketing channels, facilitated the use and production of farm inputs at subsidised prices and regulated trade (import and export policy) of agricultural inputs and produce.[58]

(a) PRODUCTIVISM THROUGH MARKETING REGULATIONS

Major structural reforms in agricultural bureaucracy, establishment of foreign aided and partnered research institutions and market adjustments geared towards increasing crop productivity were made in 1965 to control the prices and distribution of food grains. Institutions such as the Food Corporation of India (FCI) and the Commission for Agricultural Costs and Prices (CACP), previously known as the Agricultural Prices Commission were set up. The FCI was to calculate prices of food while the CACP would buy up surplus grain from producers at those prices, or release food stocks whenever needed. These 2 organisations are the foundational bodies that sustain India's food security efforts that rely on providing food subsidies to disadvantaged sections of society, as they control the demand and supply of agricultural produce. Further, financial institutions focusing on mobilising and managing agricultural finance were also established, such as the National Bank for Agriculture and Rural Development (NABARD) in 1982 and several regional banks.

Agricultural pricing is closely linked to marketing and is a highly controlled component of agricultural policy. This includes public procurement, storage, and distribution of food grains under the Agricultural Produce Marketing Committee Acts (APMC Acts in different states in India)[59] and the Essential Commodities Act 1955 (ECA). The ECA gives the power to the central government to make wide ranging orders pertaining to a list of essential commodities notified by different states. Commodities under the Act are in fact commodity groups that can be interpreted widely.[60] Although

[57] OECD, 'Agricultural Policies in India', OECD Food and Agricultural Reviews (July, 2018) <https://www.oecd-ilibrary.org/agriculture-and-food/agricultural-policies-in-india_9789264302334-en>.

[58] Ibid at 151.

[59] The central government has also published the Agricultural Produce Marketing (Regulation) Model Act (APMR Act). State legislation regulating their agricultural markets may be termed as APMC Acts or APMR Acts, or both.

[60] Prior to liberalisation, the number of essential commodities under the ECA stood at 70, however, by 2006, the list comprised 7 items: (i) drugs; (ii) foodstuffs including edible oilseeds and oils; (iii) fertiliser, whether inorganic, organic or mixed; (iv) petroleum and petroleum products; (v) hank yarn made wholly from cotton; (vi) raw jute and jute textile; and (vii) seeds of food-crops and seeds of fruits and vegetables, seeds of cattle fodder, and jute

since liberalisation, the ECA has been less pervasive, its existence makes for the foundation for today's agricultural production and marketing mechanisms.

The APMC Acts allow state governments to control agricultural markets in varying degrees. The intention behind maintaining a regulated market is to reduce marketing costs for the producer and limiting the scope for malpractices. Under these Acts, states set up wholesale markets, establish entry requirements, and the presence of a mandatory public market prevents private parties from establishing monopolies.[61] While the ECA can be invoked throughout the entire value chain from producer to consumer, the APMC Acts in most cases apply only to the point of first sale from the producer.[62] The combined effect of these Acts is highly differentiated across states as each has their own marketing provisions and implementation capacities. Even within any one state, there is no unified agricultural market system leading to a multiplicity of licences, fees, rules, and governing institutions. Since 2017, a substantial quantum of sales taxes and fees have been clubbed under Goods and Services Tax (GST) which prescribes a nationally uniform rate for each product. This is a big step towards implementing the recently introduced single national agricultural market (NAM).[63] Even the electronic national agricultural market (E-NAM) is a highly regulated market that places strict entry requirements on the online platform for buyers of agricultural produce.

(b) PRICE CONTROL FOR AGRICULTURAL PRODUCE

The ultimate policy instrument in the hands of the government, which triggers government decisions of purchase, storage and sale of agricultural produce is the setting of a minimum support price

seeds. Foodstuffs here could mean a wide-ranging set of items, thereby empowering the government to pass control orders on pricing/distribution/storage/marketing etc of any item that could be interpreted within its meaning.

[61] Government of India, 'Organisation of the Commission for Agricultural Costs & Prices', Commission for Agricultural Costs and Prices, Ministry of Agriculture and Farmers Welfare (2017), available at <http://cacp.dacnet.nic.in/content.aspx?pid=32>.

[62] Not all wholesale markets are primary markets, i.e. some wholesale markets, usually those in cities and large commercial centres, are secondary markets, where transactions take place between different traders and market intermediaries. The fragmentation of markets, even within a state, is considered to hinder the free flow of agricultural commodities from one market area to another. Government of India, 'National Agricultural Market', Small Farmers' Agribusiness Consortium, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare (2017), available at <http://www.enam.gov.in/NAM/home/about_nam.html#>.

[63] In pursuance of the creation of a national agriculture market (NAM), the central government in 2016 approved the creation of a pan-India electronic trade portal, integrating APMC markets across the country. In 2017, the central government rolled out the model Agricultural Produce and Livestock Marketing (Promotion and Facilitation) Act, 2017 (APLM Act), as latest reformulated marketing act. The model APLM Act includes provisions that aid in increasing the density of different types of wholesale agriculture markets, i.e. primary, secondary and terminal markets. The model APLM Act seeks to end the monopoly of APMCs by allowing more players to create markets and ensure greater competition.

(MSP). An MSP was first announced for rice in 1965, and since then the pool of products that have an MSP has gradually increased over the years. The central government, upon the recommendation of the CACP, announces an MSP for several major crops in the beginning of each cropping season (*kharif* crops: grown between July-October and *rabi* crops: grown in October-March).[64] The rise and spread of agricultural technology and production since the Green Revolution owes much to the marketing and pricing policies such as the remunerative security provided by an MSP.

In a pre-MSP era, a *free* market existed where a farmer could sell their produce to anyone who offered a good price. This was inefficient, as farmers incurred high transaction costs, but it was also exploitative, given that private buyers could squeeze large profit margins from farmers in a short window of the post-harvest.[65] The setting of an MSP assured farmers that their produce would be procured at a fixed price, and this encouraged them to produce more. This incentive to produce more ensured a sustained increase in agricultural productivity. The crops listed by the CACP that have an MSP are more likely to be grown by farmers as there is an assurance of purchase. Until recently millets were not part of the MSP system. Since their inclusion there is a increased uptake in millets among farmers; which goes to show the power and outreach of the MSP system. Farmers lack the incentive to grow their own traditional varieties as agricultural markets via the MSP and government procurement targets only a few crops over others. High production is the only measure in this system, as other factors such as water conservation, diverse cropping, cultivation of landraces or the low use of chemical inputs is not rewarded.[66] The marketing mentality that the MSP generates among farmers on the ground is arguably the third component to the complementarity of the centrally controlled CACP and the FCI. In recent years, the government's pricing policy has been criticised for being an obstacle to *free* trade among private buyers and sellers in the agricultural market.[67] Different states have experimented with the MSP to pursue different goals, while some have completely abolished the idea of an MSP[68], and

[64] CACP, Ministry of Agriculture and Farmers Welfare, Govt of India, 2019-20 MSPs, available at <https://cacp.dacnet.nic.in/ViewContents.aspx?Input=1&PageId=36&KeyId=0>.

[65] Devinder Sharma, 'Agriculture in 'Terrible Crisis': Indian Farmers are Struggling to Survive' (GRAIN Laws and Policies Blog, 24 Aug 2014), available at <https://www.grain.org/bulletin_board/entries/4993-agriculture-in-terrible-crisis-indian-farmers-are-struggling-to-survive>.

[66] Rudresh Sugam, Poulami Choudhury and Jennifer Hartl, 'Promoting Neo-Traditional Agriculture to Achieve Food and Livelihood Security, and Climate Change Adaptation', Policy Brief (July, 2016), Council on Energy, Environment and Water, <https://www.ceew.in/publications/promoting-neo-traditional-agriculture-achieve-food-and-livelihood-security-and-climate>.

[67] Supra n 57, OECD (2018) at 165: as the CACP does not "take into account the cost of production, overall demand-supply, domestic and international prices, inter-crop price parity, terms of trade between agricultural and non- agricultural sectors, the likely impact of the price policy on the rest of the economy, while ensuring rational utilisation of production resources like land and water."

[68] For example, Bihar's abolishment in 2006 led to a steep decline in farmers' income due to selling at distress price over many seasons.

others have pushed for legislation that creates a 'right to MSP' for farmers[69]. Such a diverse attitude towards the MSP, and more broadly, towards the government's involvement and support in agricultural marketing is reflective of farmers' reliance on the same. Farmers that rely on government procurement wish for its perpetuation while others who rely on private contracts are not touched by government procurement.

(c) POLICIES ENCOURAGING USE OF AGRICULTURAL INPUTS

Control and artificial reduction of input costs is another tightly controlled policy sphere where the government has consciously promoted highly mechanised and input-intensive agriculture. Agricultural producers have made significant gains as inputs have been made available at low prices since the advent of the Green Revolution. One of the major ways of controlling input costs are input subsidies that the government provides for fertilisers, electricity, and water.[70] Other subsidies that have recently been added to the mix are seeds, credit and crop insurance.

To ensure the timely availability of fertilisers at affordable prices, the government controls the price of fertilisers as well as facilitates its production and distribution through several policies.[71] For example, domestic urea manufacturers are provided a subsidy to cover any loss incurred from selling urea at a fixed price. For other types of fertilisers like phosphatic and potassic fertilisers, the government provides subsidies for their constituent materials such as nitrogen, phosphate, potash, and sulphur.[72] There are transport subsidies via railway and road transportation to reduce the cost of distribution of fertilisers.[73]

Electricity is another major input that is used by most medium to large farmers for powering pumps for irrigation water. Under the central Ministry of Power, statutory bodies such as the Central Electricity Authority, several regulatory commissions and transmission utilities and autonomous

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[69] *Raghuvar Dutt* v *State of Uttarakhand and ors*, Writ Petition No.79 of 2018; other High Courts have also suggested that farmers should have a legal right to MSPs (Madhya Pradesh 2018, Punjab and Haryana 2019).

[70] Morten Jerven, 'The Political Economy of Agricultural Statistics and Input Subsidies: Evidence from India, Nigeria and Malawi' (2013) 14/1 Journal of Agrarian Change 129.

[71] Fertiliser has been classed as an essential commodity under the ECA. The Department of Fertilizers in the Ministry of Chemicals and Fertilizers ensures constant production of fertilizers and coordinates its distribution at with state governments. The network of supply comprises public co-operatives, private sector or marketing federations. The Department of Fertilizers administers ten fertiliser manufacturing enterprises, nine in the form of 'public sector undertakings' and one multi-state co-operative society.

[72] Supra n 44, Patel (2013) at 7-9.

[73] Ashok Gulati and Pritha Banerjee, 'Rationalizing Fertiliser Subsidy in India: Key Issues and Policy Options', Working Paper 307, Indian Council for Research on International Economic Relations, available at <(ICRIER), http://icrier.org/pdf/Working_Paper_307.pdf>.

bodies[74] make up the electricity governance infrastructure for agriculture. The rates that the electricity boards charge to agricultural customers is considerably lower than its general charges.[75] In some states the electricity for agriculture is free.[76] This is reflected by the revenue shares from agriculture in the total revenue at different State Electricity Boards. However, a low price of electricity does not guarantee a steady and quality supply. Power interruptions are common, especially in areas where electricity subsidies have been thought to make the greatest impact.

With respect to water also, water for irrigation is supplied at a subsidised rate. The Central Water Commission under the Ministry of Water Resources initiates schemes for irrigation and is involved in building and operating irrigation infrastructure. Investments and sheer size of irrigation projects increased drastically within 2 decades reflecting a clear productivist shift in thinking.[77] Electricity subsidies are closely linked to water use, as electricity in farms is primarily used for irrigation. The implementation of programmes meant to increase the irrigated area, increase water efficiency and improve irrigation management is riddled with many problems.

The provision of seeds, access to agricultural credit, machinery and other miscellaneous inputs are regulated in pursuance of Green Revolution values. First, many seeds are listed as essential commodities under the Essential Commodities Act 1955 (ECA), allowing the government to exercise control over their development, production, and distribution. Second, since the 1960s, policies governing seeds have taken the shape of legislation, control orders, schemes, missions, programmes or the creation of certain institutions. A plethora of such policy articulations encourages farmers to use certified seeds, spells out a relationship between the government and the National and State Seed Corporations, offers pre and post-harvest machinery at subsidised rates, offers farm credit under the banner of the NABARD and runs several programmes for crop insurance. While these 'farmer-friendly' schemes rolled out by successive governments etc tackle several issues, they aid in the growth and progression of agriculture towards higher growth and production, achieving a higher share in national gross domestic product (GDP), upscaling and increasing farmer income through productivity and so on.

Within this complex web of agricultural policymaking, a general direction of agricultural policy in India is perceptible even if this trajectory has not been strictly linear. As described in the previous

[74] Rural Electrification Corporation provides financial assistance in the form of loans for rural electrification.

[75] Government of India, *Annual Report (2015-16) on the Working of State Power Utilities & Electricity Departments*, Power and Energy Division, Planning Commission, available at <http://planningcommission.nic.in/reports/genrep/rep_arpower0306.pdf>.

[76] North-Eastern states and high agricultural producing states like Punjab and Tamil Nadu. Ibid.

[77] Vasudha Chhotray, *The Anti-Politics Machine in India: State, Decentralization and Participatory Watershed Development* (Anthem 2011) 55.

chapter, the Indian government has enacted laws for farmers rights, access and benefit sharing from use of agro-biogenetic resources and created schemes, institutions, and mechanisms such as farmers awards to *recognize* and perhaps *strengthen* then control farmers have over their biogenetic resources. In this sense, it could be argued that the Indian state has played an ambiguous role, whose stance and action is neither weak nor strong, but strategic to be able to 'capitalize on their perceived weakness in order to render themselves unaccountable both to their citizens and to international institutions'.[78] However, while conceding some quantum of ambivalence, it is clear that overall policymaking follows productivism, and rewards high yields over other efforts. Even after the Green Revolution achieved national food security and made India a food-surplus nation, the focus remains on producing more, rather than doing so in an ecologically sustainable fashion. India's agricultural law and policy complex does not effectively reward traditional farming, conservation of traditional crops, and agroecological farming. Therefore, rights of farmers vis-à-vis biogenetic resources cannot help but stand as exceptions to mainstream rights, as they do not fit neatly within the productivist paradigm. Farmers who manage their biogenetic resources sustainably remain on the fringes unless they can prove their success within this paradigm. High yields, high incomes through organic farming and creation of the healthy food market are ways in which farmers secure such a space. However, if one cannot show for such success, then they have been largely ignored, as no intrinsic value is attached to the conservation, sustainable use and rights over biogenetic resources. The next section analyses the effects of the post-Green Revolution productivist paradigm construction on farmers and biogenetic resources.

5. Indian Seed Law within a Productivist Agricultural Context

(a) Seed Laws as a Crucial Component of Biogenetic Resource Law in India

An increased emphasis over productivism within agriculture has meant that farmers have been increasingly adopting improved and hybrid varieties, and therefore, been shifting away from cultivating their own traditional seeds. The Indian case study is not unique in this regard, as the loss of seeds through farmers' dispossession is a global trend, that has gained traction across different countries.[79] India's seed laws within a broader political economy of seeds in many ways perpetuate seed loss and

[78] Karoline Peschard, 'Farmers' Rights and Food Sovereignty: Critical Insights from India' (2014) 41/6 J Peasant Studies 1085, 1087; Shalini Randeria, 'The State of Globalization: Legal Plurality, Overlapping Sovereignties and Ambiguous Alliances between Civil Society and the Cunning State in India' (2003) 24 Theory, Culture & Society 1, 3.

[79] Supra n 15, FAO Report (2019) at xxxvii; Hope Shand, 'Biological Meltdown: The Loss of Agricultural Biodiversity' (Rural Advancement Foundation International (RAFI) 2017) <http://www.reimaginerpe.org/node/921>.

are not geared towards promoting agroecology through seed saving. The Seed Act of 1966 was the first statute focusing on seeds; it addresses issues of seed quality. Legislated amidst the Green Revolution, this statute regulates the quality of only seeds notified by the Central Government;[80] that is, seeds developed and released by public agricultural institutes and universities. This Act established administrative bodies that at the time, were meant to regulate, through compulsory certification and labelling measures, an emerging hybrid seed industry. While this Act still holds force for notified seeds, its non-operability over privately developed seeds is its biggest limitation.

In 1977, the National Seed Programme (NSP) was launched by the Central Government to develop high-yielding seeds for several crops within India's agricultural mix. This was a three-phased development project funded by the World Bank to improve hybrid production within India's agricultural research institutes.[81] India's National Seeds Corporation (Beej Nigam) and State Seeds Corporations that have been pivotal in the development of the seed industry were established under the NSP. Later in 1983, the Seed Control Order created a system of granting commercial licensing for private seed dealers,[82] followed by the de-reservation of the seed sector allowing private players to produce and market seeds in 1987.[83] At the same time, seed and biotech companies were classified as 'core industries' by the government to allow for greater investment and growth in the sector. Yet it was the New Seed Policy 1988 that ushered the most drastic changes in the seed sector. The Policy opened Indian agriculture for foreign investments and trade by allowing imports of seeds for cereal, pulses and oilseeds, vegetables, horticultural and ornamental plants.[84] The 1988 Policy read with the New Industrial Policy 1991, that opened the seed industry for foreign direct investment, paved the way for a massive expansion of India's seed sector.

Private companies, multinational enterprises, and public-private participatory research initiatives have since made significant inroads in India, especially with respect to first-generation

[80] The Seed Act 1966, sections 5 and 6: 'Power to Notify Kinds of Varieties of Seeds' and 'Power to Specify Minimum Limits of Germination and Purity, etc'.

[81] National Seed Project I, II and III were phases in the National Seed Program funded by the World Bank to develop 'high-quality' seed in the Indian Council of Agricultural Research, <https://projects.worldbank.org/en/projects-operations/project-detail/P009703>.

[82] Seed Control Order 1983, GSR 932 (E) (In exercise of the powers conferred by section 3 of the Essential Commodities Act, 1955).

[83] Shri Chaudhury, 'IDRA and Industrial Licensing with Rules, Forms, Notifications, Press Notes, Guidelines, Policies' (Bharat Law House 1987).

[84] Deepthi E Kolady, David J Spielman and Anthony Cavalieri, 'The Impact of Seed Policy Reforms and Intellectual Property Rights on Crop Productivity in India' (2012) 63/2 J Agricultural Economics 361.

hybrids.[85] These are seeds bred by cross-pollinating 2 genetically diverse crops, whose yields are higher than either parent, and whose second-generation seed if saved and reused usually renders a lower yield than the first-generation. Resultantly, one must purchase such seeds every year to maintain a high yield. Since the Seed Act 1966 does not apply to privately bred seeds, imported seeds are not regulated under any seed-specific law. They are regulated as any other commodities requiring truthful labelling and purity standards.[86]

(b) POLITICAL ECONOMY OF SEEDS – A CASE OF FARMER ESTRANGEMENT

Today the development and diffusion of seeds in India is chiefly controlled by public bodies such as the Indian Council of Agricultural Research (ICAR), 38 agricultural research universities across different states, 415 Farm Science Centres (KVKs) to demonstrate and distribute seeds, and central and state seed corporations (*Beej Nigams*) that develop, check, mark, certify and distribute seeds; and a highly competitive and profitable private seed industry comprising over 700 companies in the formal sector as of 2022.[87] In the informal space, a plethora of farmers associations, local companies, and seed systems of farm-saved, selected and exchanged seeds are involved in seed production and supply, and some of these entities and systems function with governmental financial support. The overall share of private hybrid seeds vis-à-vis open pollinated traditional seeds is 70-88 % in India.[88] Across major crops, hybrids comprise shares between 7-8% in paddy, 60-70% in maize, 90% in jowar, bajra and some oilseeds such as sunflower, 95% in cotton, and over 80% in vegetables such as tomatoes, capsicum, okra, chillies, cauliflower, gourds, brinjal and carrots.[89] The current value of the private seed industry is estimated at approximately 4.9 billion USD, which includes valuations of invested private equity,

[85] Carl E Pray and Bharat Ramaswami, 'Liberalization's Impact on the Indian Seed Industry: Competition, Research, and Impact on Farmers' (2001) 2/3-4 Int'l Food and Agribusiness Mag't Rev 407.

[86] These labelling standards are imposed by the National or State Seed Corporations, and not any governmental agricultural agency.

[87] National seed Association of India (NSAI), 'Proposal on Capacity Building Program Initiatives for Indian Seed Industry', Briefing Note submitted to NABARD as part of Atma Nirbhar Bharat Program (17 November 2022) <http://nsai.co.in/storage/app/media/uploaded-files/Detailed%20note%20for%20NABARD.pdf>; see also: Pepijn Schreinemachers et al, 'The Contribution of International Vegetable Breeding to Private Seed Companies in India' (2017) 64 Genetic Resources and Crop Evolution 1037, 1038-9.

[88] For studies conducted over the past: Pramod K Agrawal, 'Seed Regulations in Relations to Seed Industry Development in India' in David Gisselquist and Jitendra Srivastava (eds), *Easing Barriers to Movement of Plant Varieties for Agricultural Development* (World Bank 1997) 105–111; Rajeshwari Raina et al, 'Agricultural Innovation Systems and the Coevolution of Exclusion in India' [Working Paper SIID 07/2009]; Rajshree Chandra, 'Farmers' Rights in India Globally Sui Generis' [2016] 6 South Asia Chronicle 119, 129-131.

[89] IMARC Group, 'Report: Seed Industry in India: Market Trends, Structure, Growth, Key Players and Forecast 2021-2026' (2021), <https://www.imarcgroup.com/seed-industry-in-india>; Ken Research, 'Report: India Seed Industry Outlook to FY'2018 - Rapid Hybridization in Vegetables, Corn and Rice to Impel Growth' (2013) <https://www.kenresearch.com/agriculture-and-animal-care/seed/india-seed-industry-research-report/372-104.html>.

seed technology, supply chains and intellectual property.[90] These figures also include scenarios where private firms mass produce and sell seeds that were previously researched and developed by the public bodies. The growth of the private sector has changed the landscape with respect to not only the choice of seeds and crops, but also the direction of research and development in seeds. Prior to 1988, public bodies carried out seed research and development, however today approximately 80% of all private firms have their own research facilities and the majority of seed development has shifted into private hands.[91]

6. INDIAN AGRARIAN CRISIS AND DEPEASANTISATION TRENDS

There are two interrelated factors that have been plaguing Indian agriculture which have led to slowly deteriorating the quality of biogenetic access, control, and knowledge among farmers. One, India has been suffering from a slow yet acute agrarian crisis, that is, a sharp decline in production and profitability in farming over the past decades. This has led to pervasive farmer distress, where farmers are pushed to the edge of survival amidst the crisis. Farmer indebtedness has among other things led to thousands of farmer suicides in some parts of India. The gains made during the 1960 Green Revolution remain a standard of measure, and these have been petering out owing to many factors including economic liberalisation, rising costs of inputs, decline in landholding sizes, and labour problems.[92] However, pushing against ecological limits is the most profound reason behind the crisis.[93] The Green Revolution model of agriculture has led to acute groundwater depletion, destruction of soil organic matter, release of toxins, chemicals, and pollution and much more. The ecological underpinnings of the agrarian crisis are known to the government's agricultural administrative machinery, as well as cultivators across the country that are experiencing the crisis first-hand.[94] Yet law and policy has not adequately engaged with the ecological dimension of ongoing crisis, but rather it has worked to perpetuate the Green Revolution model that rewards high-yields and input-intensive agriculture over all else.

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[90] Ibid.

[91] Supra n 84, Kolady; supra n 87, Schreinemachers et 1040; Radheshyam Jadhav, 'Private Sector's Share in India's Seed Industry Expands to 65 Per Cent' *The Hindu Business Line* (3 July 2021).

[92] Narasimha Reddy and Srijit Mishra, *Agrarian Crisis in India* (Oxford University Press 2010) 2.

[93] Deepak Mishra, 'Agrarian Crisis and Neoliberalism in India' (2020) 13/2 Human Geography 183.

[94] Bharat Bhushan Tyagi and Richa Kumar, 'The Future of Farming: To What End and For What Purpose?' (2020) 25/2 Science, Technology & Society 256.

The second factor is depeasantisation. At a macro level, low agricultural profitability over the past decade has led to several issues, one among them: thousands of young people are opting out of agriculture as a profession. The average age of a farmer in India 51 years.[95] The agricultural 'brain drain' has been observed across states of India.[96] This raises an important question of who are the current knowledge-bearers of biogenetic resources, and who wo will bear this knowledge in the future? Surveys conducted analysing rural youth's aspirations for what they wanted to become in the future show that merely 1.2% wished to join agriculture.[97] While India is not alone in a general observable trend of aging farmers across the world, from a perspective of knowledge-bearing, the loss of a generation has and will translate into loss of knowledge itself.

Low agricultural profitability has had a profound impact on agricultural labour. To fill this youth vacuum among cultivators, agricultural labourers that are usually landless themselves and are employed under vulnerable and temporary conditions are brought in. Long-term decisions regarding protecting biogenetic resources cannot be taken by this kind of labour or absentee landlords. A study shows that until 2011 the number of cultivators declined by 10 percent (14% women farmers and an even higher percentage across non-main cultivators). On the other hand, the number of agricultural labourers has risen by 31 percent in the same period.[98] Further, 76 percent of farmers surveyed did not wish to remain in agriculture.[99]

(a) FARMERS AS INNOVATORS: NO NEW KNOWLEDGE CREATORS

The plant varieties registration data is one indicator among others in assessing the role of farmers as innovators and knowledge-bearers with respect to plant varieites. Innovation is born out of existing knowledge, as one can breed new varieties of crops only when the *original* resource and surrounding knowledge is available to build upon. India's *sui generis* farmers' rights legislation: the PPVFR Act 2001, recognizes farmers as plant breeders and offers them an opportunity to register their varieties. However, registration data at the PPVFR Authority shows that farmers play a very small role as innovators and knowledge bearers in the subject. The number of applications and conversions to registered variety certificates is proportionately very low.

[95] Centre for the Study of Developing Societies, 'State of Indian Farmers: A Report', CSDS 2014.

[96] Richard Mahapatra, 'Farmers Ageing, New Generation Disinterested: Who Will Grow our Food?', *Down to Earth* (24 July 2019).

[97] Pratham, Annual Status of Education Report 2017: Beyond Basics (Rural) (2018) 8-9.

[98] Nitin Gupta, 'Decline of Cultivators and Growth of Agricultural Labourers in India from 2001 to 2011' (2016) 12/2 Int'l J Rural Management 179.

[99] Ibid.

First, a large section of farmers cannot navigate the PPVFRA procedure; that is, they are either unaware of the Act or their applications fail to meet the distinctness, uniformity and stability (DUS) standards prescribed under the Act.[100] Even though farmers comprise the largest group of applicants (between 45-50% across the years and different applications categories), the proportion of acceptance of their applications (7-8% of all applications) compared to the acceptance ratio of other parties such as public/private research organizations or biotech companies is considerably lower.[101] Up till 2022, farmers submitted the highest number of applications and were issued the lowest number of certificates.[102] Since 2015, the share of certificates issued has been on a glacial rise. In any case, successful farmers who register their varieties comprise a very miniscule proportion of all farmers in India.

Alongside this the Indian seed market has slowly transformed over the past decades with the increase in private sector share in seed production and concurrent decrease in varietal production of seed by farmers.[103]. A majority section of the Indian seed market comprises high-yielding hybrid seeds for which farmers pay (price including royalty for the IP) every season with restrictions on saving, re-planting, and selling of such seeds.[104] Farmers' retention and production of knowledge pertaining to biogenetic resources is dependent on their ability to develop, improve and adapt such varieties according to changing conditions. However, with the increasing share of hybrids, that are protected under the PPVFR Act, farmers have little incentive to use traditional varieties or develop new ones that take several seasons and a trial-and-error strategy. Furthermore, India's research infrastructure has developed in the direction of the neoliberal model of agriculture shrinking the space for knowledge borne by farmers.[105] In this vein, plant breeders' rights under the PPVFR Act must be seen as a part of the agricultural bureaucracy and research infrastructure of the state. It centralizes the function of recognition and rewarding innovation, and thus monopolizes knowledge-creation.

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[100] Mrinalini Kochupillai, 'India's Plant Variety Protection Law: Historical and Implementation Perspectives' (2011) 16/2 J IPR 88, 93.

[101] PPVFR Authority, List of Registered Certificates Issued, updated 28 February 2022 <http://www.plantauthority.gov.in>. Previous lists of applications and certificates issued also available under 'Application Details'.

[102] Data analysed using PPVFR Annual Reports and Journals <http://www.plantauthority.gov.in>.

[103] Ken Research, 'Report: India Seed Industry Outlook to FY'2018 - Rapid Hybridization in Vegetables, Corn and Rice to Impel Growth' (2018) <https://www.kenresearch.com/agriculture-food--beverages/agriculture/372-104/India-Seed-Industry-Outlook-to-FY2018.html>.

[104] Rajshree Chandra, 'Farmers' Rights in India Globally Sui Generis' [2016] 6 South Asia Chronicle 119, 129-131.

[105] B L Manjunatha et al, 'The Legal Protection of Public and Private Plant Varieties in India: A Comparative Analysis' (2013) 4/7 J Bioremediation and Biodegradation 1-5.

Aside from the PPVFR Act, the National Biodiversity Authority (NBA) created under the Biological Diversity Act 2002 tangentially regulates access and transfer of IPR in agrobiodiversity. The Traditional Knowledge Digital Library (TKDL) is a government research institution dedicated to the protection and management of traditional knowledge. However, in both these cases, the NBA and TKDL focus on misappropriation by foreign countries. While such centralisation of knowledge has indeed proven as a safeguard against biopiracy to a certain extent, the NBA and State Biodiversity Boards (SBBs) are exceedingly lenient with Indian applicants who seek biological resources.[106] Benefit-sharing between applicants and farmers as knowledge holders is a grey area under the NBA, as local communities do not have any automatic right to benefits, as they depend on the granting authorities to channelize funds to the communities. Thus, the state is made the repository of knowledge vis-a-vis local knowledge holders. The PPVFRA and the BDA both reflect a strong centralised control-based framework.[107]

(b) Marginalised Farmers not Fitting within the State's Metrics of Agricultural Success

Years of productivist-focused agricultural policymaking following the Green Revolution have defined the metrics of what comprises agricultural success. The use of high yield variety (HYV) seeds, chemical inputs, and mechanisation to increase production have characterised what successful agriculture should look like.[108] The combination of these elements within a good business model leads to higher farm incomes is the standard understanding of how things work. In contrast, 'traditional' farming has been understood as inefficient and unsuccessful in generating substantial incomes. Agricultural policies have felt the need to address the plight of these farmers by helping them switch to more market-oriented farming practices. Recently, despite some positive strides in the direction sustainable agriculture,[109] the 2021 Niti Aayog's (Policy Commission of India) Agricultural Vision towards 2030 continues to echo the productivist tone, where it points to low efficiency, sub-optimal fertilizer and chemical use, problems in technology-diffusion and small landholding as the chief

[106] Rule 19(2) and 20(1) Biodiversity Rules 2004. Philippe Cullet, 'Property Rights over Biological Resources: India's Proposed Legislative Framework' (2001) 4 J World Intellectual Property 211, 216.

[107] KD Prathapan et al, 'Biological Diversity Act 2002: Shadow of Permit-Raj over Research' (2006) 91 Current Science 1006.

[108] Raju J Das, 'Geographical Unevenness of India's Green Revolution' (1999) 29/2 J of Contemporary Asia 167.

[109] Such as Niti Ayog's Initiative on 'Mapping and Exchange of Good Practices Initiative for Millets Mainstreaming in Asian and African Countries' (2021); and the 'National Dialogue on Enhancing Farmers' Income, Nutritional Security and Sustainable Food Systems' (2021).

problems that affect agriculture and farmers.[110] It further elaborates the reasons for agriculture's overall under-development as low levels of technology, low quality of inputs, low investments, low availability of credit and missing links within supply chains. Farmers' and rural poverty alleviation programmes have worked hand in hand with the idea that low productivity *is* unsuccessful agriculture.

This rhetoric is heard even within specific sectoral contexts as well. For instance, self-replicating varieties have been dubbed as inferior vis-a-vis 'improved' or 'hybrid' varieties.[111] With respects to input subsidies for power, water and fertilizer, the government has continually pointed out leakage within these programmes is the chief cause for its ineffectiveness. The government's plans to implement Direct Benefits Transfer (DBT) to the poorest of farmers is another means of alleviating those that are engaged in 'unsuccessful' or 'inefficient' agriculture. After decades of such policy interventions, the desired outreach aimed at increasing productivity has not been achieved, and this drive has led the ongoing agrarian crisis of low productivity. While India's agricultural bureaucracy is making some efforts to rectify these wrongs, the impact of such initiatives remains limited.[112]

Within the productivist framing, agriculture is performing despicably in the past decades as per its own metrics. Farmer distress is one clear indicator of low performance. In November 2018, thousands of farmers marched to New Delhi to protest; this was preceded by many protests in other cities, such as the 'Long March' of 12 March 2018 in Mumbai; the 2017 *dharna* (non-violent sit-in protest) of Tamil farmers in Delhi; protests met with police violence leading to the death of 5 farmers in Mandasur, Madhya Pradesh. The Indian agrarian crisis has been plaguing farmers since decades, but only reached a head recently, and its deeprooted problems cannot be solved with bandages as guaranteeing cash transfers and MSPs.[113] Labour is another indicator, wherein owing to the increasing non-viability of agriculture, agricultural labour for big (successful) commercial farms is availed of from the farthest stretches of the country, and even from neighbouring countries. As mentioned above, younger generations choose to find livelihoods in urban areas and are most often relegated to low-income jobs here.

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[110] Ramesh Chand, Niti Aayog, 'Transforming Agriculture for Challenges of 21st Century', 102 Annual Conference Indian Economic Association (27-29 December 2020) 5.

[111] Rajshree Chandra, Farmers' Rights in India: 'Globally Sui Generis' (2016) 6 South Asia Chronicle 119; Ken Research, 'Report: India Seed Industry Outlook to FY'2018 - Rapid Hybridization in Vegetables, Corn and Rice to Impel Growth' (2013) <https://www.kenresearch.com/agriculture-and-animal-care/seed/india-seed-industry-research-report/372-104.html>.

[112] Rahul Tongia, 'India's Biggest Challenge: The Future of Farming', The India Forum, 4 October 2019, 5.

[113] Himanshu, 'India's Farm Crisis: Decades' Old and with Deep Roots', The India Forum, 5 April 2019, 5-8.

There is therefore a need to re-assess these metrics of what comprises successful agriculture. While some Western countries have started moving towards a post-productivist framing of agriculture[114], there is no evidence of the same in India. If the idea of successful agriculture were to be framed outside the productivist paradigm, then small and marginal farmers could be seen in a completely different light.[115] If agriculture is viewed through the parameters of crop diversity, environmental impact in terms of water use and soil erosion, retention of control over traditional knowledge in seeds, plants and plant genetic resources and incomes of farmers, then the idea of a successful farmer would have to qualify more than the mere production bar.

A centralised supply of agricultural knowledge and ideals of agricultural success has left many marginalised sections behind. Eighty percent of all poor in India comprise smallholder farmers, women, pastoralists, landless agricultural labourers and shepherds; that is, a substantial majority of poor are involved in agriculture. Thus, production-orientation of agriculture leads to impoverishment of large sections of people marginalised and displaced by it.[116]

Moving back to the 1960s, it was farmers' ability and/or willingness to either participate or not participate in the new scientific modes of food production that determined their wealth, status and most importantly, their food security for years to come. This is so because, first, the spread and coverage of the Green Revolution was scattered, erratic and diverse across different locations of India.[117] Many accounts of the Revolution recount a smooth and miraculous spread from the north-western states of India, such as Punjab, to other states. However, spatial and temporal diversities require a closer look to fully appreciate the impact of the Green Revolution. Some states such as north eastern states (states that are characterised by a majority of tribal populations), geographically remote and socio-economically backward areas, Scheduled Areas (areas within non-tribal states that have a significantly large tribal population) by and large, did not embrace new agricultural technology, including HYV seeds.[118] And

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[114] Geoff Wilson, 'From Productivism to Post-Productivism ... and Back Again? Exploring the (Un)Changed Natural and Mental Landscapes of European Agriculture' (2001) 26 Transaction of the Institute of British Geographers 77.

[115] Ramesh Chand and Shinoj Parappurathu, 'Temporal and Spatial Variations in Agricultural Growth and its Determinants' (2012) 47/26-7 Review of Rural Affairs, Economic and Political Weekly Supplement 55.

[116] MS Swaminathan, *50 Years of Green Revolution: An Anthology of Research Papers* (World Scientific 2017) 33-36.

[117] Bill Pritchard et al, *Feeding India: Livelihoods, Entitlements and Capabilities* (Routledge 2014) 49.

[118] These areas continued with *traditional* agriculture, marked by little or no use of agro-technology, practice of saving and sharing/exchanging seeds rather than purchasing HYV seeds, and low input/resource intensive agriculture. Over the years, these areas have shown a stagnant or negative rate of growth in food yields. Ministry of Agriculture & Farmers Welfare, Department of Agriculture, Cooperation & Farmers Welfare and the Directorate of Economics & Statistics, 'Agricultural Statistics at a Glance' (Government of India 2017) available at <https://eands.dacnet.nic.in/PDF/Agricultural%20Statistics%20at%20a%20Glance%202017.pdf>.

second, the Green Revolution's agricultural technology was welcomed and quickly adopted by only certain section of farmers, whereas the majority of farmers were not part of this process. 'Agricultural technology introduced by it was mainly used by richer, less risk-averse farmers with better access to inputs and information'.[119] It helped those engaged in commercial farming.

The productivist trajectory of agriculture has had profound effects on the rural social and organisation structures, labour relations and the socio-economic situation of small and medium scale farmers.[120] Inequality among farmers became more pronounced over the years as the gap between rich/resourceful farmers and poor/vulnerable farmers.[121] Many studies shown that neoliberal trends in agricultural growth have accelerated class differentiations, polarised sections of rural peasantry, increasingly concentrated landholdings among rich farmers and led to pauperisation and proletarianization of those displaced through agricultural growth and development.[122] Within the first 2 decades of the agricultural mechanisation revolution, the number of female cultivators reduced by 52 percent, while landless female agricultural labourers increased by 47 percent.[123] Women undertake 80 percent of farm work, own only 13 percent of agricultural land.[124] The infusion of technology into a socio-economic context that disadvantages women in the first place, leads to their further invisibilisation. Women's marginalisation has dire consequences on efficient management of biogenetic resources, as women are known to be chief knowledge-bearers and nutritionists within the farm and at home.[125]

7. CONCLUSION

The 1960 agricultural transformation and consequent rise in food production resulted in a reorganisation of India's agricultural and food systems. A reconfiguration of institutional apparatus in the agricultural sector had a lasting effect, such that future policymaking was oriented towards Green Revolution ideals of achieving higher yields, greater production, and increased profitability.[126] The post-independence goal of achieving national food security was replaced by a more pressing obsession

[119] Supra n 46, Lipton and Longhurst (1989) at 41.

[120] Walter P Falcon, 'The Green Revolution: Generations of Problems' (1970) 52/5 Int'l Labour Rev 705.

[121] Thomas Reardon and Bart Minten, 'The Quiet Revolution in India's Food Supply Chains' in Marco A Ferroni (ed), *Transforming Indian Agriculture-India 2040: Productivity, Markets, and Institutions* (Sage 2012) 273–294.

[122] Sudha Pai, 'Class, Gender and Agrarian Change: An Analysis of the Status of Female Agricultural Labour in India' (1987) 15/6 Social Scientist 16.

[123] Ibid.

[124] Oxfam, 'When Women Farm India's Land: How to Increase Ownership', Policy Brief, Oxfam 2013.

[125] Vandana Shiva, *Who Really Feeds the World* (Zed Books 2016) Ch 8.

[126] Frederic Landy, *Spatial Parameters of Food Grain Policy* (Manohar 2009) 154.

of enhancing agricultural growth through production. The construction of a productivist paradigm saw the tight control of some areas of agricultural policymaking at the cost of ignoring others. Policy instruments such as price control, input regulations and control of agricultural marketing have been wielded by the Indian state to further the productivist ideal, and agricultural success has been understood in terms of growth, yields and incomes. The 1991 economic liberalisation amplified this neoliberal progression of Indian agriculture.

Utilitarian ideals food production and productivist goals of agricultural policy have side-lined alternate parameters that do not currently feature within the agricultural success metric. These are crop diversity, environmental impact, marginalisation, and displacement of farmers and so on. Most significantly, farmers' innovations and knowledge has been rendered increasingly irrelevant in an era of modern Indian agricultural research institutions. Law and policy constructed within a producivist paradigm cannot ensure farmers' control over biogenetic resources. The food sovereignty approach as an alternative policy approach can offer a new rendering of this relationship that is not defined by high yields and greater growth. The next chapter explores rights of farmers based out of food sovereignty.

CHAPTER IV

FOOD SOVEREIGNTY RIGHTS AS HUMAN RIGHTS OF INDIAN FARMERS

1. INTRODUCTION

This thesis argues that the Indian legal framework pertaining to biogenetic resources in agriculture is fragmented. Much of its content lies within intellectual property law, and laws that resemble intellectual property rights (IPRs) such as plant breeders rights and farmers rights. There is a near-complete disconnection between environmental laws and biogenetic resource law thereby leaving the latter devoid of environmental concerns such as biogenetic conservation, promoting agroecological farming, and accountability for environmental destruction through the process of farming. Furthermore, farmers who are coping with overarching issues of diminishing productivity, non-profitability amidst an acute agrarian crisis, have other greater concerns that affect their survival than campaigning for biogenetic protection.[1] Food sovereignty therefore provides an inspiration for creating food systems that are oriented towards addressing these triple concerns of food, farmer, and ecology.

Chapter 2 provided an overview of food sovereignty with its different elements and parameters. Here, the 6-pillar framework (Chapter II.2.b) was explained as food sovereignty's core essence. The presence of food sovereignty marks the presence of food sovereignty. These pillars are – (1) a focus on food for people; (2) valuing food providers; (3) localizing food systems; (4) placing control locally; (5) building knowledge and skills; and (6) working with nature. Chapter 2 also endeavoured to identify what is meant by biogenetic rights within the food sovereignty approach, and what their substantive content is. This chapter picks up from this reasoning, following the critique of India's post-Green Revolution agricultural and food complex in Chapter 3. This chapter introduces the 'food-farmer-ecology' nexus, drawn out of the food sovereignty approach and its 6-pillar framework. Food-farmer-ecology provides a basis for a legal architecture that holds the potential for ushering food sovereignty rights in India. As explained in the preceding chapters, especially in Chapter 2 that food sovereignty has expressed itself in a language of rights. It has been tried in different geographical contexts via a rights-based vehicle as well as other legal measures such as land reforms, nationalisation of key food and agricultural input sectors, and local governmental reorganisation. This chapter links these rights-based assertions with India's fundamental rights to argue that the introduction of food sovereignty can

[1] Birendra K Biru and Indrani Barpujari, 'Jan Sunwai on the Present Agrarian Crisis – A Report', Gene Campaign, 7 July 2014.

be ushered in India through a human rights-based approach – one that the India legal system and judicial architecture is well-versed in.

This chapter explores the legal underpinnings of the food-farmer-ecology nexus, to therefore suggest in Chapters 7 and 8 the specific points of intervention in each of these frames. In order for food sovereignty to inspire stronger biogenetic rights for Indian farmers, the restricted framing of the current subject area around biogenetic resources itself has to change. The current framing of biogenetic resources is a result of IPR law's limited focus on innovations, creating commercially profitable monopolies, and protecting knowledge through a system of royalties and fees. On the other hand, food sovereignty does not strictly frame biogenetic resource rights as a separate or detachable component of the food sovereignty approach. Even with respect to the Peasants Rights Declaration, the seed rights are one constituent part of a whole – valuing peasants' contributions and knowledge. Food sovereignty similarly has been seen more holistically as it would be futile to extract on the biogenetic component therefrom and implement that, without any other changes within the food and agricultural system. Therefore, this chapter uses human rights to show that by implementing a wide range of food sovereignty rights, biogenetic rights of farmers would automatically gain strength.

These rights must cover the food, farmer and ecological dimensions of food systems, and in doing so *change* the food security law, socio-economic rights and welfare benefits of farmers, and environmental law pertaining to agriculture. This chapter therefore identifies what these areas are in these respective realms and what kinds of rights within the food-farmer-ecology nexus already echo the food sovereignty approach. Within these realms, the rights and legal provisions that currently cover biogenetic resources, especially seeds or can cover seeds are also discussed, to make for a richer and broader discussion in the latter half of the thesis. For instance, while exploring the right to food, asks whether such a right includes the right to produce food? The right to use farm-saved seeds for food security? Or do current biodiversity laws include conservation rights for a rich array of seeds through their in-situ use and cultivation? Does the right to clean environment include a right to agroecology?

Preserving traditional seeds is important for environmental, nutritional, and cultural reasons (food-farmer-ecology nexus). As shown above in Chapters 1 and 3, such a practice across different geographical and crop contexts is fast diminishing. Seed laws and policies, alongside other related laws should encourage and promote the in-situ use and conservation of traditional seeds, and this is possible only if seed systems are preserved. Reading seed rights into our rights framework is therefore important. This chapter starts by providing an overview of India's rights-based claims in the realms of food, farmers, and ecology. This is done to show that food sovereignty has a process or pathway for being invoked and implemented in India - through rights. Given how environmental law and food security law have progressively grown via the medium of rights, this chapter then moves to each of the individual elements by first exploring how agroecological rights can be churned out of environmental rights. Following this, moving to food sovereignty rights from the right to food, and finally, from farmers

rights to rights of farmers. The chapter then moves to charting out different mobilizations around seeds in India, to argue that this generates an Indianized basis for progressive biogenetic resource rights and more broadly a reorganization of food systems that are geared towards food-farmer-ecology. This chapter ends by arguing that a re-imagining of food systems for the protection of farmers' rights to food, a wide range of human rights and envrionmental rights. This is a route towards transforming food systems, to make them more localised, autonomous, and diverse, and can result in the wider acceptance and recognition of food sovereignty.

