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What drives the creation of nested markets? A qualitative case study of food markets in West Bengal, India

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Abstract

The ethics of ecological production, egalitarianism, and democratic control underpinning recent research directions in agri-environmental governance are common to many of the issues explored in the alternative economies literature. One way in which these ethics are put into practice in agri-environmental governance is through the concept of 'nested markets'. Using qualitative methods of interviews and a focus group discussion, we examine newly constructed markets for food at different spatial scales in West Bengal, India. We find that multifunctional farmers and other actors along the supply chain started to construct and/or strengthen their own outlets and channels to reach consumers and to sell their products. Some of these markets build on long, historically deeply-rooted experiences, such as local periodic markets; others are relatively new constructions, making use of internet marketing platforms or messaging services and direct home delivery. Although they are market segments that are nested in the wider commodity markets for food, they have a different nature, different dynamics, a different redistribution of value added, and different relations between producers and consumers. Surprisingly, environmental issues were considered to be less important motivations than the creation of solidarity between producers and consumers. A deeper examination of these markets suggests new possible answers to the question of how to improve the sustainability of agricultural systems within an alternative economies framework.

Zusammenfassung

Fragen zur Ethik ökologischer Produktion, des Egalitarismus und der demokratischen Kontrolle, die den jüngsten Forschungsarbeiten zur Umweltgovernance im Agrarsektor zugrunde liegen, finden sich häufig auch in der Literatur zu alternativen Ökonomien wieder. Das Konzept der *nested markets* stellt einen möglichen Ansatz dar, diese Ethik in der Agrar- und Umweltgovernance in die Praxis umzusetzen. Auf Basis qualitativer Daten aus Interviews und einer Fokusgruppendifkussion untersucht dieser Beitrag neu konstruierte Märkte für Lebensmittel auf verschiedenen räumlichen Maßstabsebenen in Westbengalen, Indien. Die fünf Fallstudien zeigen, dass multifunktionale Landwirte und andere Akteure entlang der Wertschöpfungskette begonnen haben, ihre eigenen Absatzmärkte und -kanäle zu initiieren und/oder zu stärken, um die Verbraucher zu erreichen und ihre Produkte zu vermarkten. Einige dieser Märkte bauen auf langen, historisch tief verwurzelten Erfahrungswerten auf, wie z. B. lokale periodische Märkte (*haats*); andere sind relativ neue Konstruktionen, die Internet-Marketing-Plattformen oder Chat- und Direktvermarktung über Lieferdienste an Konsumentenhaushalte nutzen.

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Obwohl es sich um Marktsegmente handelt, die in die weiteren Märkte für Lebensmittel eingebettet sind, unterscheiden sie sich davon in ihrem Wesen, ihrer Dynamik, der Umverteilung der Wertschöpfung und in den Beziehungen zwischen Produzenten und Konsumenten. Überraschenderweise wurden ökologische bzw. umweltbezogene Gesichtspunkte von den beteiligten Akteuren der Märkte als weniger wichtige Motivationen angesehen als die Schaffung von Solidarität zwischen Produzenten und Konsumenten. Eine tiefergehende Untersuchung dieser Märkte kann zur Beantwortung der Frage beitragen, wie landwirtschaftliche Systeme im Kontext alternativer Ökonomien nachhaltiger gestaltet werden können.

Keywords nested markets, common-pool resources, sustainable agriculture, India, West Bengal

1. Introduction

The ethics of ecological production, egalitarianism, and democratic control underpinning recent research directions in agri-environmental governance (AEG) are common to many of the issues explored in the alternative economies literature. One emerging strand of AEG is the burgeoning literature on alternative food networks (AFN).