2. INDIA'S RIGHTS-BASED CLAIMS IN THE REALMS OF FOOD, FARMERS AND ECOLOGY

Food systems triangulate issues of food security, socio-economic-cultural empowerment of farmers and biogenetic conservation. Years of agricultural policymaking has aimed at securing quantitative self-sufficiency, remunerative prices for farmers/producers and the safeguarding of consumers' interests through affordably priced food. These orientations have profoundly changed local food systems globally, and in India.[2] The global food system has heavily influenced India's attempts of shaping its own agricultural policies and food systems. Productivist agriculture has moved further and further away from a biodiverse food-based approach. As explained in the previous chapter, this is a result of the Green Revolution and a Green Revolution based thinking founded upon its 'successes'. Food grown in the farm works in tandem with food prepared and eaten at home. Food staples provided by the public distribution system (now the targeted public distribution system under the Food Security Act 2013) has quantitatively addressed India's food security problem, however this problem has morphed into a nutritional security problem, where deficiencies persist in terms of nutritional deficiencies rather than caloric deficiencies.[3]

Government strategies aimed at enhancing nutrition have provided some fixes in the existing paradigm, through improvements in agricultural production, breeding programmes of certain disease-resistant cultivars, industrial fortification, nutritional supplementation of crops and so on.[4] Yet, there is still a large gap between nutritional security and a holistic understanding of food and agricultural

[2] VPS Arora, 'Agricultural Policies in India: Retrospect and Prospect' (2013) 26/2 Agr Eco Res Rev 135; Amitabh Kundu, 'Food Security System in India: Analysing a Few Conceptual Issues in the Contemporary Policy Debate' in N Srivastava and P Sharma (eds), *Protecting the Vulnerable Poor in India: The Role of Social Safety Nets* (World Food Programme 2006) 556.

[3] Praduman Kumar, 'Food and Nutrition Security in India: The Way Forward' (2017) 30/1 Agricultural Economics Research Review 1; Alwin D'Souza et al, 'Enhancing Food Security through Diet Quality: The Role of nonfarm Work in Rural India' (2020) 51/1 Agricultural Economics 95.

[4] IS Bisht et al, 'Farmers' Rights, Local Food Systems, and Sustainable Household Dietary Diversification: A Case of Uttarakhand Himalaya in North-Western India' (2018) 42/1 Agroecology & Sustainable Food Systems 77, 78.

systems, while at the same time a gap persists between agroecology with eco-nutrition.[5] This is why this thesis proposes a nexus-based understanding, such that food sovereignty rights are developed to address the triple elements of the food-farmer-ecology nexus. Within the Indian policy framework these three are not well coordinated and attempts to solve one problem does not cross the bridge to engage with the other. This section aims to show that food sovereignty has a process or pathway for being invoked and implemented in India - through 'rights' in the respective domains of food security, rights of farmers and environmental rights.

(a) From Food Security and the Right to Food towards Food Security of Farmers and their Food Sovereignty Rights

India's food distribution apparatus has evolved under the shadow of the 1960 Green Revolution 'success' story. The post-Revolution rhetoric around HYVs and agricultural inputs can be summed up in the words of Norman Borlaug, the father of the 1960 Green Revolution, who once remarked that, "We have the technology to end hunger now!"[6] The promise of this technology captured the imagination of many policymakers at the time. Yet, beyond technology, laws and policies, it takes *food* to end hunger.[7] While this might seem like a truism, several decades of food security policy reflect eroding interconnections between hunger and agriculture. For instance, India's severe agrarian distress remains de-linked with India's food security policy; and state investments in rural development have targeted large farmers and agrobusinesses over small and marginal farmers, who bear the bulk of India's food security burden.[8]

In the aftermath of the Green Revolution, India achieved self-sufficiency in food grains and became an exporter of several agricultural commodities. In the decades that followed neoliberal growth in India led to increases in economic inequality, as specific regions, and social groups due to heightened vulnerability were impoverished over time.[9] A lowering profitability of agriculture, and an absence of non-agricultural employment have caused and exacerbated rural poverty.[10] The rural poor comprise the majority of beneficiaries of India's multiple food programmes. Major programmes including the public

[5] Kumar Das, RV Bhavani and MS Swaminathan, 'A Farming System Model to Leverage Agriculture for Nutritional Outcomes' (2014) 3/3 Agr Res 193.

[6] Norman E Bourlaug, 'Ending World Hunger: The Promise of Biotechnology and the Threat of Antiscience Zealotry' (2000) 124 Plant Physiology 487.

[7] Purabi Bose and Bernd van der Meulen, 'The Law to End Hunger Now: Food Sovereignty and Genetically Modified Crops in Tribal India—A Socio-Legal Analysis' (2014) 118 Penn State L Rev 893.

[8] Sukhpal Singh, 'Reform by Stealth', *Frontline* (19 June 2020).

[9] Angus Deaton and Jean Dreze, 'Poverty and Inequality in India: A Re-Examination' (2012) 37/36 Eco & Pol Weekly 7.

[10] Jayati Ghosh, 'The Political Economy of Hunger in 21st Century India' (2010) 45 Eco & Pol Weekly 33.

distribution apparatus do not engage with agriculture, despite a majority of the target population being engaged in agriculture. The right to food that is implemented through the food distribution architecture has resultantly also remained delinked with agriculture.

- *The Legal Recognition of the Right to Food by the Indian Supreme Court*

The post-1990 period saw several popular civil society movements make demands on the Indian state seeking redressal for the problems arising from neoliberalisation.[11] A prevailing climate of civil society and judicial activism pushed for the adoption of human rights-based approaches for solving development problems by channelising legislative and executive action towards strengthening civic-political and socio-economic rights.[12] The Right to Food Campaign, an informal network of organisations and activists is a prominent example among these movements. The Campaign spoke against the paradox of 'hunger amidst growth' by raising awareness of high levels of food insecurity in the country. Some major food programmes funded by the Indian government were already operative since the 1970s, such as the Public Distribution System (PDS), Integrated Child Development Services (ICDS) and Food for Work (FFW). Many more programmes were added over the decades, yet these were riddled with several problems of inefficiencies and leakages.

In 2001, when major newspapers reported numerous starvation deaths in the country, the Rajasthan branch of the NGO, People's Union of Civil Liberties (PUCL) filed a writ petition in the Supreme Court alleging a right to life violation.[13] The petition sought an intervention by the Court to prevent starvation by the release of food stocks in government warehouses, and proper implementation of existing social programmes, employment schemes and food schemes that could provide relief to distressed people.[14] PUCL demanded 'for legal recognition of the right to food as intrinsic to the right to life, while seeking implementation of the right in practice through reform of existing government programmes'.[15]

The efforts behind the Right to Food Campaign that culminated in the FSA 2013 has opened a new route for achieving food security. From being understood as a poverty-related deprivation, food security came to be viewed as an entitlement. Food insecurity therefore became a 'right violation' thereby paving the way for a human rights approach to achieving food security. Human rights as legal

[11] Sanjay Ruparelia, 'India's New Rights Agenda: Genesis, Promises, Risks' (2013) 86/3 Pacific Affairs 569, 572.

[12] Alf Gunvald Nilsen and Kenneth Bo Nielsen, 'Social Movements, State Formation and Democracy in India: An Introduction' in Nilsen and Nielsen (eds), *Social Movements and the State in India: Deepening Democracy?* (Palgrave Macmillan 2016) 1-23.

[13] *People's Union for Civil Liberties* v *Union of India & Ors*, Supreme Court of India, Civil Original Jurisdiction, Writ Petition (Civil) No. 196 of 2001.

[14] Dan Banik, 'The Hungry Nation: Food Policy and Food Politics in India' (2016) 1/1 Food Ethics 29.

[15] Shareen Hertel, 'Hungry for Justice: Social Mobilization on the Right to Food in India' (2014) 46/1 Dev'p & Change 72, 73.

instruments are well-understood, redressable within an already extant national legal infrastructure and can conveniently link with universal frameworks that advance global justice. This is not to say that such an approach is without limitations. Yet, in the Indian context, the right to food have resulted in shifting the policy debate from mere political aspiration to legal obligation.[16]

The Indian Supreme Court articulated the right to food within the Indian Constitutional context in *PUCL* v *Union of India & Ors*.[17] Relying on previous readings of Article 21 where right to life was read as 'the right to live with human dignity and all that goes along with it, namely, the bare necessaries of life such as adequate nutrition'[18] the Court progressively constructed the right to food and forced the state and central governments to ensure the realisation of this right. The Supreme Court ordered 16 states to provide immediate food assistance and improve the implementation of a host of schemes operative across states.[19] The Court also ordered for setting up of a commission for monitoring and implementation of the Court orders. This commission while submitting its third report in 2003 stated that there was a 'routine violation of Supreme Court orders by state governments', and there was an 'overarching lack of state commitment to the prevention of hunger and starvation.' The budget allocations and logistical support that food and other social schemes was not provided, and it was 'politically or administratively expedient to spend the funds elsewhere.'[20] The commission report concluded that the Supreme Court order was 'potentially effective', yet the 'initiatives have only made a small impact in the massive problem of chronic hunger.'[21]

The extent of judicial review that the Supreme Court exercised while crossing over executive, legislative and political arenas was questioned by many.[22] At the same time, it was received favourably by many owing to the inadequacy of other organs of the state.[23] The Right to Food Campaign leading up to the *PUCL* case focussed on only the state's obligation in implementing social protection programmes in an accountable manner. A case was made against bureaucratic malpractice leading to

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[16] Lawrence O Gostin, *Global Health Law* (Harvard University Press 2014) Ch 8.

[17] *PUCL* v *UOI*, Interim Order No.2, 2003.

[18] *Francis Coralie* v *Union Territory of Delhi*, AIR 1981 SC 746.

[19] Right to Food Campaign, 'Supreme Court Orders in the Right to Food – A Tool for Action' (2005), <https://www.corteidh.or.cr/tablas/27433.pdf>.

[20] Naresh Chandra Saxena, 'Third Report of the Commissioner – The Right to Food, Two Years On', Report of the Commissioner of the Supreme Court (2003), <http://www.righttofoodcampaign.in/legal-action/supreme-court-commissioners>.

[21] Ibid.

[22] Dan Banik, 'Governing the Giants: The Limits of Judicial Activism on Hunger in India' (2010) 3/3 J Asian Public Policy 263.

[23] SP Sathe, *Judicial Activism in India – Transgressing Borders and Enforcing Limits* (OUP 2002) 278.

hunger deaths; thus, lack of access to public food was the basis for right to food justiciable against the state.

- *The Right to Food within the National Food Security Act*

Following the *PUCL* judgment, efforts were made towards enacting a national food security legislation. India passed its own National Food Security Act (NFSA) also known as the Right to Food Act in 2013 with a view of eradicating hunger in the country. The Act creates a legal entitlement for two-thirds of the Indian population to subsidised grain via the public distribution system and other social security programmes. This Act is significant mainly in the change of legal status of food and nutrition, as these are now entitlements rather than state largesse. Food insecurity therefore became a 'right violation' thereby paving the way for a human rights approach to achieving food security.[24] The National Food Security Act 2013 was passed to ensure 'access to adequate quantity of quality food at affordable prices to people to live a life with dignity and for matters connected therewith or incidental thereto.'[25]

The right to food recognized in 2003 by the Indian Supreme Court manifests through the institutional implementation framework under the NFSA. India's public distribution system, the largest in the world, is controlled by the central and state governments. The Food Corporation of India (FCI) is the primal agency through which the government controls the distribution network. While the PDS has undergone several changes over the decades, the passing of the NFSA in 2013 has marked a watershed in the evolution of the system. This Act converted many social protection programmes into legal entitlements by providing almost 75% of the rural population and 50% of the urban population (2/3rd of the Indian population) rice, wheat, or coarse cereals per person per month at a subsidised price of Rs 1-3 per kg. It provides for maternity entitlements to food and other benefits, special provisions of food for 6 months to 6 years' children, mid-day meals for school children up to the 8th grade. It also provides cash transfers as food security allowance in certain scenarios. And recognizes women as household heads while issuing ration cards (beneficiary identity cards). The Act also sets up an implementation infrastructure at the Central, State and District levels. The Act was hailed as a watershed despite delays in enactment and several criticisms.[26]

Its first draft released in 2011 was discussed and debated among political parties, think-tanks, scholars, civil society organisations and media commentators. Oppositions included high cost, redefined

[24] Ana Ayala and Benjamin Mason Meier, 'A Human Rights Approach to the Health Implications of Food and Nutrition Insecurity' (2017) 38/10 Public Health Reviews 1, 8.

[25] NFSA, Preamble.

[26] Harsh Mandar, 'Food from the Courts: The Indian Experience' (2012) 43/1 IDS Bulletin 15.

centre-state federal relations, omission of nutritional security and the extent to which existing programmes would be improved.[27] Right to Food Campaigners who had battled through the Supreme Court case were not satisfied, as the Act quantitatively and qualitatively failed to meet expectations.[28] Aside from the criticisms on the substantive content of the Act, there were widespread concerns over the implementation of the food distribution system, given inefficiencies and leakages that already existed within this infrastructure.[29] The NFSA is one among other human rights based legislations that take a view of socio-economic deprivations as rights-violations.[30] Unlike the international discourse around the 'right to food', as elaborated by UN Committee on Economic, Social and Cultural Rights in its General Comment 12 and later by the FAO Guidelines on the Right to Food, the Indian version of this right is inseparable from its accompanying legislation, and in effect, does not engage with the multiple facets of the right explained within these international documents.[31] The right to food in India is manifested through the structural framework of the NFSA, which is, to provide consumers of food access to food via the public distribution system. There is, however, no mention of securing food through direct access by growing food on farms, as envisioned by the Economic, Social and Cultural Rights Committee in its General Comment.

- *Diminishing Effectiveness of the Right to Food*

The effectiveness of a right to food entitlement in reducing malnutrition and food insecurity can only be gauged by examining the political economy context in which such a right is embedded.[32] Productivist thinking within a growth metric continues to dominate, and the success or failure of the agricultural sector are measured on the basis of its productive value, rather than its role as a sustainable food source.[33] Solutions to increase agricultural profitability are conceived on the lines of more

[27] Supra n 14, Banik (2016) at 39-43.

[28] Right to Food Campaign, 'Right to Food Campaign's Critique of the National Food Security Bill 2011', 18 March 2012, <http://www.righttofoodindia.org/data/right_to_food_act_data/events/March_2012_general_note_final_18_february_2012.pdf>.

[29] Shalini Iyenger and Balakrishnan Pisupati, 'Available, Accessible, But not Stable', *The Hindu* (5 June 2018).

[30] Alf Gunvald Nilsen, 'India's Turn to Rights-Based Legislation (2004–2014): A Critical Review of the Literature' (2018) 48/4 Social Change 653.

[31] UN Committee on Economic, Social and Cultural Rights, 'General Comment No. 12 on the Right to Adequate Food', E/C.12/1999/5; Intergovernmental Working Group for the Elaboration of Voluntary Guidelines, FAO, 'Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of the National Food Security', Report of the 30th Session of the Committee on World Food Security (CFS), Supplement, FAO Doc. CL 127/10-Sup.1, Annex 1 (2004).

[32] Asim K Karmakar and Debasis Mukhopadhyay, 'Towards a Prudent Policy for Food Security in India' (2014) 11 US-China L Rev 221, 227.

[33] Partha Dasgupta, 'The Nature of Economic Development and the Economic Development of Nature' (2013) 48/51 Eco Pol Weekly 38, 44-8.

investment and technology to increase efficiency.[34] A combination of factors such as, high-investment-high yield agricultural practices introduced by the Green Revolution and neoliberal market reforms that excluded the agro-rural sectors have debilitated the ability of the rural poor to build their own capabilities of food and nutrition though subsistence agriculture, education, health and democratic self-governance institutions.[35] When entitlements in the nature of the right to food are recognized within a society that has faced continuing and historic disadvantages, they 'never quite become rights.'[36]

India's food security programmes have manifested in either distributing basic staples via the TPDS, providing mid-day meals in public elementary schools, providing maternal and childcare programmes, or other forms of food and nutrition schemes at the central and state levels. They operate within an environment of severe rural and agrarian distress.[37] The NFSA does not break the cycle of disempowerment of agricultural peasantry, instead it can be used as a tool to re-enforce this cycle. On the one hand, this legislation can be viewed as one among many other interventionist measures that have been addressed directly to benefit the poor.[38] Counter to the notion of a state that is subordinated within a global 'corporate food regime',[39] the NFSA has showed India's potential of being a 'progressive state' that doesn't just 'step back' by passing neoliberal reforms, but also 'moves in' by passing an ambitious legislation such as the NFSA.[40] Pritchard et al conclude in their extensive study on the NFSA that progressive state action has 'transformative potential' in conceptualising an 'emergent global food regime.'[41] Surveys conducted after the enforcement of the NFSA show some positive trends in its uptake. More households procured ration cards and used their entitlement to food and maternity benefits.[42] Other surveys show an increase in children covered under the Mid-Day Meals programme.[43]

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[34] Supra n 32, Karmakar and Mukhopadhyay (2014) at 227-8.

[35] Amartya Sen, *Development as Freedom* (Knopf 1999); Gyorgy Scrinis, 'From Techno-Corporate Food to Alternative Agri-Food Movements' (2007) 4 Local-Global: Identity, Security, Community 112.

[36] Partha Chatterjee, 'Democracy and Economic Transformation in India' in Sanjay Ruparelia et al (eds), *Understanding India's New Political Economy: A Great Transformation* (Routledge 2011) 23, 27.

[37] Supra n 33, Dasgupta (2013).

[38] Supra n 14, Banik (2016) at 40.

[39] Philip McMichael, *Food Regimes and Agrarian Questions* (Fernwood 2018) 96.

[40] Bill Pritchard et al, 'Stepping Back and Moving In – The Role of the State in the Contemporary Food Regime' (2016) 43/3 J Peasant Studies 639.

[41] Ibid.

[42] Nandini Nayak and Shikha Nehra, 'Accessing the Right to Food in Delhi' (2017) 52/23 Eco & Pol Weekly.

[43] Jean Drèze et al, 'Casting the Net: India's Public Distribution System after the Food Security Act' (2019) 54/6 Eco & Pol Weekly.

On the other hand, one could argue that the NFSA has further embedded the neoliberal agenda.[44] After the Act was passed, unsurprisingly enough, the 'pro-business' BJP government that came to power on the promise of 'expedited neoliberalism' has completely revamped India's food security apparatus.[45] In doing so, the 'right to food' has also been redefined.

The NFSA also fits Randheria's thesis of India being a 'cunning state',[46] wherein such populist policies and laws are rolled out to display commitment towards the plight of the poor nationally, and its compliance with international human rights standards internationally. It would be simplistic to call such interventions as 'exceptions' to an otherwise neoliberal pro-market trajectory. An exception should also qualify as a disjuncture from the underlying institutions that enable neoliberalism. The NFSA is in many ways an embodiment of contradictory dynamics.

(b) FROM FARMERS' RIGHTS TOWARDS RIGHTS OF FARMERS

The special role of farmers in food systems, conservation of biogenetic resources and maintaining ecological services has only minimally been recognized in India's legal framework. Farmers' rights were introduced as an attempt to allay some of the issues that intellectual property rights (IPR) in agriculture brought with it. The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRA) in its Article 9 defines 'farmers rights' as rights to save, use, exchange and sell farm-saved seeds.[47] What the ITPGRFA settled with was commendable in one sense, as it framed farmers privileges under UPOV as 'rights'.[48] Notwithstanding this language of entitlement, the farmers rights framework is limited in imagination and scope, because it only stands as a response to IPRs. The content of farmers rights restricts itself to mainly seeds and exceptions to registered innovations that seek credit and gain monetary advantage from such an innovation.[49]

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[44] Jostein Jakobsen, 'Neoliberalising the Food Regime 'Amongst its Others' the Right to Food and the State in India' (2019) 46/6 J Peasant Studies 1219, 1227.

[45] Radhika Desai, *The Slow-Motion Counterrevolution: Developmental Contradictions and the Emergence of Neoliberalism* (Palgrave McMillian 2016) 16.

[46] Shalini Randheria, 'The State of Globalization: Legal Plurality, Overlapping Sovereignties and Ambiguous Alliances between Civil Society and the Cunning State in India' (2007) 24 Theory, Culture & Society 1.

[47] Art. 9.1, ITPGRFA recognizes the enormous contribution that local, indigenous communities, farmers have made and will continue to make to the conservation and development of plant genetic resources; Art. 9.2(a): protection of traditional knowledge relevant to plant genetic resources; Art.9.2(b) right to equitably participate in sharing benefits arising from their utilization; Art. 9.2(c): right to participate in making decisions; Art. 9.3: right to save, use, exchange and sell farm-saved seed/propagating material.

[48] Article 15(2) UPOV Convention 1991; Explanatory Notes on Exceptions to the Breeder's Rights Under the 1991 Act of the UPOV Convention, UPOV/EXN/EXC/1, UPOV, Geneva, 22 October 2009.

[49] Stephen A Marglin, 'Farmers, Seedsmen, and Scientists: Systems of Agriculture and Systems of Knowledge' in Frederick Apffel-Marglin and Stephen A Marglin, *Decolonizing Knowledge: From Development to Dialogue* (OUP 1996) 205-6.

Farmers rights makes no provision for conservation per se but acknowledges that traditional seed saving and exchanging practices result in conservation of agrobiodiversity.[50] In India, farmers' rights under the Protection of Plant Varieties and Farmers' Rights Act (PPVFRA) are being increasingly rendered irrelevant given the current seed market and technology trends. As problematised in Chapter 1 more than 80% of seeds in the market are hybrid varieties, thereby leaving little or no incentive for the farmer to save, exchange and sell his/her own varieties. The rise in hybrid varieties has increased drastically,[51] thereby decreasing the incentive of medium and small farmers to carry on such a practice. In this context of rise in scientific methods of breeding replacing traditional ones, rights over traditional knowledge and compensation/benefit for use of such knowledge have increasingly been forgotten.[52] The sustainability of food systems depends on preserving the agro-biogenetic variability, which in turn is possible only through greater empowerment of farmers as decision-makers. Farmers rights are thus not 'all rights of all farmers', but a highly specialised category of exceptions to IPR type rights. Its more grounded meaning ought to include rights that are more pressing for the survival and prosperity of small farmers.

A holistic approach towards respecting farmers' human rights and recognising their special status among some of these rights can lead to more food-farmer-ecology oriented systems. For instance, the right to food can be reconceptualised as a claim of individuals and groups against society, starting with but not ending with the state.[53] While converting India's main social protection programmes into legal entitlements, the Supreme Court only laid down the state's obligation, however nothing precludes a broader right to food that can be secured or violated without any state machinery coming into action. Dreze gives the example of a girl who does not get her fair share of food within her family.[54] Within human rights jurisprudence, the state is only a primary bearer of human rights obligations, while there is always a broader duty on non-state institutions and other individuals.[55] Furthermore, socio-economic

[50] Peter Halewood, 'Trade Liberalisation and Obstacles to Food Security: Toward a Sustainable Food Sovereignty' (2011) 43/1 University of Miami Inter-American Law Rev 115; Karine E Peschard, 'Farmers' Rights and Food Sovereignty: Critical Insights from India' (2014) 41/6 J Peasant Studies 1085; Marcus Taylor, 'Climate-smart Agriculture: What is it Good For?' (2018) 45/1 J Peasant Studies 89.

[51] Rajshree Chandra, 'Farmers' Rights in India Globally Sui Generis' [2016] 6 South Asia Chronicle 119, 129-131: Depending on the different sectoral crops, the share of commercial hybrid seeds vis-à-vis open pollinated traditional seeds is 70-88%. The use (and consequently the incentive to keep using) of traditional varieties is shrinking alarmingly.

[52] Not even one claim for ABS has been filed.

[53] Jean Drèze, 'Democracy and the Right to Food' (2004) 39/17 Eco & Pol Weekly 1723, 1725-6.

[54] Ibid at 1727.

[55] David Bilchitz, *Poverty and Fundamental Rights: The Justification and Enforcement of Socio-Economic Rights* (OUP 2008) 59-73.

rights complement one another and should not be seen in isolation.[56] Right to food's entanglement with other rights such as the right to water or health also leaves a lot of its content outside the *PUCL* judgment. Expanding the normative content of the right to food beyond a clear state obligation and state causation of malnutrition has proven very difficult ever since the question of hunger has been framed in such a circumscribed character.[57]

Deep-routed issues of farmer indebtedness and low profitability plague the agricultural sector, and the rural economy at large. In November 2018, thousands of farmers marched to New Delhi to protest; this was preceded by many protests in other cities, such as the 'Long March' of 12 March 2018 in Mumbai; the 2017 *dharna* (non-violent sit-in protest) of Tamil farmers in Delhi; protests met with police violence leading to the death of 5 farmers in Mandasur, Madhya Pradesh. The historic farmers' protests against 3 farm laws introduced in June 2020 captured the attention of the world. These protests, beginning in August 2020, were widespread across the country, and were arguably the biggest mobilisation India has ever seen, comprising farmers' organisations from states of Punjab and Haryana marching to the capital New Delhi in November 2020.[58] All these protests sought government intervention and support for the ongoing distress and demonstrated the seriousness of agrarian and rural issues. They stood against the withdrawal of the state from the agricultural state opening up the space for greater corporatisation.[59] Therefore, a lot more is needed to relieve this distress by means of massive reinvestments in agriculture, support for labour-intensive rural industries, and social and other infrastructure to relieve a long-ongoing rural distress.

The right to livelihood for farmers is also of immense relevance in this context. The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA) initiated in 2005 is a prominent effort that tried to revive a broken rural economy by guaranteeing work for at least 100 days with a fixed pay per day. Much like the NFSA, the MGNREGA is an example of a rights-based approach aimed at human development. The MGNREGA gave many rural areas a boost in terms of employment, community and private project funding and rearranged the rural political economy in many ways.

[56] Mahendra Pal Singh, 'The Statics and the Dynamics of the Fundamental Rights and the Directives Principles - A Human Rights Perspective' in SP Sathe and S Narayan (eds), *Liberty, Equality and Justice* (Eastern Book Co. 2003) 45.

[57] Shareen Hertel, 'A New Route to Norms Evolution: Insights from India's Right to Food Campaign' (2016) 15/6 Social Movements Studies 610.

[58] Amita Baviskar and Michael Levien, 'Farmers' protests in India: Introduction to the JPS Forum' (2021) 48/7 J Peasant Studies 1341, 1344.

[59] Jens Lerche, 'The Farm Laws Struggle 2020–2021: Class-Caste Alliances and Bypassed Agrarian Transition in Neoliberal India' (2021) 48/7 J Peasant Studies 1340.

However, this was not enough to invigorate the rural economy beyond a point.[60] Further, since 2014, the BJP government has reduced spending on MGNREGA in every successive budget.[61] The economic slowdown following an arbitrary decision to demonetise high-value Indian currency notes in 2016 had a devastating impact on the rural economy.[62] The Covid 19 crisis has driven the rural economy into further regress. Amid a broken economy, where a majority of rural poor lack power to seek redressal, food programmes resemble state largesse more than they do entitlements. Beneficiaries of state programmes who receive free or subsidised food may qualify as 'food secure', yet without raising the question of rearranging rural power dynamics in favour of the peasantry, beneficiaries cannot effectively be termed as 'food sovereign'. A host of rights recognised under Article 21 (right to life) such as the right to food,[63] right to health,[64] right to livelihood,[65] right to water,[66] right to environment (see below),[67] and the right to human dignity[68]; and rights to equality and cultural rights of minorities can be read in the special context of peasants and farmers.

(c) FROM ENVIRONMENTAL RIGHTS TOWARDS AGROECOLOGICAL RIGHTS

In 1991 the Supreme Court of India read the right to a clean environment as a component of right to life under Article 21 of the Indian Constitution.[69] This substantive right to environment has now gained international recognition following United Nations Human Rights Council's resolution endorsed later by the General Assembly's resolution recognizing the 'right to a clean, healthy, and sustainable

[60] Shylashri Shankar and Raghav Gaiha, *Battling Corruption: Has NREGA Reached India's Rural Poor?* (OUP 2013) 34-5; Manisha Nair, 'Effect of the Mahatma Gandhi National Rural Employment Guarantee Act on Malnutrition of Infants in Rajasthan, India: A Mixed Methods Study', 8/9 United States Library of Public Sciences (2013) 75089.

[61] Sandip Das, 'A Fiscal Crisis: Why FCI Needs Provisioning in Food Subsidy Budget', *Down to Earth* (6 October 2020), < https://www.downtoearth.org.in/blog/food/a-fiscal-crisis-why-fci-needs-provisioning-in-food-subsidy-budget-73670>.

[62] Ritambara Singh and Mahesh Prajapati, 'An Agribusiness Perspective of Demonisation in Central Region of the State of Gujarat in India' (2020) 51/9 J Economic Structures 1.

[63] Supra n 13, *PUCL* (2001).

[64] *Consumer Education and Research Centre* v *Union of India*, AIR 1995 SC 1811.

[65] *Olga Tellis and ors* v *Bombay Municipal Corporation and ors*, AIR 1986 SC 180.

[66] *Subhash Kumar* v *State of Bihar*, AIR 1991 SC 420.

[67] *Vellore Citizens Welfare Forum* v *Union of India*, AIR 1996 SC 2715.

[68] *Maneka Gandhi* v *Union of India*, AIR 1978 SC 597; *Francis Coralie* v *Union Territory of Delhi*, AIR 1981 SC 746.

[69] Supra n 66, *Subhash Kumar* (1991).

environment' as a human right.[70] Aside from a substantive right to environment, the term 'environmental rights' usually refer to procedural environmental rights such as the right to information, right to participate in decision-making, and the right to access to justice in environmental matters.[71] Food sovereignty rights can be read within the environmental rights framework. This holds the potential for invoking procedural environmental rights towards promoting agroecology, as the third element of the food-farmer-ecology nexus.

In India, constitutional provisions, such as the recognition of the right to information under Article 19 (right to freedom), and provisions of the Environment (Protection) Act 1986, the Right to Information Act 2005, the Forest Rights Act 2006, the EIA Notification 2006 and the National Green Tribunal Act 2010 make up the current framework around procedural environmental rights. While these provisions exist in black letter, these rights are routinely denied or curtailed, especially when invoked in an environmental law context.[72] Environmental rights can be a vehicle for advocating towards food-farmer-ecology based food systems, while the substantive right to environment can include a right to agroecology. This is because environmental rights have been a basis for legal innovation in the recent past, wherein a robust judicial machinery is geared towards adopting new approaches for fostering positive environmental changes.[73]

With respect to substantive rights, the provisions within the United Nations Declaration on Rights of Peasants (UNDROP) provides another rights-based vehicle for reading seed rights within the substantive right to environment. The provisions within the UNDROP can also be invoked for promoting agrobiodiversity conservation, given that India is a signatory to the Declaration. Environmental rights themselves trace their evolutionary lineage to both human rights and environmental law.[74] Seed rights under the UNDROP are a result of activism by farmers and peasants against different forms of seed enclosures, created either by IPRs or other laws that have been entrenched within a larger neoliberal agricultural model. Similarly, environmental rights have originated from frustrations against wide-spread environmental degradation which has been gradually

[70] UNGA Resolution A/76/L.75 (28 July 2022); this followed the UN Human Rights Council Resolution No. 48/13 (8 October 2021) recognizing this right for the first time internationally.

[71] Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, 25 June 1998, 2161 U.N.T.S. 447 (entered into force 30 October 2001).

[72] Shibani Ghosh, 'Procedural Environmental Rights in Indian Law' in Ghosh (ed), *Indian Environmental Law: Key Concepts and Principles* (Orient Blackswan 2019).

[73] Gitanjali Gill, 'Access to Environmental Justice in India: Innovation and Change from Access to Justice' in Jerzy Jendroska and Magdalena Bar (eds), *Procedural Environmental Rights* (Cambridge University Press 2018).

[74] Rachel Pepper and Harry Hobbs, 'The Environment is all Rights: Human Rights, Constitutional Rights and Environmental Rights' (2020) 44/2 Melbourne University Law Review 634.

understood as a human rights violation, making governments and societies at large accountable.[75] Under Article 19 of the UNDROP, peasants' seed rights are articulated, which are much wider in scope than is the case for farmers' rights under the ITPGRFA and PPVFRA. Governments are obligated to combat the negative impacts of IPRs on agrobiodiversity, such as the disappearance of traditional seeds, disruption of environmental stability, and sociocultural integrity.[76]

Food sovereignty rights, and within this realm, seed rights therefore have both procedural and substantive elements, such that for farmers it would be impossible to truly realise and enjoy a right to 'environment' without first satisfying their agroecological rights, that is, their rights to maintain ecological harmony through their rights to seeds. This is not novel thinking. For instance, Article 24 of the African Charter[77] and Article 29 of the Declaration on the Rights of Indigenous Peoples[78] recognizes a right to environment and constructs this right as an essential (precursor) right for satisfaction of other civil-political, socio-economic and cultural rights. Food sovereignty and seed rights can be read in the same vein as intrinsic components of farmers' and peasants' life, such that the loss of control over seeds could arguably lead to a loss of identity – peasantness, and a deprivation of other rights.[79] There is a long history of using the human rights framework for environmental protection and invoking environmental rights to satisfy new human rights can promote the sustainable use and protection of biogenetic resources. This can also open the possibility for seed claims to be brought before environmental or human rights tribunals in India.

3. MOBILISATIONS AROUND SEEDS IN INDIA - A BASIS FOR PROGRESSIVE BIOGENETIC RESOURCE RIGHTS AND MORE

The rise of the commercial seed sector in India and its impact on the uptake of farmers' traditional varieties has led to several mobilisations in India around seed sovereignty. These mobilisations have made several claims such as farmers rights to save, sow, exchange and sell seeds; community governance over seeds, agricultural implements, and natural resources; and reforms to alleviate the agricultural distress and so on. Albeit these mobilisations have not yet converged to push

[75] Dinah Shelton, 'Developing Substantive Environmental Rights' (2010) 1/1 J Human Rights & the Env't 89.

[76] Article 19, UNDROP.

[77] African Charter on Human and Peoples' Rights, 27 June 1981, 1520 U.N.T.S. 217 (entered into force 21 October 1986).

[78] United Nations Declaration on the Rights of Indigenous Peoples, Resolution adopted by the UN General Assembly on 13 September 2007, UN Doc. A/RES/61/295 (2007).

[79] See Sofía Monsalve Suárez, Angélica Castañeda Flores and Philip Seufert, 'The Rights to Biodiversity and Seeds', UNDROP Series, FIAN International (December 2020), <https://www.fian.org/files/files/Andrea_20201211_Papers_4_Seeds_v2.pdf>.

for legal recognition of seed sovereignty rights, they provide a foundation to future legal claims over seeds. These movements highlight the overall importance of protecting and reviving peasant seed systems and finding a clear place for them within the political economy of seeds in India. These are evidence of the growing importance of the food sovereignty discourse for India, and the grassroots voices advocating for food sovereignty rights, and a stronger biogenetic framework based on food sovereignty principles.

Resistance against seed loss with demands to restore autonomy and agency of farmers have been channelled against the state that is seen as either imposing or enabling seed enclosures. India has a long and rich history of agrarian resistance movements, which resonate with today's challenges as well. Agriculture in India underwent sweeping changes in the colonial era with the introduction of cash crops such as indigo, silk, jute, cotton and sugarcane. The colonial administration forced farmers to grow these crops over food staples to extract higher profits and revenue.[80] During this period, agriculture underwent waves of commercialisation, to such an extent that at the start of the twentieth century, cash crops occupied over 40 percent of all cultivated land under British control.[81] Colonial impositions on what one can or cannot grow led to several peasant uprisings and unrests in different parts of British India.[82] Fast forward to the Green Revolution in 1960, when the postcolonial Indian state embraced scientific and technological advancement in agriculture, a different kind of imposition on farmers can be seen.

Among the first mobilisations against large-scale uniformalised agriculture in line with the Green Revolution were the spearheaded by organisations such as the Karnataka Rajya Raitha Sangha (KRRS) and Navdanya in 1980s. These organisations managed to develop and alternate discourse against plant variety protection and liberalisation in the agriculture sector. The Beej Bachao Andolan started in the 1980s in the Tehri Garhwal region, Uttarakhand, under the leadership of Vijay Jardhary. The Andolan has protected thousands of traditional seeds and mobilized hundreds of farmers to adopt agroecological approaches to farming.[83] This led to many other connected and successor movements that raised awareness around conserving farm-saved seeds by cultivating them. Vandana Shiva's activism against farming practices introduced by the Green Revolution and HYV seeds replacing traditional varieties led to the Beej Swaraj (seed freedom or seed sovereignty) campaign in the early

[80] Eric Stokes, *The English Utilitarians and India* (OUP 1959) 86-95.

[81] Richa Kumar, 'India's Green Revolution and Beyond Visioning Agrarian Futures on Selective Readings of Agrarian Pasts' (2019) 54/34 Eco & Pol Weekly 41.

[82] LS Vishwanath, 'Peasant Movements in Colonial India: An Examination of Some Conceptual Frameworks' (1990) 25/2 Eco & Pol Weekly 118.

[83] Trent Brown, 'Chipko Legacies: Sustaining an Ecological Ethic in the Context of Agrarian Change' (2014) 38/4 Asian Studies Review 639, 646-654.

1990s.[84] The Beej Bachao Manch (save the seeds forum) continues to operate as a country-wide network of organisations and movements that are involved in seed conservation. Among them, Navdanya, an organisation founded and headed by Shiva in 1987 has since set up 150 community seed banks in 22 states involving 7,50,000 farmers.[85] Navdanya's radical agenda against HYV seeds, GMOs, corporate seed ownership etc has run several programmes to promote farmers owning their own seeds, carrying out sustainable farming practices that are also profitable.[86]

In 1993, the Gene Campaign founded by Suman Sahai has been dedicated to promoting ecologically sustainable agriculture by conserving indigenous seed varieties and germplasm. It also led the campaign against India joining the UPOV, by challenging its decision in the Supreme Court through a public interest litigation.[87] Many such organisations have coordinated their actions under the Alliance of Sustainable and Holistic Agriculture (ASHA), an organisation headed by Kavitha Kurunganti. In 2010, ASHA launched a Kisan Swaraj Yatra (rally for farmers' sovereignty) that involved NGOs, organisations such as Navdanya, Gene Campaign etc and several other farmers' organisations across 20 Indian states to raise awareness on agricultural distress and promote farmers' self-reliance through the increased control over seeds.

There are hundreds of examples of regional and local farmers' groups and organisations that advocate the revival and protection of farm-saved seeds that are fast disappearing.[88] These organisations, coalitions and movements have argued that farmers need to regain control over their seeds to reduce dependencies on the market fluctuations, climatic changes and intensive farm inputs. These include: Karnataka Rajya Raitha Sangha (KRRS) now working as the La Via Campesina India chapter; Sambhav and the Centre for Integrated Rural and Tribal Development in Orissa; Auroville in Tamil Nadu; the Deccan Development Society in Maharashtra; Timbuktu Collective in Andhra Pradesh; Dram Disha Jaivik Samooh in Baag village, Himachal Pradesh; Bramhakumari Trust (Sashwat Kheti campaign) in Gujarat and SIMFED in Sikkim. Aside from the names of individuals mentioned above, farmers such as Rahibai Popere, dubbed the 'seed mother' was awarded the Padma Shri for her work on preserving traditional crop seeds. Other distinguished farmers include Gangawar Anjama, Babulal Dahiya and Debal Deb, to name a few. These seed-saving actions, either via NGOs, organisations,

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[84] R Krishna Kumar, 'Bharat Beej Swaraj Manch to Work Towards Restoring 'Seed Sovereignty' of Farmers', *The Hindu* (17 April 2015).

[85] Navdanya, 'Community Seeds Bank' <https://www.navdanya.org/site/living-seed/navdanya-seed-banks>.

[86] For example: Anna Swaraj: Movement to Stop Misleading & Unscientific Labelling <https://www.navdanya.org/site/living-food/anna-swaraj-campaign>.

[87] Suman Sahai, 'India's Plant Variety Protection and Farmer's Rights Act, 2001' (2003) 83/3 Current Science 407.

[88] Karine Peschard and Shalini Randeria, 'Keeping Seeds in Our Hands': The Rise of Seed Activism' (2020) 47/4 J Peasant Studies 613.

coalition of organisations, informal or semi-formal groups, individuals etc have a somewhat scattered identity, yet they have a shared vision on some key aspects.[89]

What brings these movements together is the importance they attribute to traditional seeds, and a sense of crisis in the wake of seed loss. They promote environmentally sustainable and ecologically grounded farming, may be these be traditional indigenous or region-specific practices, or scientifically researched and tested. They all have also have a gendered character, as women within most farming communities have served as conservationists, knowledge-bearers and curators of seeds. Yet, given that farmers are not a homogenous group, even these actions should be open for critical inspection. Organisations and coalitions raise the question of which farmers do these groups represent? The extent to which these groups are influenced by donors, urban middle-class notions on organic and ecologically sustainable agriculture, sociocultural hierarchies within these groups, and whether seed-related claims tend to essentialise what all farmers want or what all agriculture should look like.

4. UNRESPONSIVENESS TO MOBILISATIONS – A PERSISTENCE OF PRODUCTIVISM BEHIND THE VEIL OF FOOD SECURITY

The past decades of agricultural policy have side-lined the role of farmers as key knowledge bearers for agrobiodiversity, leading to a knowledge deficit within agriculture. There are three dimensions to this: one, the creation of agricultural research infrastructure in the advent of the Green Revolution; two, lowering of agricultural profitability over the past decades creating a skilled labour vacuum; and three, farmers as innovators within the PPVFR system. The Green Revolution has left its mark on Indian agricultural policymaking in many ways, yet one of its most long-lasting endowments has been the establishment of agricultural knowledge infrastructure. Universities and central agricultural institutions have become knowledge centres of agrobiodiversity. Research that generates new knowledge and technologies for crop production determine the content and size of all other policy instruments.[90] Research that agricultural institutions churned out consolidated the space for science and technology in state policymaking. National fixations on ensuring food security and higher agricultural growth has looked for solutions primarily within this knowledge paradigm. Irrigation, land, seeds and even rural development policies have conceded the supremacy of science and technology, as they are based on science and technology outputs. Obsessive legitimization of scientific research and technology

[89] Ibid.

[90] Rajeswari Raina, 'Knowing and Administering Food: How do We Explain Persistence?' in C Sheela Reddy (ed), *Food Security and Food Production: Institutional Challenges in Governance Domain* (Cambridge Scholars 2015) 11, 17.

has been critically evaluated by many scholars to show that science and technology are not neutral; they fit within a certain paradigm.[91]

Among the different facets of food and nutritional policy defined by the WHO, there is no mention of food production per se. These facets are nutrition, food safety, sustainable access to food, and a healthy lifestyle.[92] Increasing agricultural production only assists in the sustainable access to food and should not be pursued as policy goal on its own. As agriculture policy has pursued technology-intensive growth, other pillars of food and nutritional security have been ignored. Today, scientific institutions create knowledge, produce seeds, catalogue different gene traits and store genomes. The farmer's role in this knowledge political economy is marginal.

Food production has increased since 1960, however this has not led to an eradication of hunger and malnutrition, which was *the* core ideal of ushering in the transformation. The number of farmers that buy their food versus grow it has been on the rise, but this is especially more pronounced among marginal, landless and female farmers.[93] This makes them on the one hand vulnerable to changes in food prices, as well as, susceptible to low-nutritionally rich food intake through the PDS system.[94] The decline in self-produced food and local food systems has led to loss of knowledge on local foods, techniques of preservation of biogenetic resources.[95]

Alternative agro-ecological approaches have albeit found some utterance and have slowly gained more space in policymaking. For instance, the 2001 Right to Food campaign wherein organisations and groups advocated for more comprehensive agricultural approaches that address livelihood, wages and resource conservation and sustainable use. Judicial pressure helped bring the campaign to a forefront when the Indian Supreme Court read the 'right to food' within Article 21: right to life within the Constitution.[96] This movement culminated in the Food Security Act 2013, which unfortunately shied away from making any changes in the food system and instead took a narrow view

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[91] Keith Griffin, *The Political Economy of Agrarian Change: An Essay on the Green Revolution* (Macmillan 1979) 213.

[92] WHO, 'Food and Nutrition Policy and Plans of Action', Report of the WHO-FAO Intercountry Workshop, 17-21 December 2008, Hyderabad.

[93] Supra n 90, Raina (2015) at 19.

[94] FAO, 'Towards a Green Revolution', *World Food Summit: Food for All* (Rome, 13-16 November, 1996), available at <http://www.fao.org/3/x0262e/x0262e06.htm>.

[95] S Mahendra Dev, 'Agriculture-Nutrition Linkages and Entry Points in India', Working Paper 6, IGIDR, 2012, <http://www.igidr.ac.in/pdf/publication/WP-2012-006.pdf>.

[96] *People's Union for Civil Liberties* v *Union of India & Ors*, Supreme Court of India, Civil Original Jurisdiction, Writ Petition (Civil) No. 196 of 2001.

of food security, restricting its operation to subsidized food distribution to the poor. In 2005, the central government rolled out its first ever Organic Farming Policy that begins with how the Green Revolution was a tremendous success, yet admits that its input intensive style of production has had harmful effects on farmers and the ecology.[97] Eleven states have organic farming policies that speak of location-appropriate agricultural practices, ecological and economic returns strategies and a move towards fair trade food.[98] While these are positive developments towards integrating human and ecological health, they are still seen as alternatives.

The Green Revolution based productivist approach remains the dominant approach in India's knowledge-policy paradigm. Efforts towards organic farming and nutritionally rich local food systems do not attract the same level of research interest as do production-oriented knowledge creation. Furthermore, there have been efforts outside the agricultural realm that aim at increasing rural incomes and ergo access to food. These include rural employment programmes, most notably the MGNREGA, rural infrastructure development, market reforms to support local supply chains and programmes aimed towards woman empowerment, transferring benefits (usually cash) directly to women have an impact on food security for marginalised populations. However, these too operate within the same knowledge-policy paradigm. While these programmes and schemes may place more money in the hands of vulnerable sections of society, however, these efforts do not address the core issue of a flawed production system itself. Such programmes and those providing food subsidies, fuel subsidies to produce food are after all located within the centralist productivist paradigm.[99] The same assumptions around productivity perpetuate, while rural labour that benefits from these schemes gets further disconnected with agriculture.

5. RESPONDING TO MOBILISATIONS – RECOGNIZING FARMERS' RIGHTS TO CONSERVE BIODIVERSITY

Crop genetic resources can be conserved within their natural environment, that is: in farmers' fields, the wild, or in natural reserves or parks (in situ), or outside their natural environment, say in gene banks, botanical gardens, or zoos (ex situ). While a combination of both in situ and ex situ techniques is required within a conservation strategy, the balance ought to be in favour of in situ conservation to

[97] Ministry of Agriculture, Organic Farming Policy 2005, Dept of Agriculture and Cooperation, <https://ncof.dacnet.nic.in/Policy_and_EFC/Organic_Farming_Policy_2005.pdf>.

[98] For example, Uttarakhand is the first state to enact a Organic Agriculture Act in 2019, this Act inter alia declares several of Uttarakhand's districts as organic. Sikkim is another state, that is completely organic. Many other North-Eastern states are also organic.

[99] Supra n 90, Raina (2015) at 73.

ensure effective protection and management of biogenetic resources.[100] Crops in their natural environment leads to healthy mutations of genetic traits that need to be preserved within the crop species. Preservation of certain genotypes coincides with increased crop diversity as crops variations can increase only if they are planted and replanted as opposed to being locked in cold storage. Further, local knowledge surrounding crops, their traits, variations, and respective characteristics 'remains alive' in the process of farming.

On-farm conservation depends on farmers' choice to maintain traditional crop varieties and grow them repeatedly. This involves growing crops that satisfy livelihood concerns of farmers, that is, they ensure marketability, suitability in terms of inputs available to the farmer, and low risk.[101] The Indian Government has recognized the need for conservation and sustainable use of crop genetic resources. In situ conservation although has not featured high up within the list of strategies adopted to achieve this. The PPVFRA through its benefit sharing mechanism and recognition of farmers varieties makes only an allusion to in situ conservation, however the larger focus on conservation does run through the Act as a common thread. Second, the Biological Diversity Act 2002 regulates access and transfer of IPR in agrobiodiversity. This Act also creates a system of benefit sharing, albeit quite different from the PPVFRA, yet what is clear here is that conservation is the main motive behind the Act, and this includes in situ conservation.[102] Third, the formulation of the National Biodiversity Strategy and Action Plan in 1999 (NBSAP) has been the only policy instrument that is solely focused on in situ conservation crop genetic resources. The PPVFRA and BDA although have the potential to cover these themes, they have not resulted in or been used to encourage on-farm conservation of traditional crop varieties. The NBSAP envisages providing subsidies, making credit available, provision of insurance, creation of markets and other infrastructure for the conservation.[103] However, the effectiveness of this policy and other overarching legislations have not been investigated to show what farmers respond to while engaging in conservation action. On the other hand, hundreds of schemes and programmes are focused on only increasing yield and ergo increasing farm livelihood.

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[100] Nigel Maxted et al, 'Towards a Methodology for On-Farm Conservation of Plant Genetic Resources' (2002) 49/1 Genetic Resources and Crop Evolution 31.

[101] Stephen B Brush (ed), 'The Issues of In Situ Conservation of CGRs' in *Genes in the Field: On-Farm Conservation of Crop Diversity* (Lewis Publishers, IDRC and IPGRA 2000) 3; Anil Gupta, 'Cradle of Creativity: The Case for In Situ Conservation of Agro-biodiversity and the Role of Traditional Knowledge and IPRs', paper presented at the International Workshop on Property Rights, Collective Action and Local Conservation of Genetic Resources, Rome (2003).

[102] Jayanta Boruah, 'Access and Benefit Sharing: A Status Under Indian Legal Regime', Seminar Paper submitted to National Law University and Judicial Academy Assam (March 16, 2019).

[103] Ministry of Environment, Forest and Climate Change (MoEFCC), 'National Biodiversity Strategy and Action Plan, India: Final Technical Report of the UNDP/GEF Sponsored Project', vol I (2003) Chapter 7c.

National notions of India's agricultural model and food system have evolved within a productivist paradigm that favours large-scale production of commercially lucrative crops over traditional small and medium-scale farming. The state has been active and present in directing agricultural policy towards higher productive capacities, and in doing so, the state has chosen to focus its attention on some aspects of agricultural policy while ignoring others. As described above, price control, agricultural marketing, agricultural input regulations are among these tightly controlled areas of agricultural policymaking. Farmers' biogenetic rights comprises a largely ignored category, and even when this subject has been addressed it has remained enveloped within the productivist paradigm.

Agricultural policy progression while trying to solve national level food security, has created further problems for food security at the local level for farmers, who are unable to generate substantial agricultural income for themselves.[104] Further, the rise of quantitative-oriented provision of staples through the Public Distribution System (PDS) strengthened by the Food Security Act 2013 has created new problems of nutritional insecurity. Large-scale cropping and mono-cropping of profitable crops have reduced the demand for different varieties of crops that cannot compete as commodities within agricultural markets. This connects with the disappearance of in situ conservation of these varieties. If farmers do not grow these varieties anymore, the resource itself and related knowledge is lost, which largely remains diffused among communities or with public domain. Such knowledge becomes centralised within state institutions, where appropriation over the resource by private parties (may they be large multinationals, companies or big farmers/agrobusinesses) is a more natural consequence than public access.[105]

(a) Conservation of Landraces, Local Cultivars and Using Farm-Saved Seeds

Worldwide trends during this period also showed that the use of high yielding varieties (HYVs) for commercial agriculture encouraged farmers to switch to monocropping, as well as, the propagation of HVY seeds and innovation of new HVYs using a small pool of parent lines resulted in decreased genetic diversity.[106] The Indian experience by and large confirms this proposition, however there are variations in specific crop species.[107] In the two decades following the Green Revolution, the proportion

[104] Jack R Kloppenburg, *First the Seed: The Political Economy of Plant Biotechnology, 1492–2000* (University of Wisconsin Press 2004) 336.

[105] Philippe Cullet, 'Intellectual Property Rights and Food Security in the South' (2004) 7/3 J World IP 261, 265.

[106] Jock R Anderson and Peter BR Hazell, *Variability in Grain Yields: Implications for Agricultural Research and Policy in Developing Countries* (Johns Hopkins University Press 1989).

[107] For instance, Stephen Brush challenges the two widely held hypotheses about the effects of the green revolution, that it led to biological simplification and instability. He argues that farmers have maintained a significant degree of crop genetic diversity in some crops even after using modern seed varieties. The Green

of cultivated land that used HVY seeds increased by a staggering 60 percent.[108] Loss of variation has not been clearly measured, as only those farmers who made a switch towards more uniform varieties or improved varieties to replace local varieties have been accounted for.[109] Varieties that have been lost owing to other factors other than switching to new varieties (say for displacement etc) have only been guessed as they have not been accounted for prior to their loss.

Studies based on particular crops using data available at the National Gene Bank of India have been conducted to show the general trend in genetic diversity in Indian agriculture. In case of staple crops whose cultivation saw a drastic change during the Green Revolution gene diversity has shown an increasing trend from 1940-2005, thereafter a decreasing trend between 2006-2013, however at the level of alleles, an increasing trend in between 1940-1985 remained constant during 1986-2005 and again showed an increasing trend. This means that while many new plant varieties for major crops are being registered and researched upon, reliance is placed on only a few parents, which has resulted in loss of gene diversity especially after 2005.[110] Geneticists and agronomists have pointed out that this trend in decreasing diversity creates an urgent need to broaden the genetic base of Indian crop varieties using diverse parents.

The loss of crop diversity and crop genetic diversity leads to instability in agriculture and the loss of resilience.[111] Agriculture in India is highly sensitive to weather shocks. The intensity of these shocks is increasing and will continue to intensify in the years to come. First, crop diversity can insulate farmers against these, and genetic traits and genomes can survive or even thrive in such environmental extremes. Crop diversity and genetic diversity therein is therefore an avenue for increased resilience.[112] The importance of resilience in farm produce has been highlighted in literature from different

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Revolution in genetically diverse countries such as India has not led to increased instability. 'Reconsidering the Green Revolution: Diversity and Stability in Cradle Areas of Crop Domestication' (1992) 20/2 Human Ecology 145. His analysis however limits the definition of 'stability' to only yield stability, while today resilience is understood to mean stability in the wake of extreme weather events, drought and climate change induced changing weather patterns.

[108] Dana G Dalrymple, Development and Spread of High-yielding Wheat Varieties in Developing Countries (USAID 1986) 54; Marie Ruel et al, 'Nutrition-Sensitive Agriculture: What have we Learned and Where do We Go From Here?' (2017) IFPRI Discussion Paper 1681. International Food Policy Research Institute (IFPRI), Washington, D.C.

[109] AJ Singh and Derek Byerlee, 'Relative Variability in Wheat Yields Across Countries and Over Time' (1990) 41 J Agr Eco 21.

[110] Nivedita Singh et al, 'Genetic Diversity Trend in Indian Rice Varieties: An Analysis Using SSR Markers' (2016) 17 BMC Genetics 127.

[111] Ibid at 128-33.

[112] Maximilian Auffhammer and Tamma A Carleton, 'Regional Crop Diversity and Weather Shocks in India' (2018) 35/2 Asian Devp't Rev 113.

disciplines.[113] From an agricultural economics point of view, higher crop diversity in a given cultivated area leads to more drought resilience, and positively impacts both gross and net revenues of farmers. Thus, farmer welfare both through physical (yield) and market (price) channels have a strong relationship with increased crop and genetic diversity.

In India, the North-eastern region is one of the few remaining agrobiodiversity rich hotspots, albeit under threat.[114] Tribal communities have felt the pressure of the dominant economic and agricultural model, and resultantly, indigenous foods, recipes and socio-cultural knowledge associated therewith are disappearing. To ensure food security through nutrient-rich healthy foods, tribal food systems and traditions must be preserved.[115] In many other locations in India, studies have shown that crop diversity ensures a diverse dietary intake and ergo higher food security.[116] Thus an agriculture-nutritional integrated approach is necessary for effective biodiversity management.[117] Studies have also shown that crop diversification and diversification in intra-home diets increases farmers' incomes.[118]

In the 1960-80 decades there was a rise in staple specialisation owing to Green Revolution technologies, however after 1980 the area of staple cultivation grew at a much slower rate, and substantial gains in cultivation area were made by oilseeds.[119] Owing to demands of agricultural trade, commercial farming has intensified around cash crops over diverse food crops. The crops that have therefore taken the maximum beating are different varieties of staples that do not grow as quickly or have the same amount of yield, and fruits and vegetables that are so varied that consumer preferences

[113] Ibid at 116. Diversity in agricultural systems has been suggested in the agroecology, climate impacts and environmental economics literatures as a powerful means of on-farm insurance, both through physical and market-based channels.

[114] Tapasi Das and Ashesh Kumar Das, 'Agrobiodiversity in Northeast India: A Review of the Prospects of Agrobiodiversity Management in the Traditional Rice Fields and Homegardens of the Region', in Niranjan Roy et al (eds), *Socio-Economic and Eco-Biological Dimensions in Resource use and Conservation* (Springer 2020) 117.

[115] Supra n 4, Bisht (2018) at 79.

[116] Anil Kumar et al, 'Community Agro-Biodiversity Conservation Continuum: An Integrated Approach to Achieve Food and Nutrition Security' (2015) 109/3 Current Science 474.

[117] AV Vijaya Bhaskar et al, 'Establishing Integrated Agriculture-Nutrition Programmes to Diversify Household Food and Diets in Rural India' (2017) 9 Food Security 981; Suneetha Kadiyala et al, 'Agriculture and Nutrition in India: Mapping Evidence to Pathways' (2014) 1331/1 Ann NY Acad Sci 43.

[118] Sukhwinder Singh et al, 'The Association Between Crop and Income Diversity and Farmer Intra-Household Dietary Diversity in India' (2020) 12 Food Security 369, 375.

[119] CR Hazra, 'Crop Diversification in India' in Minas Papademetriou and Frank Dent (eds), *Crop Diversification in the Asia-Pacific Region* (FAO 2001) 32, 36.

have not evolved around appreciating them.[120] While the government has intervened at the central and national levels to promote diversification of crops either as an environmental measure or livelihood measure. For example, the Orissa government's 2020 State Agricultural Policy (Samrudhi) has made a push towards diversification, however as described above the productivist paradigm still looms large as diversification is emphasised as a means to socio-economic well-being of farmers, development of technologies and creating new market linkages. Such policies however commendable continue to reiterate the growth metrics and cannot escape them.[121]

(b) RE-IMAGINING FOOD SYSTEMS FOR THE PROTECTION OF FARMERS' HUMAN RIGHTS

Food systems can be re-oriented, to make them more localised and diverse, by recognizing and respecting their food, environmental and conservation rights, including a wide array of their human rights. Farmers in India have mobilized in the past demanding this, against a backdrop of agrarian crisis and depeasantisation. The recognition and legislative enactment of the right to food fits within a broader context of the popularity of human rights-based approaches aimed at poverty reduction. Human rights as legal instruments are well-understood, redressable within an already extant national legal infrastructure and can conveniently link with universal frameworks and standards that advance global justice.[122] A human-rights-framing of hunger has not resulted in the productivist paradigm losing its relevance altogether. For instance, the FAO recommended that the global food production needed to increase by 50% by 2030, and double by 2050 to feed 9 billion.[123] In fact, productivism and the right to food are extreme difficult to decouple in a globalized food system. The rights-based conception is concerned with only individuals receiving adequate quantities of nutritious food, even if it needs to be shipped from the other side of the world, or even if such individuals have no power within the politics of the food production, consumption, and distribution.[124]

Food sovereignty stands as an alternative paradigm has been iterated on several occasions in different forums. The 2007 Nyeleni Declaration is arguably the most widely accepted articulation of food sovereignty. It defines the term as: 'the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food

[120] Nicolas Rada, India's Post-Green-Revolution Agricultural Performance: What is Driving Growth? (2016) 47/3 Agricultural Economics 341.

[121] Supra n 118, Singh et al (2020) at 369.

[122] Supra n 16, Gostin (2014) Chapter 8.

[123] FAO, 'How to Feed the World in 2050 - Report', FAO Conference, Rome (15 October 2009).

[124] William Schanbacher, *The Politics of Food: The Global Conflict between Food Security and Food Sovereignty* (Praeger 2010) ix.

and agriculture system.'[125] Most food sovereignty advocates do not reject a right to food or more broadly, human-rights based approaches. Food sovereignty itself uses a rights-language. The right to food and food sovereignty narratives have at most times complemented on another, and on some occasions have also merged. For instance, former UN Special Rapporteur on the Right to Food (2008-14), Olivier de Schutter's support for small-scale peasant farming, sustainable agroecological agricultural practices, and food that was nutritionally and culturally suitable is an example of entanglement of the right to food and food sovereignty discourses.[126]

La Via Campesina's strategy to advance the cause of food sovereignty, while including local and national campaigns and political mobilisations, has also included participation within the Committee for Food Security, the FAO generally, and within the Human Rights Council's Working Group on rights of peasants and people working in rural areas.[127] Food sovereignty advocacy has thus involved a balancing act between engaging in the international institutional politics and pursuing its grassroots operations.[128] Despite being a counter movement, food sovereignty has managed to translate itself into a language that the UN and its members operating within this institutional space understand well. Attempts to institutionalise food sovereignty rights within the human rights framework were made.[129] An active pursuit towards an International Convention on Food Sovereignty was discussed and articulated in many Via Campesina forums, which also resulted in the 6-pillar framework.[130] However, since the 2007-08 food prices crisis, this pursuit was abandoned.[131] Via Campesina has since channelled its efforts towards effecting national policymaking, continuing to work actively within the Committee for Food Security, and engaging in the efforts that led to the passing of the UN Declaration on Peasants

[125] Via Campesina, 'Nyeleni Declaration' (Mali, Forum for Food Sovereignty, 2007), <http://www.foodandwaterwatch.org/world/global-trade/NyeleniDeclarationen.pdf/view>.

[126] Olivier De Schutter, 'Report of the Special Rapporteur on the Right to Food - Final Report: The Transformative Potential of the Right to Food', A/HRC/25/57, 24 January 2014.

[127] Emma Larking, 'Mobilising for Food Sovereignty: The Pitfalls of International Human Rights Strategies and An Exploration of Alternatives' (2019) 23/5 Int'l J Hum Rts 758, 759.

[128] Priscilla Claeys, 'The Creation of New Rights by the Food Sovereignty Movement: The Challenge of Institutionalizing Subversion' (2012) 46/5 Sociology 844 847.

[129] La Via Campesina, 'Our World is Not for Sale - Peoples' Food Sovereignty & WTO Out Of Agriculture', Statement, 2 September 2003, <https://viacampesina.org/en/peoples-food-sovereignty-wto-out-of-agriculture/>.

[130] For instance: World Forum for Food Sovereignty, Declaration of the International Forum for Agroecology 2007 (Nyeleni Declaration), Mali; World Forum for Food Sovereignty, 'Synthesis Report' (23-27 February 2007, Mali) <https://nyeleni.org/IMG/pdf/31Mar2007NyeleniSynthesisReport-en.pdfNyéléni>.

[131] International Planning Committee for Food Sovereignty, 'Policies and Actions to Eradicate Hunger and Malnutrition', Working Document (November 2009).

Rights 2018. This Declaration embodies many food sovereignty ideals and values and is arguably the latest and most concrete iteration of an otherwise fuzzy concept of food sovereignty.

Food sovereignty's framing of its own claims as 'rights' include the rights to define one's food system, preserve one's 'way' of cultivation, wide-ranging rights over land, seeds, and traditional knowledge etc.[132] In a legal sense, food sovereignty uses a rights-based vocabulary that can inform policymaking in varied spheres.[133] The use of rights-based language aims at rejecting the power asymmetries inherent among those who produce, distribute and consume food.[134] Hence, the right to food needs to be distinguished from food sovereignty rights, as the former is blind to such power asymmetries. An entitlement to food is understood as direct access to food one grows or collects; or an economic entitlement to buy food from local markets. First, the right to food within development policymaking has operated alongside the fact that approximately 80 percent of world's most food-insecure people are food producers.[135] Therefore, the normative construction of the right to food betrays smallholder farmer or peasant interests by failing to integrate farmers' special positions within the rights narrative. Agarwal likewise argues a right to food entails 'an inherent conflict' between consumers' right to 'decide what they want to eat, and how and by whom it is produced' and rights of smallholder producers to decide what they want to grow.[136] Consumers may as well prefer the low cost of imported foods, or GMOs, which would constitute an exercise of their right to food. Food sovereignty when understood as a *special* right that places farmers on a higher moral standing than any other entitlement vessels, this conflict may be resolved. Via Campesina's promotion of 'the peasant's way' even in its vaguest avatars infuses a sense of higher respect or moral desert towards farmers *over* other consumers.

Food sovereignty rights to define one's food and agricultural policy should not be reduced to a privilege.[137] Farmers when conflated with all other holders of the right to food, first, reduces the conception of agriculture as a mere occupation, rather than *the* source of food; and second, farmers

[132] Priscilla Claeys, 'Food Sovereignty and the Recognition of New Rights for Peasants at the UN: A Critical Overview of La Via Campesina's Rights Claims over the Last 20 Years' (2015) 12/4 Globalizations 452, 456.

[133] Robin Dunford, 'Human Rights and Collective Emancipation: The Politics of Food Sovereignty' (2015) 41 Rev Int'l Studies 239.

[134] Saturnino Borras, Marc Edelman, and Cristóbal Kay, 'Transnational Agrarian Movements Confronting Globalization' (2008) 8/2-3 J Agrarian Change 169, 173-5.

[135] Tina Beuchelt and Detlef Virchow, 'Food Sovereignty or the Human Right to Adequate Food: Which Concept Serves Better as International Development Policy for Global Hunger and Poverty Reduction?' (2012) 29/2 Agr & Hum Values 659.

[136] Bina Agarwal, 'Food Sovereignty, Food Security and Democratic Choice: Critical Contradictions, Difficult Conciliations' (2014) 41/6 J Peasant Studies 1247.

[137] Radhika Balakrishnan and Diane Elson, 'Auditing Economic Policy in the Light of Obligations on Economic and Social Rights' (2008) 5/1 Essex Hum Rts Rev 1.

much like any other consumers need only have economic agency (which could be satisfied by farming or any alternative income sources) to realise their right to food.

6. CONCLUSION

This chapter has analysed what India's trajectory of agricultural policy means for Indian farmers and their relationship with biogenetic resources. Some facets of this changed relationship stand out, these are: (a) a limited understanding of rights pertaining to food, farmers, and ecology, and the need to expand their conceptualisation in the 3 different domains; (b) farmers' mobilisations that provide evidence for a broader range of food sovereignty and biogenetic rights; (c) farmers being replaced as biogenetic knowledge-bearers, and ergo innovators; and finally how these ideas do not neatly fit within the productivist state's metrics of agricultural success. Major changes in farmers' food systems have led to a deterioration of local food systems and diets, loss of farm and home nutritional/crop diversity and the loss of in situ conservation.

The next 2 chapters are fieldwork chapters, that report empirical evidence from 2 field sites in India – the first, Patan in North Gujarat and the next, West Sikkim in the North-Eastern state of Sikkim. These are case studies that present a vignette of the larger Indian context, and the applicability of food sovereignty rights therein. In both these case studies, the status of agrobiodiversity, nature and types of seed systems, biogenetic resource conservation and cultivation, and the overall potential for food sovereignty-based food systems to thrive in these diverse contexts.

CHAPTER V

ECHOES OF FOOD SOVEREIGNTY IN A CASH CROP FOOD DESERT – UNPACKING RESPONSES FROM PATAN GUJARAT

1. INTRODUCTION

This chapter is the first of 2 fieldwork chapters that explores different seed and food systems in the respective field sites to assess the potential of food sovereignty in diverse settings in India. The previous chapters have explored the location and scope of food sovereignty rights of Indian farmers from different dimensions – situating biogenetic resource rights within the food sovereignty approach (Chapter 2); situation of farmers and their decreasing control over biogenetic resources in a productivist context (Chapter 3); and food sovereignty rights as human rights (Chapter 4). This chapter is dedicated to the case study of Patan, North Gujarat, while the following chapter is based on the case study of West Sikkim in North-East India.

The first field-site is the district of Patan in the state of Gujarat (western India). Agriculture in Patan comprises primarily cash crops, with a high reliance on commercially sold seeds for high-value crops. Most medium to large-scale farmers enter into contracts with private buyers with a pre-arranged price with minimal reliance on *state mandis* (APMCs) to sell their produce, while small and marginal farmers continue to be heavily reliant on the state markets. Agriculture in North Gujarat is heavily influenced by the Green Revolution, comprising a privatised and corporatized network of agrobusinesses, seed companies, fertilizers and pesticides companies and a majority of farmers engaged in agriculture for-profit rather than subsistence.

The second field-site is the district of West Sikkim (also known as Geyzing district) in the state of Sikkim (North-eastern Indian). This district is nestled within the Eastern Himalayan mountains, and ethnically comprises the Limboo, Lepcha and Bhutia scheduled tribe communities. Owing to the mountainous landscape, landholding sizes are small to marginal, and farming is carried out mainly for subsistence and consumption within the community or village area. The contact and reliance on *mandis* are minimal, but unlike Patan, this is not due to the presence of private buyers or agrobusinesses. There is firstly, little surplus crop sold to the market, majority surplus shares are sold in temporary or weekly / bi-weekly markets in *basti* (village) centres rather than the district regulated market in the district capital, Gyalshing. Majority of seeds used are farm-saved, and inputs are low given the organic richness of the Himalayan soil and Sikkim's organic status since 2016. Over the past few years, state governments and central agricultural agencies have been promoting more high-value for-profit farming

in Sikkim which has led to rapid changes in the seed systems, marketing and export systems and attitudes of farmers.

Chapters 7 and 8 will analyse these 2 contrasting case studies to discuss the application and potential for operation of food sovereignty rights with respect to biogenetic resource in these case study sites. These highly diverse agricultural contexts stand as microcosms for developing a vision for food sovereignty rights in India as a whole. Therefore, the following 4 chapters focus on some key markers of food sovereignty, these include:

1. *Agency* of farmers or lack thereof in development of their food systems and more broadly agricultural policy that affects them. This thesis argues for the need for frameworks to guide this development in a more food sovereignty-based and farmer-led way.

2. The impact and *importance of agriculture on farmer livelihoods*. Within a larger context of agricultural non-profitability and depeasantization, there is lesser reliance on agriculture as contributor to farm family income, as younger family members are actively discouraged or chose not to remain in farming. The shaping of food systems that are farmer-led will not reflect food sovereignty ideals unless agriculture is lucrative and rewarding for young people. This therefore necessarily includes questions of availability of markets, transport, supply of inputs and pricing regulations that greatly influence who stays in farming and who leaves.

3. The *presence and potential of food sovereignty-inspired biogenetic resource rights*. The 2007 Nyeleni Declaration is arguably the most widely accepted articulation of food sovereignty. It defines the term as: 'the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture system.'[1] In its synthesis report supporting the Declaration, the World Forum for Food Sovereignty, set out a framework for food sovereignty – Six Pillars Framework.[2] I use these pillars to analyse the presence and potential of biogenetic rights in the field sites.

The Six Pillar Framework comprises:
(1) a focus on food for people;
(2) valuing food providers;
(3) localizing food systems;

[1] World Forum for Food Sovereignty, Declaration of the International Forum for Agroecology 2007 (Nyeleni Declaration), Mali.

[2] World Forum for Food Sovereignty, 'Synthesis Report' (23-27 February 2007, Mali) <https://nyeleni.org/IMG/pdf/31Mar2007NyeleniSynthesisReport-en.pdfNyéléni>.

(4) placing control locally;
(5) building knowledge and skills; and
(6) working with nature.

These are a reference point for the analysis that follows. The analysis raises questions such as - is the control over seeds and traditional knowledge local? Is food grown with a focus on people? Do farming styles and methods work with nature? This thesis contests the assumption that enhancing farmer incomes through the cultivation of high value export-oriented crops is, on its own, sufficient for food security of farmers.

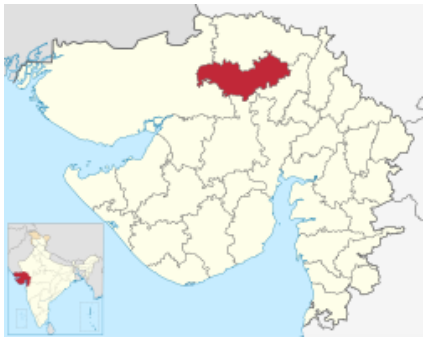
Both field sites, notwithstanding their contrasting settings, are rife with instances of alternative visions for improving food security of local farmers through the direct control of seeds, cultivation of local traditional crops and control over agricultural inputs aimed at improving food-related outcomes for farmers. These expressions of food sovereignty within both case studies offer a window into the on-ground operation and adoption of food sovereignty approaches. As the Six Pillar Framework indicate, food sovereignty is highly place-based, and will therefore not assume the same shape and form in diverse settings.[3] By exploring multiple interpretations of food sovereignty in the field sites and among participants, this thesis hopes to:

(i) identify the elements of a food sovereignty framework in India,
(ii) examine how existing seed laws and overall agricultural policy modifies or alters food sovereignty of farmers, and
(iii) develop a food sovereignty framework that is applicable to multiple contexts and fields.

[3] Christina Schiavoni, 'The Contested Terrain of Food Sovereignty Construction: Toward a Historical, Relational and Interactive Approach' (2017) 44/1 J Peasant Studies 1.

2. SETTING AND BACKGROUND

The first case study is based in Gujarat state in western India. Empirical research was carried out primarily in Patan district and in some areas within its surrounding districts for a period of 4 months (October 2019 – January 2020). Patan district is one among 33 districts in the state. It is located in north Gujarat, surrounded by Kutch district on the west, India's largest district comprising a vast salt desert; Banaskantha district on north and northeast; and Mehsana district on the east and southeast. It is a medium size district comprising 5792 km^2.



Patan city is the capital of the district with a rich history and culture. It was the capital of Gujarat for over 700 years in the late medieval period. Patan district falls between the North Gujarat Plain and South-Western Punjab plain, with a hot, arid and semi-arid climate. Average annual temperatures range between 34° C - 28° C. The district is dry, receiving only 27.09mm of precipitation (20.7 rainy days) annually.[4]

Patan district comprises medium black to black salts affected soil, loamy and sandy soil, not suitable for growing water-intensive crops. With very low rainfall and a dried up Saraswati river that used to flow through the district, Patan has no natural perennial source of irrigation. Patan draws water from the Sardar Sarovar Project via its Western canal – Narmada Canal. Water from 5 branch canals – Kutch, Radhanpur, Amrapura, Rajpura and Bolera canals supply water for irrigation and industrial use. For a majority of farmers interviewed, canals and tanks supplied by major irrigation projects such as the Sardar Sarovar are the main sources of irrigation. Groundwater sources such as open wells, bore wells and lift irrigation are also used, however Patan, and more broadly North Gujarat is infamous for its overexploitation of groundwater. The district has one of the most polluted, overdrawn and under-recharged aquifers in the country.[5]

Cash crops are dominant in Patan, with a majority of farmers growing castor, Bt Cotton, groundnut and cumin. Other major crops include *desi* cotton (non GMO), fodder millet, wheat, mustard, pulses, pearl millet (*bajra*) and fennel. Major vegetables and fruits grown include cowpea, brinjal, okra, jujubes (*ber*), sapodilla (*chikus*) and pomergranate. The average landholding size is 2.6 hectares (3.5 -

[4] Patan District Profile <https://patan.nic.in/document-category/district-profile/>; Patan Agricultural Profile <http://www.kvkpatan.in/detail/188143/district-profile>.

[5] AK Sinha, Assistant Hydrogeologist, 'District Groundwater Brochure Patan District Gujarat' (2014) 13-17 <http://cgwb.gov.in/District_Profile/Gujarat/Patan.pdf>.

4 *bighas*) with approximately 53% of all farmers being small or marginal farmers.[6] Landholding is much higher than the national average of 1.08 h, and proportion of small and marginal farmers is much lower than the national average of 86%.[7] Given its cash crop-oriented agriculture, the past few decades have seen consolidation of landholding into large to medium size holdings, as this is the only way to remain profitable. The fieldwork data (below) shows that as the size of farm families grow, extended family members continue their farm businesses as one unit (pooled landholding) rather than fragment land ownership.

3. GUJARAT'S PATAN DISTRICT AS AN UNLIKELY LABORATORY FOR FOOD SOVEREIGNTY – A THEME BASED ANALYSIS

Since India's economic liberalisation in 1991, the state of Gujarat has been touted as a poster child for economic progress and technological advancement. Within the growth metric, Gujarat has usually featured within the top 10 Indian states every year.[8] These include inter-state comparisons on overall State Domestic Product (SDP), and sectoral growth statistics in energy, trade, irrigation and so on.[9] 'Agricultural growth' in Gujarat is high, compared to other states and compared to the national agricultural growth rate; but when compared to other sectors within Gujarat, agricultural growth is negligible.[10] The agricultural success story has been told and sold similar to Gujarat's broader economic success story,[11] where a free-market economy supported by a business-friendly state government have resulted in a recipe for success for any and everyone.

Gujarat's agricultural 'success story' attributed to a free market economy is a myth, as it hides many truths about the highly interventionist policies in the nature of energy subsidies, massive irrigation projects, promotion of large-scale crop acreages, cultivation of high value export crops and the creation

[6] Supra 4, Patan District Profile.

[7] GoI, 'All India Report on Number and Area of Operational Holdings – Based on Agricultural Census Data 2015-16' (2019) 2 <https://agcensus.nic.in/document/agcen1516/T1_ac_2015_16.pdf>.

[8] Economic and Social Organisation Punjab (GoI), 'State-Wise Data' (5 February 2021) <https://esopb.gov.in/static/PDF/GSDP/Statewise-Data/statewisedata.pdf>.

[9] See Niti Ayog, 'State Statistics' <https://www.niti.gov.in/state-statistics>.

[10] Shah et al (2010) show that Gujarat has undergone a high growth in agriculture in the 2000-07 period. This view is contested by Dixit (2009) in a long study (1960–2006) shows that agricultural growth has been negative in 20 out of 25 years including during 2000-06. Either way, agricultural growth is negligible compared to manufacturing, construction, non-domestic investments etc. Tushaar Shah, Ashok Gulati, P Hemant, Ganga Sreedhar and RC Jain, 'Secret of Gujarat's Agrarian Miracle after 2000' (2010) 46/52 Eco Pol Weekly 45; Anita Dixit, 'Agriculture in a High Growth State: Case of Gujarat (1960 to 2006)' (2009) 44/50 Eco Pol Weekly 64.

[11] Ibid; also see: Dixit, 'Growth and Non-Farm Employment – the Case of Gujarat' (2009) 52/3 Ind J Labour Economics 519.

of cooperatives and agrobusinesses that perpetuate this marketized model.[12] These interventions have disproportionately benefitted large farmers, and led to small and marginal farmers leaving agriculture.[13] Critical studies on Gujarat's agricultural model have also thrown light on the numerous externalities that are routinely ignored in this 'success story' retting. Severe groundwater depletion, soil degradation, crop toxicity due to overuse of chemical inputs, loss of indigenous plant varieties, and malnutrition among small farmers and agricultural labour are some examples.[14]

Patan district is a specimen of the Gujarat brand of neoliberal agricultural growth and development. Food systems in Patan comprise small to large scale farmers, including tenant farmers integrated into a commercialised cash crop economy, heavily reliant on long-distance commodity chains for farmers' own food security. Several actors operate within an industrialised complex of food grains and crops transported from South Gujarat or from other states in India, processed and marketed in North Gujarat, and distributed by retailers and firms across different areas.[15] Over 90% of farmers interviewed do not grow and consume food for themselves and rely almost entirely on markets near them. It would not be wrong to say that farmers in Patan engage in agricultural commodity production, rather than the production of *food.* Food systems are therefore neither locally self-sufficient, nor independent of regional and globalised market forces. Herein food sovereignty, farmer choice and agency are embedded within the realm of neoliberal notions of choice and freedom.[16] Empirical data from this field site highlights the troubles associated with such a limited conceptualisation and explores whether food sovereignty-inspired seed rights can ever escape this entrenchment.

Against this background, this section analyses the field data in the light of the Nyeleni Declaration's Six Pillars of Food Sovereignty. This is done to assess the scope and potential of food sovereignty approaches in agricultural contexts, such as Patan Gujarat, that are characterised as 'high-performing' agricultural economies due to intensive cash cropping and conducive privatised markets in seeds, inputs, agricultural commodities and exports. The food sovereignty approach, with it its broad

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[12] Tushaar Shah, Mark Giordano, and Aditi Mukherji, 'Political Economy of the Energy-Groundwater Nexus in India: Exploring Issues and Assessing Policy Options' (2012) 20/5 Hydrogeology Journal 995, 996.

[13] Nikita Sud, 'The State in the Era of India's Sub-National Regions: Liberalization and Land in Gujarat' (2014) 51 Geoforum 233, 236-8.

[14] Aarti Sethi, 'Terms of Trade and the Cost of Cotton: The Paradox of Commercial Agriculture in India' (2021) 48/7 J Peasant Studies 1397; Anita Dixit, 'Agrarian Poverty, Nutrition and Economic Class - A Study of Gujarat, India' (2013) 13/2 J Agrarian Change 263.

[15] Ibid at 1398-99.

[16] See Kacy McKinney, 'Troubling Notions of Farmer Choice: Hybrid Bt Cotton Seed Production in Western India' (2013) 40/2 J Peasant Studies 351.

principles that can assume different place-based interpretations. This analysis will also assist in determining how farmers' control over seeds, protection and conservation of traditional seeds, and revival of ecologically sustainable and locally self-sufficient food systems can be promoted outside indigenous contexts, where landholdings are already relatively large and the next generation of farmers have or are attempting to move to cities leaving much of the day-to-day farming on landless tenants.

(a) PILLAR ONE – FOOD FOR PEOPLE

The first pillar is that of food systems that focus on 'food for people'. The first pillar speaks of a right to sufficient, healthy and culturally appropriate food being available for all individuals, peoples and communities, and 'rejects that food is just another commodity or component for agri-business'.[17] The agricultural landscape of Patan and broadly North Gujarat, comprises cash crops such as hybrids in cotton and many other agricultural commodities. The wide use of hybrids, and a corollary local hybrid seed industry is testament to the fact that producing high yields that render high profits in domestic and international markets is the main 'focus' of Patan's agricultural system. It's food system on the other hand, comprises food crops transported from South Gujarat or other parts of India,[18] except for a few crops, to name a few, that are locally sourced such as potatoes, cereals such as wheat and bajra, and vegetables such as okra, brinjal, cucumbers and spinach.

With respect to access to food within the broader food sovereignty vision, on the one hand Patan district's malnutrition and poverty figures are lower than the state and national average.[19] On the other, as is the case worldwide, these figures are the highest among those who work in agriculture.[20] Most landed farmers complained that agriculture is not creating enough employment, and it remains a "last option" or "fall back option" for the low-skilled labour force in Gujarat. Field data corroborates the National Sample Survey (2019) data on Agricultural Households, which shows decrease in agricultural employment, and a decrease in the share of agricultural households in rural areas.[21] This

[17] Supra n 2, Synthesis Report 2007.

[18] Interviews on file of personnel working at APMCs / mandis in Sidhpur and other much larger mandis in Patan and Mehsana.

[19] IFPRI, Patan District Nutritional Profile (2012-13) at <https://ebrary.ifpri.org/digital/api/collection/p15738coll2/id/131645/download>; Purnima Menon, Anil Deolalikar and Anjor Bhaskar, 'Indian State Hunger Index, Comparisons of Hunger Across States' (2009) 15 <https://motherchildnutrition.org/india/pdf/mcn-india-state-hunger-index.pdf>.

[20] As shown in a national context: Ashok Gulati and Ranjana Roy, 'Linkage Between Agriculture, Poverty and Malnutrition in India' in Ashok Gulati, Ranjana Roy and Shweta Saini (eds), *Revitalizing Indian Agriculture and Boosting Farmer Incomes* (India Studies in Business and Economics-Springer 2021) 39; and in a Gujarat context: Anita Dixit, 'Growth and Non-Farm Employment: The Case of Gujarat' (2009) 52/3 Ind J Labour Economics 519.

data also shows an overall decline in farmers' incomes from crop production, that are on average lower than MGREGA wage-rate. Thus, despite Patan's higher than national average agricultural growth and incomes, it is no different from any other district where the agriculture-poverty-malnutrition nexus in manifest. In other words, one has a higher chance of being food secure and well-nourished if they are not engaged in farming. This is precisely what food sovereignty opposes – a system where food insecurity is not a result of physical lack of food, as food markets in Patan are both wide-spread and regularly set-up, but a result of lack of access,[22] where poor cultivators do not have the means to buy food or grow it. Markets that rely on long commodity supply chains are the only major source of food for farmers and non-farmers in Patan, and as the agricultural sector is one with the highest concentration of the poor, it is also the sector with the highest concentration of hunger and malnourishment.

Even though there is overwhelming evidence of food being seen as a 'commodity' first and 'food for people' later in the Patan-Gujarat context, many farmers were acutely aware of the ecological, spiritual and traditional value of food. Most female interviewees and most interviewees aged above 50 years lamented on the highly commercial state of agriculture in Patan. They described it as a "trap" or a "vicious cycle" from which there could be no escape. Here, female farmers carried on several practices such as maintaining a home garden to grow chemical free food for their own family's subsistence. In Madhupura, a dairy cooperative run by women also exchanged foods they grew in their gardens on "chemical free patches of land" whenever they were harvested. In Umru, Santalpur and Radhanpur, women farmers also carried on a similar practice and organised feasts from food grown by them on festivals or on other special days, for example, to celebrate board examination results in their local school. A tenant farmer in Samoda, contracted to cultivate test-varieties on the KVK and Samoda Agricultural College lands brought his own vegetable and wheat seeds from South Gujarat every year to plant on a small patch. These seeds were passed down within his family and were not found anywhere in North Gujarat. He and his family found their own varieties to be "tastier and healthier" than the varieties the KVK tested and later distributed among other farmers. He also added that he is teaching his children to plant these.

Farmer accounts were corroborated by those who work in the FPOs in Kheda and Nadiad where they admitted growing some food for their own consumption, and for distribution within their friends

[21] Share of agricultural households decreased from 57.8% to 54% between 2013-2019, even though the number of agricultural households increased during this period. There has been an overall trend of decline in agricultural employment in India over several rounds of NSS and Census data collections. Aparajita Bakshi, 'Situation Assessment Survey of Agricultural Households 2019 - A Statistical Note' (2020) 11/2 Review of Agrarian Studies at <http://www.ras.org.in/situation_assessment_survey_of_agricultural_households_2019_a_statistical_note>.

[22] As pointed out by Sen in 1981, and Dreze and Sen in 1989 in their theses: Amartya Sen, *Poverty and Famine: An Essay on Entitlement and Deprivation* (OUP 1981); Jean Dreze and Amartya Sen, *Hunger and Public Action* (OUP 1989).

and others in their village, but this could not create any income, or substantially reduce their dependency on the market. FPOs in Patan and Sidhpur opposed this view, and considered this a waste of the farmer's time, as it neither generated any income, nor could render the farm family or village food secure on its own. Most farmers and FPO members consider food markets to be more resilient than growing food for their own subsistence. After the Covid 19 pandemic, telephonic conversations with 8 farmers in Patan showed that they had somewhat changed their views on 'resilience' due supply chain disruptions, which they had never encountered before. They spoke of growing more food for themselves to keep a "local stock" available at all times, should another crisis come their way.

(b) PILLAR TWO – VALUING FOOD PROVIDERS

The Nyelini Synthesis Report elaborates this pillar to mean the valuing and support meted out to women and men, peasants, small scale producers, pastoralists, indigenous peoples, agricultural and other rural workers who grow, harvest and process food. Food sovereignty rejects policies, actions and programmes that undervalue them, threaten their livelihoods or seek to eliminate them.[23] In Patan, situated within a highly capitalistic Gujarati economy, parameters or markers of agricultural 'success' are framed in financial terms. High profits and high incomes and financial wealth are things to aspire for and remain the focus for farmers as well as several national and state level welfare programmes. At the national level, the 2014 and 2019 general elections were contested by the ruling party on a campaign for doubling farmers' incomes.[24]

Among farmers interviewed, there appears a class divide, wherein large farmers perceive 'value' in terms of the size of their landholdings and earning generated therefrom. From their perspective, there is little to value small and marginal farmers for their contributions to the food system. One farmer noted that small farmers "do not know how to do business"; another stated that small farmers needed to diversify into other farm-related activities, like transport or food processing to increase their profits, which can only happen if they "open their minds and invest in new opportunities." In other words, *only* farming or growing food is not per se valuable. It is large and resourceful farmers, often belonging to higher castes that occupy key positions in FPOs. This was seen in Kheda, Nadiad (Khambat), Sidhpur and Patan, where each of the office bearers at the FPO owned 8-10 bighas of land and above. While at the Jagruti Vikas Trust in Patan, one farmer-FPO personnel described a rather utopian vision of farmers in the area who were proud of being cultivators and food-providers. He spoke at length of how everyone helps each other at the time of need and stands by one another and never refuses to assist his "brother", as growing food is a noble and spiritual activity. While I interacted with

[23] Supra n 2, Synthesis Report 2007.

[24] Ministry of Agriculture and Family Welfare, 'Doubling Farmers' Incomes' <https://agricoop.nic.in/en/doubling-farmers-income>.

him, many persons walked in and out of the FPO office with requests of borrowing some equipment, some funds, or requesting some other type of assistance from him. The idea that 'everyone helps when help is needed' is a luxury that only large farmers enjoy, to whom many small farmers already owe many favours.

Across different classes though, a common feature of farmers' pride was perceptible. Despite a high dependency on the market for food, and a business-oriented to farming, all farmers displayed some sense of pride in "working with the earth" or "being a facilitator of God", as it is He who feeds the world. Small and large farmers alike spoke of how farmers need to be valued more by urban consumers. One elderly farmer in Nagvasan spoke of spreading awareness in how much time and effort goes in growing one grain, or one pea plant. Most people eat their food without any sense of awareness of where it comes from or what is its "story" before it arrived on the plate. Farmer accounts such as these echo food sovereignty's push towards establishing deeper connections with food.[25] Some farmers, KVK officials in Samoda and Anand and Samoda agricultural college personnel proposed that all schools students in urban and rural areas should learn farming or have some experience with it. This would fundamentally change the way farmers are viewed, and the next generation would be more likely to join the profession with a sense of pride. Overall, the idea of farmers' pride, albeit present among all cultivators, does not translate into policies or laws that value farmers *for their virtue of being food producers*. It rewards farmers who perform well in their agro-businesses, and value is attributed to in real terms by way of profits and farm earnings. This incentivises farmers to cultivate high value cash crops, as subsistence food crops do not render comparable profits.

(c) Pillar Three and Four – Localises Food Systems & Puts Control Locally

This pillar speaks of bringing food providers and consumers closer and aims at putting producers and consumers at the centre of decision-making on food. Food sovereignty opposes the often-accruing side effects of long supply chains within a globalised agro-food market. These include dumping of food to poor consumers, providing culturally inappropriate food aid and assistance, control over agricultural inputs (linked to the next pillar) vested locally rather than in remote and unaccountable corporations or other entities. On the other hand, critical scholars point out that 'localised' systems add disproportionate burdens on women tasked with food provisioning and nourishing responsibilities in households.[26] Thus, localised systems that build on existing socio-cultural that are discriminatory and

[25] See Raj Patel, 'What does Food Sovereignty Look Like' 36/3 J Peasant Studies 663.

[26] Katherine Turner, Julian Idrobo, Annette Aurélie Desmarais and Ana Maria Peredo, 'Food Sovereignty, Gender and Everyday Practice: The Role of Afro-Colombian Women in Sustaining Localised Food Systems' (2022) 49/2 J Peasant Studies 402.

asymmetrical to begin with, should aim to become more equitable while striving for greater self-sufficiency and autonomy. In the Gujarat-Indian context, a localised system needs to factor in not just gendered complexities, but also caste-based and religious complexities.