In recent years, economic geographers have argued for and proposed more differentiated understandings of what the 'alternative' may comprise in this context. For example, *Rosol* (2020) proposes using three different dimensions or pillars that help define alterity. These three pillars – alternative food, alternative networks, and alternative economies – enable a “more precise empirical analysis of existing food systems” (*Rosol* 2020: 58). In doing so, *Rosol* acknowledges the inherent tension between the idea of alterity (which she adopts in her paper) and diversity, which Diverse Economies scholars have used to demonstrate the already-heterogeneous nature of the economic landscape (*Roelvink et al.* 2015). Diversity is preferred over the term alterity by some authors, who see it as problematic because of the presumption of the mainstream (*Cameron and Wright* 2014) which undermines efforts to deconstruct capitalocentric analyses. Despite this critique of alterity, *Rosol* (2020) seeks inspiration from the diverse economies approach, attempting to overcome the problem of alterity terminology and its implications by expanding on the character of alternative economic models and practices as a way to lend more context to the term alternative, and thus providing more meaning to the term.

An ongoing debate related to this context is that of agricultural sustainability, or differently put, the question whether alternative agricultural practices are also per se more sustainable, and how (normatively) value may be assigned to different types of alterna-

tive practices (*Abe Chatterjee and Bernzen* 2019). Researchers conducting the first comparative analysis of paradigms of sustainability in agriculture identified the emergence of three competing paradigms: sustainable intensification, ecological intensification and agro-ecological intensification (*Wezel et al.* 2015). At the same time, actual practices do not readily conform to the paradigms, making it important to understand what these alternative practices seek to accomplish. Examining practices also suggests that while alternative forms of agriculture are defined in opposition to forms of existing agriculture, they may not necessarily be more environmentally sustainable simply by virtue of being alternative.

Despite the conceptual advances in AFN literature, there remain a number of critiques regarding the applicability of these understandings of alterity. Specifically, authors have identified a clear difficulty of defining the mainstream as well as the alternatives to it in the context of the Global South. Perhaps it is for this reason that research on AFNs to date demonstrates a regional bias to countries of the Global North, while studies on AFN from the Global South are lacking (*Erler and Dittrich* 2020; *Michel-Villarreal et al.* 2019), forcing researchers to rely on criteria for alterity like organic certification. *Brown* (2017) identifies the pitfalls of this approach: certification is understood by some as being a tool for export-driven corporate agriculture and thus to be avoided; and the way in which the diverse understandings at field level risk being ignored and glossed over when rigid criteria for selection are applied. The lack of institutional capacity for enforcing alternatives can also lead to the appearance of no alternatives or no diversity of practices existing, whereas this institutional void may actually be encouraging experimentation with new approaches.

A second research gap regarding AFN literature relates to a lack of in-depth analysis of marketplaces, and markets in general (*Hebinck et al.* 2014b; *Callon*

2021). *Hebinck et al. (2014b)* argue that this lack leads AFN literature to overlook the dynamic changes that take place in the act of market co-creation, focusing instead on the setting and verification of criteria for determining whether a food network is alternative or not. *Callon (2021)* argues that these attempts to set and verify criterion are an example of the problematic “interface model of the market” (*ibid.*: 45), where supply and demand are distinct blocs that are theorised to interface through the market layer. Instead, he proposes the use of a market agencement model, with markets being co-constituted by diverse agents engaging in their own *qualcalculations*, a calculation based on a mixture of qualitative and quantitative dimensions (*ibid.*: 160).

This paper seeks to address these two gaps by means of an empirical case study in India, which is presented through the lens of the concept of *nested markets* (NM). Our contribution to the debate is based on more on the idea of diversity than of alterity. We agree with the wider project of *reading for difference* through weak theory that *Gibson-Graham (2014)* espouse, yet sympathise with *Rosol's (2020)* assertion that more theoretical and conceptual clarity is required. We argue that the NM approach allows us to explore the possibilities of an agencement model of markets as proposed by *Callon (2021)*, providing the necessary conceptual clarity while being open to the unexpected, thereby helping us to better capture different levels of distinction (diversity) in specific agricultural contexts as found (particularly) in the Global South, and allowing for new answers to the question of how to improve the sustainability of agricultural systems.