By local control, food sovereignty advocates control over territory, land, grazing, water, seeds etc. All regimes that place control far away from the local community, such as 'privatisation of natural resources, commercial contracts, and intellectual property regimes' are rejected.[27] Patan's food system is neither localised, nor is 'control' particularly exercised locally. Food markets in Patan district comprise several permanent *mandis* in cities and towns such as Patan, Chanasma, Harij and Sidhpur; weekly or by-weekly *bazaars* in peripheral semi-urban areas, and in rural areas. Most farmers interviewed stated that they buy food from nearby urban centres whenever they travel to the city/town during the week. *Mandis* in urban or semi-urban areas are more reliable and have a larger range of foodstuffs available. Rural markets are also well-organised but they provide a limited range of items at a limited time. FPO and *mandi* personnel point out that these markets are supplied by agricultural produce from mainly South Gujarat, Maharashtra and other eastern India states. Specific items such as potatoes, millets, okra, some gourds and spices such as cumin and some pulses, are supplied from with North Gujarat itself.

Patan city, Deesa in Banaskantha district and Mehsana district have several large and small agrobusinesses that export agricultural produce from North Gujarat abroad. This is a common business opportunity among many land-owning farmers that have moved to these cities in the last 20-30 years while renting out their farmlands to tenant cultivators. One farmer-cum-export businessperson interviewed in Deesa explained how many business firms shipped / sold their produce directly to companies abroad, while some did so via an intermediary company or firm based in Ahmedabad or Surat. With respect to organic produce specifically, an Ahmedabad-based organic farmer explained how the "real" organic market lay outside India, where consumers could afford its relatively high price. Organic foods in India are concentrated in cities that cater to an upper middle class to elite consumer base. While on the field, organic foods (either raw produce or processed foods) were a rare sight in the cities of North Gujarat. Farmers and others alike in Patan and more broadly in North Gujarat have limited access to chemical free organic food. For most, who do not grow their own food, and prefer organic food, buy it (have it shipped) from Ahmedabad at a high price.

Small and marginal farmers therefore have access to food markets only on limited days of the week, depending on where they are located; and have access to a limited range of foodstuffs unless they can afford to travel to urban centres on a weekly or other frequent basis. Among these tenant farmers do not usually grown food on their landlords' lands for their own subsistence, barring some examples, such as in Samoda, Unjha and Chhappi. Thus, direct access to food is also limited. Lastly, they remain highly underrepresented in FPOs, FCOs and other farmers' groups and mobilisations that are dominated

[27] Supra n 2, Synthesis Report 2007.

by large farmers. All the FPO personnel interviewed and observed at the 8 farmers' organisations (FPOs/FCOs) visited in Gujarat comprised men, most of whom owned on average 8-10 bighas or more.[28] Related to the challenge of 'agency' exercised by small farmers, local control and control-related social dynamics exclude peasants, migrants, tenants, women and lower classes and castes of farmers, that remain unheard and under-appreciated from Patan's food systems.

(d) PILLAR FIVE – BUILDS KNOWLEDGE AND SKILLS

Food sovereignty relies on local knowledge, skills and practices of food providers that has evolved as a result of conserving, developing and managing plant varieties, and their farming and harvesting systems. There should be appropriate research institutions and systems to support local knowledge and ensure its passing on to future generations. Food sovereignty 'rejects technologies that undermine, threaten or contaminate such knowledge systems, e.g. genetic engineering.'[29] This connects with local control over agricultural inputs and implements, as its surrounding knowledge and skills can only be preserved and built if control is exercised locally. Patan's cash crop driven agricultural model is firstly dominated by hybrid cotton, described in further detail below (Part IV.i). This is the only GM crop legally grown in India; and is considered among the most profitable crops grown in India, primarily in North Gujarat, Maharashtra, Andhra Pradesh and Telangana.[30] Farmers grow hybrids and other cash crops using methods prescribed by the seed providers, contractual buyers or in some cases demonstrated by the KVK, FPOs and other farmer training platforms.

A combination of factors prevents local knowledge systems to emerge and perpetuate in Patan. One, a system of contractual farming where farmers enter into price-determined contracts with buyer agrobusiness or food companies. For instance, FL2027/ FC5 potato varieties registered by Pepsico are grown in Patan and Banaskantha districts, along with many other varieties that are used in major fastfood chains. Climatic and soil conditions, a concentration of agrobusinesses and availability of cold storage facilities in Patan and Deesa have made this region a hub for potato contract farming that is highly profitable and secure for farmers. One farmer in Santalpur spoke of the complete eradication of local potato varieties over the past 3 decades, as all farmers have switched into potato contract farming for big companies. The issue of control over seeds is further described in Chapter 7. Two, the system of tenancy and depeasantisation coupled together. Most farms are cultivated and managed by tenants

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[28] Similar to: Alnoor Ebrahim, 'Agricultural Cooperatives in Gujarat, India: Agents of Equity or Differentiation?' (2000) 10/2 Development in Practice 178.

[29] Supra n 2, Synthesis Report 2007.

[30] KR Kranthi and Glenn Davis Stone, 'Long-term Impacts of Bt Cotton in India' (2020) 6 Nature Plants 188, 190.

who are not incentivised to take on long term conservation or knowledge development. Barring a few migrant tenant farmers interviewed who carried their family seeds with them to their landlords' farms, or those who planted their local varieties for nutritional and taste reasons, most tenants are sharecroppers. They receive a proportion of the profits, and therefore are driven to increase yields, in consonance with landlords. One elderly female farmer in Umru laments the loss of local plants, skills and knowledge over the past few decades, but also points out that "there is no way we can go back."

(e) PILLAR SIX – WORKS WITH NATURE

This pillar points at agriculture with low external input, agroecological production and farming methods that maximise the contribution of ecosystems, to further improve resilience and adaptation to climate change. Food systems overall should not be based on "energy intensive monocultures" and destructive practices that contribute to soil degradation, water pollution and inefficient water-use, and global warming.[31] Patan's agricultural model is built on cash crops, intensive inputs aimed at increasing yield, food systems and agricultural trade networks comprising long supply chains including international shipping / transport. The KVK chief in Samoda, Patan reports that Patan has a very poor environmental track record. It's soil is highly degraded in terms of organic content, toxicity and salinity.[32] North Gujarat is a water-stressed region, and government subsidies for water and energy use in agriculture continue to distort the environmental impacts of cash crop oriented agriculture.[33] Furthermore, the contradictions around ecology-centric and organic agriculture are explored below in Part VI.ii.

The KVK and agricultural college in Samoda, Patan are closely associated with the Brahma Kumari Trust[34], which is a worldwide spirituality organisation. They have worked in Patan and North Gujarat to promote *shaswat yogic kheti* – sustainable 'yogic' farming. Many farmers interviewed including Samoda College's trustees, principle and KVK officers are followers of the Brahma Kumari way. During the fieldwork, a programme was organised by the Trust at the KVK with over 350 farmers in attendance. The one-day event comprised several speeches and demonstrations of how to use organic manure, improve microorganism content in the soil, use water more judiciously and most importantly how to do 'yoga' on the farm to improve the yield through yoga's positive vibrations.[35] The KVK chief

[31] Supra n 2, Synthesis Report 2007.

[32] See Table 2 for Patan being among the worst districts for land degradation and soil quality: Priyanka Sharma et al, 'Land Degradation In Gujarat: An Overview' (2015) 31/2 Journal of Industrial Pollution Control 279, 283.

[33] Supra n 12, Shah et al 2012.

[34] Brahma Kumaris, <https://www.brahmakumaris.org/>.

[35] Event Details here: <http://yogickheti.org/news2019.html>.

in Samoda admits that in terms of agroecological farming methods, it only events such as these organised by external entities that raise the issue of environmental damage and unsustainability. The KVK itself is mainly tasked with demonstrating and disseminating technologies and knowledge around plant varieties, but has not focused on nature and environmental sustainability per se.[36]

Theme	**Participant & Collection Tool**	**Brief Description**	**Applicable Quote if Any**
(1) A focus on food for people	Tenant farmer in Umru village - Interview	Landlord farmers are not involved in the day-to-day farming and see the farm as a profit generating enterprise. Tenants cannot take long term farm decisions. High prevalence of 'focus on food for market'. Landlords and tenants rely on markets to buy most of their food for consumption.	"There is no need to save seeds and grow traditional crops. Those are not our decisions... Owners do not know much about farming, but they sometimes buy the seed for us, or we buy it and must show them the receipt… saved seeds are low-yielding, and markets will not accept varied and tasteless varieties of vegetables." - Male, 46 years, migrant from South Gujarat, working in Umru with a 1/4th tenancy share since 8 years (23/11/2019).
(2) Valuing food providers	Farmer / member at FPO in Patan - Interview	While there is a sense of pride in being a food provider, most medium and large farmers do not value subsistence farming or farming with the primary objective of growing food for local communities, as this is not very profitable.	"[Small farmers] do not know how to do business." - Male, 55 years, owns 15 bighas outside Patan city. "[Small farmers need to diversify] into other activities like transport or food processing to increase their profits. They

[36] See KVK past events and demonstrations around high-yielding and productive varieties: <http://www.kvkpatan.in/detail/994453/training>.

			need to open their minds and invest in new opportunities." - Male 57 years, owns over 5 bighas. (22/11/2019).
(3) Localizing food systems;	Farmer/ Sidhpur APMC *mandi* commission agent; Farmer in Ganeshpura - Interview	Patan's food systems comprise long supply chains as most foods are sourced from South Gujarat or surrounding states. Farmers in North Gujarat grow cash crops for exports and/or commodity trade.	"North Gujarat cannot meet its own food demand." - Male 32 years, working at mandi since 5 years, also a farmer owns approximately 1 bigha. (3/12/2019) "I try to grow everything we need seasonally and organically in my garden, as markets are not always reliable." - Female 42 years, member of cooperative trust in Ganeshpura. (13/12/2019)
(4) Placing control locally	KVK official. - Interview	Small farmers remain underrepresented in FPOs and other types of collectives that are dominated by large farmers.	"The KVK in Samoda is in the far east of Patan district. Our outreach to farmers in the western towns is low. The farmers there have to spend at least 3 days to reach here for any technology demonstration or grievance. Who would come all the way then?"
(5) Building knowledge and skills	Beej Nigam official;	Most farmers grow hybrids that are protected varieties owned by the government, food businesses or seed corporations. Few farmers	"Mahyco [Monsanto subsidiary] cotton seeds are the most reliable in the market, among all other local companies."

	Farmer in Santalpur - Interview	engage in seed saving, or have the knowledge and skills around local varieties.	- CV Patel, Gujarat Beej Nigam (29/12/2019) "Within 30 years all local potato varieties have been lost, [because of] farmers doing contract farming with big companies that have their own varieties." - Male farmer, 60 years, owns less than 2 bighas (26/11/2019)
(6) Working with nature	Brahmakumari Trust 'sustainable yogic farming' demonstration at KVK, Samoda - Event	Most farmers grow hybrids which are input-hungry crops. There is a high level of plant toxicity, loss of organic matter in the soil and depletion of the water table owing to high intensity inputs. Some programmes and campaigns promote ecologically sustainable agriculture.	"Have you all not experienced decreasing yields in cotton every passing year? Have you all not felt the pinch with the rising costs and rising quantities of fertilizers needed? Have you not felt that something needs to change?" - Speech by Ms. Ranju Dadiji at the sustainable farming event, Brahmakumaris (24/11/2019)

4. FAILING THE TEST OF FOOD SOVEREIGNTY IN THE PATAN LABORATORY - DISCUSSION

Patan's agrarian landscape is filled with farmers of different landholding capacities and landholding or tenancy statutes, most of whom are driven by profit and display capitalist tendencies. Upadhaya terms these as 'capitalist farmers'.[37] This section explores two major facets of agriculture in Patan that pose major obstacles in moving towards food sovereignty. Chapter 7 further develops these

[37] Carol Boyak Upadhya, 'The Farmer Capitalists of Coastal Andhra Pradesh - Parts 1 and 2' (1988) 23/27 and 28 Eco Pol Weekly 1376 and 1433, 1379.

themes to comparatively discuss the control over biogenetic resources in the 2 case studies - Patan and Sikkim.

(a) Hiding in Plain Sight: Failures of 'Modern' Agriculture and the Story of Hybrid Cotton in Patan

Bt cotton is the dominant crop in Patan and most other parts of North Gujarat. Over 95% of all farmers interviewed grow hybrid cotton. The Beej Nigam (Gandhinagar) overwhelmingly focuses its actions and efforts on regulating and labelling cotton seeds compared to other seeds, given its dominance in the Gujarat context. Bt cotton was field-tested for the first time by Monsanto in Saurashtra, Gujarat, in 1998. The genetically modified Bt cotton seed is resistant to a common cotton pest - the bollworm. Today India is the largest producer of Bt Cotton and Monsanto's biggest market in the world.[38] In the fieldwork, half of the farmers among those who grow hybrid cotton have been doing so since over a decade, while others mainly concentrated in Radhanpur and Santalpur talukas, which are further away from town centres such as Patan, Harij and Sidhpur, are relatively new cultivators. All farmers have to buy cotton seed every year to secure a high yield, unless if they run out of adequate finances and cannot purchase a fresh batch. These seeds can be re-sown, but the second generation will not display the characteristics of the first-generation plants, due to a phenomenon called 'gene revision' where only some plants carry the Bt gene to the next generation.[39] With every iteration the number of these gene-displaying plants reduces, forcing the farmer to buy a new set of seeds.

Gujarat has a thriving underground cotton seed market. Even before Monsanto formally entered the Indian market in 2002 through its Indian subsidiary Mahyco, pirated hybrid cotton seeds were sold in Gujarat by some companies.[40] Among these, Navbharat remains dominant, which was accused by Monsanto in 1999 for copying the Bt cotton seed in the process of Monsanto's field trial leaks. Navbharat's N-151 seed variety and other hybrids are very popular with most farmers, however, farmers with larger landholdings (beyond 8-10 bighas) or those more resourceful preferred Mahyco's varieties as they were more reliable. Mahyco's cotton varieties sold under the brands of Upaj, Bahubali and Neeraja remain dominant, however 2 farmers, one in Nagvasan and the other in Patan were well-travelled and did buy Mahyco cotton seeds sold in Maharashtra and Tamil Nadu under other brands, not available in Gujarat.

[38] Cotton Corporation of India, 'National Cotton Scenario', <https://cotcorp.org.in/national_cotton.aspx>.

[39] A Suresh, P Ramasundaram, Josily Samuel and Shwetal Wankhade, 'Cotton Cultivation in India Since the Green Revolution: Technology, Policy, and Performance' (2015) 4/2 Review of Agrarian Studies 25.

[40] Ronald Herring, 'Stealth Seeds: Bioproperty, Biosafety, Biopolitics' (2007) 43/1 J Development Studies 130.

Small farmer interviewees complained of navigating the local seed market for cotton, where every year new sellers claiming successes in other parts of the country entered the scene. These 'successes' outside Patan were not verified by anyone, and farmers had no means of knowing whether this buyer would be traceable after the sale of seed, nor did they know what type of hybrids these were (in terms of parental genes and specific traits etc). Farmers in Radhanpur and Santalpur, as well FPOs in Santalpur and Kheda complained that quality-control and insurance against crop failures were the 2 biggest problems they faced. If the crop failed then there was no on to hold accountable. There is a high risk attached to testing a new seed, which may render high yields for some seasons, but may fail in its fourth or fifth season. This was corroborated by officials interviewed at the Gujarat Beej Nigam and FPO members in Kheda, who had tried to purchase 'authentic' hybrids to sell to farmers at a subsidised rate. The Beej Nigam has tried to reign in on bogus companies, and routinely run awareness campaigns on seed labels, authentication marks and availing Beej Nigam complaints mechanism. Coverage of these programmes remain limited to major towns and surrounding areas. Farmers in Radhanpur and Santalpur have never seen the Beej Nigam organise a programme in their talukas.

Farmers who have been growing cotton since over a decade remember Mahyco's campaigns that targeted large farmers, who in most cases, were already growing hybrids of other crops. These were farmers who could afford the inputs hybrids needed and could therefore switch to Mahyco's Bt cotton, which was priced higher than local 'pirated' varieties. Growing Bt cotton in the early 2000s was reflective of a high status, and the first 10-12 years showed great results – with high yields, low input costs and an accruing competitive edge. Large farmers in Chhapi, Umru, Sipor and Unjha alluded to a point in time when the "problem started". Contrary to several other studies done on Bt cotton in Gujarat, that confirm a decreasing productivity of Bt cotton after a few highly successful yields,[41] these farmers believe that this has been caused by small and marginal farmers who had no business in cultivating Bt cotton. In the 2000s, the acreage under hybrids spiked from 30–35% to 95% due to the sole uptake of Bt cotton.[42] The sudden and massive uptake of Bt cotton consequently created a demand for seeds, fertilizers, pesticides, weedicides, and more sophisticated markets for cotton in Gujarat. Many agricultural inputs, just like 'pirated' seeds were not checked adequately for quality, and farmers that tried to cut costs by using cheaper inputs including organic cow dung encountered losses in cotton.

Large farmers routinely display mistrust towards lower classes, small farmers and farmers belonging to other religious and caste groups. When asked about why cotton and other crops were

[41] Suman Sahai and Shakeelur Rahman, 'Performance of Bt Cotton: Data from First Commercial Crop' (2003) 38/30 Eco Pol Weekly 3739; 'Bt-Cotton, 2003-2004: Fields Swamped with Illegal Variants' (2004) 39/26 Eco Pol Weekly 2673; Vasant Gandhi and NV Namboodri, 'Economics of Bt Cotton Vis-a-Vis Non Bt Cotton in India: A Study Across Four Major Cotton Growing States' (Report, Ministry of Agriculture, 2010).

[42] Supra n 14, Sethi 2021 at 1404.

becoming less and less profitable, most large farmers responded with a class bias, stating that smaller farmers "did not know how to do business". They wanted to keep employing the same methods while expecting different results. Previous research studies on cotton confirm that in the long-term, Bt cotton requires higher inputs, diminishes organic content of soil, invites new pests and invasive species on the farm, and renders lower yields unless farmers can bear the cost of rising inputs.[43] Large farmers did not agree with this, and stated Bt cotton was as on date the most profitable crop they could grow, despite the high inputs. They also stated that this is the case with all hybrids, given that all other environmental factors have declined – they cited a rise in temperatures, pollution, water impurities etc, it is only "natural to use more inputs" if one is to sustain their yield. On the other hand, small farmers, agreed with the findings of the Sahai and Rahman (2003) and others that followed them.[44] Small farmers admitted that their input costs had gone up, and that Bt cotton was not good for their soil. One indicator for this, as pointed out by an organic farmer in Banaskantha, that if one could not grow anything for several successive seasons after growing Bt cotton. The soil was so depleted of nutrients that it took at least 3 years if not 5 or 6 in some cases for any other form of cultivation to be possible. This was confirmed by a cooperative of an organic seed company based in Mysore, called Sahaja Seeds.[45]

Growing Bt cotton, notwithstanding its destructive environmental impacts and long-term non viability, remains the most popular crop in Patan. This is mainly because Gujarat remains a hub for the Bt cotton market. Over 90% of cotton growing farmers interviewed were bound by private contracts lasting 3-5 years, where buyers had agreed to purchase the cotton produce at a settled price. FPOs in Patan, Nadiad and Ganeshpura engage in collective bargaining for a good price for cotton, given the rising input costs that farmers ought to bear.[46] Singh (2021) has pointed out the bearing contract farming has on farmer choice.[47] In a similar vein, Kaur, Singla and Singh (2021) suggest that creating markets through contract farming can encourage farmers to diversify their crops.[48] The cotton buyers in Patan

[43] Supra n 41, Sahai and Rahman 2003; Esha Shah, 'Local and Global Elites Join Hands: Development and Diffusion of Bt Cotton Technology in Gujarat' (2005) 40/43 Eco Pol Weekly 4629.

[44] See KR Kranthi and Glenn Davis Stone, 'Long-Term Impacts of Bt Cotton in India' (2020) 6 Nature 188. Many studies have been conducted on Bt Cotton belts outside Gujarat which have not been cited here.

[45] The author interviewed a Sahaja representative at an organic food festival in Ahmedabad during the fieldwork. Sahaja Seeds <https://www.sahajaseeds.in/>.

[46] See Sukhpal Singh, 'Producer Companies as New Generation Co-operatives' (2008) 43/20 Eco Pol Weekly 22.

[47] Sukhpal Singh, 'Institutional Innovations in India: An Assessment of Producer Companies as New-Generation Co-operative Companies' [2021] J Asian Development Research 1, 3-4.

[48] Pavneet Kaur, Naresh Singla Sukhpal Singh, 'Role of Contract Farming in Crop Diversification and Employment Generation: Empirical Evidence from Indian Punjab' (2021) 12/3 Millennial Asia 350.

and more broadly North Gujarat comprise agrobusinesses primarily based in Gujarat that export cotton outside India. One farmer in Santalpur claimed to be in contract with a foreign company directly.

Many factors have led to the dominance of and dependency over hybrid cotton in Patan. Despite many farmers admitting that they cannot afford to grow it, there are few alternatives that provide a price guarantee and high buyer demand. Most farmers cannot afford Mahyco seeds every year, which guarantee high yields, and they rely on local hybrid cotton seeds which may not have undergone any quality-checks and are therefore at a high risk. This robust 'underground' seed market for hybrid cotton is made up of a network of farmers, local seed developers, and other types of actors capable of back-crossing 'original' Bt cotton variants. The Beej Nigam has been working on curbing the operation of 'fake' seeds. One official noted that because these seeds has already been copied and diffused into Gujarat, the 2002 Genetic Engineering Approval Committee was forced to allow Monsanto to also operate in India formally.[49] Herring calls this 'anarcho-capitalism', which is also observable in sectors beyond seeds. For instance, unregulated markets in manures, fertilizers, pesticides, weedicides and farm technology including processing machines and tractors.

Not growing cotton can make farmers "outliers", as relatives and neighbours who grow cotton routinely question those who do not.[50] Parallels may be drawn to other hybrid crops grown in Patan such as bajra, soybean, groundnuts and a range of vegetables that require less inputs and render high yields in the first few runs, but this starts to change in the long-term. Farmers who grow hybrids, either cotton or other plants, are forced to continue to do so, as switching into non-hybrids is unrealistic. This is because, as described above, soil subjected to hybrids cannot grow any other crops for at least some years, and also because, there are not many marketing options as compared to a well-established contract farming system for hybrid crops. Farmers therefore seldom grow a diversified crop portfolio unless they have a separate home garden or area where hybrids have never been cultivated. Sethi describes this as "farming cash crops without cash", where farmers have effectively no choice to control their own agricultural or food systems. [51]

[49] Ian Scoones, 'Regulatory Manoeuvres: The Bt Cotton Controversy in India', Institute of Development Studies, Working Paper 197 (2003) 9-12 <https://core.ac.uk/download/pdf/29134868.pdf>.

[50] Similar to a long-range study describing cotton seed's "adoption fads" in Warangal, Andhra Pradesh: Glenn Davis Stone, Andrew Flachs and Christine Diepenbrock, 'Rhythms of the Herd: Long Term Dynamics in Seed Choice by Indian Farmers' (2014) 36 Technology in Society 26.

[51] Supra n 14, Sethi 2021 at 1405.

(b) BIOGENETIC RESOURCES PROTECTION: OLD PATHOLOGY NEW IRRELEVANCY

The neoliberal directionality of Gujarat's food and agricultural systems is symptomatic of a broader trend of rural-to-urban shifts in India. These have been seen over the 19-20th centuries in countries of the Global North and more recently in China, Brazil and other fast-'developing' countries of the South.[52] Shifts are characterised by rapid urbanization and a simultaneous neglect over strengthening rural institutions, improving rural infrastructure and healthcare, and creating meaningful employment opportunities for the youth in rural areas. Patan is archetypal in this shift, where agriculture is largely believed to be a last resort occupation, especially for the younger generation within farm families. This thesis situates the problem of loss of farmers' control over biogenetic resources within the larger question of whether India is shutting its doors on any alternative development scenarios that integrate urban with rural life, prioritise ecological integrity and environmental protection, and promote food sovereignty? Thus, seed saving practices, conservation of local landraces and traditional plants, maintaining seed and knowledge reserves locally, or exercising local control in other ways sounds idyllic, but to many farmers in Patan it sounds non-viable.

Patan is also an archetype of the critiques against food sovereignty.[53] For instance, addressing unknowns such as - who will administer food sovereignty?[54] Herein, if farmers are the 'sovereign' in food sovereignty, then what should be the role of the state in designing governance mechanisms, and the role of the markets in allocating resources and rewarding production outputs? In Patan, any food sovereignty intervention that aims to mitigate effects of the neoliberal agricultural model on poor farmers is perceived as an economic constraint on one's farm earnings.[55] Both small and big farmers that heavily rely on hybrid cotton, vouch to continue growing it for reasons described above. Most farmers including farmers working in collectives such as FPOs and FCOs in North Gujarat consider livelihood security as the first step to food security. Thus, a localised, ecologically sound, and

[52] Tom Angotti, 'The Urban–Rural Divide and Food Sovereignty in India' (2012) 28/4 J Developing Societies 379.

[53] Marc Edelman et al, 'Introduction: Critical Perspectives on Food Sovereignty' (2014) 41/6 J Peasant Studies 911.

[54] Tina Beuchelt and Detlef Virchow, 'Food Sovereignty or the Human Right to Adequate Food: Which Concept Serves Better as International Development Policy for Global Hunger and Poverty Reduction?' (2012) 29/2 Agr & Human Values 259; Amy Trauger, Trauger, 'Toward a Political Geography of Food Sovereignty: Transforming Territory, Exchange and Power in the Liberal Sovereign State' (2014) 41//6 J Peasant Studies 1131.

[55] Similar to empirical study on hybrid cotton farmers in a region of South India: Elizabeth Louis, '"We Plant Only Cotton to Maximize Our Earnings": The Paradox of Food Sovereignty in Rural Telengana, India' (2015) 67/4 The Professional Geographer 586.

subsistence-based agriculture is not something that farmers, as sovereigns within the food sovereignty paradigm desire.

A corollary of the question of 'who is the sovereign' is the question of reconciling different versions of food sovereignty. Democratic land control to promote smallholder farming and practicing agriculture that secures food and is ecologically sustainable is the pivot on all interpretations of food sovereignty revolve.[56] It may be argued that this combination however can manifest in organic farming that is trade-oriented, or chemical farming that is for subsistence. For instance, Bramha Kumari Trust's work in Patan and its association with KVK Samoda focuses on *sashwat yogic kheti* that is healthy, ecology-centric (if not totally organic at first), but also, and most importantly, profitable. Their programmes and campaigns attract attention on the point of high yields and competitive levels of productivity albeit through the *sashwat yogic* route. Further, 3 organic farmers interviewed in Ahmedabad and Navsari while explaining the complexities involved in pursuing it, defend organic farming's ability to produce high yields and ergo high profits.[57] On the other hand, women farmers interviewed in Madhupura and Ganeshpura, who use some of their regular produce for subsistence, had no qualms in consuming non-organic produce, which is also sold after every harvest. They claim that while home gardens, or small chemical-free patches are an option, they can only produce little quantities that cannot be relied upon. These multiple interpretations of food sovereignty are possible in Patan, wherein, it is not difficult for farmers to reconcile food sovereignty's foundational tenets with their commercial aspirations and socio-economic realities. It is therefore impossible to imagine a food sovereignty intervention that does not integrate these place-based, and arguably capitalistic interpretations. Altieri and Toledo have argued in this context, that the core principles of food sovereignty should provide a 'pure form', where such stretches of place-based interpretations do not dilute the food sovereignty socio-political mission.[58]

Another interpretation routinely voiced by small and large farmers alike is the potential of scaling up or economically progressing. This links to the critique against food sovereignty on whether it essentialises peasant farmers while arguing for their rights.[59] In the context of Patan, most farmers aspire to scale up in property-terms. Tenant farmers interviewed seek to save up enough money in the long-term to - one, provide a good education for their children so that they do not have to work on the

[56] Miguel Altieri and Victor Toledo, 'The Agroecological Revolution in Latin America: Rescuing Nature, Ensuring Food Sovereignty and Empowering Peasants' (2011) 38/3 J Peasant Studies 587, 588.

[57] Similar to many organic farming trusts and movements in India that vehemently defend its productive capacity and profitability: KR Shroff Foundation, <https://www.krsf.in/blog/organic-farming-food-agriculture-in-india/>.

[58] Supra n 5656, Altieri and Toledo 2011.

[59] Henry Bernstein, 'Food Sovereignty Via the 'Peasant Way': A Sceptical View' (2014) 41/6 J Peasant Studies 1031.

farm; and two, acquire a property asset themselves, may it be farmland or an adjoining *makaan.* In most cases in North Gujarat, tenants receive a quarter or third of the farm profits, while landlord farmers, whose main source of income is usually not agriculture, provide for all the farm inputs including seeds, fertilizer and pesticides etc. Borras and Franco have called for 'land sovereignty' as a necessary foundation of food sovereignty.[60] This is unlikely to happen via redistributive land reform, which has no place in Gujarat's highly capitalistic economy. It is also predicted that aspirations of 'scaling up', as corroborated by tenant farmers themselves hoping to acquire non-farm properties in the future, will lead to a decrease in the number of farmers overall.[61] In the valedictory session of the National Summit of Agro and Food Processing in Anand in December 2021, India's Prime Minister spoke of zero budget farming to 5000 attendee farmers. Here a dual emphasis on making farming both ecologically sound and economically profitable resonates this sentiment of appealing to farmers using the bait of economic progress.[62]

A de-peasantisation is palpable among all farmers interviewed that do not see the next generation involved in the same vocation and perceive 'scaling up' to be something other than small scale subsistence farming. Bezner-Kerr and Kloppenburg connect land sovereignty with seed sovereignty, as a way reverting control over plant germplasm in the hands of small farmers.[63] Farmers predict that in the near future, Patan will comprise only tenant farmers, who cannot be employed anywhere else, and those who exercise no control over what they grow and which inputs they use. Depeasantisation, as a result of neoliberal agricultural policies and an overall distress in farm profits, can therefore be termed as an old pathology which renders many debates around food sovereignty *irrelevant* to cultivators, who are mostly tenant farmers in Patan.

This section raises questions on what food sovereignty would look like in Patan or a Patan-like vista. It is however not the intent of this thesis to present a bleak view as to why food sovereignty has no place here at all. Several accounts recorded during the fieldwork as well as secondary data on food sovereignty case studies in other parts of Gujarat and India provide guidance in invoking a sense of hope. These are islands of success in a sea of unsustainable and distress-stricken agriculture. With

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[60] Saturnino Borras and Jennifer Franco, 'A 'Land Sovereignty' Alternative? Toward a Peoples' Counter-Enclosure' (Transnational Institute Discussion Paper, July 2012).

[61] Supra n 14, Dixit 2013.

[62] Press Information Bureau, 'Prime Minister Shri Narendra Modi addresses National Summit on Agro and Food Processing', Government of India (16 December 2021), <https://pib.gov.in/Pressreleaseshare.aspx?PRID=1781004>.

[63] Rachel Bezner-Kerr, 'Seed Sovereignty: Unearthing the Cultural and Material Struggles over Seed in Malawi' in Hannah Wittman, Annette Aurélie Desmarais and Nettie Wiebe, *Food Sovereignty: Reconnecting Food, Nature & Community* (Fernwood 2010) 134.

India's dynamic eco-social movements that boldly imagine alternative development scenarios, there is indeed a possibility for unique place-based interpretations of food sovereignty to flourish and thrive, which are not too far or contradictory to its core principles. Critical food sovereignty saw its most famous rebuttal in McMichael's reply to Bernstein,[64] which is relevant for the next section that seeks to develop a progressive food sovereignty vision for Patan.

5. CONCLUSION

This chapter aimed at assessing the applicability and potentiality of food sovereignty approaches in the first case study – Patan Gujarat. It presents a stark contrast with the aspirations of food sovereignty and the realities of Patan, a capitalistic cash crop driven agrarian landscape. Further it presents the ironies of calling Patan and more broadly Gujarat a 'success story' from an economic and agricultural point of view. Gujarat's 'high economic growth rate', relatively high farmer incomes and relatively high landholding sizes hide the failures of modern 'successful' agriculture. These are failures on all counts of food sovereignty, as indicated by the Six Pillar analysis – that cover a wide range of areas, such as failures to work with nature, failures to value small farmers, failures to retain and exercise control locally etc.

Based on this premise, Chapter 7 and 8 will analyse for both case studies – Patan and Sikkim (Chapter 6), the potential and channels for moving towards greater food sovereignty approaches in the specific context of biogenetic resources. Chapter 7 will focus on seeds and their control and will draw upon fieldwork data as do Chapters 5 and 6 to support its arguments. Chapter 7 strikes a common ground between the contrasting contexts of Patan and West Sikkim. Despite such drastic differences in approach and directionality of agriculture, several similarities can be drawn that chart out a vision for food sovereignty in future. These include seed saving practices despite numerous incentives to do otherwise, passing down of practices and knowledge surrounding local varieties, evolution of dynamic seed markets, instances of farmers valuing their role as food providers and 'standing up to the corporations' when required, and an increasing consciousness towards nutritious culturally appropriate food produced ecological sustainable methods. This Chapter draws from McMichael's reply to Bernstein's food sovereignty critique, as it provides a roadmap for developing a food sovereignty framework in varied locations and despite the ambiguities and contradictions that food sovereignty is critiqued for possessing.

[64] Philip McMichael, 'A Comment on Henry Bernstein's Way with Peasants, and Food Sovereignty' (2015) 42/1 J Peasants Studies 193.

‘CHAPTER VI

DISAPPEARING FOOD SOVEREIGNTY AMIDST BIG AGRARIAN CHANGES IN A SMALL HIMALAYAN STATE – UNPACKING RESPONSES FROM WEST SIKKIM

1. INTRODUCTION

The second field-site is the district of West Sikkim (also known as Geyzing district) in the state of Sikkim (North-eastern Indian). An initial component of the fieldwork was done in East Sikkim district, in areas surrounding the state capital – Gangtok. Central and state agricultural officers, such as members of ICAR-NOFRI (Indian Council of Agricultural Research & National Organic Farming Research Institute in Tadong); members of the state agricultural department (Sikkim Krishi Bhavan in Tadong); educators at the College of Agricultural Engineering and Post-Harvest Technology in Ranipool, an affiliate college of the Central Agricultural University, Imphal; the Krishi Vigyan Kendra (KVK) in Ranipool, East Sikkim; and members of SIMFED, the state organic farmers’ cooperative and retail chain in Gangtok. Three villages in East Sikkim were also visited for farmer interactions, however the bulk of these interactions were carried out in West Sikkim.

Sikkim is nestled within the Eastern Himalayan mountains, and ethnically comprises the Limboo, Lepcha and Bhutia scheduled tribes. Owing to the mountainous landscape, landholding sizes are small to marginal, and farming is carried out mainly for subsistence and consumption within the community or village area. The contact and reliance on *mandis* are minimal, firstly because, there is little surplus crop to sell to the market, and secondly, many parts of West Sikkim do not have a good access to markets. Majority of seeds used are farm-saved, and inputs are low given the organic richness of the Himalayan soil and Sikkim’s organic status since 2016. Over the past few years, state governments and central agricultural agencies have been promoting more high-value for-profit farming in Sikkim which has led to rapid changes in the seed systems, marketing and export systems and attitudes of farmers.

As stated in Chapter 5, the fieldwork analysis tries to focus on some key markers of food sovereignty, which include:

1. *Agency* of farmers or lack thereof.
2. The impact and *importance of agriculture on farmer livelihoods*. Locating the importance of agriculture within a larger context of agricultural non-profitability and depeasantization.

3. The *presence and potential of food sovereignty-inspired biogenetic resource rights*. The Six Pillars Framework is used to analyse the presence and potential of food sovereignty-inspired biogenetic rights in the contrasting field sites.

The Six Pillar Framework comprises:
(1) a focus on food for people;
(2) valuing food providers;
(3) localizing food systems;
(4) placing control locally;
(5) building knowledge and skills; and
(6) working with nature.

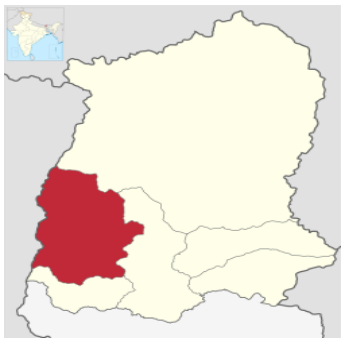
This chapter will use the Six Pillar Framework, as done in Chapter 5, to show how the on-ground operation and adoption of food sovereignty approaches is highly place-based[1] and assumes a different shape and form from Patan's experience. Sikkim was chosen as the second field site following Patan, Gujarat to draw a contrast from the agricultural scenario in Patan. A comparative analysis is carried out following this chapter, yet that is not the sole purpose of using 2 field sites rather than 1. Two sites serve multiple purposes – one, lessons drawn from contrasting sites help in charting out a national picture of the potential of food sovereignty. Along the spectrum of Patan and Sikkim, there are many regional diversities of how agriculture is practiced, who the main actors are, and to what end it is carried out. Thus, a highly commercialised and marketized set up in Patan can stand as a representative site of other districts and states which adopted the Green Revolution model promptly in 1960. Further, Sikkim can represent those districts and states that are relatively far away from a fully fledged commercialised model, where agriculture is deeply linked with communities, tradition, subsistence, and locality. Two, two sites help in drawing comparisons as to what the impacts of certain policies and agricultural trajectories are. For instance, it is no surprise that the environmental impacts of high intensity commercial agriculture are immense, while organic and agroecological farming practices in Sikkim have yielded a lesser impact. Another instance is that of a near-total loss of landraces in Patan, where only cash crops thrive, while this is not the case in Sikkim given that the demand for cash crops has only recently risen and that too in a few parts of the state. Three, two sites help in distinguishing control factors such as community farming, share cropping and tenancy land rights, presence of corporates and their role in contract farming and fixing commodity prices. Each site has a unique set of factors that influence the outcomes of agriculture and for food sovereignty to be realised therein, these

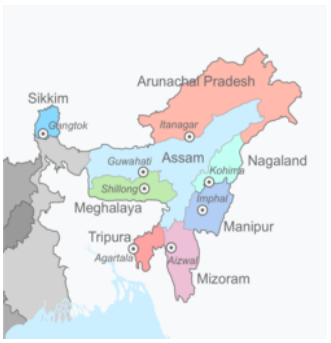
[1] Christina Schiavoni, 'The Contested Terrain of Food Sovereignty Construction: Toward a Historical, Relational and Interactive Approach' (2017) 44/1 J Peasant Studies 1.

factors must be taken into account as location specific nuances. All these reasons enable multiple interpretations of food sovereignty to flourish as will be explored in Chapter 7 and 8.

2. SETTING AND BACKGROUND

The second case study is based in the North-Eastern state of Sikkim. Empirical research was carried out in Sikkim during a period 3 months (January 2021 – March 2021). Three weeks were spent in Gangtok and surrounding areas in East Sikkim, after which the mainstay of the empirical work was carried out in West Sikkim. The state of Sikkim is the least populated and second smallest state in India. It has 4 districts – North Sikkim, East Sikkim, West Sikkim, and South Sikkim. It is surrounded by 3 international borders - Tibet Autonomous Region of China in the north and northeast, Bhutan in the east, and Nepal in the west. It shares a border with West Bengal in the south, which is its only link with the rest of the country. Sikkim is notable for its biodiversity richness in its alpine and sub-tropical climatic zones.[2]





Sikkim is one of the eight North-Eastern states in India. The North-East region has the highest density of scheduled tribes and sub-tribes and comprises a distinct climatic and geographical region in terms of biodiversity richness and scenic beauty. Sikkim has a rich history and culture dating back several centuries. The Namgyal dynasty founded their kingdom here in the 17th century, with Yuksom in West Sikkim as its first capital, followed by Rabdenste, near Pelling, also in West Sikkim. Sikkim was a princely state of British India in 1890, followed by a protectorate status at the time of India's independence in 1947. Sikkim joined the Indian Union in 1975. The Himalayan state is home to India's highest peak, and the third highest in the world, Mount Kangchenjunga. Thirty-five percent of Sikkim's area comprises the Kanchenjunuga National Park, that stretches over West Sikkim and North Sikkim districts. Most of West Sikkim district experiences a temperate climate, with average temperatures ranging from 17-27˚C. Its soil type ranges from loamy sand to silty clay, common to many regions of the lower Himalayas.[3]

West Sikkim receives 3000 to 4000 mm of rainfall during the monsoon months of July to September. Some parts experience torrential rains, which in some areas leads to landslides. Majority of agriculture in West Sikkim is rain-fed. There are some minor irrigation canals that channel out of the

[2] Sikkim Biodiversity Board, 'Biodiversity in Sikkim', <http://sbbsikkim.nic.in/sikkim-biodiversity.html>.

[3] Government of Sikkim, 'West Sikkim District Profile', <https://westsikkim.nic.in/aboutdistrict/>.

Rangit River or its several tributaries that flow through the district.[4] West Sikkim district has a total of 83 minor irrigation canals with a gross irrigation capacity of 5822.12 ha of land.[5] Canals have been funded and built not only for irrigation, which is why irrigation potential remains underutilised, but also strategic flood control. A majority of farmers interviewed relied on the monsoons and storage tanks for irrigation, while only a few situated near a canal network used its waters for irrigation. The government has a provision for funding lift or diversion schemes, building surface water tanks and purchasing individual pump sets. Depending on the specific terrain, drip and sprinkler irrigation are also set up.

Sikkim has many natural springs across its 4 districts, although they do not comprise a major source of irrigation, there has been a push in recent times to revive 'dead' or 'dying' springs.[6] The 'Dhara Vikas' spring revival scheme has been operative in South and West Sikkim districts since its inception in 2008. This scheme is spearheaded by Sikkim's Rural Development Department using MGNREGA funds allocated by the centre. This spring-shed programme is meant to improve water security of rural communities through a range of location-specific methods. In West Sikkim this scheme has led to a slow and steady recharge of groundwater and has improved the movement of groundwater through different regions.[7]

A majority of Sikkim's population is engaged in agriculture. Agriculture provides food and economic security. In West Sikkim, a range of subsistence food crops are dominant, such as, rice, wheat, maize, finger millet (*ragi*), buckwheat, barley, pulses, some vegetables such as potatoes, beans, cauliflower and cabbage, and some fruits such as peaches, plums, oranges and apples. Spices such as large cardamom, turmeric and ginger are also widely grown. Many areas of Sikkim have seen a drastic transformation of their mountain slopes being turned into cardamom plantations, that were previously home to wild trees and shrubs. Most farmers interviewed grow food for their own subsistence and have little to no surplus sold in the market. In cases of surplus, produce is sold in temporary (seasonal harvest-based) or weekly/ bi-weekly markets. In West Sikkim, the biggest farmers' market is held on Thursdays in the Gyalshing town centre. Other towns such as Dentam, Hee Burmiok, Yuksom and Soreng also

[4] See: Deepak Sharma et al, 'Assessment of Hydromorphological Conditions of Upper and Lower Dams of River Teesta in Sikkim' (2019) 15/2 J Spatial Hydrology 1.

[5] Sikkim Water Resources and River Development Department, 'Minor Irrigation', <http://sikkim-waterresources.gov.in/minorirrigation.html>.

[6] Integrated Mountain Initiative, 'Dhara Vikas Scheme – Reviving the Springs of Sikkim', Policy Brief (2019) <https://www.mountaininitiative.in/images/publications/policy-briefs/Sikkim.pdf>.

[7] Nidhi Jamwal, 'In Sikkim, A Spring Rejuvenation Scheme is Helping Villages Tide over Summer Water Shortage' *Scroll* (20 September 2018).

have weekly markets. Smaller *bastis* (villages) such as Chongpung, Singdram, Baluthang and Darap etc do not have markets of their own and rely on nearby town centres.

Agriculture in Sikkim received wide attention in 2016 when the state declared itself the first organic state in the world. It started with a state assembly resolution in 2003 to convert all agricultural land to organic farming.[8] In 2009, the state government declared all chemical fertilizer and pesticides production and sales illegal within Sikkim. In 2014, the Sikkim Agricultural, Horticultural Input and Livestock Feed Regulatory Act, 2014 further restricted the import, sale, distribution and use of inorganic agricultural, horticultural inputs and livestock feed. The next year, the state government established the Sikkim State Organic Certification Agency, and cracked down on many shops or sale-points to completely stop the import of these inputs into the state. In some cases, inorganic agricultural produce was openly burned to deter others from using chemical inputs.[9] Prior to the implementation of Sikkim's organic mission, most farms in Sikkim were organic, and those that were not, used approximately 10 kg of chemical fertilizers p/ha every year, compared to the national average of 90 kg/ha.[10] This reflects a grassroots consensus among farmers in support of the government's decision to go fully organic. After a decade-long phase out of chemical inputs and employing corroborative strategies such as promoting bio-fertilizers and organic pesticides, Sikkim declared itself fully organic in 2016. Since then, the government has endeavoured to scale up organic production to meet local demand, as well as enhance exports of high value crops. Even though Sikkim is an organic state, most of the food sold in the cities of Gangtok, Namchi and Jorethang, as well towns in all its districts is inorganic produce imported from other states, mainly neighbouring West Bengal. This is because, one: organic produce is not enough to meet the local and tourist demands of Sikkim, and two: farmers are increasingly shifting to cultivating high value exports, such as kiwis, avocados, quinoa, and some herbs and spices (especially cardamom) that have reduced the land available for subsistence food crops.[11]

[8] Sikkim Organic Mission, 'State Policy on Organic Farming' (Government of Sikkim 2015) 5 <http://scstsenvis.nic.in/WriteReadData/links/Sikkim%20Organic%20Policy%202015-401740061.pdf>.

[9] Annie Gowen, 'An Indian State Banned Pesticides, Tourism and Wildlife Flourished. Will Others Follow?' *The Washington Post* (31 May 2018).

[10] John Paull, 'Four Strategies to Grow the Organic Agriculture Sector' (2017) 2/3 Agrofor Int'l J 61, 65.

[11] See Sonam Taneja, 'Sikkim is 100% Organic! Take a Second Look' *Down to Earth* (15 April 2017).