The overarching aim of this paper is to understand how and why NM for agri-food products are created. We do this by presenting findings from qualitative original data collected in five case studies in West Bengal, India. In particular, we draw out the distinctions that enabled farmers and other stakeholders to make food systems that are more environmentally sustainable while addressing economic and social issues. India, as we will explicate in detail further below, is a good example for this endeavour as domestic demand for ‘alternative’ or more ‘sustainable’ (‘organic’, home-grown, pesticide-free, healthy...) foods has been growing steadily, while at the same time there is no clearly defined or coherent understanding of what ‘sustainable’ or ‘alternative’ implies in the Indian context.

The paper is structured as follows. Following this introduction, we provide a description of the concept of NM in more depth, and an introduction of the geographic and institutional context of AFNs in India and West Bengal. This conceptual and contextual part is followed by an empirical part which provides a short explanation of the case studies, followed by a section on the applied methodology. Findings from the five case studies are explored in more depth in the results section. Finally, the discussions and conclusions section depicts the wider conceptual and empirical explanations.

1.1 Nested markets

The NM concept as such is young, originating from literature on New Institutional Economics (*Polman et al. 2010*) and rural development policy (*Hebinck et al. 2014a*), with a focus in the agricultural domain. It shows clear similarities to the concepts of *embeddedness* (*Granovetter 1985*) and convention theory (*Boltanski and Thévenot 2006*), and also has affinities to understandings of *markets as institutions* common to socio-economic perspectives in economic geography, i.e. not merely a market-based exchange between rational actors. In other words, it is an example of an agencement model (*Callon 2016*), albeit with insights afforded from a study of practices rather than of theorising. It has been applied particularly in two research areas in the rural development literature: first, the importance of exchanges of resources and services regarding their ownership and/or availability, and second, “the emergence of new forms of spatialised intermediations versus the simple idea of globalised and digital dis-intermediation” (*Osti and Carrosio 2020*: 305; also *van der Ploeg et al. 2012*). In this sense, NM also have commonalities with AFN and related concepts such as short supply chains or niche markets. For example, in their study on wild blueberry foraging in Latvia and its shift from subsistence orientation to global market integration, *Grivins and Tisenkops (2018)* use the NM concept to “explain the relationship between locally-owned, often culturally embedded economic activities and global markets” (*ibid.*: 335). They analyse stakeholder relationships, showing how unique transactions and infrastructures between local blueberry pickers, collecting points and dealers emerged as a result of lacking political oversight. They further highlight the ways in which these relationships enable local Latvian communities to strengthen their bargaining position and

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maintain balanced power relationships in the global value chain. The value of NM in this study is that it helps explain how berry pickers can secure high incomes, agrarian lifestyles and rural livelihoods.

What distinguishes the NM from the mentioned related approaches is that NM are an inclusive response to mainstream globalised markets rather than standing in stark opposition to them or comprising well-regulated niches within neoliberal market arrangements in general (Schneider et al. 2016). According to Polman et al. (2010), NM feature both multifunctional firms as well as a specific hybrid nature of stakeholder relationships which align neither with pure market nor hierarchy forms of market exchange.

Literature on NM details specific characteristics which allow us to demarcate them from mainstream or conventional markets (for a more detailed overview including critiques of NM, see e.g. Osti and Carrosio 2020). The first characteristic of NM is that of unique (*socio-material*) infrastructures, while keeping in mind that NM are neither necessarily small nor limited to the local. Unique infrastructures can also include new types of mediators. Second, the making of NM is also about constructing new forms of governance, built on the valorisation of *common-pool resources* (CPR)¹. NM scholars here rely on a key concept proposed by Elinor Ostrom, to understand the mechanisms of NM creation and evolution. Commons, such as water, air or trust, are “accessible to all and require[...] the contribution of all for its maintenance. [...] However, the common pool resources are not in themselves the objects that are exchanged in the nested markets, but concomitant factors – pre-conditions or side effects – that increase their value and allow the exchange to be more equitable and sustainable” (Osti and Carrosio 2020: 307). Finally, a key feature of NM is that they have a *uniqueness, specificity or distinctiveness* that allows them to bridge structural holes or institutional voids. These voids “are breeding grounds for innovations [...] allow[ing] novel elements to be designed, tested and improved, precisely because there are *no* rules... All this newness represents a *deviation* from the standard” (Schneider et al. 2014: 262; emphasis in original). NMs are a non-anonymous segment of a larger market in which the assessment of value emerges from economic as well as moral, social, cultural and/or political motives. In other words, NM are markets driven by ethical and social values, related to the quality of products, human relationships, the development of the territory and environmental protection. Each NM