3. SHRINKING SPACE FOR FOOD SOVEREIGNTY IN SIKKIM'S ORGANIC AND AGROECOLOGICAL VISIONS – A THEME BASED ANALYSIS

Agriculture is the primal occupation of over 80% of Sikkim's population.[12] Over the past few decades, the reliance on agriculture has been reducing due to the pressures on agricultural land, and the increasing availability of other employment opportunities.[13] Agrarian stresses are especially pronounced in Sikkim, given the sensitivities of the Himalayan ecosystems and the high dependence over rain, organic soil content and other geoclimatic factors. Climate change, soil erosion, land degradation, human-wildlife conflict, pests and diseases and water scarcity are the major challenges farmers face, coupled with socio-economic challenges such as lack of markets or inadequate market accessibility, fragmentation of landholdings and high input and transport costs.

Rapid geophysical and socioeconomic changes have led to declining productivity in the recent past. Climate change is a chief driver of this decline, although several micro-climatic and regional drivers also exist.[14] Productivity of several crops is in a state of decline, leading to food deficiency, which needs to be fulfilled by imports from neighbouring states. Faster rates of soil erosion, gully erosion, expansion of riverbanks, changes in rainfall patterns and more frequent occurrences of landslides are among the major threats to production sustainability.[15] Lowering productivity of staple and cash crops has been attributed to the failures of organic agriculture alone. Organic farming, especially in the transition years has known to negatively affect yields in almost all crop, soil and climatic scenarios. However, in the case of Sikkim, most parts of which were already organic prior to 2016, low productivity is a result of climate change and other stresses mentioned above, alongside

[12] Environmental Information System (Envis), Govt of India, 'Agriculture in Sikkim', Report on Sikkim: Status of Environment and Related Issues (Govt of India, 2020) 1.

[13] Prabuddh Kumar Mishra et al, 'Analysing Challenges and Strategies in Land Productivity in Sikkim Himalaya, India' (2021) 13 Sustainability 11112.

[14] Hemant K Badola et al, 'Socio Economic and Bioresource Assessment: Participatory and Household Survey Methods, Tools and Techniques: A Training Manual Based on the Experiences from the Khangchendzonga Landscape, India', GB Pant National Institute of Himalayan Environment, Sikkim Unit (2016) 2-3.

[15] Parvendra Kumar et al, 'Climatic Variability at Gangtok and Tadong Weather Observatories in Sikkim, India, During 1961–2017' (2020) 10 Scientific Reporter 15177; Eklabya Sharma, 'Soil, Water and Nutrient Conservation in Mountain Farming Systems: Case-Study from the Sikkim Himalaya' (2001) 61 J Env Management 123.

factoring in low productivity due to the organic transition.[16] Farmers face multiple vulnerabilities with respect to agricultural production, food security and livelihood owing to these pressures.[17]

Farmers interviewed in West Sikkim district, and some in East Sikkim are small to medium farmers. The average landholding size across Sikkim is 2-4 hectares or 5-10 bighas.[18] There is no regularised system of tenant farmers as most farmers cultivate their own lands. This however is changing, with the younger farmers moving away from rural areas to join either the tourism industry or other urban jobs. Most young men in farming families work as cab drivers either full time or part time. Young women, either daughters or daughters-in-law within farming families work on the farm itself, while the men work away from the farms, visiting home every week or month. The summer season (March to June) sees the maximum influx of tourists in Sikkim, and most young men try to earn a livelihood from different jobs within the industry. One farmer from Rumtek remarked that "most of us earn enough for the entire year by driving cabs in the tourist season, [whereas] we would earn the same amount only after working on the farm for 3-4 years..." Medium size farmers employ seasonal labour either from within Sikkim or neighbouring states such as West Bengal or Bihar. Given the small size of the farm enterprise, labour shortages were not among their top concerns, as one farmer noted that "labour can be managed somehow. We all help each other in the hills."

Food systems among farmers in West Sikkim comprise largely a subsistence based localised food system. Some seasonal vegetables, pulses and oil are imported from West Bengal, however Sikkim has a limited reliance on long-distance commodity chains outside West Bengal. Most staples such as local varieties of rice, maize, barley, millets and wheat, including buckwheat are produced by farmers themselves and stored for consumption over the year.[19] Retail shops in cities such as Gangtok, Jorethang, Namchi and Gyalshing are completely dependent on West Bengal's grains and other agricultural produce. There is hence a contrast between what farmers grow and consume for themselves, and what is sold for tourist and urban consumption. Against this background, this section analyses the field data in the light of the Nyeleni Declaration's Six Pillars of Food Sovereignty. This theme-based analysis shows how the space for food sovereignty in Sikkim is shrinking, and the instances of existing

[16] Adani Azhoni and Manish Kumar Goyal, 'Diagnosing Climate Change Impacts and Identifying Adaptation Strategies by Involving Key Stakeholder Organisations and Farmers in Sikkim, India: Challenges and Opportunities' (2018) 626 Science of The Total Environment 468.

[17] Singyala Chiphang and Ram Singh, 'Livelihood Security Determinants of the Organic Farm Household in Sikkim, India: Ordered Logistic Regression Approach' (2020) 39/20 Current J Applied Science & Tech 138.

[18] Department of Agriculture and Cooperation, 'Agriculture Census: Average Size of Operational Land Holdings: Sikkim', Govt of India (2015-16).

[19] Ravi Kant Avashte, Yashoda Pradhan and Khorlo Bhutia, 'Transforming Rural Sikkim', Sikkim Organic Mission (2016).

food sovereignty are also disappearing. This is owing to one, overarching problems of lowering productivity and depeasantisation, wherein young people from farming families are moving away from agriculture. And two, for a range of socio-economic-political factors described below. These include, a top-bottom implementation of organic agriculture that goes against the very essence of food sovereignty; free distribution of improved seeds by the agricultural central and state administration that are replacing local landraces and famers varieties; lack of a Sikkim-specific agricultural research facility or university that is mandated to collect and preserve local seed varieties and farming practices; and finally a strong governmental mandate coupled with market pressures to upscale production for marketing organic produce, rather than valuing its use for subsistence. As explained in the previous chapter, this analysis hopes to assess the scope and potential of food sovereignty approaches in diverse agricultural contexts, such as Patan Gujarat on the one hand, and West Sikkim on the other. Lessons from farmers' control over seeds, protection and conservation of traditional seeds, and agroecological aspects of Sikkim's organic agriculture are especially relevant in moving towards sustainable and locally self-sufficient food systems.

(a) PILLAR ONE – FOOD FOR PEOPLE

The first pillar that focuses on 'food for people' is based on the right to sufficient, healthy, and culturally appropriate food being available for all individuals, peoples, and communities, and 'rejects that food is just another commodity or component for agri-business'.[20] The agricultural landscape of Sikkim, and more specifically West Sikkim comprises a range of food crops grown mainly for subsistence. Ninety-five percent of the farmers interviewed satisfy their food requirements from the food they grow but alongside, rely on nearby markets for foods that are either not grown in Sikkim or are not in season.[21] Among these farmers, more than half sell their surplus produce in markets, while the rest do not have any significant surplus. Farmer interactions reveal that food is understood as a necessity for survival first and a marketable commodity later. Recent governmental interventions in scaling up organic production in Sikkim however have introduced a new wave of thinking in this respect.

In July 2020 the state government introduced the Production Incentive Scheme (PIS) to incentivise farmers to grow and sell specifically 5 crops – large cardamom, ginger, turmeric, orange,

[20] World Forum for Food Sovereignty, 'Synthesis Report' (23-27 February 2007, Mali) <https://nyeleni.org/IMG/pdf/31Mar2007NyeleniSynthesisReport-en.pdfNyéléni>..

[21] The remaining 5% are farmers interviewed at Mevedir's commercial farms in Sombaria. This is the only instance of contract farming encountered during fieldwork in Sikkim. Contract farming is gaining popularity with some agrobusinesses similar to the Mevedir setting up in South and East Sikkim.

and buckwheat.[22] The state agricultural department provides cash incentives through the state's Farmers Producers Organizations (FPOs) to farmers involved in production and marketing of these crops. The scheme also provides funding for processing and packaging units at the cluster level, that is the cluster of farmers under the charge of an FPO. The government hopes to augment farmer incomes while also scaling up production of a select-few crops. In 2021, this Scheme was extended to 12 crops to include kiwi, carrot, red cherry pepper (*dalle khusrani*- Sikkim's traditional variety of chilli pepper), green peas, cauliflower, cabbage and radish.[23] State government's agricultural secretary and FPO officials in West Sikkim have praised the design and implementation of the scheme. The West Sikkim FPO head in Gyalshing states that there is a need to "start thinking like a businessman about cash crops".[24]

More than half of the farmers interviewed in West Sikkim are associated with this scheme, either via their FPO based in Gyalshing or Baluthang, or directly under the West Sikkim KVK. They have all admitted that the seeds distributed under the PIS scheme are higher yielding than local varieties, and for marketing purposes, these HVYs are more desirable. However, most PIS beneficiary farmers, across different landholding sizes grow the local variety of buckwheat, chillies, and peas, and in some instances other vegetables (among the 12 under the PIS scheme) for their own consumption. One farmer in Chongpung showed the different patches of crops grown side by side – one comprised HVY peas distributed by the KVK under the PIS scheme, while the other was his own variety which as was evident on the site, was greener and taller. He said the latter was for our own local consumption and its yield was low, while the HVY variety was to be marketed.

Food security figures in Sikkim are close to the national average, as the state falls in the middle in a rank-list of Indian states on most counts of food security.[25] Malnutrition figures are the highest among marginal and small farmers, concentrated in the North and West Sikkim districts.[26] Sikkim has seen an overall decline of food security, that is the quantitative and qualitative availability and cultural appropriateness of food in the past 2 decades. Farmers, FPO workers and food retailers acknowledge

[22] Government of Sikkim, 'Emergent Northeast India', Press Release (07 July 2020) <https://sikkim.gov.in/media/press-release/press-info?name=Emergent+North+East+India>.

[23] Dichen Ongmu, 'Sikkim Government's Production Incentive Scheme Unique, Historic: Agriculture Minister' *The Sikkim Express* (14 July 2021).

[24] Interviews on file.

[25] Counts include food availability, food access and food utilization measured via nutrition levels among children, women, mortality, stuntedness etc. Ministry of Statistics and Programme Implementation & The World Food Programme, 'Food and Nutritional Security Analysis, India' (2019) at <http://www.indiaenvironmentportal.org.in/files/file/Food%20and%20Nutrition%20Security%20Analysis.pdf>.

[26] Ashok Gulati and Ranjana Roy, 'Linkage Between Agriculture, Poverty and Malnutrition in India' in Ashok Gulati, Ranjana Roy and Shweta Saini (eds), *Revitalizing Indian Agriculture and Boosting Farmer Incomes* (India Studies in Business and Economics-Springer 2021) 39.

the lowering productivity of land due to several reasons. As mentioned above, Sikkim's organic transition is only one of the causes, while climatic, geophysical changes, growth of population and the rise of Sikkim's tourism sector have put a pressure on food security. Recent studies conducted by Chiphang et al,[27] and Kumar, Rai and Verma[28] show that Sikkim's food security has been decreasing. National Sample Survey (2019) data on Agricultural Households data shows that farmer incomes are on a decline and consequently agriculture as a secure source of employment.[29] This is corroborated by most farmer interviews that confirm the agriculture-poverty-malnutrition nexus, wherein young farmers have a better chance of being food secure if they are not engaged in farming, but rather in other urban, tourism-related, skilled occupations.

(b) PILLAR TWO – VALUING FOOD PROVIDERS

This pillar aims at valuing and supporting women and men farmers, peasants, small scale cultivators, pastoralists, indigenous peoples, agricultural and other rural workers who grow, harvest and process food. It rejects policies, actions and programmes that undervalue them, threaten their livelihoods or seek to eliminate them.[30] In this context, the state agricultural institutions, organic marketing network and farmers themselves take pride in Sikkim's unique approach to agriculture. Sikkim's 'organic, sustainable and agroecological' agricultural story is at the centre of Sikkim's identity as a state. It is also the most pivotal element of former Chief Minister Pawan Chamling's legacy.[31] Sikkim's tourism industry also uses its organic status as a 'selling point' while portraying Sikkim as a nature-oriented and heavenly land that has something valuable to teach the rest of the world. Yet 'valuing food producers' entails more than just narrative-building around organics.

Sikkim's government has indeed taken many progressive steps in stirring the state away from chemical-based farming. Yet the role of the state government in setting the terms of agricultural development and scaling up production albeit via the organic route derides the agency and decision-

[27] Singyala Chipang et al, 'Determinants of Food Security for the Organic Farm Households in Sikkim: A Logistic Approach' (2021) 8/2 Ind J Economics & Dev'p 83.

[28] Pawan Kumar, SC Rai and Rahul Verma, 'Evaluating the Status of Gross and Net Food Availability in Special Reference to Carrying Capacity of Land of Sikkim' (2021) 3 Current Research in Environmental Sustainability 100099.

[29] Aparajita Bakshi, 'Situation Assessment Survey of Agricultural Households 2019 - A Statistical Note' (2020) 11/2 Review of Agrarian Studies at <http://www.ras.org.in/situation_assessment_survey_of_agricultural_households_2019_a_statistical_note>.

[30] Supra n 20, Synthesis Report 2007.

[31] Office of the Chief Minister, Sikkim, 'Under the Leadership of India's Greenest Chief Minister Shri Pawan Chamling—Sustainable Development through Greening, Organic Farming, Cleanliness and Unique Social Engineering', Report, Government of Sikkim (2016) 390.

making capacity of farmers. Meek and Anderson explain that Sikkim's agro-social engineering experiments that are driven primarily by 'elites within the state'.[32] These are progressives that have "come to power with a comprehensive critique of existing society and a popular mandate to transform it."[33] Most farmer interactions have revealed this sentiment, as to Chamling's faulty presumptions in "knowing what is best for his people", and "framing laws and policies aimed at projecting a particular image of Sikkim".[34] There has been little participation by small farmers and food producers in Sikkim's organic transition, which has been implemented as any state top-down mandate. One farmer in Baluthang who lost out on 3 years of agricultural produce owing to the chemical-to-organic transition complained that the state should have provided some livelihood or insurance support during those years. Further, he complained that in the most remote (and poorest) regions of Sikkim there is little connectivity to markets. The government only focuses on foreign exports going out of South and East Sikkim that have better infrastructure and connectivity. The West and North districts are often ignored.

Sikkim's state agricultural administration officers based in Gangtok and those interviewed in Gyalshing employ view small farmers as lacking scientific and technical knowledge. Officers remarked on the 'inefficiency' of small farmers, their low incomes owing to 'inferior' seeds and other inputs, 'cost-cutting mentality' and an attitude of dependency over the government. Corruption and wasteful utilisation of funds by FPOs was alleged without providing any specific evidence of the same. Officers while being aware that Sikkim does not wish to follow the Green Revolution model of intensive and environmentally unsustainable agriculture, also admit that increasing farm incomes by 'scaling up organic production' is a top priority of the government.

Sikkim has one agricultural college in Ranipool which specialises in engineering and post-harvest technologies.[35] Many state agricultural officers lamented the fact that Sikkim does not have its agricultural educational institution that could potentially focus on Sikkim-specific agriculture and biodiversity. Professors themselves admit that the agricultural college imparts a centrally designed course and what students learn is "dis-engaged from the land in which the university is situated." Officers at NOFRI-ICAR based in Tadong share this attitude of inferiority and mistrust towards smallholders. One officer stated that "local farmers don't really know anything"… "despite repeated

[32] David Meek and Colin Anderson, 'Scale and the Politics of the Organic Transition in Sikkim, India' (2020) 44/5 Agroecology and Sustainable Food Systems 653, 668.

[33] James C Scott, 'Seeing Like a State: How Certain Schemes to Improve the Human Condition have Failed' (Yale Agrarian Studies, Yale University Press 1998) 89.

[34] Interview on file.

[35] College of Agricultural Engineering and Post-Harvest Technology in Ranipool, an affiliate college of the Central Agricultural University.

demonstrations on the field and free distribution of HYV seeds, they stick to the same practices…" There is hence a juxtaposition between Sikkim's agroecological organic agricultural posturing and its simultaneous push towards attracting private investments, setting up value chains and encouraging farmers to scale up and practice business-oriented farming, all the while admonishing "simple" farmers who do not embrace this change. As for farmers themselves, all farmers, especially older and elderly farmers, spoke of a sense of pride in "providing food to the world." The idea of farmers' pride remains disconnected with the state's policies or laws, and farmers are not particularly valued as food producers per se. Amidst lowering productivity and pressures to move away from agriculture into other professions, 'value' is attributed in real terms by way of profits and farm earnings, just as is the case in other industrialised and cash crop settings.

(c) Pillar Three and Four – Localises Food Systems & Puts Control Locally

This pillar speaks of bringing food providers and consumers closer and aims at putting producers and consumers at the centre of decision-making on food. Food sovereignty opposes long supply chains within a globalised agro-food market, as they place power away from local communities, and entail high environmental costs. By local control, food sovereignty advocates control over territory, land, grazing, water, seeds etc. All regimes that place control far away from the local community, such as 'privatisation of natural resources, commercial contracts, and intellectual property regimes' are rejected.[36] Control in the form of designing and employing agricultural policy should be enjoyed by farmers and rural workers.[37] Many of these features are also parameters of agroecology. Sikkim's agricultural law and policy is state-driven. It organic transition aside, other initiatives pertaining to farmer welfare, scaling up of crop production and encouraging the creation of value chains and markets via private investments have not been initiated or led by farmers or farmer groups themselves. It is important however to note that as is the case in some parts of India, where farmer mobilisations are so strong as to wield political power, farmers in Sikkim remain a dispersed and diverse group. State officials in the Cooperation Department in Gangtok and Gyalshing report there is so much central and state funding that remains unutilised every year, as there are not enough producer organisations or cooperatives in the state. There is scope for more, and there is an active mandate by the state government to promote the formation of such groups. One official in Gyalshing reported that out of the 4 sub-divisions in the district, there is only 1 functional FPO in Gyalshing sub-division,[38] 3 in Soreng which

[36] Supra n 20, Synthesis Report 2007.

[37] Miguel Altieri and Clara Nicholls, 'Scaling Up Agroecological Approaches for Food Sovereignty in Latin America' (2008) 51/4 Development 472; Steve Gliessman, 'Agroecology: Growing the Roots of Resistance' (2012) 37/1 Agroecology & Sustainable Food Systems 20.

[38] Gyalshing Organic Producer Cooperative Society Ltd, Gyalshing.

were formed due to efforts of private companies rather than the state administration,[39] and 1 in Dentam;[40] there is still no functional FPO in Yuksom. There are 18 FPOs on paper in West Sikkim, but most are dormant and do not mobilise or engage in collective bargaining or marketing at all.

Food systems in Sikkim are localised to some extent, and 'control' on many fronts is exercised locally. Most farmers grow food for subsistence, yet alongside there is a high reliance on food markets. Food markets in West Sikkim district comprise several permanent retail stores in cities and towns such as Gyalshing, Dentam, Yuksom and Soreng. These stores are supplied by produce imported from neighbouring states such as West Bengal. Weekly or by-weekly *mandis* are also set up in these towns and in other peripheral semi-urban and rural areas. For example, every Thursday there is a farmers' market in the Gyalshing town centre which sells organic produce from within Sikkim. Legship, Hee Bermiok, Rinchenpong and Tashiding also have informal weekly *mandis.* Most farmers interviewed buy their food from these *mandis* that are set up on a particular day of the week. Usually they travel to the city/town at least once a week and make their purchases either from the *mandi* or from formal retail stores.

With respect to agricultural inputs and implements, local control is exercised in different ways. Most farmers interviewed produce their own organic manure. One middle-aged farmer in Singdram admitted that prior to 2016 there was no need to do this, as chemical fertilizers were easily available, but after the ban, he has had to produce his own stock. One female farmer from Charrasata complained that if her own organic manure stock ran out, it was very difficult to get another stock at a reasonable price. The government had only set up fertilizer production units, and soil laboratories in South Sikkim and there was nothing for the people in the West, especially in places such as Charrasata that were very far from Gyalshing.[41] Aside from biofertilizers, seeds for staple cereals that most farmers regularly consume are saved on the farm or are locally sourced. In the years leading up to 2016, the Sikkim Organic Mission distributed HVY seeds for many crops across different villages of Sikkim. Some of these were part of the Bio-Village programme, wherein several select villages transitioned to organic villages with government support. Approximately 400 villages (approximately 75,000 hectares) were transformed to 'bio-villages' and were certified organic.[42] Since 2008-09 the state government has imported the National Seed Corporation (NSC) that are distributed free of charge via the state government and via KVKs. Later in 2010, the NSC & a private company, ZUARI Seeds started

[39] Soreng Sunrises Organic Producer Cooperative Society Ltd, Soreng; Daramin Constituency Organic Producer Cooperative Society Ltd, Sombaria; Zoom Organic Producer Cooperative Society Ltd, Nayabazar.

[40] Dentam Organic Producer Cooperative Society Ltd, Kaluk.

[41] Sikkim has one 300 MT biofertilizer unit in Majhitar (East Sikkim) since 2013. There are 3 soil testing units in Sikkim, one in Namchi (South Sikkim) and two in Gangtok (East Sikkim).

[42] Sikkim Organic Mission, 'Comprehensive Progress Report', Government of Sikkim (2014) 392.

supplying seeds of 9 major crops in Sikkim via a joint venture. Despite Sikkim's subsistence-based small scale farming context, control over agricultural inputs has been shifting away from local communities. Further, all agricultural policies affecting farmers are shaped by 'experts' in government without much farmer involvement. In terms of localisation of food systems, farmers remain reliant on non-organic imports, while they themselves are encouraged to grow high value crops for exports. Thus, long supply chains wherein control is situated outside and far away from the local communities is increasingly becoming a norm in Sikkim.

(d) PILLAR FIVE – BUILDS KNOWLEDGE AND SKILLS

Food sovereignty relies on local knowledge, skills and practices of food providers relating to inter alia, farming and harvesting systems, and conserving, developing and managing plant varieties. Research and education institutions and knowledge systems should support local knowledge and ensure its preservation and passing on.[43] Sikkim has a wealth of local knowledge on farming practices and biogenetic resources. Its rich biocultural heritage includes many plant varieties indigenous to Sikkim, and unique farming methods used to cultivate them.[44] The regional centre of the National Bureau of Plant Genetic Resources reports that there are approximately 121 germplasm collections belonging to Sikkim.[45] These collections were made since 1980 until today. In the early 2000s, NOFRI submitted a 'blueprint on seed chains' to the state government, that is, a report on the then used landraces, commercial varieties and their parental varieties.[46] But this was never followed up, and no conservation programme came out of this report. Officials at NOFRI and within the state government admit that many varieties in this report have been lost, as they are no longer cultivated. In 2008-14, another effort was made under ICAR funding to document and conserve 'under-utilised crops'. NOFRI collected over 200 samples of local varieties of different plants, most of which were not present in any database prior to this, including the Shillong NGPBR regional centre. After 2014, this project was abandoned for unknown reasons, and today only some of these samples are still preserved in the NOFRI facility in Tadong. Most NOFRI interviewees believe that the under-utilised crops programme was aborted due to lack of political will and funding from the state government. State government officials while admit that past attempts at collecting germplasm and documenting local varieties were initiated and later

[43] Supra n 20, Synthesis Report 2007.

[44] Lachlan Gregory, Jagjit Plahe and Sandra Cockfield, 'The Marginalisation and Resurgence of Traditional Knowledge Systems in India: Agro-Ecological 'Islands of Success' or a Wave of Change?' (2017) 40/3 J South Asian Studies 582, 594.

[45] NGPBR, 'PGR Portal – Core Collections Sikkim', at <http://pgrportal.nbpgr.ernet.in/(S(2ydps45510r4jm3jfw1zyz31))/default.aspx>. Results of collections published: Ranbir Rathi, Sanjay Singh and Anup Misra, 'Collection and Characterization of Trait Specific Multi-crop Germplasm from Sikkim' (2018) 31/2 Ind J Hill Farming 274

[46] Interview of Ravikant Avasthe, Joint Director ICAR-NOFRI, on file.

abandoned, no particular interviewee could give any further details as none of them were office-bearers while this programme was carried out. In 2014 a similar project on 'potential crops' was conceived but also abandoned in 2016 for unknown reasons. The state agricultural secretary and other state government officials acknowledge the importance of sample collection and conservation of germplasm, but also admit that it is not a major priority.[47] One official stated that it wasn't a priority because in any case these varieties must be replaced with high yielding "scientific" varieties, because that is the only way to increase farmer incomes. Another official noted that the government had only focused its attention only on organic agriculture, and therefore preserving local varieties and knowledge around it "wasn't a part of this vision".[48]

Today farmers are increasingly growing hybrids, on a few of which have been developed from within Sikkim. Farming methods are demonstrated by KVKs and state government officials at the time seeds are distributed. Amidst these changes, some unique stories of local traditional knowledge preservation have emerged. For instance, two young monks in their mid-20s at the Pemayangtse Monastery near Pelling were learning to cultivate a local variety of rice used in some Buddhist rituals at the monastery. They were originally from North Sikkim and had recently joined the Pemayangtse group. The rice variety that grows in the West is not the same as the North, which requires a different method of cultivation. To learn more effectively, these monks use a social media mobile application (Whatsapp) to share and learn farming knowledge with other young monks in the district, such as those in Ravangla and Phodong. The conversations on this group include how to effectively store paddy seeds, farming methods such how to plant, maintain and cut the plant, and even post-harvest recipes of the local rice varieties.[49]

The control over seeds and traditional knowledge is further discussed in Chapter 7 and 8. Yet, overall, Sikkim presents a contradiction – on the one hand, most farmers cultivate local varieties for subsistence, and use farm-saved seeds for staple crops such as maize and paddy.[50] So much so that young Buddhist monks share paddy-related notes and recipes with one another via social media. While on the other hand, the issues of low productivity and depeasantisation are plaguing Sikkim, as is the

[47] Interview of Sushma Pradhan, Agricultural Additional Secretary (Gangtok); Interview of Tshering Bhutia, Agricultural Joint Director (Tikjuk, West Sikkim), on file.

[48] Interviews on file.

[49] Interviews on file.

[50] Chanda Gurung Goodrich, 'Gender Dynamics in Agro-Biodiversity Conservation in Sikkim and Nagaland' in Sumi Krishna (ed), *Agriculture and a Changing Environment in Northeastern India* (Routledge 2016) 166.

case in the rest of the country. Further, HYV seeds are distributed and promoted across the state. Local knowledge is therefore highly vulnerable to such changes.

(e) PILLAR SIX – WORKS WITH NATURE

Sikkim has promoted itself as a state that is sensitive to its unique natural landscape and one that advances the ecologisation of its agriculture. Transitioning into a fully organic state has been a significant policy intervention.[51] Every farmer and FPO official interviewed vouched for the state's organic status, that is, they are aware that there are serious consequences for practicing chemical farming illegally. The seriousness with which the government has pursued this transition is noteworthy on many fronts. First, in the decade leading up to 2016, organic content of soil was tested and measured in most parts of Sikkim.[52] This was followed by a drive towards producing biofertilizer on the farm, and the setting up biofertilizer plants, albeit concentrated in the South and East. Second, farm technologies that have been invented and introduced are simple and customised to Sikkim's needs. They are not destructive in the tilling to harvesting process, as preserving the nutrients of the topsoil is crucial for organic agriculture.[53] Third, many farmers have been trained to employ a nature-based agricultural thinking. The government has held several training workshops to spread awareness on organic farming and post 2016, on scaling up organic production.[54] This marks an important shift in farmer attitudes. Most farmers interviewed supported these interventions and believe that organic farming is good of their land and their health in the long term. However, here too, one farmer form Baluthang complained that these efforts were concentrated in the South and East districts, with very little training or support provided to farmers from the North or West.

With respect to seeds, HVY seeds distributed by KVKs are mostly derived varieties of Sikkimese plants, as other varieties grown elsewhere are highly responsive to chemical inputs and are therefore unsuitable for Sikkim. NOFRI officials and KVK personnel state that in most cases, such as maize, paddy, buckwheat, turmeric, and cardamom, are derivatives of local Sikkimese varieties. Seeds distributed by the state government and the KVK's vegetable and fruits seed stock are supplied by the National Seed Corporation or other parts of India. ICAR is the chief agency that coordinates this supply, when some variety shows promising results that its scientists believe can be replicated in Sikkim. Thus, to the extent that Sikkim's own varieties are researched and developed, seed innovations are nature-

[51] Supra n 19, Avaste, Pradhan and Bhutia (2016).

[52] Supra n 42, Sikkim Organic Mission Report (2014) 393.

[53] Sikkim Organic Mission, 'Organic Farming in Sikkim as a Strategy for Sustaining Ecosystem Services and Livelihoods', Government of Sikkim (2019) 5-6.

[54] Supra n 14, Badola et al (2016) 3.

based. Yet the benefits that accrue with organic farming aside, there are many nature-based aspects of food systems that have been sacrificed at the alter of organic farming. For instance, pastoral grazing has been banned in most parts of Sikkim except in the Kanchenjunga National Park, Lachung and Lachen valleys.[55] This has been done to prevent crop destruction; however, grazing is an important element of maintaining ecological systems and preserving biodiversity. One farmer in Lower Geyzing explained how most farmers own less livestock than before.

Since 2016 Sikkim has actively encouraged monocropping of high-value crops (through the PIS and other policies discussed below in the context of large cardamom) and have not provided substantial financial or other support for integrated farming systems that do not disturb the natural terrains as much as possible. Sikkim's efforts to scale up production through monocultures has had a negative impact on the environment. For instance, many non-dominant plant species have been lost or are likely to be lost soon. Many wild spaces have shrunk, with monoculture plantations replacing a variety of long-standing soil-binding trees. Even though the government has tried to revive natural springs in Sikkim, the pressures of urbanisation and a swelling under-regulated tourism sector have seen more *pukka* (cement and mortar) constructions in the rural areas which have blocked streams and springs in many parts of the state.[56] Sikkim's agricultural model cannot be analysed in isolation of its development model, which is ecologically destructive and resource-wise unsustainable.

Theme	**Participant & Collection Tool**	**Brief Description**	**Applicable Quote if any**
(1) A focus on food for people	Landowning farmer, and sarpanch of Chongpung village - Interview	Most farmers grow food for subsistence. Especially local varieties of maize, paddy and wheat are farm-saved varieties grown for consumption. In recent years the focus is shifting from subsistence farmers' variety food crops to	"Within [Chongpung] we do exchange with one another or sell to one another unless they are really short of any seed. We never buy from the market, because all those seeds are tested somewhere else but are not very good for this place. "Our seed is superior, we know… and what if the market seed fails? Where will we go?"

[55] Ban operative since 1998: Rashmi Singh et al, 'Conservation Policies, Eco-Tourism, and End of Pastoralism in Indian Himalaya?' (2021) 5 Frontiers in Sustainable Food Systems 50.

[56] Interviews of farmers in Nandok (East Sikkim) and Yangtey (West Sikkim).

		hybrid cash crops – chiefly large cardamom, turmeric, orange and ginger.	- Male, 52 years farmer, owns 9.5 bighas land (10/02/2021).
(2) Valuing food providers	Farmer in Singritam - Interview	There is a deep sense of pride among farmers across different classes and regions. Most farmers support the organic transition, yet wish there was more support for local marketing, biofertilizer production and training in West Sikkim. Farmers are aware that Sikkim is not food self-sufficient, and may never be so, since farmers are slowly shifting away from food crops. Young men from farming families that work in the tourism industry or drive cabs etc do not see a future in agriculture due to its low profitability.	"The KVK distributes seeds for free many times. Last year they distributed seeds for peas and red onions. They have not performed as well as my seed. But since I did not have enough seed, I had to use theirs. "They know that farmers prefer their own seeds, so they usually give kiwis, cardamom and ginger seeds [or propagators], so we can sell them and earn something." - Female 39 years, owns over 3 bighas. (14/02/2021).
(3) Localizing food systems;	Farmer working at private farm in Soreng, employed by Mevedir Pvt Ltd -	Farmers are usually self-sufficient with respect to staple cereals and keep a stock of vegetables, spices and herbs. They depend on local markets for non-seasonal produce, fruits and	"We grow quinoa that is exported to Europe. Mevedir gets free seeds from the South Sikkim KVK. Our boss and people at the KVK want me to grow quinoa in my farm also, because traditional varieties if not today then tomorrow they will disappear, as the people of Sikkim itself are not consuming enough of it,

	Interview	other foods (including processed). The government is inviting private investment and promoting the consolidation of supply chains for export outside the state and abroad. Further, a substantial portion of Sikkim's food demands, to support its urban population and tourism industry comes from West Bengal or other states.	then how would they convince the world to consume it? "I stopped growing barley, some types of millets and *saak*, because I don't need to anymore. But I cannot give up maize. Even they know that. No Sikkimese farmer can let go of his *makkai* [maize]." - Male 55 years, worked for Mevedir since 2013. Owns 2 bighas land near Soreng. (19/02/2019)
(4) Placing control locally	Department of Cooperation Officer, Gyalshing - Interview	The state provides funding for FPOs, and much of this is underutilised in West Sikkim. There are only a few functioning FPOs. They focus on purchasing farm technology and arranging sales of harvested produce. FPOs are trained and funded for growing cash crops, and there is no effort towards marketing traditional varieties.	"FPOs submit their audit and activity reports to this department. This year, the Khechiperi Organic Society distributed improved buckwheat seeds among its farmers, but only time will tell whether after this year's season they will buy another stock or not. Farmers may reject it. The Soreng FPO made a big purchase of cardamom seeds, because it is popular in that region. Lots of farmers are increasingly switching to cardamom, even though now is the down-season. Forests and farms that grew vegetables are all switching to cardamom. My parents say that … land used to be planted with multi-cropping cycles and fed by rain/springs etc. Now if everyone grows cardamom as a commercial enterprise, then no one is taking care

			of the land/giving breaks to the land the way they did before." - Male 29 years, government officer in Dept of Cooperation. His parents own and cultivate their family farm in Yangtey - 8 bighas. (11/02/2021)
(5) Building knowledge and skills	Joint-Secretary, Department of Agriculture, Sikkim - Interview	There is one agricultural college in Sikkim only focused on post-harvest technologies. Neither NOFRI, nor the state government, nor any KVK has a collection of Sikkim's local germplasm. The NBPGR regional office in Shillong has a collection. Farmer training and education is led by scientists trained at IARI-ICAR or in colleges outside Sikkim/Northeast.	"Sample collection and conservation of germplasm is important, but it cannot be a major priority. There are many climatic pressures and market pressures on our farmers. So, traditional varieties must be replaced with high yielding scientific varieties, because that is the only way to increase farmer incomes." - Female bureaucrat 58 years, in service since 1979.
(6) Working with nature	Farmer in Nandok (East Sikkim) - Interview	Sikkim's organic transition is commendable. It has made efforts in reviving springs, training farmers to make their own biofertilizer and get their soil tested for organic/nutrient content. However, organic farming is aspect of agroecology, a much wider concept. Sikkim's organic transition has been state-led with little	"20-25 years ago some government officers had come and taken some of my seed sample. Maybe it was for research. But there have been no collections recently. What I ate as a child, is not grown. Noone knows what happened to it. It is lost… [nearby, there was] a stream, which has run dry. All the youngsters have left, and no one fought for the stream to remain.

		to no involvement of farmers, has ignored biogenetic resource conservation (e.g. protecting landraces etc) and has failed to prevent rapid changes in the landscape (e.g. reduced forest cover due to plantations, tourism constructions etc).	I told my son that he should not leave farming because this is our heritage, and it must be passed on from one generation to another. Simple farming is not enough to sustain the household, so I grow orchids and collect wild vegetables [wild tapioca] and sell at a premium price during the festive season." - Male 80 years farmer, owns 6 bighas (11/01/2021)

4. AGRICULTURAL MODERNISATION EXPERIMENTS IN THE WEST SIKKIM LABORATORY - DISCUSSION

Sikkim's organic transformation, which, by the government's own retting, is synonymous with an agroecological transformation, has led to major agrarian changes in state. Even if, for a moment, one was to accept Sikkim's own definition and standard of agroecology, even then many contradictions arise. For instance, the government has initiated many scaling-up programmes to increase farmer incomes and increase agricultural development through the setting up of value chains for commodity markets in the country and abroad.[57] The Sikkim Organic Mission has been pivotal in designing and implementing scaling up programmes after its efforts in turning Sikkim into a fully organic state reached fruition in 2016.[58] These efforts include educational and training programmes for farmers with respect to some high value crops, provide funding and logistical support to FPOs and FCOs for specialising in these crops, and re-orient state markets to include private vendors that aid in the scaling up process.[59]

The story of large cardamom is a related, yet separate, contradiction between the state's agroecological vision versus its capitalist action. This section explores two major facets of agriculture in West Sikkim that pose major obstacles in moving towards food sovereignty – example of large cardamom that mirrors the case of Bt cotton in Patan in terms of policy choices, public-private

[57] For post-organic transition scaling up challenges: Devon Sampson, 'Productivism, Agroecology, and the Challenge of Feeding the World' (2019) 18/4 Gastronomica: J Food and Culture 41.

[58] Supra n 32, Meek and Anderson (2020) 666.

[59] Triangulated analysis from interviews of Gyalshing FPO officials, operations officer of Mevedir Pvt Ltd, and West Sikkim KVK officials.

collaborations and agroecological-capitalist contradictions. The second being the problematic usage of the term agroecology to describe Sikkim's agricultural model. The absence of biogenetic resource protection, and other important parameters of agroecology lead to the conclusion that organic agriculture should not, and cannot in Sikkim's context, be equated with 'agroecology'.

(a) Reorientation of Landscapes and Value Chains towards Organic Monocultures: the Story of Cardamom in West Sikkim

Large cardamom is the principal cash crop of Sikkim. Among several dominant crops that the government has promoted for scaling up, large cardamom is the most significant in terms of volume, profits, and land area. Most farmers interviewed grow this crop; officials at the East and West KVKs, and state government officials spoke of the benefits of growing large cardamom. One cannot miss seeing large cardamom growing on Sikkim's mountainous slopes on any journey from one village to another in West Sikkim. Some of these are common lands or lands leased by the government to farmers for its production.[60] Prior to 2016, large cardamom was a popular cash crop in Sikkim, however since turning organic, the land area for cardamom has increased six-fold.[61] Government initiatives aside from the PIS mentioned above have incentivised its cultivation – for instance, Sikkim Organic Mission's efforts to promote the crop,[62] the training and propagation programmes by Agricultural Technology and Management Agency (ATMA) in North Sikkim,[63] and..

Cardamom production is resembling any high-intensive cash crop farming and changing forest landscapes drastically.[64] The senior agronomist at NOFRI stated that cardamom has been highly profitable compared to other crops, except in the last 3-4 years where production has declined, and profits suffered due to supply chain disruptions because of the Covid 19 pandemic. This crop does not require a lot of farmer care, and once planted, it more or less "grows on its own".[65] Farmers in Darap, Lower Pelling and Lower Geyzing corroborated this by explaining how they try not to "waste" their lands for growing cardamom, which can anyway stand in common or abandoned lands. Someone from

[60] See: Correspondent, 'All Barren Land in Sikkim to be Converted into Cultivable Patches' *The Assam Tribune* (15 September 2010).

[61] International Centre for Integrated Mountain Development, 'Report - Agrodiversity in Sikkim Himalaya: Socio-Cultural Significance, Status, Practices and Challenges', ICIMOD Working Paper 5/2016, 35.

[62] Supra n 42, Sikkim Organic Mission Report (2014) 231-41.

[63] Bharat Gudade, 'A Study on Awareness and Adoption of Large Cardamom Production Technology among Tribal Farmers of North Sikkim' (2012) 48/3-4 Ind J Extension Education 104.

[64] Athar Parvaiz, 'India's First Fully Organic State' *Earth Island Journal* (8 August 2016).

[65] Interview on file.

the village may visit the site sometimes to look after it, and that is all that needs to be done. When harvested, profits are distributed in the village, unless the crop is grown privately on any farmer's land, in which case the profits would be his alone. Young farmers, who work in the tourism industry or drive cabs during the tourist season (i.e. not full-time farmers) are in favour of growing cardamom, since it does not require "back-breaking work".[66]

Cardamom from Sikkim is exported to other states in India, and abroad. SIMFED plays an important role as the key state procurement agency that buys cardamom at a fixed price from farmers. Cardamom-growing farmer interviewees in West Sikkim complained that SIMFED does not give them a fair price, as they are much lower than the private vendors and the procurement happens near Gangtok in East Sikkim, therefore transport costs from the West to East have to be borne by the farmers, and this reduced their earnings. Private firms such as PR Exports Ltd, AGI Exports and KDSA Enterprises have been in the business of cardamom and other spice exports since over a decade. Since Sikkim's organic transition, the demand and price of organic cardamom rose briefly before falling more recently. A SIMFED official reported that the level of consolidation in value chains for cardamom was incomparable with any other crop in the state.[67]

Recent studies commissioned by ICAR and others carried out by independent researchers show that cardamom production is on the decline due to problems of soil fertility, low availability of water and climate change.[68] While agrarian distress has affected all crops, the high dependency over cardamom has meant that losses in cardamom production and profitability have been most acute for farmers. Many farmers interviewed hope that prices will rise again in the subsequent years, but as on the date of writing this has not happened.[69] Further, cardamom plantations in common and private lands have replaced many traditional landraces, food crops and forest cover.[70] Farmers aged 50 years and

[66] Interview of 30-year-old farmer from Dentam who runs a business in Siliguri while his parents cultivate and live on the farm in Dentam, on file.

[67] Interview on file.

[68] Ghanashyam Sharma et al, 'Declining Large-Cardamom Production Systems in the Sikkim Himalayas Climate Change Impacts, Agroeconomic Potential, and Revival Strategies' (2016) 36/3 Mountain Res & Devp 286; B Skusre et al, 'Assessing Water Footprint of Large Cardamom and Developing Management Strategy in Sikkim, India' (2020) 69 Irrigation and Drainage 1157.

[69] Supra n 61, ICIMOD Report (2016) 1: "…agricultural landscape of Sikkim has undergone a rapid transformation due to the impact of globalisation… Genetic resources and traditional knowledge systems are deteriorating at a significant level"; Sushmita Chakraborty and Namita Chakmal, 'Perspective on Large Cardamom Cultivation and its Challenges in West Sikkim, India' (2019) 6/5 Space and Culture 190.

[70] Ravikant Avasthe, KK Singh and Jyoti Tomar, 'Large Cardamom based Agroforestry Systems for Productions, Resource Conservation and Livelihood Security in the Sikkim Himalayan' (2011) 39/2 Ind J Soil Conservation 155, 159.

above in Pelling remember that the government had planted pine trees in several land patches in 1980. In the past decade, the government has permitted the felling of these trees for cardamom plantations or for constructing hotels and tourist lodges.[71]

With respect to seed replacement, the most popular large cardamom varieties include Ramsey, Golsey and Sawney varieties.[72] These varieties have been developed by ICAR and are distributed via KVK and state government channels, mainly through SIMFED networks. Some farmers outside these distribution networks, purchase these seeds from the Gangtok or Siliguri markets.[73] Other higher quality seeds, that are more expensive are also available, but only some farmers can afford them. There is little private operation over cardamom seeds in Sikkim, as these varieties belong to the government and are first-sold or distributed by government agencies. In other parts of India, such as West Bengal, Nagaland (and other parts of the Northeast) and Uttarakhand, and in Eastern Nepal where cardamon is grown, private seed actors in this otherwise profitable spice are limited.[74] This may change soon, given the overall penetration of private actors in the hybrid seeds industry. In Sikkim, hybrid vegetables and fruits, and the less popular hybrid cereals comprise a mix of public and private actors that own and sell seeds to farmers. Sikkim is seeing a fast transition from subsistence to cash-crop-based agriculture, that, with respect to cardamom, and some other high value crops, has been orchestrated and supported by the state. The extent of consequent agrobiodiversity loss and disintegration of independent small-scale food systems remains unrecognized and undocumented.[75]

(b) EQUATING 'ORGANIC' WITH 'AGROECOLOGICAL' – HOW ONE TRANSITION HAS NOT LED TO THE OTHER

Sikkim's agricultural model has not tried to emulate the Green Revolution productivist model, however it has failed to escape the burdens and attractions of a productivist model. On the one hand, large swathes of monocropping cultures cannot exist in the hilly terrains of state, and on the other,

[71] The researcher witnessed one felling cycle in the 'Pine Valley' area of Pelling in March 2021. The workers showed their felling permits and stated that it was for a hotel construction, which had to be completed before the summer tourist season that year.

[72] Tasvina Bohra, Ravikant Avasthe and R Helim, 'Large Cardamom – A Traditional Cash Crop in Sikkim' (2012) 16/3 Asian Agri-History 271, 272.

[73] SIMFED remains the dominant seed provider in Gangtok along with Himalayan Agro Products Ltd and Organo Sukhim Ltd; Sahara Seeds Ltd is the main private firm in Siliguri, whose seeds are used in Sikhim and North Bengal.

[74] Sony K. C., Bishnu Raj Upreti, 'The Political Economy of Cardamom Farming in Eastern Nepal: Crop Disease, Coping Strategies, and Institutional Innovation' (2017) 7/2 Sage Open 215.

[75] Agrobiodiversity loss to some extent documented in supra n 61, ICIMOD Report (2016).

realising the geophysical realities of Sikkim, the state government has tried to steer agricultural policy towards organic production of some specialised crops rather than trying to increase production of all mainstream crops. In other words, Sikkim has not tried to compete with other states on the basis of high agricultural production but has played a different game somewhat outside of the dominant crops metric.

Sikkim's divergence away from the Green Revolution productivist model of agriculture has not been free of challenges. Issues of low productivity have plagued Sikkim, just as the agrarian crisis persists across other parts of the country and arguably, the world. Despite the state government's efforts in converting Sikkim into an organic agro-haven, and touting these efforts as environmentally sustainable agroecological transitions, agricultural production per hectare area has been declining over the past two or so decades.[76] Even for a state that has sought to chart its own unique path into agricultural development, away from the Green Revolution's legacy, the onset of a productivity crisis is a highly painful phenomenon and one that cannot be ignored. Thus, Sikkim's agricultural actions often reflect a balancing act between promoting organic chemical-free farming and scaling up production of some specialised crops for export. Sikkim's organic and agroecological labels must be read in this light.

Sikkim has ardently advertised its organic programme and has portrayed itself as an agroecological haven, to show the world how 'ecologically sustainable agriculture should be practiced'.[77] These efforts have not gone unnoticed. In 2018, FAO, the World Future Council and the International Federation of Organic Agricultural Movements (IFOAM) awarded Sikkim with the Future Policy Award.[78] In 2021, Sikkim was awarded the Eco-Agricultural Award by the Agriculture Today Group.[79] Even though Sikkim's agricultural policy has focused on 'organic' farming, the Sikkim model has been propagated, received and lauded as an agroecological model. Meek and Anderson have critiqued this by drawing a distinction between the two in the Sikkimese context.[80] While Gregory, Plahe and Cockfield read the Sikkimese organic transition as a 'vignette' or version of agroecology.[81] Organic agriculture is a system that uses non-chemical or biological fertilizers and pesticides that promote agro-ecosystem health. The organic movement began as a grassroots social movement in the 1990s that aimed at holistic agricultural production that enhances biodiversity, agro-biological cycles,

[76] Supra n 13, Mishra et al (2021) 11114.

[77] Sikkim Organic Mission, 'Organic Farming in Sikkim as a Strategy for Sustaining Ecosystem Services and Livelihoods', Technical Report (January 2019) 1-3.

[78] FAO, 'The "100% Organic State" Sikkim in India Wins Gold', *Agroecology Hub FAO* (10 December 2018).

[79] Correspondent, 'Sikkim Receives Eco Agriculture Award', *Sikkim Express* (22 May 2021).

[80] Supra n 32, Meek and Anderson (2020).

[81] Supra n 44, Gregory, Plahe & Cockfield (2017) 594.

and soil biological activity.[82] Over the years, this idea has been co-opted by agrobusinesses and multinational corporations that are not particularly concerned with advancing agro-ecological health or enhancing biodiversity, but rather creating value chains of monocultures by only substituting chemical inputs with organic ones.[83] Such a restricted conceptualisation of organic agriculture renders it taking on "many of the characteristics of mainstream agriculture regarding scale and structure."[84]

Agroecology is the application of ecological principles to agriculture, and more broadly shaping food and agricultural systems around ecology and social practices.[85] It is an intersection of agriculture, nature and people. Most scholars agree that agroecology is not a set of prescriptive rules but based on some core principles or values that revolve around the relationship people have with nature.[86] The food sovereignty interpretation of agroecology includes farmers' agency, local knowledge, and control over agroecological implements.[87] Today's mainstream understanding of 'organic agriculture' does not include these ecology-centric, social and political aspects of agroecology. A self-identification of organic produce, third party organic certifications and labelling are based on the types of inputs are used while farming, and do not delve into questions of ecological principles, judicious use or natural resources, localised control and bottom-up social processes.[88] Organic agriculture in Sikkim is quintessential of this distinction between organic and agroecological approaches. Its policies on scaling up organics, especially promoting some high value crops such as cardamom, conflicts with the essence and key principles of agroecology.

The use of the term agroecology in the Sikkimese context is reflective of the compromises and dilution of its core principles. Giraldo and McCune have argued that any form of agrocological institutionalisation or the translation of agroecology into state policy leads to some degrees of dilution

[82] Daniel Jaffee and Philip Howard, 'Corporate Cooptation of Organic and Fair Trade Standards' (2010) 27/4 Agriculture and Human Values 387.

[83] Josée Johnston, Andrew Biro and Norah MacKendrick, 'Lost in the Supermarket: The Corporate-Organic Foodscape and the Struggle for Food Democracy' (2009) 41/3 Antipode 509.

[84] Doug Constance, Jin Young Choi and Damian Lara, 'Engaging the Organic Conventionalization Debate' in Bernhard Freyer and Jim Bingen (eds), *Re-Thinking Organic Food and Farming in a Changing World* (Springer 2015) 161.

[85] FAO, 'What is Agroecology?', *Agroecology Hub FAO* (11 June 2020).

[86] Supra n 32, Meek and Anderson (2020) at 655.

[87] Peter Rosset et al, 'Agroecology and La Via Campesina II: Peasant Agroecology Schools and the Formation of a Sociohistorical and Political Subject' (2019) 43/7-8 Agroecology & Sustainable Food Systems 895.

[88] Paola Migliorini and Alexander Wezel, 'Converging and Diverging Principles and Practices of Organic Agriculture Regulations and Agroecology: A Review' (2017) 37 Agronomy for Sustainable Development 63.

or hybridisation.[89] Gonzales, Thomas and Chang further point out that such compromises are tantamount to co-opting the term agroecology all the while supressing its core ideals.[90] Furthermore, sustainable agriculture activist, GV Ramanjaneyulu has pointed out that Sikkim has failed to incorporate issues of food self-sufficiency and nutrition in its organic agricultural policy. He further states that this policy was drawn and implemented without farmers being at the centre-stage of the organic programme – such as top-down approach has therefore led to many inequities in farming outcomes and nutrition.[91] Sikkim's organic agricultural journey and the loose use of the 'agroecolgoical' label must be examined with nuance a detailed reflection on the role of the state in pioneering and engineering agrarian transitions. Asymmetries in farmer training, support, resources and power passed from the hands of the state to farmers echoes the inequities that the Green Revolution model ushered and exacerbated.

5. CONCLUSION

This chapter aimed at assessing the applicability and potentiality of food sovereignty approaches in the second case study – West Sikkim, Sikkim. It presents a stark contrast with the cash crop driven agrarian landscape of Patan, where the aspirations and manifestations of food sovereignty are very different. The Sikkim case study exemplifies the compromises within the terminology of agroecology, the contradictions between presenting Sikkim as an organic and ecology-centric haven while shaping agricultural policies, incentives and institutions with a cash-crop-based logic. Like Gujarat, Sikkim has been touted as a 'success story', not from an economic or agricultural development point of view, but an organic, sustainable and ecological basis. This chapter has analysed fieldwork data to show, that just like Gujarat, Sikkim's 'success story' requires a deeper inspection in terms of one, setting straight what falls within or outside the idea of 'agroecology'; two, how far can organic agriculture deviate from the essence of food sovereignty and still be accepted within its fold; and three, how can infuse environmental thinking in framing agricultural policy that aims at enhancing farmer incomes through scaling up processes.

Given the eco sensitivity of the Himalayan state, and an overwhelming acknowledgment of climatic and geophysical changes and pressures on agriculture, Sikkim's true 'success' will lie in aligning itself with food sovereignty principles, as indicated by the Six Pillar analysis. Food is increasingly not seen as 'food for people'; small farmers are increasingly being pushed out of the

[89] Omar Felipe Giraldo and Nils McCune, 'Can the State take Agroecology to Scale? Public Policy Experiences in Agroecological Territorialization from Latin America' (2019) 43/7-8 Agroecology and Sustainable Food Systems 785.

[90] Raquel Ajates Gonzalez, Jessica Thomas and Marina Chang, 'Translating Agroecology into Policy: The Case of France and the United Kingdom' (2018) 10/8 Sustainability 2930.

[91] Supra n 64, Parvaiz (2016).

profession unless they adopt cash crop farming; control is highly top-down and state centric; Sikkim's markets are highly dependent on non-organic agricultural produce from neighbouring states, while the most profitable farmers are those that export their produce abroad via long supply chains controlled by agrobusinesses; and finally as the case study on large cardamom highlights, there is a lot more that needs to be done to 'work with nature' and not against it. Surprisingly, despite being very different from Patan Gujarat, it scores similarly on this 6-point basis.

Based on this premise, Chapter 7 will analyse for both case studies – Patan and Sikkim , the potential and channels for moving towards greater food sovereignty approaches in the specific context of biogenetic resources. Chapter 7 will draw out the lessons from fieldwork data analysed in Chapters 5 and 6. Chapter 7 and 8 strike a common ground between the contrasting contexts of Patan and West Sikkim. Despite such drastic differences in approach and directionality of agriculture, several similarities can be drawn that chart out a vision for food sovereignty in future. These include seed saving practices despite numerous incentives to do otherwise, passing down of practices and knowledge surrounding local varieties, evolution of dynamic seed markets, instances of farmers valuing their role as food providers and 'standing up to the corporations' when required, and an increasing consciousness towards nutritious culturally appropriate food produced ecological sustainable methods. This Chapter draws from McMichael's reply to Bernstein's food sovereignty critique, as it provides a roadmap for developing a food sovereignty framework in varied locations and despite the ambiguities and contradictions that food sovereignty is critiqued for possessing.

CHAPTER VII

APPLICABILITY OF THE FOOD SOVEREIGNTY APPROACH IN INDIA – NEW LANGUAGES OF VALUATIONS

1. INTRODUCTION

Food sovereignty has been used as an aspirational standard in this thesis to develop stronger biogenetic rights for Indian farmers. The field sites present a view of the Indian countryside, wherein its seed and food systems have been analysed against the standard of foods sovereignty. Following these chapters, this chapter compares and draws from the data collected in these different sites and presents the challenges in implementing food sovereignty rights in diverse settings. This chapter also endeavours to use the field data as vignettes for charting new pathways towards stronger biogenetic rights in India, that are founded on food sovereignty principles and parameters. It churns out broad lessons learnt from fieldwork, based on the theme of food-farmer-ecology explained in the previous chapters (esp Chapter 4). Based on these lessons, the second section argues for a new language of valuation beyond the Green Revolution productivism metric. It uses food sovereignty's radical approach against capitalistic agriculture to propose a radical re-valuation against agriculture's ecological crisis. This is to say that policymakers, agrobusinesses, consumers and farmers urgently need to measure a different set of criteria to define success such as soil health, aquifer levels, crop diversity and socio-cultural values of food. The third section proposes, based on this new language of valuation, new rights to be introduced and recognized within India's existing rights framework. While Chapter 4 dealt with re-interpretations of existing rights, such as the right to food and right to environment, this part sets the stage for introducing new rights, such as right to produce food, right to seeds and traditional knowledge etc – which are explored in detail in the next chapter. In the process of exploring new biogenetic rights, the space it occupies in the wider context of food systems in India is explained. It argues that food systems need to be grounded in food, farmers and ecology, rather than productivism and capitalistic notions of food as commodities. The chapter ends on an aspirational note on the role of law and policy in conceptualising and progressing towards such food systems.

2. INDIANIZED VERSIONS OF FOOD SOVEREIGNTY – LESSONS FROM GUJARAT AND SIKKIM

Empirical research carried out in Gujarat and Sikkim provide diverse contexts to explore the dimensions of this research. This section employs a comparative analysis to distil the main lessons learned in the context of biogenetic resource rights, Green Revolution based productivism, rights of

farmers and the potential of implementing food sovereignty in India. The lessons are drawn with the aid of the Bernstein versus McMichael debate within critical food sovereignty literature (in Chapter 2.2.b). The themes discussed in this debate are crucial for embracing the food sovereignty approach despite several criticisms posed against it. Criticisms include ambiguity of core principles; its incompatibility with dominant regimes; contradictions within its framework; and the difficulty in implementing its form (see Chapter 2.2.b). Food systems in Patan, Gujarat and West Sikkim analysed in the previous chapters flag these critiques within respective situational contexts. The difficulties in introducing, re-introducing, safeguarding and promoting food sovereignty have been highlighted in the discussion sections. This chapter draws from the themes of Bernstein-McMichael debate to push beyond food sovereignty's critiques, to ergo argue that it is possible to reconceptualise India's food systems towards new valuations, and resultantly new food sovereignty rights. The themes include – the question of resistance, identifying the peasants, reconciling with capitalist agriculture, improving the peasant's condition, and seeking new languages of valuation.

(a) FOOD SOVEREIGNTY AS 'RESISTANCE' AGAINST ECOLOGICAL CRISIS

'Resistance' as a foundational element of food sovereignty, which can manifest in 'mundane' or 'everyday forms' that is more 'adaptive' than 'reactive'.[1] Everyday resistance of peasants is the act of continuing farming in a particular way, that is informed by traditional knowledge, agroecological values and a sense of community and autonomy.[2] While adhering to one's practices, farmers retain some 'room for manoeuvre' wherein they adapt to the new changes while retaining their traditional practices as much as possible.[3] To this McMichael points out that aside from mundane or adaptive forms, there are more 'heroic' forms of resistance in the nature of social movements, from small farmers mobilisations to global movements and coalitions such as La Via Campesina. Via Campesina has been itself described as a 'resistance movement', that created a space for a 'global agrarian resistance'.[4] The food sovereignty narrative of resistance is based on its opposition against the neoliberal food regime, one characterised by agricultural commodification, cheap food imports, monocultures and monopolies of ways of farming, and land-grabbing.

[1] Henry Bernstein, 'Food Sovereignty via the 'Peasant Way': A Skeptical View' (2014) 41/6 J Peasant Studies 1031, 1040.

[2] Philip McMichael, 'Reframing Development: Global Peasant Movements and the New Agrarian Question' (2006) 27/4 Canadian J Devp Studies 471.

[3] Sergio Schneider and Paulo Niederle, 'Resistance Strategies and Diversification of Rural Livelihoods: The Construction of Autonomy among Brazilian Family Farmers' (2010) 37/2 J Peasant Studies 379.

[4] Supra n 2, McMichael (2006) at 471; Saturnino Borras, Marc Edelman and Cristobal Kay (eds), 'Transnational Agrarian Movements Confronting Globalization' (2008) 8/1-2 Spl Issue J Agrarian Change 5, 7.

'Resistance' within the food sovereignty approach either framed as Bernstein's everyday/mundane resistance, Ploeg's adaptive resistance, or McMichael's heroic/ social movements-based resistance do not adequately address the Indian experience. The neoliberal food regime has been understood as the trigger or cause justifying the need for food sovereignty approaches. Yet, while neoliberal trends in food and agriculture have made influxes in India, they have not led to resistance movements like those in South America that gave rise to La Via Campesina. On the other hand, resistance movements (in Chapter 4.3) have demanded more state regulation, state support in terms of agricultural input subsidies, tax breaks, loan waivers, insurance for crop failure and so on; and opposed state withdrawal from these arenas.[5] This presents a dichotomous relationship of Indian peasantries and the Indian state, wherein such resistance movements in most likelihood cannot be a logical basis for food sovereignty.

Locating resistance in the Indian context would require a leap of imagination in redefining the potential trigger or cause of resistance and redefining what resistance itself looks like. This thesis argues that India's ongoing agrarian crisis (in Chapter 3.6) is essentially an ecological crisis that farmers across Patan, Sikkim and the rest of country are acutely aware of. India's agro-ecological crisis exacerbated by climate change can be imagined as a potential trigger or cause justifying a radical change. Both forms of resistance, mundane and heroic, can then be read into the Indian experience through the lens of agrarian crisis. For instance, most farmers in Patan agree that Bt cotton is the most profitable crop among other cropping options, despite its high seeds and other input costs. Yet even cultivating the most profitable crop is not enough to keep farmers in the profession. The same is true for large cardamon in Sikkim, wherein, despite its relatively high profitability there is no interest among young farmers to remain in agriculture. Ecological pressures including low availability and quality of water, decreasing yield and productivity over the long term, and climate change have made agriculture very difficult, pushing small and medium farmers in a state of extreme distress. Just as the neoliberal pressures of the late 20th century led to a wave of farmer dispossession, the 21st century has seen agro-ecological pressures added to this, leading to a new kind of dispossession, wherein farmers are forced to leave their farms and farming practices. Consequently, most reactions to this include demands for more benefits, assurances, and security from the state.

Most female farmers interviewed in Patan maintain some patch of land, either in the form of a garden, or on their farms, to grow chemical free food for their own consumption. In most of these instances, they used their own farm-saved varieties, or locally available non-hybrids. In Sikkim, where all farmers interviewed grew organic produce for self-consumption first and engaged in markets only if

[5] Mekhala Krishnamurthy, 'Agricultural Market Law, Regulation and Resistance: A Reflection on India's New 'Farm Laws' and Farmers' Protests' (2021) 48/7 J Peasant Studies 1409, 1415.

they had a surplus, the use of farm-saved seeds and use of traditional farming practices is a matter of default. Furthermore, despite diminishing incentives to use farm-saved seeds, some tenant farmers in Patan used only their ancestral seeds which they brought with them from their homes. In Sikkim, all farmers maintain a practice of saving maize seeds, among other crops, and do not use HYV maize varieties even then they are distributed by the KVK or state governments for free. The popularity of *sashwat yogic kheti* (organic or agroecological yogic farming) in Patan and the fact that almost all farmers interviewed in Sikkim showed support for the Chamling government's decision to go organic, evince a basis of 'everyday resistance' among farmers who wish for a more agroecological and nutritious farming future but are forced to succumb to market and climate pressures while carrying on in the profession. Food sovereignty scholars have argued that peasant resistance is expressed in several forms, trying to preserve the ontological alternative to neoliberalism in food regimes.[6] Transitioning from the twentieth to the twenty-first centuries, neoliberalism presents itself as a simplistic explanation for rising input costs, lowering production and the destabilisation of rural populations. Agroecological resistances to the ongoing agro-ecological crisis are both evident in the sites visited and are necessary for India at large.

Farmers' social movements in the field sites and in other parts of India provide evidence of 'heroic resistance'. Two instances of farmer mobilisation in Gujarat were encountered during fieldwork. One, the *sashwat yogic kheti* event at the Samoda KVK grounds in November 2019. The Bramha Kumari Trust has many farmer members in the region. Most attendees interviewed were permanent members who had attended similar events in the past. Two, the farmer mobilisation against Pepsico suing 11 farmers in Deesa, Sabarkantha, Banaskantha and Aravalli for allegedly violating its plant variety rights over the FL2027/ FC5 potato. Pepsico's suing of the farmers and the consequent farmer backlash took place over March-May 2019, and interviews with some of the sued farmers based in Deesa and Sabarkantha revealed that farmer organisations in North Gujarat were well organised and ready to oppose any intimidation techniques that large corporates may wish to employ against farmers. The efforts were led by the Bharatiya Kisan Sangh, while other organisations such as ASHA (Alliance for Sustainable & Holistic Agriculture) demanded that Pepsico's plant breeder right over the potato variety be withdrawn.[7] Farmers' social movements or mobilisations as acts of resistance have been largely absent in Sikkim. Farmer cooperatives are weak and there have been no major instances of farmers demanding or protesting any action, given that most farmers are largely in agreement with the

[6] Supra n 4, Borras, Edelman and Cristobal Kay (2008) 8; Peter Rosset and Maria Elana Martinez-Torres, 'Rural Social Movements and Agroecology: Context, Theory and Process' (2012) 17/3 Ecology and Society 17.

[7] Biswajit Dhar, 'Points of Law in the Pepsico Potato Case' *The Hindu* (7 May 2019) <https://www.thehindubusinessline.com/opinion/points-of-law-in-the-pepsico-potato-case/article27060326.ece>

organic transition of the state. Farmers in West Sikkim who are critical of the government's focus and resource concentration in East and South Sikkim, have not really mobilised to do something about it.

Social movements and organisations such as the Bramha Kumaris and ASHA are manifestations of heroic resistance against ecologically destructive agriculture. they have in their own niches provided an alternative vision for food systems. Food sovereignty unites these narratives against agro-ecological crisis in Indian agriculture. Patan and Sikkim provide a wide array of types of resistance: it could be said that Sikkim falls within Bernstein's idea of everyday or mundane resistance, while examples from Patan and Deesa fall within the ambit of heroic resistance.

(b) FOOD SOVEREIGNTY'S COMPATIBILITY WITH CAPITALIST AGRICULTURE

The next theme discussed within the Bernstein versus McMichael debate is that of 'celebrating capitalist productivity of agriculture'. The food security framework begins with an accounting of population growth and claiming that it would be impossible to feed a growing population (750 million in 1759 to 7.7 billion in 2020) without capitalist agriculture.[8] In the Indian context, the 1960 Green Revolution ushered productivist-oriented agriculture that become more and more capitalistic especially following the 1991 economic liberalisation. The Green Revolution managed to transform India from a grain-deficient country into an exporter of surplus grain. The negative outcomes of the Green Revolution, both ecological and social have often failed to compete with the Revolution's positive food security outcome – that a capitalist drive to produce more food did indeed feed a growing Indian populace, and without it the country may have slipped into a state of famine.[9]

At a global and national level, famines have largely become a thing of the past.[10] Some famines in the past few decades, for example, in Sub-Saharan Africa, are outliers in a broader trend of a famine-free world. The near-eradication of famines has been attributed to an ever-increasing food supply owing to capitalist productivity – that is a high increase in per hectare yields,[11] and a more efficient system of

[8] United Nations - Department of Economic and Social Affairs, 'Population, Food Security, Nutrition and Sustainable Development', UN/DESA Policy Brief #102.

[9] Daisy John and Giridhara Babu, 'Lessons from the Aftermaths of Green Revolution on Food System and Health' (2021) 5 Frontiers Media 64559.

[10] Joe Hasell and Max Roser, 'Famines', Our World in Data (2013) <https://ourworldindata.org/famines>; Joe Hasell, 'Famine Mortality in the Long Run', Our World in Data (2018) <https://ourworldindata.org/famine-mortality-over-the-long-run>.

[11] Hannah Ritchie and Max Roser, 'Agricultural Production', Our World in Data (2020) <https://ourworldindata.org/agricultural-production>.

providing emergency food aid.[12] However, there is little room for complacency, as hunger now manifests in newer ways aside from famine. Hunger can be severe, or moderate, permanent, or transient, caloric, or nutrient-based. The instances of this broader conception of hunger, that moves beyond the narrower and more extreme occurrence of famine, has increased in the past decade.[13] In India, the state food security apparatus, including governmental procurement of agricultural produce and distributing it at each district, block and village level via the targeted public distribution system, has been instrumental in eradicating the instances of extreme hunger caused by famine. Hunger in a broader sense, however, as is the case globally, has not significantly decreased in the recent past, with 15.3% of its population living in hunger.[14] Thus, celebrating capitalist productivity of food, solely on the basis that it has averted global famine in Malthusian terms, is not enough. A deeper analysis of its failures in rendering nutritionally rich and cultural appropriate food whose supply is resilient against shocks is required.

There are 2 major critiques against capitalist agriculture being the only method towards achieving world food security: one, that a majority of food is produced by small farmers. Some studies show that nearly 70% of the world's food is produced by small farmers.[15] In more recent times, these numbers have been challenged by several other studies, that argue that the smallholders' share in food production is shrinking every year, and the figure currently stands at 28-32% percent, rather than 70%.[16] The debate over small farmers' contribution still continues.[17] Yet, either way, capitalist productivity is not the only reason behind feeding a growing world population. Small farmers produce one-third of the world's food or more, and therefore have a substantial contribution to the providing food security to the

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[12] World Food Programme, 'Food Aid Information System' <https://web.archive.org/web/20180516064041/http://www.wfp.org:80/fais/quantity-reporting/overview>; WFP, 'Annual Review 2021' (June 2022) <https://www.wfp.org/publications/wfp-annual-review-2021>.

[13] FAO, 'State of Food Security and Nutrition in the World - Transforming Food Systems for Food Security, Improved Nutrition and Affordable Healthy Diets for All' (2021).

[14] Global Hunger Index, 'India' (2021) <https://www.globalhungerindex.org/india.html>.

[15] ETC Group, 'Who Will Feed Us?', ETC Group Communiqué 102 (November 2009); Karla D. Maass Wolfenson, 'Coping with the Food and Agriculture Challenge: Smallholders' Agenda Preparations and Outcomes of the 2012 United Nations Conference on Sustainable Development (Rio+20)', FAO (April 2013, revised July 2013) 1.

[16] Sarah Lowdera, Marco Sánchez and Raffaele Bertinic, 'Which Farms Feed the World and has Farmland become more Concentrated?' (2021) 142 World Development 105455; Vincent Ricciardi, Navin Ramankutty, Zia Mehrabi, Larissa Jarvis, Brenton Chookolingo, 'How Much of the World's Food is Produced by Small Farmers?' (2018) 17 Science Direct 64.

[17] ETC Group, 'Small-Scale Farmers and Peasants Still Feed the World' (ETC Report 2022) <https://www.etcgroup.org/files/files/31-01-2022_small-scale_farmers_and_peasants_still_feed_the_world.pdf>.

world. In India, it is widely accepted within India's agricultural research institutions that marginal to small farmers produce approximately 60% of India's grain.[18]

Majority of India's staple crops come from small farmers, is one dimension in highlighting their importance. The other being, that a majority of farmers themselves are small and marginal farmers. Capitalist agriculture is premised on eliminating many small farmers in a quest towards greater market efficiency and a concentration of capital among lesser number of large farmers.[19] These trends are perceptible in Patan and West Sikkim wherein most young people have left or are leaving agriculture despite both these districts being at different stages of the capitalist productivity trajectory. Thus, capitalist productivity is a celebration for who? Who are the winners and losers in the drive towards producing more food in a capitalist economy? These questions are uncomfortable, yet necessary before the positive outcomes of agricultural productivism can be lauded. To put matters into further context, capitalist productivity cannot be viewed independently without engaging with another relevant question – what livelihood prospects do the rural youth have in India when they are forced to leave farming?[20] The lack of urban, industrial, skilled, and semi-skilled employment that can provide employment to India's farming family-youth is linked with the question of celebration of capitalist productivity. In the absence of suitable alternate professions, it is imperative that India's dominant agricultural model be reconsidered.[21] The second major critique against capitalist agriculture's role in providing food for the world is on the point of unsustainability of industrial agriculture. Modern capitalist agriculture as a source of celebration has been enabled by fossil fuels and has largely remained 'ecologically blind'.[22] The omission of fossil fuel contributions from capitalist agriculture raises the ecological question, along with the labour question raised above. The idea of celebration of capitalist agriculture is based out of a somewhat linear notion of stages of development. On this point, critical food sovereignty scholars have collated the food sovereignty movement with 'recovering the past' wherein its proponents consider 'pre-capitalist forms superior' than modern forms of agriculture. Idealising the past over the present is

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[18] Sunil Kumar et al, 'Small and Marginal Farmers of Indian Agriculture: Prospects and Extension Strategies' (2020) 20/1 Ind Res J Extension Education 35.

[19] Jane Hayward, 'Beyond the Ownership Question: Who will Till the Land? The New Debate on China's Agricultural Production' (2017) 49/4 Critical Asian Studies 523. Based on the Byres' thesis of the rural to urban population shift owing to capitalist agriculture: TJ Byres, 'The Agrarian Question, Forms of Capitalist Agrarian Transition and the State: An Essay with Reference to Asia' (1986) 14/11-12 Social Scientist 3.

[20] David Taylor, 'Bridging the Gap: How Youth Junction is Training Rural Youth in India for Urban Jobs' *Stanford Social Innovation Review* (25 June 2020) <https://ssir.org/articles/entry/bridging_the_divide>.]

[21] Sarah Bailey, 'Rural Youth Aspirations: Can Indian Agriculture Regain the Interest of Rural Youth?', Transforming India's Green Revolution by Research and Empowerment for Sustainable food Supplies – Global Challenges Research Fund Project (2 April 2020).

[22] Farshad Araghi, 'Accumulation by Displacement: Global Enclosures, the Food Crisis, and the Ecological Contradictions of Capitalism' (2009) 32/1 Review 113.

a common criticism against environmentalists in general, which has been raised against food sovereignty as well.[23] Yet this is a misconstruction of the food sovereignty movement, that not only rejects linear stages of development,[24] but also embraces many 'modern' ideas – such as ecological rights, gender rights, seed commons, and engagement with scientific consensus over agroecological practices as alternatives to industrial farming. Reliance on fossil fuels is connected with larger environmental issues such as the unsustainable use of natural resources and land grab.

3. LESSONS FROM PATAN AND SIKKIM – LOCATING RESISTANCE AGAINST CAPITALIST AGRICULTURE

The basis and rationale of food sovereignty in Indian soil must rest on resistance – evidence of which, in all its forms (everyday and heroic) has been provided above; and a myth-busting of the neoliberal ideal of capitalist agriculture. In the Patan and West Sikkim contexts, several lessons can be drawn despite the contrasting conditions. First, related to the question of resistance, farmers across these different agricultural models share a deep sense of pride as food providers. They value farm saved seeds and continue to save and use their own seeds despite pressures of low profitability and simultaneous incentives to switch to high yielding varieties available in the market or provided by the government machinery. There is a sense of dispossession among older farmers who see the loss of farmer varieties and traditional knowledge as a tragic yet inevitable fact of the future. Second, the issue of biogenetic resource control and retention of traditional knowledge is not as big a concern for farmers, when compared with the bigger issue of India's agrarian crisis. At the grassroot level, farmers are reeling under ecological stresses caused by intensive agricultural practices and the onset of climate change, and their chief concerns are around profitability, staying out of debt, and trying to provide better opportunities for the next generation such that they do not have to "remain in agriculture."[25]Third, capitalist productivity is not enough to keep the next generation of farmers on the farms. Ecological unsustainability of hybrid cotton, and commercial marketing of large cardamom is not a major concern for farmers or policymakers. In other words, a celebration of 'capitalist productivity' cannot satisfy the livelihood needs of the farmers themselves. Four, neither capitalist Patan nor organic Sikkim presents a scenario of self-sufficiency or resilience against shocks within food systems. During lockdowns imposed in response to the Covid 19 pandemic, which followed the Patan and Sikkim field visits, many

[23] James Krueger, 'Food Sovereignty and Anti-regulation from the Left' in David Tindall, Mark Stoddart and Riley Dunlap (eds), *Handbook of Anti-Environmentalism* (Edward Elgar 2022) 284.

[24] Philip McMichael, 'A Comment on Henry Bernstein's Way with Peasants, and Food Sovereignty' (2015) 42/1 J Peasant Studies 193, 196.

[25] Interview on file - farmer in Dentam, Sikkim.

farmers relied on produce from home gardens, local farms and KVKs. Reliance on markets that rely on long supply chains did not prove useful during this time. A post-pandemic drive towards greater self-reliance and localisation of basic staples, fruits, vegetables, and other foods has been perceptible in both sites despite Sikkim's existing subsistence based agricultural model. Five, the role of women is crucial in restoring local food systems, local seeds, and traditional knowledge. In most instances, women are the only link between the younger generation and farming. In Sikkim, urban and tourism industry-based employment opportunities are open to more men than women. Precarious and seasonal employment such as cab driving, or factory jobs in peri urban centres of Gujarat, employs primarily men while women stay back to tend to the family farm.[26] Therefore, women are crucial for any food sovereignty transition in India.

Last but not the least, both sites sketch a picture of balancing food needs with commercial cash-crop production. While all farmers claim to stand by organic and agroecological principles, there is a strong aversion to environmental concerns owing to the market risk they present.[27] Farmers in Patan and Sikkim that have long ago switched to mono-cash crop cotton etc or are doing so with export-oriented cardamom production have strong reasons for doing so despite the ecological fallouts. Ironically, their vulnerability amidst the agro-ecological crisis has increased as a result. Their 'autonomy' or 'right to define' their current food systems are shadowed with many nudges and dissuasions in the forms of subsidies, price guarantees, state transfers, farmer income support and input support etc.[28] Small and marginal farmers also cannot opt out of this cycle, even though food sovereignty is framed in terms of liberal notions of choice. Thus, while critical food sovereignty has offered useful critiques against food sovereignty, these can be rebutted and surpassed in order to fit within the Indian context, where small farmers who may not necessarily be affected by land grabbing or corporate bullying, continue to expand their capacities within the productivist framework, rather than outside it. There are therefore no easy answers about incorporating food sovereignty elements in different social forms and diverse historicisms,[29] yet the untapped potential of food sovereignty can be unleashed with a broader outlook towards new languages of valuations.

[26] Pesticide Action Network Asia and the Pacific, 'Women: Reclaim our Seeds' (PANAP 2013) 27-32.

[27] Tania Murray Li, 'Food Sovereignty: A Critical Dialogue – Can there be Food Sovereignty Here?' (2015) 42/1 J Peasant Studies 205.

[28] Robert Netting, *Smallholders, Householders: Farm Families and the Ecology of Intensive, Sustainable Agriculture* (Stanford University Press 1993) 182-6.

[29] Supra n 24, McMichael (2015) 200.

4. FROM PRODUCTIVISM TO NEW LANGUAGES OF VALUATIONS – REDEFINING 'SUCCESS' WITHIN FOOD AND AGRICULTURE

India's post-Green Revolution agricultural thinking has been based on producing qualitatively higher yield per hectare staples; and qualitatively improve a wide variety of crops, to grow in different soil types, irrigation and climatic conditions, and with different inputs. 'Success' in agriculture has resultantly come to be defined as high profitability through high production. As argued in Chapter 3, the Indian productivist paradigm is a result of a combination of factors – one, the need to produce more food for a growing population; two, securing India's position in a globalised agricultural commodities market; and three, using the productivist drive as a route to alleviate rural poverty, rather than make more difficult changes and reorientations in food systems.[30] Productivism as an agricultural model has served India's interests to different extents on all these fronts. Therefore, the question – 'who has the power to simplify complexity, ruling some languages of valuation out of order?' posed by Bernstein is relevant.

Food sovereignty argues for valuing more than mere productivism – an endeavour that has rendered the world in 'biophysical override'.[31] McMichael points out that people and communities across different rural landscapes are experimenting with socio-ecological agricultural innovations that lead to greater autonomy, self-reliance, and power over local food systems etc. These are experiments towards new forms of valuation, where producing more food is not the only measure of success.[32] Such a shifting language, despite a certain degree of ambiguity, cherishes values such as independence, control over agricultural resources, nutritive value, cultural appropriateness, and ecological sustainability. Such imagination to endeavour towards new 'values' or measures of success is necessary given the failures of productivism as an agricultural goal. Several scholars have explained how productivism has neither led to the eradication of hunger but has in turn led to newer problems of unprecedented food wastage, overconsumption leading to obesity and diseases such as diabetes, and changed food preferences within many cultures.[33] Alongside social and health consequences, it has also created a massive environmental impact such as soil degradation, depletion of water resources, and agrobiodiversity loss.

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[30] "The political economy of food systems as an obstacle to transition": Olivier de Schutter, 'The Specter of Productivism and Food Democracy' (2014) 4/10 Wisconsin Law Review 199, 222.

[31] Tony Weis, *The Global Food Economy: The Battle for the Future of Farming* (Zed 2007) 65.

[32] Supra n 24, McMichael (2015) 200.

[33] Tim Benton and Rob Bailey, 'The Paradox of Productivity: Agricultural Productivity Promotes Food System Inefficiency' (2019) 2/6 Global Sustainability 1.

The basis for food sovereignty in India requires new languages of valuation, that are beyond productivism. Many innovative valuation parameters have been touted internationally to provide a new vision for 'successful agriculture'. According to the food sovereignty approach, valuations should be based on ecology, food, and farmers, as the 3 prongs of food sovereignty's 6 pillar framework. As will be explained in further detail below, ecological values include valuing the supporting or overarching services that are imperative for important ecosystem services to thrive. These include the primary production of oxygen, soil formation and nutrient cycling.[34] Further, valuing regulating services that maintain and regulate ecosystem services, such as climate regulation, water conservation and quality maintenance and erosion control.[35] Food-related valuations include caloric quantity of food, its nutrient content, resilience to shocks, availability across seasons and in some contexts, the value food adds in building sustainable and farmer-oriented value chains.[36] Lastly, the socio-cultural leg aims to value farmers themselves, and celebrates small producers by orienting valuations as per their needs and interests. Here, increasing farm incomes, poverty reduction through agriculture, improving rural infrastructure including the creation and management of local markets, developing local seed banks and supplies of landraces and local farmers varieties, as well as systems of valuing and imparting agricultural knowledge to children and young farmers.[37]

5. VALUATIONS BASED ON FOOD, FARMERS AND ECOLOGY – TOWARDS FOOD SOVEREIGNTY BASED RIGHTS

It is crucial for food, farmers and ecology-based perspectives to develop new languages of valuations that move beyond productivism or the industrial agricultural ideals of the Green Revolution. Coupe, Ensor and Mulvany's comparative analysis on the 6 pillars through the ecological, sustainable intensification and the industrial production models provides guidance on what these valuations should and could be.[38] This section uses this analysis to interpret the ecological and sustainable intensification categories in the Indian context. As some overarching food sovereignty ideals: markets, the government

[34] Mark Brady et al, 'Valuing Supporting Soil Ecosystem Services in Agriculture: A Natural Capital Approach' (2015) 107 Agronomy Journal 1809.

[35] Emma Aisbett and Marit Ellen, 'Valuing Ecosystem Services to Agricultural Production to Inform Policy Design: An Introduction', Environmental Economics Research Hub Research Reports, Report No.73, (October 2010) 6.

[36] Laura Armengot, David Pérez-Neira and Johanna Jacobi, 'Agroforestry, Food Sovereignty and Value Chains for Sustainable Food Systems' *Frontiers in Sustainable Food Systems* (17 February 2022).

[37] M Jahi Chappell, 'Food Sovereignty: An Alternative Paradigm for Poverty Reduction and Biodiversity Conservation in Latin America' (2013) 2 F1000 Research 235.

[38] Patrick Mulvany, 'Food Sovereignty: A Critical Dialogue', International Institute of Social Studies Conference Paper No. 94, The Hague (24 January 2014) Annex I.

and consumers should value and reward food systems that are locally controlled, with control over productive resources including seeds, traditional local knowledge and other physical resources, decision making powers over their allocation, setting up and operation of markets, employing labour or providing it elsewhere on fair terms. Such food systems should additionally be supported and rewarded for maintaining high degrees of soil health, agrobiodiversity, locally adapting seeds, replenishing natural cycles and ecosystem services and conserving water. Productivity intensification should only be pursued and/or rewarded after the ecology, food and farmer criteria are adequately met.

The six-pillar framework has been used as an analytical tool in this thesis as they represent the parameters of food sovereignty, and a standard to measure and weigh any available evidence of food sovereignty. Out of these parameters, this thesis attempts to churn out the triple valuation of food-farmer-ecology, that is to say – food systems should value these triple goals along with profitmaking in a commercial market setting. Our current systems do not aspire towards these preserving and bettering these or values reward systems / farmers that do work with them. This section draws out these triple values from the six-pillar framework and argues how place-based agro-food systems can adopt and evolve towards greater food sovereignty. Fieldwork carried out in Patan and Sikkim provide a window into a wider Indian experience wherein a wide range of settings can start valuing food-farmers-ecology and move towards greater food sovereignty through the six-pillar framework. Therefore, the triple valuation is both a starting point and an ending point for "people's right to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems".[39]

Values, much like the six pillars themselves are not rigid categories, but provide important places-based meanings comprising histories, politics and ecologies of a setting, and also include resistance movement and struggles of its people.[40] Devising and applying the triple valuation in the Indian context also shows how food sovereignty, despite its radical origins, is not only about resistance, struggle and farmers' movements seeking justice, but about a much wider range of elements in the food system. India has historically leaned towards centralism with centralist control of a top-down administration. Therefore, ideas of local 'sovereignty', autonomy and self-determination are difficult to voice, conceptualise and implement.[41] Therefore, India's food sovereignty discourse has to ground itself in a larger frame – one that moves beyond radicalism, into a softer space of 'valuations'.

[39] For different food sovereignty values within communities: Sam Grey and Lenore Newman, 'Beyond Culinary Colonialism: Indigenous Food Sovereignty, Liberal Multiculturalism, and the Control of Gastronomic Capital (2018) 35 Agriculture and Human Values 717.

[40] Christina Schiavoni, 'The Contested Terrain of Food Sovereignty Construction: Toward a Historical, Relational and Interactive Approach' (2017) 44/1 J Peasant Studies 1.

The triple valuation also shifts the discourse away from only indigenous communities and special groups, such as forest dwellers or minority communities, that have been identified as special legalistic groups for the purposes of one legal framework or another. Food sovereignty is therefore for everyone and everywhere, including the urban city-dwelling youth who lacks any agricultural background or training. This thesis however does not delve into all these realms given its tight focus, but advocates for place-based interpretations of food sovereignty that can be measured against the six pillars and which align with triple valuation. This also prevents restricting the discourse within a de-colonial and post-colonial frame – wherein food sovereignty is necessarily against international trade, commerce and market pressures.[42] Food sovereignty's manifestations in South America have broadly been based out of social movements against a neoliberal capitalist agricultural system. It's resistance themes coincided with de-colonial claims of restructuring control over resources, reorganising national agricultural policy and the dominance of finance capital that leads to wealth accumulation.[43] In other parts of the world, food sovereignty transformed to include site-specific claims that may not be wholly irreconcilable with capitalist agriculture.[44] Thus, in India, food systems inspired by food sovereignty should not *only* focus on anti-capitalist and de-colonial claims as they currently do, but should be wired towards valuing ideas and concepts that currently do not fit within market valuations. These therefore will necessarily result in varied dialects of valuations but those from within the language of food sovereignty. As is often the case in real life, the speaker of one dialect may not discern much of the other, despite falling within one linguistic family. Similarly, food sovereignty or more specifically the emphasis and approach towards biogenetic resources will differ from place to place, one being drastically divergent from another, however they are all still within valid forms of food sovereignty that are steps towards more progressed system the adheres to the six pillars.[45]

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[41] The centrist-statist push and pull within the India: Amrita Basu, 'State Autonomy and Agrarian Transformation in India' (1990) 22/4 Comparative Politics 483.

[42] Kyle Powys Whyte, 'Food Sovereignty, Justice, and Indigenous Peoples' in Anne Barnhill, Mark Budolfson & Tyler Doggett (eds), *The Oxford Handbook of Food Ethics* (OUP 2018) 345.

[43] Otto Hospes, 'Food Sovereignty: The Debate, the Deadlock, and a Suggested Detour' (2014) 31/1 Agriculture and Human Values 119, 120.

[44] Ricardo Jacobs, 'The Radicalization of the Struggles of the Food Sovereignty Movement in Africa', in *Via Campesina's Open Book: Celebrating 20 Years of Struggle and Hope* (LVC 2013), <https://viacampesina.org/en/wp-content/uploads/sites/2/2013/05/EN-11.pdf>.

[45] Charlotte Coté, '"Indigenizing" Food Sovereignty: Revitalizing Indigenous Food Practices and Ecological Knowledges in Canada and the United States' (2016) 5/3 Humanities 57.

(a) VALUING 'FOOD' AS THE PRIORITY OUTPUT OF THE SYSTEM

The first Nyeleni pillar of food sovereignty speaks of 'food for people'. Food systems that produce food for people as a priority need to be valued more than commodity production (usually carried out not at a small or marginal scale), meant for long supply chains, whose prices are set externally by national, regional or international markets. Valuing small food systems by rewarding farmers who produce sufficient, healthy and culturally appropriate food for people within their communities and others has to be a policy directive. Currently, markets, governments and consumers reward a high-external input-based industrialised agricultural model. In India, some start-ups and agrobusinesses have raised awareness on this point, by creating value chains out of small food systems comprising small producers.[46] Herein, locally sourced farm produce, one that may also involve consumers directly involved in the farming process, learning local practices and knowledge from farmers, and paying a premium price for indigenous food are popular ideas creating new opportunities for small farmers. Such sporadic private sector initiatives cannot fill the space for robust policy making and hard law that should be based on a food sovereignty 'food for people' valuation system.

(b) VALUING PEASANT FARMERS

Food producers, especially women, peasants, small farmers, indigenous peoples, and agricultural workers. Our current system rewards primarily large farmers who cultivate cash crops, while small producers and those that belong to special categories are often pushed to the margins. Amidst a depeasantisation crisis that has albeit engulfed young farmers belonging to different classes, castes and regions of India, young farmers belonging to the abovementioned categories are specially affected.[47] The rural to urban migration in search of non-agricultural employment has been messy and uneven, varying in timing and nature.[48] The existing dominant agricultural model does not have sufficient room for small farmers and peasants, so much so that they would wish to continue farming and producing food. According to the food sovereignty approach, valuing small producers and those belonging to special categories is crucial for creating and sustaining food systems that are oriented towards ecology, food, and farmers. Thus, valuation of such producers should entail special rewards, incentives, recognitions, and accesses that value their contribution to food systems. In India, even though several governments have tried to appease farmers for the sake of making electoral gains, and farmers are respected in popular culture, literature and media, in terms of real support to small farmers,

[46] Businesses include: 'Farmizen: Buy Directly from Local Farmers', <https://www.farmizen.com/>; 'The Tribal Box: Organic Farming is the Elixir', <https://www.thetribalbox.com/organic-farming-is-the-elixir>.

[47] Chetan Choithania, Robbin Janvan Duijne and Jan Nijman, 'Changing Livelihoods at India's Rural–Urban Transition' (2021) 146 World Development 105617.

[48] Ibid.

there is very little[49] (for a detailed argument on how government largesse has benefitted large farmers, while leaving small farmers to fend for themselves, see Chapter 3.3).

(c) VALUING LOCAL FOOD SYSTEMS

This aspect of valuation based on the third pillar of food sovereignty reads as a yes-no question. Our current dominant model of agriculture rewards long and elaborate supply chains, rather than localised and autonomous subsistence-based food systems. It encourages and drives the production of agricultural commodities that are cultivated based on international or regional demand, whose prices are determined remotely, and which usually do not provide adequate nutritional food security to consumers. Good quality food should be locally accessible, unlike the food deserts of North Gujarat, wherein, owing to intensive cash crop production in the North, food markets must be supplied by produce from the south of the state or from other states. Growing adequate, nutritious, and culturally appropriate food should be a priority for farmers. Such localisation helps with retaining control over resources and decision-making.[50]

In most parts of India, localised food systems have little means to sustain themselves. Even high value organic produce is cultivated and sold using the same model and market systems as non-organic produce. Organic and 'agroecological' farming in Sikkim for instance is undergoing its own cycle of intensification and upscaling as would be the case with non-organic produce. Therefore, localisation, subsidiarity and small-scale food systems are not something to be desired. The government views small farmers and land holdings as inefficiencies in a market-oriented agricultural system. Several schemes and programmes encourage the consolidation of landholding and the provision of credit to upscale, increase production of food crops or switch to the cultivation of cash crops.[51] Furthermore, consumers are also rewarded with low prices of food that is a product of long and elaborate supply chains. Therefore, valuing food systems that deliver locally is largely missing in India's agro-food policy framework.

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[49] Sukhpal Singh, 'Future of Indian Agriculture and Small Farmers: Role of Policy, Regulation and Farmer Agency' *Down to Earth* (2 February 2021).