places its focus on a specific type of distinctiveness (Van der Ploeg et al. 2012). The NM concept hence builds on the notion that all markets are institutionally embedded and governed, and are not generic markets existing in a void (Hebinck et al. 2014a). Examples of distinctiveness may include institutionalised forms such as trademarks, geographic indication schemes, but also different relations between producers and consumers (Schneider et al. 2016), or alternative ways of price creation or distribution of the value added, which can improve farmer incomes. The NM concept thus augments Rosol’s (2020) approach of disaggregating proposed alternatives (i.e., the response), by disaggregating the diversity of issues to which an alternative approach is provided (i.e., the stimuli). An additional aspect of NMs is that they are “neither private property, nor a common good” (Van der Ploeg 2014: 41). In other words, they are co-owned by the various stakeholders, and thus become a common-pool resource themselves.

However, beyond the role of augmenting the conceptual toolkit of understanding alterity and of market diversity, NM have a very practical purpose – to bridge gaps in existing arrangements – and are perhaps better understood through concrete examples. Elaborating further on the idea of institutional voids, the main goal of NM is to bridge the gaps caused by a squeeze on agriculture within existing marketing and social arrangements. It is important to note that these NM do not just sell alternative products on the same market. Instead, they seek to “confer more autonomy [to] and room for farmers to manoeuvre” (Schneider et al. 2016: 14) by creating a new demand for distinctive products. In brief, NM and the idea of common-pool resources allows us to operationalise the diverse economies concept of *reading for economic differences* in the context of agri-food markets in India.

Based on these considerations, for each of our five case studies of NM below, we seek to illustrate (i) how distinctiveness is created, value is assigned and profit is made, (ii) which consumers are targeted and what kind of relationships exist between consumers and producers, (iii) the common pool resources tapped. Last but not least, we identify the specific voids or gaps which each NM seeks to bridge. The following section will provide an overview of the broader context to better understand the case study specificities.

1.2 The institutional void for alternative agriculture in India

To better interpret distinct features of NM in India, it is helpful to gain a general understanding of what characterises the ‘mainstream’. *Pritchard et al. (2014)* argue that it is the Green Revolution which should be understood as “the anvil on which the contemporary food economy of India has been shaped” (*ibid.*: 58)². Pushed by the Government to increase food self-sufficiency, i.e. reduce dependency on trade (food imports) and aid, it was rooted in a productivist paradigm. It also led to a substantial reorganisation of India’s food system across space (*Pritchard et al. 2014*). In their comprehensive overview of agricultural transformation in India using census data, *Sharma and Wardhan (2017: 2)* note that “Indian agriculture has become more commercial and market-oriented” since the 1950s. One indicator of this development – apart from higher use of external inputs and services, promotion and application of new and innovative technologies and crop varieties (e.g. high-yielding, HYV) or higher export orientation – is the share of agricultural production volume which is sold on the market. For example, while 30% of both rice and wheat harvests were sold commercially in the early 1950s, this share increased, respectively, to 84% and 74% in 2014 to 2015 (*GoI 2016* cited in *Sharma and Wardhan 2017: 4*).

Three main impacts related to the Green Revolution are put forward in a framework by *de Janvry and Sadoulet (2002)* which highlights the uneven distribution of benefits among different food system stakeholders: first, a sharp decline of staple food prices, second, farm income development in relation to potential advantages from using HYV, and third, new forms of economic exclusion triggered through Green Revolution technologies. Today, rice and wheat marketization is being driven by government procurement, while the private sector has driven demand for crops like maize, oilseeds and vegetables. Prices received by farmers depend to a large degree on the procurer. Rice is a good illustrative example, with government agencies procuring at a pre-determined Minimum Support Price (MSP), and private traders and processors paying significantly less, especially to small and marginal farmers (*Sharma and Wardhan 2017*). While large and medium-sized farms tend to have much better access to regulated markets, interstate variations in these arrangements also exist. In Punjab and Haryana, the states where the Green Revolution was heavily promoted, effective procurement mechanisms mean that

nearly 96% of rice is procured by government agencies, while this number was less than 1% in West Bengal, with 68% being sold to village-level traders. Further complicating the story in West Bengal is the oligopolistic nature of procurement by rice mills (*Harriss-White 2008*) which also appropriate surplus value by selling by-products. This brief description of markets in India already hints at some of the gaps that can be filled through NM.

One of the most recognisable forms of alternative agriculture is organic agriculture, particularly in its certified form (*Seufert et al. 2017*). In India, the push for organic agriculture was driven by export-oriented agriculture, but recent changes in consumer preferences has led to a significant rise in domestic demand for organic products (*TechSci Research 2016*). The most significant contributions to organic policy have been made at the state level. Sikkhim is now widely known as the first ‘Organic State’ in India, winning worldwide recognition after receiving the FAO’s Future Policy Gold Award for its organic policy (*FAO 2018*). Several states across India like Karnataka, Kerala and Mizoram have officially adopted policies for promoting organic agriculture, although they remain in the minority. Often, the adoption of policies is the result of efforts by multiple individuals, civil society organisations as well as government institutions, a process detailed by *Thottathil (2014)* in her monograph about the formulation of Kerala’s 2010 Organic Farming Policy, illustrating the successful mobilisation of different groups to collaborate on a common goal. However, the country as a whole does not have a coherent policy framework dedicated to organic agriculture, and neither do most states. West Bengal is an example of a state with no official institutional framework to support the domestic market for organic agriculture. This is surprising, given that the state has exported certified organic tea since 1988, with over two-thirds of tea estates certified organic in 2013 (*Koehler 2015*). However, tea is a special case of a plantation crop with a high demand overseas, making it possible for a market to develop exclusively for export without similar developments in the domestic market (*Mukherjee et al. 2017*). This gap is important as the lack of a state-level institutional framework for organic agriculture impedes attempts to identify and demarcate what can be considered to be alternative. We thus identify another gap to be filled, as organic certification does not seem to be suited to address the issues raised in the previous paragraph. In such a situation, we argue that it is difficult to define and then discover alterity, and instead

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rely on the NM approach to understand the attempts being made at different geographical scales and levels of social organisation in order to provide solutions to the problems perceived at the smallholder farmer level. These problems, which constitute a squeeze on agriculture, arise from rising input prices (Kamra and Ramakumar 2019), falling farm gate prices, and the risk of increased volatility from rapidly changing environmental conditions (Gupta 2017; Sainath 2018). The five case studies presented here seek to illustrate the utility of the NM concept by demonstrating how the NM are set up in response to the various elements of this squeeze as experienced in the Indian context.

2. Methods

The empirical data that is used in this paper was collected during a three-day workshop held in Kolkata, India, in September 2019. The workshop was organised by the authors and held on the premises of Development Research Communication and Services Centre (DRCSC), a non-governmental organisation (NGO), who offered logistical support in the preparation of the workshop.

We purposefully selected the five case studies based on the criteria of NM described above to present a large variety of NM, while acknowledging the specific context of West Bengal. Firstly, they arise wherever there are reactions to problems with the existing system; in this particular case, we are interested in the food system, and therefore focus on issues such as unavailability of desired products, low profits for farmers, as

well as lack of access to quality food. Secondly, these reactions are instigated by non-hegemonic players with generally little or no bargaining power in the dominant markets. In other words, NMs are bottom-up initiatives by smallholder farmers, civil society organisations, and new companies seeking their own niches within established markets. These can operate at different geographical scales. Thirdly, these actors are involved in open-ended experimentation as they seek to create novel solutions to the problems they face, a process aided by a lack of regulations as well as institutional arrangements. Finally, they rely on CPRs both tangible and intangible in order to succeed in competing with other market arrangements. In the context of our research project, we also added a fifth criterion: the use of practices and strategies that contribute to environmental sustainability within the food networks.