[50] Farshad Araghi, 'The Invisible Hand and the Visible Foot: Peasants, Dispossession and Globalization' in A Haroon Akram-Lodhi and Chistobal Kay (eds), *Peasants and Globalisation: Political Economy, Rural Transformation and the Agrarian Question* (Routledge, London, 2008) 336.

[51] See Manglesh R. Yadav and Shashank Gore, 'Strengthening the Indian Agriculture Ecosystem', Niti Ayog (National Portal of India, 4 October 2018).

(d) RE-ORIENTING POWER STRUCTURES BASED ON NEW VALUATIONS

Developing new languages for valuation involves a re-orientation of power structures within food systems. Within a productivist paradigm, higher productivity is rewarded over ecological, food and farmers' concerns. Control over hybrid high-yielding varieties lies with the innovators, such as government agencies, public agricultural universities, research units and commercial breeders. For instance, in the case of Bt cotton in North Gujarat, Monsanto's Indian subsidiary Mahyco controls the Bt cotton genetic resource. According to the food sovereignty approach, local small scale food providers, consumers and their representative organisations should exercise control over their food systems. Any attempts to place control over input resources such as territory, land, seeds, water and livestock should respect local community rights.[52] Since the Green Revolution, the government's control over the agricultural sector and its allied sectors slowly changed to a deregulation and privatisation policy following the 1991 liberalisation in some sectors such as seeds, chemical inputs and farm technologies etc. With this change, the control over biogenetic resources has gradually shifted away from farmers to the government and to private actors. Local governments, such as gram panchayats or bodies such as cooperatives and producers' organisations, exercise little control over shaping the local food system. They are rather reactionary to the policies and prices set outside the local context, and promote farmers contact with corporates and commodity supply chains.[53] Thus, valuing local control and strengthening it through law and policy is needed for the sustenance of local food systems.

(e) PROTECTING AND DEVELOPING KNOWLEDGE AND SKILLS BASED ON NEW VALUATIONS

Law and policy debates have been largely absent on valuing food as the priority output of food systems, or valuing farmers, or valuing localised small food systems, where control is exercised locally. Unlike these arenas, traditional knowledge and rights thereto have been debated widely within the Indian law-policy context.[54] However, as explained above in Chapter 3, the current dominant model of

[52] Devon Sampson et al, 'Food Sovereignty and Rights-Based Approaches Strengthen Food Security and Nutrition Across the Globe: A Systematic Review' (2021) 5 Frontiers in Sustainable Food Systems 686492.

[53] Anika Trebbin and Markus Hassler, 'Farmers' Producer Companies in India: A New Concept for Collective Action?' (2012) 44/2 Environment and Planning: Economy and Space 411; Team Cropin, 'Farmer Producer Organisations - Pathways To Agricultural Transformation', Cropin Blogs Series - Let's Talk Seeds (9 September 2020).

[54] See Marika Vicziany and Jagjit Plahe, 'Food Security and Traditional Knowledge in India: The Issues' (2017) 40/3 J South Asian Studies 566; for international debates on agriculture, food and traditional knowledge, see Stephen Brush, 'Protecting Traditional Agricultural Knowledge' (2005) 17 Washington University J Law & Pol 59.

agriculture values and rewards highly scientific and technical knowledge that can neatly fit within the folds of intellectual property rights. This knowledge that is produced, accumulated and stored away from local farm contexts is a result of formal research and development programmes in public universities or private laboratories. What is thus missing, is a value for local farming skills, local knowledge, farmers' knowledge on local landraces, biodiversity conservation, food production and harvesting systems at a small scale, based on a local determination of priorities.[55] India's traditional knowledge database does not have an agricultural focus, and is mainly tailored to protect against biopiracy. Traditional knowledge and skills in the food sovereignty context is a much wider concept, that is dispersed, locally variant, borne and employed by local farmers etc. This is under threat due to ongoing depeasantisation trends and shifting of knowledge from the hands of farmers to other more technocratic entities.[56] Valuation of traditional knowledge, skills and practices is needed such that they benefit traditional knowledge holders and protect against misappropriation.[57] Technologies and practices should not undermine, threaten, or contaminate local systems and knowledge.

(f) Valuing Ecological Systems and Services – Valuing Farmers who Work with Nature

Given the nature of the India's acute agrarian crisis, which, is essentially an ecological crisis, it is crucial that ecological values are catered into the definition of agrarian success. The current productivist paradigm undervalues the contributions of nature, and as is evident from field evidence in North Gujarat, 'does not work with nature'. The rapid changes in Sikkim over the past decades, with several intensification and scaling up efforts, and the creation of value chains outside Sikkim have progressively taken the state away from core food sovereignty principles. Farmers that do employ agroecological production and harvesting methods and maintain or even maximise the contribution of ecosystems are not rewarded in material terms in our current system.[58] Adaptation and resilience to

[55] Philip Seufert, Mariapaola Boselli and Stefano Mori, 'Recovering the Cycle of Wisdom: Beacons of Light Toward the Right to Seeds: Guide for the Implementation of Farmers' Rights (International Planning Committee for Food Sovereignty, FIAN International and Centro Internazionale Crocevia, 2021) 1-13.

[56] V. Sandhya et al, *Traditional Knowledge and Sustainable Agriculture: The Strategy to Cope with Climate Change* (Wageningen Academic Publishers 2015) 5-11; for horticultural perspective: Koteswara Rao Kodirekkala, 'Internal and External Factors Affecting Loss of Traditional Knowledge: Evidence from a Horticultural Society in South India' (2017) 73/1 J Anthropological Research 22.

[57] Christophe Golay, 'The Rights to Food Sovereignty and to Free, Prior and Informed Consent', Research Brief – Geneva Academy (9 March 2018) <https://www.ohchr.org/sites/default/files/Documents/HRBodies/HRCouncil/WGPleasants/Session5/GenevaAcademyResearch.pdf>.

[58] Suraj Bhan and UK Behera, 'Conservation Agriculture in India – Problems, Prospects and Policy Issues' (2014) 2/4 Int'l Soil and Water Conservation Research 1.

climate change has only in the past few years become a popular policy objective of the agricultural ministry, bureaucracy, and research architecture. In the context of Sikkim, it can be argued that mandating organic agriculture is a step towards more agroecological approaches. Yet, overall food sovereignty's notion of 'working with nature' runs far deeper, and thus, valuations based on ecological factors is essential for any food sovereignty-based food system.

Rising environmental awareness globally has led to several new proposals of valuing different ecological elements – such as measuring and rewarding agricultural biodiversity.[59] This could include rewards based on conserving local seeds and breeds and adapting new ones for local ecosystems. Here too, in case of the former, the government does recognize outstanding conservation efforts, while the latter scenario is covered by the PPVFR Act. Yet, in both instances, conservation is valued as a norm, but more as an exception, which must meet DUS standards in case of seed innovations protected and rewarded under the law. Some have proposed valuing making the maximum use of ecosystem functions, which means replacing wherever possible, ecosystem functions with external inputs.[60] Another proposal has been on the lines of rewarding farmers for nutrient content in the soil, measured through randomised checks.[61] High organic content and high fertility can also lead to carbon sequestration and a reduction of carbon-based inputs. Thus, there are several ideas surrounding valuing 'working with nature', which does not yet fit well within the current agricultural framework. India's dominant system is premised on a highly unsustainable use of natural resources through a policy of subsidising its true cost and is destructive of biodiversity and soil as long as production remains optimal. From a climate perspective and a much broader environmental perspective, valuing ecological services and rewarding farmers that use them is the need of the hour.

[59] Michel Duru et al, 'How to Implement Biodiversity-Based Agriculture to Enhance Ecosystem Services: A Review' (2015) 35 Agronomy for Sustainable Development 1259.

[60] Derek McLoughlin, Amanda Browne and Caroline Sullivan, 'The Delivery of Ecosystem Services through Results-Based Agri-Environment Payment Schemes (RBPS): Three Irish Case Studies' (2020) 120B/2 Biology and Environment: Proceedings of the Royal Irish Academy 91; for EU level proposal: Colin Mitchell and Barbara Bellows, 'Payments for Ecosystem Services', Report - ATTRA Sustainable Agriculture (June 2020).

[61] Cédric Deluz, 'Evaluation of the Potential for Soil Organic Carbon Content Monitoring with Farmers' (2020) 8 Frontiers in Environmental Science 113; practical examples of rewarding farmers for their soil include: Soil Capital, 'Farmers Earning Carbon Payments Each Year', <https://soilcapital.com/>.

6. SPEAKING NEW LANGUAGES OF VALUATIONS: READING FOOD SOVEREIGNTY RIGHTS WITHIN THE EXISTING RIGHTS FRAMEWORK & DEVELOPING NEW RIGHTS

Law is a system of values.[62] Based on these new languages of valuations, this thesis proposes a progressive biogenetic rights framework based on food sovereignty. In doing so, valuations based on the 6-pillar framework are used to churn out new rights and new interpretations of existing rights. These are based on the premise that it is unnecessarily restrictive to confine the discussion within the traditionally defined ambit of biogenetic rights, but rather try to move beyond its parameters to include a wide range of food sovereignty and peasants rights that have an impact on biogenetic resources.

Years of productivist-focused agricultural policymaking that encourages use of HYV seeds, chemical inputs and mechanisation have characterised what successful agriculture should look like.[63] Traditional farming using farm-saved seeds and judicious use of natural resources is not seen as profitable enough within this frame. Hence, farmers are constantly encouraged to switch to more market-oriented farming practices. Most recently, the 2020 Niti Aayog's (Policy Commission of India) Agricultural Vision continues to echo the productivist tone, where it points to low efficiency, sub-optimal fertilizer and chemical use, problems in technology-diffusion and small landholding as the chief problems that affect agriculture and farmers.[64] It further elaborates the reasons for agriculture's overall under-development as low levels of technology, low quality of inputs, low investments, low availability of credit and missing links within supply chains. Farmers' and rural poverty alleviation programmes have worked hand in hand with the idea that low productivity *is* unsuccessful agriculture.

There is a need to re-assess these metrics of what comprises successful agriculture. While some Western countries have started moving towards a post-productivist framing of agriculture[65], there is no evidence of the same in India. If the idea of successful agriculture were to be framed outside the productivist paradigm, then small and marginal farmers could be seen in a completely different light.[66]

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[62] Chief Justice James Allsop, 'Values in Law: How they Influence and Shape Rules and the Application of Law', 2016 Hochelaga Lecture, Centre for Comparative and Public Law, University of Hong Kong (20 October 2016).

[63] Raju J Das, 'Geographical Unevenness of India's Green Revolution' (1999) 29/2 J of Contemporary Asia 167.

[64] Niti Aayog, '2020 Agricultural Vision', <https://www.niti.gov.in/sites/default/files/2020-01/Presidential_Address.pdf>.

[65] Geoff Wilson, 'From Productivism to Post-Productivism ... and Back Again? Exploring the (Un)Changed Natural and Mental Landscapes of European Agriculture' (2001) 26 Transaction of the Institute of British Geographers 77.

[66] Ramesh Chand and Shinoj Parappurathu, 'Temporal and Spatial Variations in Agricultural Growth and its Determinants' (2012) 47/26-7 Review of Rural Affairs, Economic and Political Weekly Supplement 55.

If agriculture is viewed through the parameters of crop diversity, environmental impact in terms of water and soil erosion, retention of control over traditional knowledge in seeds, plants and plant genetic resources and incomes of farmers, then the idea of a successful farmer would have to qualify more than the mere production bar. A centralised supply of agricultural knowledge and ideals of agricultural success has left many marginalised sections behind. Eighty percent of all poor in India comprise smallholder farmers, women, pastoralists, landless agricultural labourers and shepherds; that is, a substantial majority of poor are involved in agriculture. Thus, production-orientation of agriculture leads to impoverishment of large sections of people marginalised and displaced by it.[67]

The role of the state in developing and implementing agricultural and within this, biogenetic resource law and policy has been non-linear and ambivalent. This means that while the government has enacted laws for farmers rights, access and benefit sharing from use of agro-biogenetic resources and created schemes, institutions and mechanisms such as farmers awards to *recognize* and perhaps *strengthen* then control farmers have over their biogenetic resources, these actions have largely stood as *exceptions* to other mainstream rights. This has resulted in a fringe positioning of farmers with respect to agrobiodiversity management. Legal innovations in the domain of the rights discourse are one option which can build upon the demands made by seed mobilisations in the past to frame stronger farmer-oriented seed rights in India. The further entrenchment of commercial hybrids and improved varieties can then be reviewed with greater scrutiny by farmers and organisations representing them through a lens of right violations; and the state can be mandated under these seed rights to protect and conserve traditional seeds rather than actively replacing them. Thus, developing food sovereignty rights that cover biogenetic resources and much more can ensure greater agrobiodiversity conservation and strengthen farmers' control over seeds.

In this context, seed sovereignty rights within the food sovereignty movement and under the United Nations Declaration on Rights of Peasants 2018 (UNDROP) are possible approaches from which new and reimagined rights can be churned out. The UNDROP is a result of culmination of the efforts of peasant organisations and farmers' movements across the world. The Declaration is premised on the value of 'peasantness' and recognizes 'peasants' as a special category of right-holders.[68] It articulates in legal terms the seed rights peasants should enjoy, and how traditional seed systems can be preserved through these means. The UNDROP provides a good entry point to conceptualise seed rights in India,

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[67] MS Swaminathan, *50 Years of Green Revolution: An Anthology of Research Papers* (World Scientific 2017) 33-36.

[68] Enrique J Jardel Peláez et al, 'Biodiversité et viabilité de l'agriculture paysanne dans la Réserve de Biosphère Sierra de Manantlán, Mexique' (2013) 3/3 Revue d'ethnoécologie 1.

as India is both a signatory to the Declaration, and has a rich legal tradition of using rights as an emancipatory tool for 'new' claims.

Under the Indian Constitution, Article 21 guarantees the right to life. Over the past decades, the Supreme Court has read many other rights into Article 21, such as the right to food,[69] right to health,[70] right to livelihood,[71] right to water,[72] right to environment,[73] and the right to human dignity[74]. Fundamental rights also include rights to equality and cultural rights of minorities. Along with Fundamental Rights (Part III), Directive Principles of State Policy (Part IV, DPSP) are non-justiciable duties upon the state to direct governance in their spirit and must apply them while framing laws. DPSPs address issues of food, agriculture and environment through Articles 47, 48 and 48A which call for raising the level of nutrition and the standard of living and to improve public health, also organise agriculture and animal husbandry on modern and scientific lines by improving breeds, protecting and improving the environment and safeguard the forests and wildlife. Other DPSPs that can be linked with peasants and seeds are: elimination of economic inequality in status and opportunities of individuals and groups, prevention of concentration of wealth and means of production, and aim that ownership and control of material resources is distributed, prevention of exploitation of workers, organisation of village panchayats to enable them to function as units of self-government, provision of just and humane conditions of work, ensuring a living wage, proper working conditions for workers with enjoyment of leisure and social and cultural activities, and promotion of cottage industries in rural areas.[75] Article 51A (g) of the Constitution spells non-justiciable duties upon citizens to protect forests, lakes, rivers, wild animals etc. Through their implementation and judicial interpretation, constitutional environmental duties have developed a symbiotic relationship with constitutional environmental rights.[76]

[69] *People's Union for Civil Liberties* v *Union of India & Ors*, Supreme Court of India, Civil Original Jurisdiction, Writ Petition (Civil) No. 196 of 2001.

[70] *Consumer Education and Research Centre* v *Union of India*, AIR 1995 SC 1811.

[71] *Olga Tellis and ors* v *Bombay Municipal Corporation and ors*, AIR 1986 SC 180.

[72] *Subhash Kumar* v *State of Bihar*, AIR 1991 SC 420.

[73] *Vellore Citizens Welfare Forum* v *Union of India*, AIR 1996 SC 2715.

[74] *Maneka Gandhi* v *Union of India*, AIR 1978 SC 597; *Francis Coralie* v *Union Territory of Delhi*, AIR 1981 SC 746.

[75] Indian Constitution, arts 38, 39, 42, 43 and 46.

[76] Lovleen Bhullar, 'Environmental Constitutionalism and Duties of Individuals in India' (2022) 34 Journal of Environmental Law 399, 406-10.

With respect to new rights, it is not impossible to imagine a right to seed sovereignty manifest under Schedule VI of the Indian Constitution. Schedule VI allows tribal communities to autonomously decide questions of governance, including food governance. Scheduled territories have a constitutional protection over alienating land to members outside the tribe. Strong land rights and provisions of self-government can lead to defining one's own food system. Other provisions such as the 73rd constitutional amendment (1992) and the Panchayat (Extension to Scheduled Areas) Act 1996 introduced Panchayati Raj (local self-government) at the village level across India (except for some Schedule VI territories) can be employed to realise seed rights in non-Schedule VI territories. Drawing a link between seed sovereignty and autonomous and semi-autonomous areas is crucial since these areas are agrobiodiversity hotspots with many peasant seed systems persistently cultivating traditional varieties.[77] The dominant narrative claims that the north-east and other tribal belts of India are pristine and therefore have such rich reserves of biodiversity. However, these areas have been inhabited by people since millennia; they are not 'untouched' or 'pristine' in the same vein as other uninhabited regions of the world. The tribes have governed themselves in a way that biodiversity is conserved, and 'touched' their forests, farmlands and fisheries in a sustainable fashion. These regions have been 'untouched' by post-Green Revolution mechanised agriculture and are largely outside the mainstream political economy of commercial seeds in India. They are hence the last reserves of farmers' traditional varieties in the country. Seeds are a vital component of agrobiodiversity that require protection to maintain ecological stability.

India's dominant agricultural model that values and strives towards greater productive value is characterised by high yielding seeds, agricultural technology, large-scale monocropping, mechanised farming, and commodity trading in the global market. The law and policy framework has evolved to support agricultural productivism where both the state and private players operate synergistically to control and manage seeds. This has led to the disappearance of thousands of traditional seeds, leaving a massive dent in agricultural genetic variability across different regions and climatic zones of India. Stronger seed rights for farmers that preserve local seed systems and saving practices can be developed based on these claims. In this respect food sovereignty rights provide a direction in which such rights may evolve.

7. CONCLUSION

This chapter applies critical food sovereignty literature in the Indian context, by using the experiences from Patan and West Sikkim to propose a food sovereignty-based approach for India. Here, the chapter discusses themes that constitute the basis for food sovereignty such as resistance against the dominant agricultural system and its compatibility with capitalist agriculture – which is a post Green Revolution reality in India. These themes are drawn from the Bernstein versus McMichael debate in

[77] Vandana Shiva, 'Recovering Biodiversity' (2001) 31/1-2 Social Change 21.

critical food sovereignty literature. The discussion on lessons drawn from Patan and Sikkim help develop 'new languages of valuation' within the Indian context. By new valuations one hopes to reconstruct the definition of 'success' and transition towards greater food sovereignty. Here, this thesis argues that a successful farmer is one who can generate high profits based on a productivist orientation towards farming. Food is a commodity first, which should be produced, traded, exported and processed to increase profitability. A well-rehearsed success story of the Green Revolution assumes that India should focus on producing more, through high-yielding hybrids and high intensity inputs. This thesis argues that food, farmers and ecology are missing from this productivist language of valuation. And it is therefore necessary to develop new languages of valuations.

This is especially pertinent for proposing new laws and legal conceptualisations, as 'law' is in essence a system of values – which perpetuates and strengthens that which is valuable to a given society, and wards away from actions that deplete this value. New valuations are based on food sovereignty's six pillar framework that oppose productivism characterised by high yielding seeds, agricultural technology, large-scale monocropping, mechanised farming, and commodity trading in the global market. In order for India's law and policy framework to encourage the use and conservation of biogenetic resources, a re-interpretation of existing rights and the development of new rights based on the food sovereignty approach and the UNDROP needs to be done.

The next chapter is the final substantive chapter of the thesis proposes a new rights framework based on the valuations proposed in this chapter. Herein, there are 2 categories of entry points – one, reading in food sovereignty rights in the existing rights framework and two, developing new rights that are novel or unique which have no equivalent or resembling legal provision in India. Here the discussion moves beyond reinterpreting the right to food, right to environment and other fundamental rights for farmers to explore rights such as right to define one's food system, right to produce food, right to biodiversity, right to traditional knowledge and so on. These are broad ranging provisions which go beyond the strict confines of biogenetic resources – a category that has been created with an intent to define 'resources' which can be owned, traded, exploited, or could otherwise comprise a part of any transaction. Food sovereignty rejects this idea of confining the definition and space of biogenetic resources – which can only serve transactions. It rather includes a wide range of rights which have a major impact on biogenetic resources, as they include them but are not limited only by them. Therefore, it is imperative to move outside the set confines of biogenetic resource law if the food sovereignty approach were to be truly implemented in India.

CHAPTER VIII

FOSTERING FOOD SOVEREIGNTY RIGHTS IN INDIA – BIOGENETIC RESOURCES AND BEYOND

1. INTRODUCTION

Chapters 2, 3 and 4 have set out the main themes and questions of this research. Chapter 2 explained what is meant by biogenetic resource rights. The substantive content of these rights was explored by situating these rights within the food sovereignty approach. These food sovereignty-inspired biogenetic rights are the aspirational standard against which India's agro-food complex is analysed in the following chapters. Chapter 3 describes how India's agricultural law and policy framework, especially India's seeds framework undermines farmers' biogenetic rights. It argues that India's agricultural institutions and policymaking has been largely influenced by the productivist logic of the Green Revolution, which has led to farmers' estrangement within their own food systems. Chapter 4 synthesises food sovereignty rights with India's rights framework to highlight how existing rights in India, including the right to food and environmental rights fall short of food sovereignty rights' standards. It also explores farmers' and rural mobilisations against farmer distress, loss of seeds and traditional knowledge, as evidence of a basis for stronger rights. Chapters 5 and 6 bring field-based perspectives from Gujarat and Sikkim on food systems and seed systems therein. These chapters shed light on the political economy of biogenetic resources in these different sites and present the challenges in implementing food sovereignty rights in diverse settings.

This chapter is the last substantive chapter of this thesis. It endeavours to provide answers to the questions raised in the preceding chapters. It builds upon the idea of valuing alternate things within our food systems – that is the food-farmer-ecology nexus. Based on these alternate valuations, it proposes that in order to chart new pathways towards stronger biogenetic rights in India, that are founded on food sovereignty principles and parameters, it is important to embrace a wider range of rights that are not merely restricted to the conventional frame of biogenetic resources. Based on the lessons learnt from field experiences, this chapter proposes 'new' food sovereignty rights. It is linked with Chapter 4 in proposing food sovereignty rights framework. Chapter 4 dealt with re-interpretations of existing rights, such as the right to food and right to environment, this chapter explores the domain of new rights, such as right to produce food, right to seeds and traditional knowledge etc.

2. BGR RIGHTS BASED ON FOOD SOVEREIGNTY - AN ALTERNATIVE AGRARIANISM FOR AN ALTERNATIVE CRISIS

This thesis has drawn attention to the acute agrarian crisis plaguing much of rural India and explained how it mirrors the global scenario. India's crisis has been described as a crisis of low productivity and ergo low profitability.[1] The discourse on the agrarian crisis in India has largely focused on the consequences of the crisis that include farmers' displacement, indebtedness, and suicides. However, the causes of the crisis are numerous and complex. More recently with the advent of climate change, the agrarian crisis has been discussed as a continuing effect of the climate crisis.[2] This is indeed true, as has been argued especially in the case of Sikkim, where the effects of climate change are profound on the Himalayan state. Yet, it is rather simplistic to *only* consider climate change as the root of crisis in its entirety. Despite low productivity resulting from climate change, there are many other factors that have led to this crisis.

First it is essential to acknowledge that the agrarian crisis is an ecological crisis.[3] The roots of farmer distress lie in the unsustainable productivist drive introduced by the Green Revolution and following this, the economic liberalisation of the Indian economy.[4] Therefore it is one thing to say that climate change has led to unpredictability in seasonal patterns or a rise of extreme temperatures and natural disasters; but quite another to say that the environmental impacts of the current dominant model of agriculture has led to this severe agricultural crisis. The impacts on soil health, the water table and atmosphere have been dire owing to the intense use of chemical inputs, cultivating every last inch of farmland and more frequently to increase crop yield, and the switch from local food crops, wild varieties and landraces to profitable high yielding varieties. The repeated emphasis of this thesis in insisting that the agrarian crisis is essentially an ecological one is owing to the near-complete lack of linkages between the impacts of the current model and the issue of crisis.[5] The disconnect between the unsustainable agriculture and the agrarian crisis has not been clearly admitted by policymakers and agricultural government officials. The government has initiated new schemes to combat the effects of

[1] SL Shetty, 'Agricultural Credit and Indebtedness: Ground Realities and Policy Perspectives' in D Narasimha Reddy and Srijit Mishra (eds), *Agrarian Crisis in India* (OUP 2010) 61.

[2] Pritha Dattaa, Bhagirath Beheraa and Dil Bahadur Rahutb, 'Climate Change and Indian Agriculture: A Systematic Review of Farmers' Perception, Adaptation, and Transformation' (2022) 8 Environmental Challenges 100543.

[3] Marcus Taylor and Suhas Bhasme, 'The Political Ecology of Rice Intensification in South India: Putting SRI in its Places' (2019) 19/1 J Agrarian Change 3.

[4] Deutsche Welle, 'The Ecological Roots of India's Farming Crisis' *EcoWatch* (2 February 2021).

[5] Tor Benjaminsen, 'Political Ecologies of Environmental Degradation and Marginalisation', in Tom Perreault, Gavin Bridge and James McCarthy (eds), *The Routledge Handbook of Political Ecology* (Routledge 2015) 354.

climate change and has taken some steps to move towards agroecology and spread awareness of the environmental toll modern farming has;[6] yet the overarching narrative of the Green Revolution, the dominant agricultural model, the focus on upscaling production, increasing farmers' income and 'opening up' the agrarian economy to private commercial interests has camouflaged the underlying truth of the origins of the farm crisis.

Second, given this acknowledgement that a vast majority of farmer distress has ecological roots and ergo ecological solutions, it is imperative that a reorientation of agro-food systems towards this is required. Within the context of agrarian crisis, the issue of biogenetic resource rights needs to be assessed. Currently a large portion of the law and governance mechanisms surrounding biogenetic resources lies within domains of IPR law and other legal fields. Fieldwork experiences show that for most farmers, big and small, across different regions of India, the issue of biogenetic resource rights is not as paramount as is the issue of distress, low productivity, and low incomes. Therefore, discussing the subject of biogenetic resource law only within the established confines of this law is futile. Especially when these confines have charted out outside-in by intellectual property proponents. The limited scope of this legal field calls for a re-evaluation itself, as the issues and interventions pertaining to sustainable management and conservation of biogenetic resources cannot be made in isolation from issues and interventions pertaining to agrarian crisis.

This thesis therefore presents an alternative 'crisis' to the literature of food sovereignty which has traditionally focused on the crisis of capitalism, extractivism, and international agro-commercial trade. Farmer mobilisations in South America that stood up against these pressures (crises) resulted in the development and evolution of the food sovereignty movement.[7] The triggering crisis in India for the advocacy, introduction and development of food sovereignty can be the agro-ecological crisis currently pervading India's rural landscapes and pushing farmers out of this space. In this sense, the issue of biogenetic resource management and conservation should be viewed as one element within a larger re-orientation of agro-food systems in India – towards greater food-farmer-ecological valuations. Such an approach of locating seed sovereignty and right to seed claims within claims of food sovereignty is not new.[8] However, the restricted legal framework on seeds and biogenetic resources needs to reflect this

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[6] See Chapter 4.2.c for more details.

[7] Hannah Wittman, Annette Desmarais and Nettie Wiebe, 'The Origins & Potential of Food Sovereignty' in *Food Sovereignty: Reconnecting Food, Nature and Community* (Fernwood 2010); Place-based motivations to promote and develop food sovereignty: Tanya Murray Li, 'Can There be Food Sovereignty Here?' (2015) 42/1 J Peasant Studies 205.

[8] Michel Pimbert, 'Reclaiming Diverse Seed Commons Through Food Sovereignty, Agroecology and Economies of Care' in Yoshiaki Nishikawa and Michel Pimbert (eds), *Seeds for Diversity and Inclusion* (Palgrave Macmillan 2022) 21.

larger context and interconnections among seeds and food systems – such that a 'food sovereignty inspired seed law' must inherently contain aspects of food sovereignty itself, and not just seed sovereignty within an otherwise productivist and profit-driven agro-food complex.

Based on these new valuations and drawing from the food sovereignty literature and the Declaration of Peasants' Rights, this thesis proposes the reinterpretation of existing rights and the introduction of new rights to further the agenda of food sovereignty. The re-interpretation potential of existing rights has been discussed in Chapter 4 with hints towards what 'new' food sovereignty rights could or should look like. These are rights that have no equivalent in the Indian legal framework, and in order for biogenetic resources to managed sustainably and conserved a host of wider food reforms are required to truly encapsulate the food-farmer-ecology nexus.

3. NEW FOOD SOVEREIGNTY RIGHTS IN INDIA

Food sovereignty rights that have a bearing on biogenetic resources are wide-ranging. These cover a large array of issues that affect production and distribution of food, farmer empowerment and welfare, and ecological protection. These therefore go beyond mere seed rights but seek to engage with wider issues within agro-food systems. These rights are drawn from multiple sources, starting from food sovereignty literature developed over the years. Food sovereignty claims that have been articulated in a language of rights can be found in several food sovereignty documents, and especially within the discourse of the UN Human Rights Council.[9] These claims have become clearer through the peasants' rights vehicle. The peasants' rights movement uses much of food sovereignty literature as a foundation for its own articulation. The 2018 Declaration therefore is a rich source of what new food sovereignty rights in India could look like – given that India has signed the Declaration and endorses its overall scheme and essence, and also that these too contain a blend of 'rights of peasants' (as discussed in Chapter 4 – rights that can be re-interpreted in the interest of farmers) and food sovereignty rights that affect peasants.

Food sovereignty rights and peasants rights have many commonalities with other human rights within the international framework. Aside from such commonalities, there are many unique or 'new' rights that the food sovereignty and peasants rights movements advocate. Therefore, the substantive content of food sovereignty and peasants rights include a mix of

[9] For La Via Campesina's involvement in the UNHRC: Priscilla Claeys, 'Food Sovereignty and the Recognition of New Rights for Peasants at the UN: A Critical Overview of La Via Campesina's Rights Claims over the Last 20 Years' (2015) 12/4 Globalizations 452.

well-established human rights that hold the potential to be re-interpreted in the context of farmers, and other rights that are 'new'. In all previous instances of pluralisation such as the rights of women (CEDAW 1979), children (CRC 1989), and migrant workers (ICRMW 1990), the conventions reiterated universally held rights along with creating new ones. With respect to the existing rights, the particular group assert an equal claim to human rights, and simultaneously spell out new rights that are unique to their situation.[10]

Table 1: Distribution of food sovereignty rights into categories of existing and new rights:

Food Sovereignty and Peasants Rights that require Reinterpretation of Existing Rights		**Food Sovereignty and Peasants Rights that are 'New' (not found elsewhere)**
Basic human rights such as right to life, health, livelihood, adequate standard of living etc.		Right to produce food.
Rights to information, participation, forming associations etc.		Right to define food systems, right to reject a certain model of agriculture.
Resource rights such as right to land, property, water etc.		Resource Rights such as rights to seeds, property rights to traditional knowledge
-		Right to preserve agricultural values
-		Marketing and Pricing rights

The first category of rights can be found in international human rights conventions, declarations that are en route to becoming binding treaties,[11] international labour conventions that preceded human rights treaties, and other international instruments that have 'moral force' or reflect 'norm evolution',[12] such as Human Rights Council's Comments or Sustainable Development Goals. Human rights at the international level translate into rights at the national

[10] Marc Edelman and Carwil James, 'Peasants' Rights and the UN System: Quixotic Struggle? Or Emancipatory Idea whose Time has Come?' (2011) 38/1 J Peasant Studies 81, 84.

[11] Some declarations take several decades before they become binding treaties. Eg: the Child Rights Declaration 1959 became the Convention on the Rights of the Child in 1989 (30 years); the Women's Rights Declaration 1967 became a binding Convention in 1979 (12 years). Richard Burchill, 'International Human Rights Law: Struggling between Apology and Utopia' in Alice Bullard (ed) *Human Rights in Crisis* (Ashgate 2008) 49.

[12] Samuel Moyn, The Last Utopia: Human Rights in History (Harvard University Press 2010) 184-6, 218-9.

level, and they are hence 'universal' and subject to voluntary adherence by states.[13] However, with respect to instances of pluralisation, the demand for human rights protection comes from local levels, and moves up to the international level when states fail to satisfy specific group demands.[14] The underlying factors that give rise to new international norms of human rights always originate from social movements, rather than elite human rights practitioners or national courts.[15] In India too, new rights have been read into the Constitution not out of elite human rights advocacy, but lots of grassroots mobilisation. There is a long history of farmers' mobilisation, up until most recent marches and protests against financial crises in the agrarian economy.

The categorisation of existing versus new rights is important while locating these rights in the Indian context. The Indian rights framework in many ways reflects the international framework. India is a member of almost all international human rights covenants and has its own domestic rights framework that comprises a wide range of civic-political and socio-economic rights. When food sovereignty and peasants rights are viewed against the backdrop of the Indian legal system, a categorisation similar to what has been described above can be seen. A reinterpretation of existing rights can be done to churn out a food sovereignty aspect from within it, and yet some rights that food sovereignty and peasant rights advocate are completely absent within the current Indian legal framework and are as such 'new'.

Table 2: Three-way comparison of which food sovereignty rights, the international legal framework, and the Indian legal framework. It shows which rights already exist, or exist in limited form, and new rights that have not found utterance before within the international and Indian national contexts:[16] (Key to Acronyms[17])

[13] Jack Donnelly, International Human Rights: A Regime Analysis' (1986) 40/3 Int'l Org 599; *Universal Human Rights in Theory and Practice* (Cornell University Press 1989).

[14] Balakrishnan Rajagopal, *International Law from Below: Development, Social Movements and Third World Resistance* (Cambridge Univ Press 2003); Sally Merry, 'Transnational Human Rights and Local Activism: Mapping the Middle' (2006) 108/1 Am Anthrop 38.

[15] Tim Dunne and Nicolas Wheeler, '"We the Peoples": Contending Discourses of Security in Human Rights Theory and Practice' (2004) 18/9 International Relations 1, 18-9.

[16] The Peasants Rights Declaration itself references most of the international instruments mentioned in Column 2 by stating that 'the struggle of peasants is fully applicable to the framework of international human rights which includes…[names several instruments]'; see supra n 10: Edelman and James (2011) have made a similar tabulation locating provisions of the Peasants Rights Declaration within some international instruments.

[17] International Agreements: UDHR: Universal Declaration on Human Rights 1948; ICCPR: International Covenant on Civil and Political Rights 1966, ICESCR: International Covenant on Economic, Social and Cultural

Sr. No.	Food Sovereignty Rights and Peasants' Rights	International Law Instruments	Indian Law
1.	Right to define own food system.	Limited content in Democratic and participatory decision making, right to information, forming associations. UDHR, ICCPR, ICESCR, ILO-11, DRIP, DRM, DCD, DEHM	Limited content in Constitution, Schedule VI; Schedule V; art 19(1) (a), (b), (c) RTI 2005
2.	Right to food	ICESCR, DEHM, SDG	Constitution: art 21 NFSA
3.	Right to produce food	DRIP, art 29: right to 'productive capacity of their lands or territories and resources.'	Limited content in FRA, sec 3 (1) clauses a, c, d.
4.	Protect and regulate domestic production and international trade	-	-
5.	Right to life, dignity, health, adequate standard of living	UDHR, ICESCR, ILO-10 and 184, CRC, CEDAW, DRIP, DCD, DEHM	Constitution, art 21 Labour laws such as Workmen's Compensation Act, Factories Act, Contract Labour Act etc.

Rights 1966; ILO-11: Right of Association (Agriculture) Convention 1921; ILO-10 Minimum Age (Agriculture) Convention 1921; ILO-141: Rural Workers' Organizations Convention 1975; ILO-169: Indigenous and Tribal Peoples Convention 1989; DRIP: UN Declaration on Rights of Indigenous People 2007; DRM: UN Declaration on Rights of National or Ethnic, Religious and Linguistic Minorities 1992; DCD: UN Declaration on Cultural Diversity 2001; DEHM: UN Declaration Eradication of Hunger and Malnutrition 1974; SDG: Sustainable Development Goals 2015; AfC: African Charter of Human Rights 1981; CRC: Convention on Child Rights 1989; CEDAW: Convention on Elimination of Discrimination against Women 1979; PGFRA: Plant Genetic Resources for Food and Agriculture Treaty 2001; CBD: Convention on Biological Diversity 1992; UPOV: International Convention on the Protection of New Varieties of Plants 2001.

National Laws: RTI: Right to Information Act 2001; NFSA: National Food Security Act 2013; FRA: Forest Rights Act 2006; PPVFRA: Protection of Plant Varieties and Farmers Rights Act 2001, BDA: Biodiversity Act 2002.

6.	Right to protect agricultural values	Limited content in ILO-169, DRIP, PGFRA	Limited content in Constitution, art 21, Schedule V and VI FRA, sec 3 (1) clauses a, c, d, i, k.
7.	Right to biodiversity	DRIP, PGFRA, ILO-169, CBD (sovereign state rights)	Limited content in Constitution, Schedule VI PPVFRA, ss 39 and 41; FRA, sec 3 (1) (k); BDA, sec 21;
8.	Right to environment (enjoyment and conservation)	DRIP, AfC CBD (sovereign state rights)	Limited content in Constitution, art 21, Schedule VI PPVFRA, sec 39; FRA, sec 3(1) (i)
9.	Right to agrarian resources, finance and information (to obtain funds, capital, and information; to material and tools of agriculture, such as transport, storage, credit; information about capital, market, the preservation of genetic resources; to be actively involved in planning the agricultural budget)	Limited content in ICESCR, ILO-99 and 141, CEDAW, DRIP, DEHM, DCD	Limited content in Constitution, Art 300A Patents Act, PPVFRA, RTI
10.	Right to land	ICESCR, ILO-169, DRIP	Constitution, arts 31A and 300A; Schedule VI FRA, sec 3 (1)

11.	Right to water	ICESCR, CEDAW, CRC, UNDRIP,	Constitution, art 21 (but not for agriculture)
12.	Right to seeds	ICESCR, CEDAW, PGFRA	Patents Act, PPVFRA, Seed Bill
13.	Right to traditional knowledge	Limited content in ILO-169, DRIP, CBD (sovereign state rights)	-
14.	Right to marketing and price determination	DRIP	-
15.	Rural development	ICESCR, DRIP, ILO-169	Constitution, art 21
16.	Right to reject (a certain model of agriculture)	-	-

Among the new food sovereignty rights this thesis proposes some rights that can fit within the politico-legal context of the Indian legal system – these include the right to define food systems, the right to produce food, rights to seeds, rights to traditional knowledge and marketing and pricing rights. For biogenetic resource control and conservation, a wider range of food sovereignty rights is necessary for the realisation of the former.

(a) RIGHT TO DEFINE ONE'S OWN FOOD SYSTEM

The right to define one's own food system is among the oldest and most widely used definitions of food sovereignty. It is the very essence of food sovereignty, as a collective right to ensure that food systems are catered to local peoples rather than the central government or corporate entities far removed from the local context. In countries where food sovereignty has been put into practice, the ideal and notion of 'sovereignty' are juxtaposed with a strong welfare state, that has developmentalist aspirations and centrist tendencies.[18] In India, food sovereignty rights guaranteed by and justiciable against the state contradict with the term 'sovereignty'. Yet, different degrees of food sovereignty can reconcile with existing state structures and institutional forms. This is an inherent contradiction that accrues with the deployment of the term 'rights' with 'sovereignty'.[19]

[18] Ben McKay, Ryan Nehring and Marygold Walsh-Dilley, 'The 'State' of Food Sovereignty in Latin America: Political Projects and Alternative Pathways in Venezuela, Ecuador and Bolivia' (2014) 41/6 J Peasant Studies 1175.

[19] Priscilla Claeys, 'Food Sovereignty and the Recognition of New Rights for Peasants at the UN: A Critical Overview of La Via Campesina's Rights Claims over the Last 20 Years' (2015) 12/4 Globalizations 452; Robert

The right to define one's own food system can be interpreted from within Articles 19 (1) (a), (b) and (c); Article 21 and the Vth and VIth Schedules of the Indian Constitution. Furthermore, the Right to Information Act 2005 creates an institutional architecture for holding government authorities – decision makers, politicians, and bureaucrats, including agricultural bureaucrats accountable for their actions and the processes of policymaking. The right to define one's food system is intricately linked with the democratic right to choose one's government through a fair and just process.[20] The right to choose governments is exercised based on the laws, policies, and vision of the contesting political party. Some scholars have made a distinction between the democratic process of law-making via public representatives, and the democratic right to choose a radically different or 'new' type of polity. This would amount to altering the basic structure of the constitution, which would constitute a higher law-making power. The question of whether the implementation of food sovereignty would require a radically different or new constitution albeit remains open, the author does not wish to address this possibility. This is because, one, there is scope of introducing food sovereignty rights within India's existing rights framework, and two, not all the countries that have implemented food sovereignty have done so through a complete overhaul of their constitutions, polities, and state architectures.[21]

The 3 main case studies available for guidance are Venezuela, Bolivia, and Ecuador. McKay and other scholars analyse these to draw some clear distinctions. In Venezuela, implementing food sovereignty have gone hand in hand with structural changes, especially a major change in land laws and management, including a decentralisation of community lands. In Bolivia, introducing food sovereignty has been part of a larger decolonialisation process – framed against extractivist entities. Compared to Venzuela, indigenous communities have been involved only marginally, without any real local-level changes in control of land and natural resources. In Ecuador, food sovereignty has been implemented as a state project, rather than having anything to do with mobilising local support.[22] These cases demonstrate how the food sovereignty concept is used by state actors. In any national-level implementation process, food sovereignty can be used by state actors to support their own goals, strategies, and political agendas.[23] As seen in the case of Sikkim, the government's co-option of

Benford and David Snow, 'Framing Processes and Social Movements: An Overview and Assessment' (2000) 26 Review of Sociology 611.

[20] Right to vote in India: The Representation of the People Act, 1951, section 62.

[21] Supra n 18, McKay (2014) 1176-78.

[22] Ibid.

[23] "Food sovereignty becomes nothing more than a legitimating discourse": Tanya Kerssen, 'Food Sovereignty and the Quinoa Boom in Bolivia', Paper presented at Food Sovereignty: A Critical Dialogue, International Conference, Yale University (2013) 2.

'agroecology' through organic farming has been done to galvanise public support, gain national and international recognition, and consolidate state-public relations.

A right to food sovereignty – that is an overarching right to define food systems in the Indian context can assume the shape of all these case studies. On the one hand, Schedule VI and V territories can implement food sovereignty within their territories while enjoying local control over land and resources within their territories. Local administrative structures have been critiqued for comprising local elites and acting against the interest of the communities,[24] yet institutionally these are highly unique structures within the Indian Constitution, opening the space for creating and sustaining locally controlled small scale food systems. On the other, less radical or context-specific versions of food sovereignty can manifest using the legal provisions already enshrined within the Indian Constitution. These would most likely resemble the Bolivian and Ecuadorian versions of food sovereignty, as has been seen in Sikkim.

Article 19 (1) (a) right to freedom of speech and expression; (b) to assemble peaceably and without arms; (c) to form associations or unions can provide the basis for constructing a right to food sovereignty. A right to define one's food system can be read as a component of 'freedom', as one of its diverse meanings.[25] The right of local communities and rural populations in determining the form of their local governments, structures and direction of policies is a broadly recognized interpretation of 'freedom'.[26] The right to form associations, groups, organisations that promote food sovereignty, and the right to protest against unjust laws, regulations and systems are enshrined within Article 19. The 'right to life and personal liberty' under Article 21 has been used by the higher judiciary in India to include a wide range of environmental and socio-economic rights. This is often read as a default provision for introducing new constitutional ideas that have been progressively read as 'essential components' of enjoying life and personal liberty. The right to food has been one prominent recognition within this right. It is not inconceivable that a right a right to food sovereignty be recognised under Article 21, as a more holistic goal that the content within the right to food, which currently only extends

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[24] Avinash Samal, 'Institutional Reforms for Decentralized Governance and the Politics of Control and Management of Local Natural Resources: A Study in the Scheduled Areas of India', Paper presented at RCSD Conference, Chiang Mai, Thailand (14 July 2003) <http://www.panchayatgyan.gov.in/documents/30336/0/2.+decentralised+governance+in+tribal+areas-samal.pdf/9a483637-32c0-4f9e-96c1-79f7e20cfbe0>.

[25] Rajni Kothari, *State Against Democracy: In Search of Humane Governance* (Ajanta Publications 1988) 4-5.

[26] Sujit Lahiry, 'Rajni Kothari's Ideas of Freedom: 'Rethinking' State, Democracy, Development and 'New' Social Movements in India' (2016) 7/1 Millennial Asia 77; for more on how right to protest has been depleted gradually in the recent past: Atul Sood, 'The Silent Takeover of Labour Rights' *The India Forum* (20 November 2020).

to food security. Furthermore, the Right to Information Act 2005 (RTI) is an important tool to not only hold governments accountable but to also effect change towards newer systems. The RTI as an environmental right has immense potential in contributing towards the realization of the substantive right to environment.[27] Despite the problems in fully accessing environmental information through the RTI machinery, its use as an environmental right and a arguably a right to access food and agricultural information that can lead to procedural changes towards a more food sovereign future.

The right of peoples to define their own agricultural and food policy and includes prioritizing local agricultural production in order to feed the people, access of peasants and landless people to land, water, seeds, and credit, the right of farmers, peasants to produce their own food, the right of people to take part in agricultural policy choices, and the right of countries to reject certain policies and guard against low-priced agricultural imports. In India, several movements and organizations like the KRRS, Alliance for Sustainable and Holistic Agriculture (ASHA) and Navdanya have advocated for food sovereignty at a local subsistence level. The right to food sovereignty / to define one's food system includes the right to reject, which is among the most highly contested and controversial of food sovereignty rights. The right to reject never made it to the UNDROP final text, yet it is an essential component, exercisable collectively to reject laws, policies that undermine the right to food sovereignty.[28] India's own rich history of peasantries and small farmer resistance movements, and a post-colonial legal tradition of using rights as an emancipatory tool for 'new' claims resonates with the right to food sovereignty, and the right to reject.