We used snowball sampling as we wanted to identify actors who were working in non-formal organic or agroecological production methods. DRCSC, as a key actor for the promotion of these methods, was the gatekeeper through which we were able to access the five different organisations mentioned in the case-studies. The final selected five case studies represent nestedness within different (features of) mainstream markets, different geographical scales, different ways of profit-making (which is distinct from the conventional market), and different types of organising groups (Table 1, Fig. 1). Our reliance on one gatekeeper organisation implies that the information presented here is by no means representative, and should instead be treated as a preliminary exploration of the diverse array of food networks present.

Table 1 Overview of case study features. Source: own elaboration

Type of Organisation	Mainstream market (feature) within which case study is nested ...	Geographical Scale	Distinction from the mainstream regarding profit-making
Social Welfare Organisation	Periodic markets	Village	Removing expense of intermediary
Farmer Producer Company	Organising farmer groups	Administrative blocks	Pooling of resources, germplasm as commons
Private Limited Company	Conventional animal husbandry	Districts	Re-use of waste, exotic meats
Non-governmental Organisation	Certification schemes	Rainfed Agriculture Areas	Reduction of certification costs, economy of scale
For-Profit Social Enterprise	Conventional cash crops	Most states	Making secondary crops profitable

The participants were invited to present their work to the assembled group. For each organisation, we requested the attendance of representatives who were knowledgeable about the daily operations as well as of the overall strategy of the organisation. Additional information was obtained through semi-structured interviews with these individuals (details in *Abe Chatterjee 2020*). In particular, the following four ques-

tions informed by a NM approach are answered in the following case studies:

1. Which type of alterity is addressed? How is distinction created, and from what?
2. Which voids/ gaps are bridged?
3. Who is the target consumer group?
4. What are the common-pool resources?



Fig. 1 Location of the various initiatives covered in the case studies. EkGaon is not represented on this map as its headquarters are located in the National Capital Region, New Delhi. Source: adapted from Abe Chatterjee (2020)

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3. Results

3.1 Social Welfare Organisation

Periodic markets are a key example of a Bottom of the Pyramid (BoP) informal market, serving as the focal point through which rural populations interact with the wider economy (Satyam and Aithal 2018). Known as *haat* in Bengali, periodic markets are held on select days of the week and present opportunities for local exchange or retail of goods, and for aggregation at the rural level. The mobility of vendors and the periodic nature of the markets are key characteristics (Velayudhan 2016). It is estimated that there are over 47,000 periodic markets in India (Satyam and Aithal 2018). Here, we provide the example of Nadia Haat, an NM within a periodic market that provides a place for farmers to sell 'poison-free food' [*bishmukto khadyo* in Bengali]. Sales through this market amount to around INR 8,000 (a little less than EUR 100) per week, as around 120 kg of produce is sold to about 60 consumers.

Alterity/Distinctiveness: Fields for organic production are identified in a strategic way to maximise the land area together, thus avoiding unwanted contamination. Farmers agree to cooperate to ensure as much land as possible is consolidated. The farmers take turns in taking the produce to the market, instead of hiring a middleman to do the work, with the most immediate and obvious benefit being the higher percentage of the final price going back to farmers. The cost of renting a place in the market is reduced through the help of the local temple, which allows Nadia Haat to sit on its premises for little to no cost. The consumers recognise the quality of the produce, and do not haggle over the price, instead paying whatever price is quoted by the farmers.

Voids/gaps bridged: While farmers receive training for producing organically, there was no market outlet for this distinct produce. The existing periodic markets did not provide an added benefit for this produce, and when sold through intermediaries, the produce would be mixed with that of other farmers. Finally, the fragmented parcels of land owned by the different members made it difficult to control unwanted contamination from agrochemical inputs.

Consumers: The target consumer group is village residents who prefer to buy produce they know to be healthy through their own experience, and from farm-

ers they trust. The prices are similar to the prices in the main periodic market, making it possible for most villagers to shop here.

Common-Pool Resources: The Nadia Haat market arises out of initiatives that provide modes of local governance, making it dependent on the context of village life, a shared understanding of what poison-free is, and a desire to change agricultural practices. The space to set up the market is provided free of cost on the premises of a temple adjacent to the main periodic market. As a result, it embodies these common-pool resources and becomes one itself.

3.2 Farmer producer company

Producer Organisations (POs) are legal corporate entities formed by producers in the primary sector with the goal of collectivisation. POs can assume one of four forms: cooperatives, producer companies, societies or public trusts (NABARD 2015). In recent years, the Government of India has been keen to encourage farmers to create farmer producer companies (FPCs) in order to improve the organisational capacities of farmer groups (Trebbin 2014). Envisioned improvements include more bargaining power, better aggregation capabilities (clustering), value addition and perhaps even elimination of many of the intermediary actors operating in the procurement process (Govil et al. 2020). Apart from improvements downstream, FPCs would open up access to financial and non-financial inputs, services and technologies that would have been previously inaccessible (MANAGE 2018). However, despite the high hopes placed in FPCs, they often end up failing due to lack of management training support (Govil et al. 2020). This case study of FPC Bhagabanpur II looks at how farmers set up one nested in community values. The initial share capital collected is around INR 170,000 (EUR 2000).

Alterity/Distinctiveness: Here, the alterity is created by a focus on non-formal organic agriculture. By focusing on products like aromatic rice, mushroom spawn and vermicompost, the FPC seeks to create a business plan informed by organic agriculture and one that builds on the potential of rural-to-rural markets. This nests the FPC within its rural context, and also builds on the social networks of the participating farmers.

Voids/gaps bridged: Before the FPC was created, farmers interested in transitioning to organic agriculture

had no support network, and no way to add value through aggregation of produce and further processing. There was also no recognition from various government agencies interested in promoting rural livelihoods.

Consumers: After FPC creation, the farmers are able to aggregate their produce and respond to demands for larger orders from government agencies as well as other farmers groups, their main targeted customers. The group also seeks to sell to schools for midday meals, as well as individual consumers. They benefit from greater visibility, as many government agencies are keen to work with FPCs.

Common-Pool Resources: The FPC is embedded within a desire to protect germplasm of indigenous crop varieties as a form of cultural heritage, to provide meaningful employment in a rural setting, and to promote rural-to-rural markets. The collected capital allows them to purchase machinery required to set up a common processing facility. The group faces threats to the CPR as well, especially with the various bureaucratic procedures required, many of them unfamiliar, in order to maintain the company. The incentives in place also push for FPCs with larger membership, with groups of at least 1,000 farmers, making it difficult to ensure that the group has a shared vision.

3.3 Private limited company

TONA Organic Farm is a model mixed farm of Bio-Diverse Farming Private Limited, and is located 40 km to the east of Kolkata. Private Limited Companies are a form of private ownership, more commonly referred to as a firm. TONA has 28 shareholders, with an average gross profit of around 40%. Turnover for 2017 was around INR 77,600,000 (EUR 925,300). The TONA processing and educational facility is around an hour and a half's drive from Kolkata, and is a walled area with 1.6 ha of land, within which there is a 0.4 ha pond. The eponymous village, Tona, is small, with roughly 80 ha of land with around 200 households.

Alterity/Distinctiveness: The diversity of meat products on offer, and the provision of feed for these animals is different from many livestock operations. By having the meat processing on-site, the offal can be re-used as inputs for other production systems like fisheries and as fertiliser, thus creating a circular system. TONA also markets its produce through a home

delivery system based on a popular mobile phone messaging service. The TONA farm is accessible at all terms, and consumers often take the opportunity to see how their food is being produced. There is an emphasis on the seasonality of products offered. Crops are selected for cultivation based on whether they are used in a typical Bengali household. Education is also a key aspect of TONA activities.

VOIDS/GAPS BRIDGED: The unaffordability of organic produce on the market was a gap that TONA sought to fill. Linking consumers to the source of their food is another important function TONA seeks to play. A key gap in West Bengal is the lack of knowledge and information about sustainable farming systems, prompting TONA to provide training and education services.