(b) RIGHT TO PRODUCE FOOD

The right to produce food is largely a unique right, as is the case with the right to food sovereignty itself. Some of its content may be found in Constitutional provisions such as Schedule VI and V, where rights over resources, that could include agricultural resources, inputs and implements, are more localised, autonomous and wide-ranging. Aside from this, the right to food itself does not currently stretch so far as to include the right to produce food. As explained in Chapter IV.2.(a) that the right to food is a consumer-based entitlement that fails to engage with rights of food producers. Yet, one possible solution may be a broader interpretation of the right to food as a direct entitlement – that is, satisfying one's entitlement by growing and consuming food directly.[29] The right to produce food

[27] Nikita Pattajoshi, 'Right to Information as an 'Environmental' Right: Trends, Issues and Challenges in India' (2021) 7/2 RGNUL Research Review 109.

[28] Devon Sampson et al, 'Food Sovereignty and Rights-Based Approaches Strengthen Food Security and Nutrition Across the Globe: A Systematic Review' (2021) 5 Frontiers in Sustainable Food Systems 686492.

[29] Zainab Lokhandwala, 'Neoliberalization of Indian Agriculture: Undermining of the Right to Food of Farmers' *Socio Legal Review Forum* (31 January 2021).

could therefore entail a re-interpretation of the right to food – by qualifying its special meaning vis-à-vis farmers, or it could be a 'new' right without any interlinkages with the existing content and meaning of the right to food.

As a reimagination of the right to food - there is a need to recognize the special status of farmers within the food security discourse. Most farmers interviewed in Gujarat and Sikkim feel a sense of pride for the work they do, to the extent that in some cases, producing food and feeding others is considered an act of God. This sentiment has no real significance in terms of a 'special legal status' of farmers and has been relegated to a mere election campaign slogan without any real meaning.[30] Such veneration for farmers can be legally recognised through the construction of a right to food of farmers that is based on their right to produce food in order to satisfy their food entitlements. Some scholars have argued how such an approach could limit the scope of the right to food to only small subsistence farmers who live directly off their farmlands.[31] Yet, envisioning food production a direct as well as economic entitlement calls for the recognition of a new right to produce food.

A new right to produce food – this right is imperative for the creation and sustenance of small-scale localised food systems that adhere to the principles of food sovereignty. Currently, aside from Schedules V and VI's limited (and non-agriculture-specific) protections, there is nothing that prevents large farmers, government entities, and corporations to squeeze small producers out of the farm business. Owing to not only the agrarian-ecological crisis, but also market pressures based on productivist languages of valuation, small farmers have no legal entitlement to 'produce food' or in other words continue farming. India's rich history of recognizing farmers' special positions as food providers intersects with its history of peasantries and subaltern classes.[32] Subaltern conflicts, farmers' movements, social movements, mobilizations, and recent protests against the agrarian crisis and corporatisation of agriculture are evidence of a basis or ready foundation of their long awaited-yet missing legal recognition. It is after all social movements that shape and reshape human rights.[33] A right

[30] For example, the slogan – '*jai jawan*, *jai kisan*!' (hail the soldier, hail the farmer) has been repeatedly been used by political parties seeking a public mandate. Aviral Virk, 'Jai Jawan, Jai Kisan: Memorable Slogan, But What Does It Mean?' *The Quint* (11 January 2021).

[31] Paul B Thompson, 'From World Hunger to Food Sovereignty: Food Ethics and Human Development' (2015) 11(3) Global Ethics 346, 346-8.

[32] Rochana Majumdar, 'Subaltern Studies as a History of Social Movements in India' (2015) 38/1 J South Asian Studies 50.

[33] Balakrishnan Rajagopal, *International Law from Below: Development, Social Movements and Third World Resistance* (Cambridge University Press 2003); for more on rights born out of struggle: Issa G Shivji, *The Concept of Human Rights in Africa* (Codesria 1989) 66-72.

to produce food would increase the choices available to farmers, who are otherwise relegated to being dependent on food entitlements or economic entitlements provided by the state.

The right to produce food as a new right should move beyond the limited construction of food-based rights provided for in the Forest Rights Act, section 3 (1) clauses a, c and d. Clause (a) includes the right to hold and live in the forest land for habitation or for self-cultivation for livelihood; Clause (c) provides for a right of ownership, access to collect, use, and dispose of minor forest produce which has been traditionally collected; and Clause (d) other community rights of uses or entitlements such as fish and other products of water bodies, grazing and traditional seasonal resource access of nomadic or pastoralist communities. This includes a wide range of food production, collection, access and use rights, yet these are restricted to tribal communities and forest dwellers.[34] Farmers are a much larger group, that do not have any protections like forest dwellers. Further, these include right to cultivate, collect, access and use in a forest context, as the title of the Act suggests, and therefore any right to produce food for farmers should naturally be broader than this. Further, such a right would lose its meaning without adequately qualifying it for small farmers. As Agarwal points out, that nothing prevents large farmers to use a 'right to produce' to their advantage, or for small farmers to cultivate based on market demands in order to make bigger profits.[35] For instance, small to medium farmers growing large cardamom in Sikkim, or cash crop spices in Gujarat would be protected by their rights to produce whatever food they wish to produce? Here again, the Six Pillar test can be applied to ensure that the essence of food sovereignty is being preserved in framing and implementing such rights-based protections.[36] If a co-option of food sovereignty by the state is problematic, so is a co-option by other larger powerful actors in the current food system. The right to produce therefore goes much further than India's current right-to-food-based food security framework, which, even if it provided for a special status of farmers, would not suffice in adequately capturing food sovereignty's vision and goals.

(c) RIGHT TO BIODIVERSITY

The dependency of human rights on biodiversity has only recently gained recognition. This nexus is based on the fact that biodiversity is essential for securing basic human rights such as the right to life, human dignity, livelihood and health. Some scholars have argued that human dignity should be

[34] Dhrupad Choudhury, 'The Forest Rights Act, Northeast India, and Shifting Cultivators: A Commentary Get access Arrow' in Sharachchandra Lele and Ajit Menon (eds), *Democratizing Forest Governance in India* (OUP 2014) 339.

[35] Bina Agarwal, 'Food Sovereignty, Food Security and Democratic Choice: Critical Contradictions, Difficult Conciliations' (2014) 41(6) J Peasant Studies 1247.

[36] Using the Six Pillar Framework as a standard: Christina Schiavoni, 'Analysing Agricultural Investment from the Realities of Small-Scale Food Providers: Grounding the Debates' (2018) 39/2 Third World Quarterly 1.

the standard for international biodiversity management.[37] Others have argued that biodiversity is highly important for all human rights, including the right to life itself, and therefore a right to biodiversity itself should be recognised at the international and national levels.[38] In the Indian context, right to life, right to food, right to health etc are fundamental rights, that have been invoked against the state in different contexts. These rights have remained detached from agriculture, biodiversity, and ecological concerns. The right to environment itself recognized by the Supreme Court in 1991 comprises a right justiciable against the state to ensure a clean and healthy environment.[39]

The loss of biodiversity and its clear impacts on the enjoyment of right to life, food, health and environment have not been contested so far as to recognise a right to biodiversity itself. India's dominant agricultural model that depends on vast swathes of mono-cash crops, such as Bt cotton in North Gujarat, has led to immense biodiversity loss. Aside from seed loss, an overall agrobiodiversity depletion has ushered a crisis of soil health and agrarian distress.[40] It can be argued that such models have directly led to a violation of fundamental rights of farmers, such as food, health, clean environment and life itself. is the foundation of all food, agriculture and more importantly, human wellbeing in the broadest sense. Loss of biodiversity on farms directly increases the risk to life through the onset of climate change and causing extreme weather events.[41] Biodiversity loss affects nutritional levels, quality and toxicity of food consumed and curtails the development of new medicines, leading to right to health violations.[42] Further, loss of biodiversity reduces the sources of food, integral components of the food chain, and decreases the stability and resilience of food systems, violating the right to food.[43] Similar arguments can be made for a wide range of rights already extant in India.

The right to biodiversity itself therefore should improve the quality of other fundamental rights such as life, health, food etc, and also link with other resource rights that comprise habitats for biodiversity – such as the right to water, land, rights of indigenous peoples to access and manage

[37] Elli Louka, *Biodiversity and Human Rights: The International Rules for the Protection of Biodiversity* (Brill 2002) 9.

[38] Eeva Primmer et al, 'Institutions for Governing Biodiversity Offsetting: An Analysis of Rights and Responsibilities' (2019) 81 Land Use Policy 776.

[39] *Subhash Kumar* v *State of Bihar And Ors*, 1991 AIR 420.

[40] A Suresh et al, 'Agricultural Sustainability and Its Trends in India: A Macro-Level Index-Based Empirical Evaluation' (2022) 14 Sustainability 2540.

[41] Sandra Diaz et al, 'Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services' (IPBES 2019) 4-7.

[42] Ibid.

[43] Ibid.

biodiversity resources.[44] Amidst different interdependencies between biodiversity and health, food, environment etc, it is important to note that farmers are a vulnerable group and are specially affected by biodiversity loss. This recognition and the special positionality vis-à-vis biodiversity management and protection has only been recognized in the case of indigenous peoples, not farmers.

Rights of farmers to manage, access and conserve biodiversity is integral for fostering food sovereignty. The sixth pillar is 'working with nature' which includes nature-based farming that is supported by biodiversity and farming that promotes its protection, restoration, and sustainable use.[45] Food sovereignty advocates have pointed out that existing food systems undermine biodiversity, and for food systems to be sustainable they have to preserve biodiversity.[46] A right to biodiversity should therefore include 'availability' and 'adequacy' of biodiversity on farms at all times, and protections against their eradication and depletion. Two, 'accessibility' of biodiversity, not just for indigenous peoples, but also farmers who wish to access seeds, germplasm, biofertilizers, microorganism cultures, and other forms of biodiversity that help sustain a vibrant and biodiversity-rich food system. These are related to clauses (i) and (k) of section 3, Forest Rights Act – 'right to protect, regenerate or conserve or manage any community forest resource', and 'right of access to biodiversity and community right to intellectual property and traditional knowledge'. Finally, food sovereignty is necessary for preserving biodiversity and maintaining sustainable food systems.[47]

The Convention on Biological Diversity places obligations on member states which can also provide guidance in determining the content of a right to biodiversity in the food sovereignty context. For instance, India's obligations to identify, monitor biodiversity, adoption of national biodiversity plans, creation of protected area, rehabilitation of degraded ecosystems, and promoting sustainable use and conservation of biodiversity can be interpreted in the agricultural context. There are many degraded and soil-scarce landscapes that have reached this stage of degradation owing to unsustainable agricultural practices, yet biodiversity law, policy and institutions have remained disconnected from the domain of agriculture. Nothing prevents India's international biodiversity obligations to be applied in

[44] John Knox, 'Report of the Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment', A/HRC/34/49 (Knox Biodiversity Report 2017.

[45] Elisa Morgera, 'No Need to Reinvent the Wheel for a Human Rights-Based Approach to Tackling Climate Change: The Contribution of International Biodiversity Law', in Erkki Hollo, Kati Kulovesi and Michael Mehling (eds), *Climate Change and the Law* (Cambridge University Press 2013) 350.

[46] Michelle Cristine Medeiros Jacob, Viviany Moura Chaves and Cecília Rocha, 'Biodiversity Towards Sustainable Food Systems: Four Arguments' in MCM Jacob and UP Albuquerque (eds), *Local Food Plants of Brazil* (Springer 2021) 3.

[47] Priscilla Claeys, 'The Creation of New Rights by the Food Sovereignty Movement: The Challenge of Institutionalizing Subversion' (2012) 46/5 Sociology 844, 847.

the field of agriculture, to address agrobiodiversity loss, yet the application of this field of law and the caselaw that has developed therefrom remain strictly outside the agricultural domain.[48] A right to biodiversity for farmers is one important step towards creating such missing links.

(d) RIGHT TO SEEDS

The right to seeds has often been understood within the food sovereignty movement as a component of the right to biodiversity.[49] Right to seeds beyond its traditional biogenetic framing, can also be considered as environmental rights.[50] Seed rights within the context of food sovereignty have a history in contesting different forms of seed enclosures that restrict farmers' access to seeds. These enclosures are a characteristic feature of neoliberal models of agriculture, where seeds are controlled, developed, and distributed by entities far-removed from small-scale farmers. For instance, in the South American context, seed enclosures have been heavily contested by farmers who stood up against corporate enclosures.[51] In India however, it is not just corporations but a host of other actors, such as commercial breeders, medium-large farmers who have diversified from pure farming to other allied activities like breeding or maintaining seed banks, small private businesses that 'copy' the seed innovation models of larger corporations and small-medium farmers who innovate with seeds to better their own produce. The contestation between small farmers versus big corporations is therefore not so straightforward or black-and-white in India.

Seed rights in India, therefore, need to reflect India's unique circumstances, such that farmers in diverse contexts like Patan and West Sikkim can use these rights can take charge of agrobiodiversity conservation, and prevent the disappearance of traditional seeds that threaten their own food security, environmental stability, and sociocultural integrity.[52] Seed rights when read with the 'right to food sovereignty' – the right to determine one's food system places an obligation on the state to "take appropriate measures to ensure that agricultural research and development integrates the needs of peasants and … ensure their active participation in the definition of priorities and the undertaking of

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[48] Gitanjali Nain Gill, Nupur Chowdhary and Nidhi Shrivastava, 'Biodiversity and the Indian Judiciary: Tracing the Trajectory' (2021) 8/2 Brics Law Journal 10.

[49] International Planning Committee for Food Sovereignty, 'Agricultural Biodiversity – Main Issues' (10 March 2022) <https://www.foodsovereignty.org/working_groups/biodiversity/>.

[50] Zainab Lokhandwala, 'Peasants' Rights as New Human Rights: Promises and Concerns for Agrobiodiversity Conservation' (2022) 12/1 Asian J Int'l L 105.

[51] Karine Peschard and Shalini Randeria, 'Keeping Seeds in Our Hands: The Rise of Seed Activism' (2020) 47/4 J Peasant Studies 613.

[52] Supra n 50, Lokhandwala at 12.

research and development [of seeds]".[53] Seed rights are also collective claims, exercisable by farming communities and indigenous groups etc.

Article 19 of the UNDROP lays down extensive right to seeds. It states that peasants and other people working in rural areas have the right to seeds, including the right to the protection of traditional knowledge relevant to plant genetic resources; the right to equitable participation in sharing the benefits arising from them; the right to participate in the making of decisions on matters relating to their conservation and sustainable use; the right to save, use, exchange and sell their farm-saved seed or propagating material; and the right to maintain, control, protect and develop their own seeds and traditional knowledge.[54] The Protection of Plant Varieties and Farmers Rights Act (PPVFRA) recognises and protects farmers rights under section 39 to save seeds and section 41 provides for 'rights of communities' (includes 'people, village or local community) to claim benefit for any significant contribution to the evolution of the variety. It is important to note that on the date of writing, no benefit sharing claim under section 41 has been made using this legislation, despite it being in force over a decade and thousands of plant variety protections have been granted under it. Furthermore, the government has initiated different schemes and programmes that coincide with some of Article 19's content, but these are not framed as rights under law. For instance, the National Bureau of Plant Genetic Resources stores thousands of farmers' varieties and landraces to conserve them for future research and cultivation; the Traditional Knowledge Digital Library in New Delhi contains inter alia, food and agricultural related knowledge originating from many communities across India; and the ongoing work of NIF to identify and assist farmers to register their seeds under the PPVFRA is one way of making the PPVFRA more accessible to farmers, the same way it is for commercial breeders. Organisations such as the MS Swaminanthan Foundation and many others that have worked both with the government and independently have set up many seed-gene-grain banks in several villages.[55] Yet these are islands of success in an ocean of ongoing seed loss.

Article 19 (3) to (8) spell out the duties of the State to respect, protect and fulfil seed rights. Possible scenarios, ranging from rights to rely either on one's own seeds or on other locally available seeds, to rights to access sufficient quality and quantity of seeds at an affordable price, such that either way farmers can 'decide on the crops and species that they wish to grow' are included. Furthermore, states should support peasant seed systems, and promote the use of peasant seeds and agrobiodiversity,

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[53] UNDROP, Article 15.4.

[54] Article 19 (1) (a), (b), (c), (d) and 19 (2).

[55] MSSRF, 'Promoting Community Seed Grain Banks' <https://mssrf.org/content/promoting-community-seed-grain-gene-banks> accessed 30 January 2022.

and ensure that agricultural research and development focuses adequately on 'orphan' crops and traditional seeds that are geographically and culturally appropriate to the region.[56]

The right to seeds within the food sovereignty framework is the right to seed sovereignty – which has been defined as the right of farmers to save, use, exchange and sell their own seeds, with a greater emphasis on ownership of seeds.[57] La Via Campesina's work in the domain of seed sovereignty has created a paradigm shift in thinking around seeds, as it has broadened the scope of seed rights as 'farmers rights' under the ITPGFRA.[58] The PPVFR Act albeit protects these rights and places farmers at the same pedestal as commercial breeders in getting their varieties registered, is a limited framework that is increasingly becoming irrelevant for farmers (as explained above in Chapters I). Seed sovereignty is considered the foundation of food sovereignty, as peasant farmers must gain control and autonomy over seeds if they are to gain control over what to grow.[59] While the ITPGRFA played an important role in furthering rights to save and exchange farmers' own varieties, Via Campesina has described it as 'a contradictory and ambiguous treaty, which in the final analysis comes down on the side of theft'.[60] Rights as per the food sovereignty approach should therefore move beyond mere IPR-like rights that do not efface existing inequities and power imbalances, but arguably enhance them.

Currently there are no legal protections for the following, which should comprise the substantive content of seed rights in India: (1) create seed banks; (2) protect traditional ways of seed saving and exchange seeds; (3) create and maintain documentation on seeds and their farming methods; (4) create an intellectual property audit on farmers' seeds, landraces and germplasm available in the community. For instance, even in Patan, Gujarat, there are farmers have experienced the disappearance of local varieties of vegetables that have now been replaced by Bt cotton or hybrid vegetables. There is no record locally available of this, except oral accounts of some elderly farmers. (5) rights to access information and resources from national and regional reserves such as the NBPGR and its regional centres. Currently this information is accessible to scientists, not farmers. Information centres at the local levels should contain this information, in the local language as to which seeds, if not available at the local seed bank, are available at the regional and national centres. (6) make conservation plans for

[56] Article 19 (5) to (8).

[57] Coordination SUD, 'The Right to Seeds: A Fundamental Right for Small Farmers!' *Grain* (12 June 2017).

[58] Hannah Wittman, 'Reworking the Metabolic Rift: La Via Campesina, Agrarian Citizenship, and Food Sovereignty' (2009) 36/4 J Peasant Studies 805, 817-9.

[59] Amy Trauger, 'Seed Sovereignty as Civil Disobedience in Northern India?' in *Food Sovereignty in the International Context* (Routledge 2015) 106; see also: Michael Fakhri, 'Report of the Special Rapporteur on the Right to Food, Seeds, Right to Life, and Farmers Rights', UN Doc. A/HRC/46/33 (24 December 2020).

[60] La Via Campesina, 'Peasant Seeds: Dignity, Culture and Life: Farmers in Resistance to Defend their Right to Peasant Seeds', Bali Seed Declaration (16 March 2011).

endangered or disappearing varieties, for which the government should provide logistical and financial support. Valuing seeds beyond their productivist value but their contributions to maintaining biodiversity reserves, improving nutrition, and socio-cultural value.[61]

(e) RIGHT TO TRADITIONAL KNOWLEDGE

Traditional knowledge is an integral part of farming, and much of food and agriculture's foundation is based on local, unwritten, non-formal forms of knowledge. Most existing debates on traditional knowledge in the Indian context have been based within the contexts of indigenous peoples whose traditional knowledge has been vulnerable to external threats.[62] Traditional knowledge of indigenous peoples has an obvious overlap with farming and agriculture, yet traditional knowledge of farmers is a much wider subject with implications on food security and sustainability. The shifting control over biogenetic resources, knowledge surrounding these resources coupled with depeasantisation trends within Indian agriculture has led to an irretrievable loss of traditional agricultural knowledge. There is little incentive in preserving traditional knowledge, when new improved varieties that have a higher productive value are constantly being offered to farmers.[63]

Traditional knowledge rights based on food sovereignty principles draws from existing protections recognized vis-à-vis indigenous peoples, existing protections for plant genetic resources and provisions introduced by the UNDROP in the agricultural context. Article 16 (1) of the UNDROP spells out a right to an adequate standard of living, a facilitated access to the means of production necessary to achieve this standard, and a 'right to engage either individually and/or collectively in traditional ways of farming … and to develop community-based commercialization systems.' Further, Article 19 (1) (a) states in the context of right to seeds, 'the right to the protection of traditional knowledge relevant to plant genetic resources for food and agriculture.' Article 19 (2) goes one step further to include more than just 'protection', to include 'the right to maintain, control, protect and develop their own seeds and traditional knowledge.' Such wide-ranging positive rights, along with defensive provisions have been tailored to food and agriculture. For instance, the UNDROP moves beyond 'misappropriation' and 'free, prior, informed consent' being the only major issues with respect to traditional knowledge.[64]

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[61] John Vidal, 'Dr Debal Deb - India's "Rice Warrior"' *The Guardian* (17 March 2014).

[62] Sanjay Kabir Bavikatte, *Stewarding the Earth: Rethinking Property and the Emergence of Biocultural Rights Get access Arrow* (OUP 2014) 209-217.

[63] Lachlan Gregory, Jagjit Plahe and Sandra Cockfield, 'The Marginalisation and Resurgence of Traditional Knowledge Systems in India: Agro-Ecological 'Islands of Success' or a Wave of Change?' (2017) 40/3 J South Asian Studies 582.

[64] Sun Thathong, 'Lost in Fragmentation: The Traditional Knowledge Debate Revisited' (2014) 4/2 Asian Journal of International Law 359.

In the Indian context, rights over traditional knowledge based on peasants rights and food sovereignty are difficult to be churned out of existing laws and their restrictive framing. Further, traditional knowledge and traditional cultural expressions are protected via the Traditional Knowledge Digital Library to prevent biopiracy and other forms of misappropriation at the international level.[65] Further, traditional knowledge protections under the Convention on Biological Diversity and the Nagoya Protocol (India is a member to both) are not per se restricted to indigenous traditional knowledge, but could include traditional knowledge pertaining to agricultural biological resources. Yet, these instruments focus on measures with respect to access and benefit sharing and free prior informed consent. While the Convention's institutional bodies admit that traditional knowledge plays a vital role in food systems,[66] there is little that farmers can do with these provisions and admissions in order to protect their traditional knowledge systems. Therefore, peasants rights present a viable path for such new claims.

Rights must protect against the loss of farmers' ingenuity, local practices, knowledge around farmers varieties and landraces, cultural food practices and other intangibles such as sanctity and sacredness associated with tangibles. For instance, this could include recipes of traditional rice varieties in Sikkim, that are preserved by young monks in West and North Sikkim. These foods are prepared by monks on special occasions and ceremonies that require the specific rice variety, rather than its improved high yielding versions. The issues of loss of indigeneity, assimilation of members into 'mainstream societies', loss of traditional knowledge and the consequent loss of culture etc can be read within the peasant farmers' context as well.[67] Depeasantisation and the rural to urban wave of migration, loss of seeds and knowledge associated therewith, farmers opting to grow high yielding hybrids which also fit into consumer choices of taste, aesthetic and price etc are all issues within the agro-biodiversity and traditional knowledge space that echo the issues within traditional knowledge of indigenous peoples space.

(f) MARKETING AND PRICE REGULATION RIGHTS

Food sovereignty prioritises local and national economies and markets over foreign trade.[68] Marketing and price regulation rights within the food sovereignty approach have 2 dimensions –

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[65] Shraddha Anilkumar, 'Traditional Knowledge Digital Library: An Imitative to Protect India's Traditional Knowledge' (2018) 3/2 Int'l J Applied and Advanced Scientific Res 43.

[66] Convention on Biological Diversity, 'Links between Biodiversity and Food Systems', <https://www.cbd.int/agro/>.

[67] Silke von Lewinski, *Indigenous Heritage and Intellectual Property: Genetic Resources, Traditional Knowledge and Folklore* (Kluwer Law International 2008) 201.

[68] Raj Patel, 'What does Food Sovereignty Look Like?' (2009) 36/3 J Peasant Studies 663, 665.

international and national. Regarding the first dimension, food sovereignty and peasants rights literature has contested the dominance of international commodity prices, fluctuations and speculation within this realm and the massive impact these have on small peasant farmers.[69] La Via Campesina has spoken up against these trends stating that control over food and agricultural inputs when lies far away from farmers, it results in a system wherein farmers are not in control of what they can and should produce. Commodity markets demands have risen for high value cash crops that have rapidly changed rural landscapes, as is seen in the case of Bt cotton in Patan or large cardamom in Sikkim. The replacement of local food crops and farmers' varieties is one consequence of changes in international markets.

Price fluctuations are a result of changes in demand and changes in prices of related commodities. Food sovereignty advocates have seen international trade as undermining local farm livelihoods and markets, however there is a lack of clarity within the movement as to how far can local farmers remain detached from market trends.[70] Yet, with regards to the issue of price volatility, there have been efforts within the UN and its bodies to protect farmers against these trends, over and above consumer support.[71] Since India joined the WTO and opened its economy in the early 1990s, price fluctuations and volatility has affected Indian farmers. Yet the government's keen hold over food prices and key agricultural inputs remains a major stabilising factor for farmers. India's minimum support price (MSP) system, within the larger public procurement system is centrally controlled Food Corporation of India (FCI) (see Chapter 3). This system has been a vehicle for achieving the productivist goals of the Green Revolution.[72] Government procurement in regulated *mandis* under the Agricultural Produce Markets Committee - APMC system incentivised farmers to shift from traditional subsistence farming into cultivating Green Revolution cereals.[73] Post-1992 a further diversification into cash crops followed. The logic and purpose of MSP has evolved over the years, which at its launch was meant to incentivise farmers to produce staple cereals and later became a tool for ensuring a minimum farmer income and a price discovery mechanism. There have been recommendations and attempts at dismantling the public procurement system as it stands today owing to inefficiencies in the system.[74]

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[69] Eugenia Correa, Wesley Marshall and Alfredo Delgado, 'Financial Speculation, Global Crisis and Food Sovereignty' (2017) 2/1 Revista de coyuntura y perspectiva 93.

[70] Kim Burnett and Sophia Murphy, 'What Place for International Trade in Food Sovereignty?' (2014) 41/6 J Peasant Studies 1065.

[71] FAO maintains a Food Price Index <https://www.fao.org/worldfoodsituation/foodpricesindex/en/> that is a price discovery mechanism for many national food markets. Matthius Kalkuhl, Joachim von Braun, Maximo Torero, 'Volatile and Extreme Food Prices, Food Security, and Policy: An Overview' in Kalkuhl, von Braun, & Torero (eds), *Food Price Volatility and Its Implications for Food Security and Policy* (Springer 2016) 3.

[72] Pritam Singh, *Federalism, Nationalism and Development: India and the Punjab Economy* (Routledge 2019).

[73] Pritam Singh and Shruti Bhogal, 'Interrogating the MSP Regime, Farm Laws and Agrarian Future in India' (2022) 12/3 Millennial Asia 332.

Yet the discussion around procurement prices and agricultural marketing has not led to a call for 'rights' over price regulation. The interests and agency of farmers has been extensively discussed in this context following the massive 2020 farmers protests.[75] These protests mark a significant moment in Indian farmers' mobilisations that stood against the corporatisation of agriculture, and they also helped spread awareness on farmers' issues to a wider audience.

The food sovereignty approach speaks of rights over price regulation that go much further than has been advocated in the Indian context. On both international and national fronts, such rights should involve a mechanism of protecting farmers against foreign price fluctuations – a feature that arguably does exist in India given that the government has stepped in on some past occasions to absorb price shocks.[76] This has not however been the case; as is similarly the approach at the national level, wherein price support and protection is offered, yet this is available only in cases where procurement markets work effectively, and in the case of only a few crops.[77] Fieldwork in Patan and Sikkim also reveals that the choice of crops made by farmers is mainly dependent on marketing laws and regulations, and the assurance of a price either via the state *mandi* system or through private contracts. Food sovereignty advocates for smaller localised food systems that bring farmers and consumers closer to one another, such that farmers can exercise greater control over their produce and the prices at which they are offered. Further, a food-farmer-ecology based food system would entail a more holistic price determination approach that takes into account the ecological costs and costs of preserving landraces and local farmers' varieties. Such price regulation rights are rights that translate control over produce and means of production into legal rights.

The UNDROP provides some clarity on how these rights can be achieved, and what is their substantive content. Price control can be exercised through independent organisations and associations, the setting up local markets and strengthening their working, respecting farmers' rights over agricultural resources and right to livelihood - including 'production tools, technical assistance, credit, insurance and other financial services', and most importantly in the context of right to seeds.[78]

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[74] Govt of India, 'Shanta Kumar Committee Report' (14 August 2014) <https://pib.gov.in/newsite/PrintRelease.aspx?relid=114860>.

[75] Kennth Bo Nielsen and Alf Gunvald Nilsen, 'India's Evolving Neoliberal Regime of Dispossession: From the Anti-SEZ Movement to the Farm Law Protests' (2022) 71/4 Sociological Bulletin 582.

[76] Kavery Ganguly and Ashok Gulati, 'The Political Economy of Food Price Policy in India', in Per Pinstrup-Andersen (ed), *Food Price Policy in an Era of Market Instability: A Political Economy Analysis* (OUP 20140 339, 342-4.

[77] Supra n 73, Singh and Bhogal (2022).

[78] Articles 9 (3), 16 (3), 16 (1) and 19 (4) respectively.

4. CONCLUSION

Biogenetic resources are the building blocks of all life and are especially crucial for food and agriculture. Their ongoing loss has dire consequences for securing adequate nutritious food, maintaining an ecological balance, and safeguarding socio-cultural norms surrounding food and agriculture.[79] Yet this loss is grounded the dominant agricultural model that is characterised by the use of hybrid high-yielding variety seeds, technological and resource intensiveness and striving towards higher production that leads to greater profits in economies of scale.[80] There is a need to revaluate these dominant models and the assumption upon which they are based. The previous chapter explained how 'law' as values required new languages of valuations upon which new 'laws' can be framed. Agriculture should reflect the food-farmer-ecology valuation – as has been explained in the previous chapters. In India, where a majority of farmers use traditional farm-saved seeds to grow food, there legal framework surrounding these resources is lacking in fully appreciating their value from the perspectives of food, farmers and the environment.

Previous studies and field experiences show that seed saving practices are fast diminishing.[81] The seed legal framework within India's agricultural complex does not encourage the use and conservation of traditional seeds nor does it promote more food-farmer-ecology based systems. In fact, much of biogenetic resource law lies within the realm of intellectual property rights that remain disjointed from concerns of farmers, protection of food cultures and environmental sustainability. In the recent past, several peasant farmer organisations and coalitions have mobilised to combat the loss of seeds.

This thesis has problematised biogenetic resource rights of Indian farmers and tried answer the question – what is wrong with farmers' biogenetic rights? The issues of agrarian distress and depeasantisation are flagged as overarching and acute. These issues are so profound that the issue of biogenetic protection has slid into the background within the farmer psyche. Conserving one's seeds is not the main concern for a farmer who is struggling to make ends meet, owing to diminishing profits, ecological pressures and lack of alternate rural employment. The 'irrelevance' of the issue of conserving

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[79] FAO, *The State of the World's Biodiversity for Food and Agriculture* (FAO Commission on Genetic Resources for Food and Agriculture Assessments, Rome, 2019) 1.

[80] Lori A Thrupp, 'Linking Agricultural Biodiversity and Food Security: The Valuable Role of Agrobiodiversity for Sustainable Agriculture' (2002) 76/2 International Affairs 283.

[81] Mathieu Thomas et al, 'Seed Exchanges: A Key to Analyze Crop Diversity Dynamics in Farmer-Led On-Farm Conservation' (2011) 58 Genetic Resources & Crop Evolution 321.

one's seeds among farmers has inspired this thesis to propose a wider, more radical change in the way food systems and agriculture as a whole is viewed.

For this, food sovereignty as a counter movement provides some answers in reconceptualising food and agriculture such that seeds and other genetic resources are sustainably used, conserved and other goals (food-farmer-ecology based) are also achieved. In this context, this thesis has proposed to introduce some food sovereignty rights in India that can aid in the process of biogenetic resource conservation. The preceding chapters and this speak of re-interpreting existing rights as well as introducing new ones such that one, farmers are valued better, and stand at the centre of shaping and evolving food systems; two, agriculture is meant for food production rather than commodity production, with the rise of smaller localised food systems that ground in local community values; and three, systems that work with nature and based on agroecological values.

CHAPTER IX

CONCLUSION

1. SUMMARY OF FINDINGS

This thesis has made an attempt towards introducing food sovereignty-inspired biogenetic rights in India. It has proposed a basic framework that uses existing rights in India and a conceptualisation of new rights that empower farmers to protect their biogenetic wealth. This thesis has used field experiences from diverse sites in India in devising a flexible approach towards food sovereignty. In essence, India's agricultural law and policy needs to progress towards a non-productivist outlook that values farmers, is geared towards producing food and not agricultural commodities and respects ecology. The following are a summary of findings, that have been elaborated in detail in the preceding chapters.

(a) DIMINISHING STATE OF AGROBIODIVERSITY IN INDIA

Biogenetic resources are the foundation of agriculture, and conserving a rich array of these resources through their in-situ cultivation is essential for agroecological sustainability. Preserving the genetic diversity of agricultural plants is essential for securing adequate nutritious food, safeguarding socio-cultural norms around food, and maintaining an ecological balance. Globally, as is the case in India, this diversity has been in sharp decline since the beginning of the 20th century. The loss of plants, seeds and their genetic diversity is a direct result of today's dominant agricultural model. This model is inspired from the 1960 Green Revolution in India and is characterised by the use of high-yielding variety seeds; technological and resource intensive farming using chemical pesticides, weedicides and fertilizers; measuring the value of agriculture in productive and commodity terms; and ergo striving towards economies of scale to maximise profits within this model. Large-scale monocropping have steadily replaced smaller diversified farms, which are considered 'inefficient' in market terms. In India, the advent of this dominant model has yielded many seed saving practices extinct. The true extent of seed loss and diminishing genetic diversity can only be guessed. India's law and policy landscape has failed to adequately address this issue. For instance, seed liberalisation policies, seed laws that do not adequately regulate private players, and intellectual property laws that protect only 'new' seeds and not others, are not conducive to seed-saving practices.

(b) THE CURRENT AGRO-BIOGENETIC LEGAL FRAMEWORK DOES NOT ENCOURAGE CONSERVATION

The issue of loss of biogenetic resources has not been adequately addressed by India's legal framework. The current framework surrounding biogenetic resources is overwhelmingly occupied by intellectual property law. Farmers' rights to save, sow, exchange and sell seeds under the Protection of Plant Varieties and Farmers Rights Act 2001 were introduced to combat the ill effects of intellectual property in genetic resources. Other laws also cover the subject but have little to do with seed conservation in the farming context. This makes for a fragmented framework comprising IPR law, farmers rights, seed laws, biodiversity laws and marketing and trade laws etc. Furthermore, agricultural law and policy has been built upon the foundational building blocks of the Green Revolution, which was geared towards productivism rather than conservation.

One of the most profound legacies of the Green Revolution is the agricultural bureaucracy and research infrastructure that aims at replicating the successes of the Green Revolution by driving up production. Within this context, farmers are no longer the chief knowledge-bearers of biogenetic knowledge due to increasing centralisation of knowledge. Second, small, marginal, tribal and women farmers who are often the chief conservationists of biogenetic resources do not neatly fit within the metrics of success in the productivist paradigm. India's law and policy framework does not reward crop diversity, environmentally sustainable farming, conservation of crop varieties and knowledge keeping.

(c) AGRARIAN CRISIS AND DEPEASANTISATION OF INDIAN AGRICULTURE – TRIGGERS FOR RE-EVALUATION

This thesis flags 2 major themes that have not been linked with biogenetic resource conservation. The first - an acute agrarian crisis, which is reflective of the state of agriculture globally. Agrarian crisis means severe non-profitability, due to a diminishing productive capacity of the land, rising input costs and changes in agricultural marketing. Most small and marginal farmers in India are reeling under this silent and slow, yet acute crisis. India has reported a staggering number of farmer suicides in the past decades owing to this crisis. This thesis therefore argues that biogenetic conservation is not and cannot expected to be a top priority for farmers that are coping through an acute crisis. Securing high yields through intensive farming therefore is a prevalent reality of most farms in India, given how stretched for earnings they are. Therefore, a re-evaluation of the basic presumptions behind agricultural productivism, and a new 'language of valuation' is needed that measures different metrics.

The second theme is that of depeasantisation, which has been widely reported in fields of peasant studies and social anthropology. India is experiencing a wave of depeasantisation, which is also reflective of the global scenario. This coincides with the rural to urban exodus that has drastically

impacted farming practices including seed saving. Therefore, biogenetic conservation must adapt to this new reality, wherein young people from farming families are increasingly moving away from agriculture. This thesis argues that given these 2 pressing themes, conservation measures within the current productivist agrarian framework will not yield much success. It is therefore necessary to consider radical approaches that value different criteria than mere production. The thesis tests the following hypothesis – food sovereignty has the potential in inspiring and imagining stronger biogenetic rights. Agrarian crisis and depeasantisation are major issues that run far and deep, and therefore a legal framework that is detached from the core struggles of farmers can never truly help in strengthening their position vis-à-vis genetic resources.

(d) India's Need for Food Sovereignty-Inspired Biogenetic Rights

This thesis introduces the food sovereignty approach and applies it within the Indian context to churn out stronger biogenetic rights for Indian farmers. Food sovereignty offers a refreshing and radical take on the agrarian crisis, depeasantisation, and the position of small and marginal farmers. It lays a claim to natural resources, including genetic resources such as seeds, traditional knowledge, and germplasm etc that should be valued, protected, and used in a peasant-way. In doing so, it moves away from the Green Revolution productivist orientation and moves towards new languages of valuation.

This thesis uses food sovereignty and related peasants rights literature as a guiding inspiration for moving towards more progressive biogenetic resource rights in India. Food sovereignty has pushed for a more holistic conceptualisation of food and agriculture that puts farmers at the centre of food systems and opposes the commodification of food. Peasants rights are special subset of rights within the larger spectrum of food sovereignty; and are most importantly concrete manifestations of food sovereignty's aspirations, and thus have many commonalities. Biogenetic rights inspired by food sovereignty can be read in Article 19 of the Peasants Rights Declaration that calls for the right to maintain, control, protect and develop their own seeds and traditional knowledge. Food sovereignty calls peoples' right to define and control their food systems, which includes sovereignty over genetic resources.

(e) Moving Towards New Languages of Valuation in Agriculture – Valuing the Food-Farmer-Ecology Nexus

This thesis describes the current agro-biogenetic legal framework and argues that it is not geared towards conserving these resources. In this vein, it delves into India's agricultural institutions, law and policymaking machinery that has been largely influenced by the productivist logic of Green Revolution. This has led to a loss of farmers' control over their seeds and their estrangement within their own food systems. Many farmers mobilisations have raised their voice against farmer distress, loss

of seeds and traditional knowledge, and this advocacy has been used as evidence of a basis for stronger rights. Building upon the claims that these mobilisations have raised, the idea of valuing alternate things within our food systems is introduced. Alternate valuations – that is food, farmers and the ecology are proposed in order to chart new pathways towards stronger biogenetic rights in India. This is done to move beyond productivist valuations that characterise the current agricultural law and policy framework.

Law is a system of values. Therefore, this thesis proposes a revised set of values that move beyond commodity-based productivism. Here it introduces the triple nexus of food-farmer-ecology. This means that food should be valued as a primary output of agriculture; farmers should be valued in a way that law and policy should be led by farmer interests; and finally valuing ecologically sound farming practices or in other words, agriculture that works with nature and not against it. A re-orientation of agri-food structures based on these new valuations, as well as developing knowledge and skills based on these valuations is needed. A physical manifestation of this could include small scall 'sovereign' or self-sufficient food systems where farmers closely control their systems and means of farming. This thesis offers a view of 'sovereignty' that aligns and complements the idea of state sovereignty rather than contesting it. Therefore, the triple valuation of food-farmer-ecology can work within a commercial market setting that rewards these values along with yield. It would depend on the place-based interpretation of these triple values within their respective food systems, described in greater detail below.

(f) Place-Based Interpretations of Food Sovereignty – Lessons from Field Experiences

Fieldwork carried out in 2 diverse districts - Patan and West Sikkim provide a window into a wider Indian experience, wherein food systems can be oriented in towards valuing food-farmers-ecology in a range of settings. Agriculture in North Gujarat is heavily entrenched by the Green Revolution, comprising a privatised and corporatized network of agrobusinesses, seed companies, fertilizers and pesticides companies and a majority of farmers engaged in agriculture for-profit rather than subsistence. Sikkim is nestled within the Eastern Himalayan mountains, and owing to the mountainous landscape, landholding sizes are small to marginal, and farming is carried out mainly for subsistence and consumption within the community or village area.

The triple valuation is both a starting point and an ending point for "people's right to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems". Values are not rigid categories but form the bare essence of food sovereignty. Values can be realised through places-based interpretations that comprise their own histories, politics, and ecologies, which also include a history of movements and

struggles of its people. The application of the triple valuation in the Indian context allows for a reconciled approach in the Indian setting. Despite its radical origins, food sovereignty does not have to manifest in a community-versus-state struggle. In more autonomous areas, local 'sovereignty' is less difficult to voice, conceptualise and implement. Field-based interpretations yield a discourse beyond radicalism, into a softer space of 'valuations'.

Food sovereignty as a set of core principles can evolve in contrasting settings. In countries where food sovereignty has been institutionalised and been accorded a constitutional status, such as Ecuador, Venezuela and Bolivia, its grassroots manifestations differ widely. Alternative visions for improving food security of local farmers through the direct control of seeds, cultivation of local traditional crops and control over agricultural inputs aimed at improving food-related outcomes for farmers have been seen in different sites. These expressions of food sovereignty within both case studies, as is the case globally are vignettes for India. The fieldwork helped in identifying the elements of a food sovereignty framework in India, examine how existing seed laws and overall agricultural policy modifies or alters food sovereignty of farmers, and develop a food sovereignty framework that is applicable to multiple contexts and fields.

(g) FOOD SOVEREIGNTY RIGHTS IN INDIA

The main thrust of this thesis is introducing food sovereignty rights in India, which include biogenetic rights as well as a host of other rights. Upon investigation of the issue of diminishing agrobiodiversity, especially plant diversity, the legal framework protecting biogenetic diversity and resource rights has been found wanting. The discourse surrounding biogenetic rights has usually been framed from an intellectual property rights versus farmers' rights perspective. While this framing of the issue has yielded several positive outcomes, the discourse needs to shift beyond it. This is owing to today's current agrarian realities such as acute farmer distress and depeasantisation. Conserving a wide array of plant species and working with nature are not farmer priorities in most instances, as they are pressed into producing high yields for survival. It is therefore not enough to restrict the discourse on biogenetic resources to intellectual property or property rights over traditional knowledge. Solutions to this issue requires a fresh outlook that includes the agrarian context within in rather than being isolated therefrom.

Food sovereignty provides this fresh outlook for addressing several problems plaguing Indian agriculture, biogenetic resource conservation being one of them. This approach focuses on food producing farmers and values their contribution. The peasants rights movement has evolved on a similar vein and traces much of its ancestry from the food sovereignty movement. This thesis uses the six-pillar framework of food sovereignty to churn out the farmer-food-ecology nexus – to argue that agricultural policymaking should be geared towards serving farmers, producing food, and working with nature –

the core essence of food sovereignty. Using this food sovereignty-based valuation and the Peasants Rights Declaration as manifestations of many food sovereignty-based rights, this thesis proposes food sovereignty rights for India.

Food sovereignty rights comprise existing rights within the Indian rights framework, such as the right to livelihood, the right to health, the right to food, special rights for autonomous regions etc that could be read in the light of farmers. This would be possible through creative interpretation, as has been done in the past with many rights that are read for special categories or special qualifications are read into them. The second category of rights are 'new rights' that have no equivalent in India. They are new as found in food sovereignty literature and the Peasants Rights Declaration such as the right to food sovereignty, right to seeds and the right to biodiversity.

2. SCOPE FOR FUTURE RESEARCH

This thesis has proposed that farmers constitute a special category of right-holders, and India's rights framework has the potential to incorporate food sovereignty principles through creative interpretation and legislation of new rights. Future research and practical litigation can usher in new rights that promote food sovereignty. Environmental rights including the substantive right to environment and procedural rights can be invoked in the domain of agriculture and farmer empowerment. Environmental law has not adequately engaged with agriculture and the environmental harm that agriculture causes. There is potential for evolving environmental law and standards that ensure agroecological farming practices and long-term ecological balance on the farm.

Aside from the role of human rights law and environmental law, there is scope for labour law and regulations, food processing regulations and rural empowerment policies to contribute towards food sovereignty at the local level. These should promote and strengthen local markets and market actors to become self-sufficient food sovereign food systems. The most important change that must manifest is the change in the research agendas of agricultural research institutions and bureaucracy. These arenas are predominantly occupied by scientists and economists trained in highly specialised and technocratic knowledge. The scientific 'miracle' of the Green Revolution has set a tone for further species development that upscale production. Farmers' food sovereignty remains a radical idea that is hard to utter in the corridors of India's agricultural researchers. Therefore, institutional competence in introducing and realising food sovereignty must be improved.

Chapters 5 and 6 shed some light on field-based research on seed systems and the potential of food sovereignty. There is tremendous scope of exploring seed conservation practices, food sovereignty experiments and long existing autonomous food systems in India. There is a rich history of peasant struggles and farmer movements in India, and those that happen every day in the modern world. Further,

urban-based food sovereignty is emerging as a post-pandemic reality where many urbanites who have no agricultural background wish to have more control over their food, either through direct farming or through indirect connections to farming. There are many interesting arenas of research in the sphere of food sovereignty that can render many positive changes to India's food, agriculture environment.

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