Consumers: Most of the consumers of TONA's products are people who live in Kolkata. Some of the motivated customers of TONA came together to form a cooperative, the *Aponjon Joutho Samabay* (Friends Solidarity Cooperative). With over 100 members, the idea was to create a platform that allows the consumers to support farmers who practice production and processing methods that they approve of, while increasing profit margins for farmers and lowering prices for consumers. It also helps educate consumers about the issue of product adulteration. TONA reports that it also serves as an effective way of expanding the consumer base at a manageable pace.

Common-Pool Resources: TONA relies on educating its consumers about what good food in Bengali food culture is, and thus a shared understanding of a good diet becomes a CPR. The TONA Farm campus acts as a tangible CPR, as villagers use processing facilities here, and consumers visit to learn more about their food, and to also have picnics on the premises. The solidarity between the consumers and farmers also leads to a trust that is a key resource for the functioning of this NM.

3.4 Non-governmental organisation

Welthungerhilfe (WHH), an INGO based in Germany, has had development projects in India since 1962 (*Welthungerhilfe* 2020). They work in regions in India where food and nutrition security remains a key issue. These areas are mostly rainfed, and cover drylands as well as forested areas. Through their various projects, they work with more than 150,000 house-

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holds of landless, marginal, and smallholder farmers. Their main focus is on how these households can work towards their own food and nutrition security by producing and consuming nutritious food throughout the year. In the period 2014 to 2019, they have managed to scale out to work with 5,000 farmers, helping to set up ten FPCs in collaboration with eight local partners. They have developed a portfolio of 20 products. They also work with around 40 small stores, to help them improve sales. Through these channels, they reach around 500,000 consumers, the majority of whom consume food within 250 km of where production takes place.

WHH and their local partner DRCSC, have a long-term vision built around FPCs. They wish to eventually set up FPCs in every district, and coordinate between them to create demand for diverse products from integrated farming systems. This larger federation of FPCs would help generate rural-rural linkages, and also improve the quantities they could market.

Alterity/Distinctiveness: Agroecological production is perceived by the NGO as necessary to aid farmers to sell their produce. In seeking to provide products for rural markets, WHH had to come up with a set of standards that was easier than the organic certification standards to implement and to verify, in order to reduce the costs associated with compliance and monitoring. WHH also had to ensure that the form of agriculture promoted was in line with the needs of marginal and smallholder farmers, particularly the need for ensuring nutrition throughout the year. They achieve this through enabling a network of various NGOs to use BhoomiKa, a certificate created by WHH for this purpose. The ultimate goal is to become a single-window solution for education and services, co-branding and new product creation.

Voids/gaps bridged: The lack of outlets for small quantities of produce typical of smallholder production is a key issue addressed. The expenses associated with organic certification as well as the lengthy transition process make it difficult to implement these standards here, necessitating the creation of the BhoomiKa label. The lack of workshops on issues like processing and regulatory compliance make it difficult for farmers to participate in value chains, and WHH seeks to fill this gap.

Consumers: The target consumer group, while currently urban consumers, is expected to gradually shift

to a wide network of rural areas. They also seek to sell to institutional buyers, like local governments and development projects.

Common-Pool Resources: By achieving economies of scale by aggregating over a wider geographic area and according to a common set of standards agreed on by all parties in the form of BhoomiKa, a region-specific CPR that can be called a virtual network is created. The various nodes of this network, the local NGOs like DRCSC, play a vital role in ensuring the success of this endeavour, and are thus important CPRs.

3.5 For-profit social enterprise

EkGaon Technologies is a company founded as a for-profit social enterprise. While there is no standard definition for this newly-emerging form within Indian regulatory frameworks, “[s]ocial enterprises are predominantly for-profit private sector small businesses that engage with the low-income population to address challenges of access and affordability in critical needs sectors” (Ganesh et al. 2018: 11). While profits can be generated, these are channeled towards some predetermined social cause (Steiner and Teasdale 2019). EkGaon offers a platform service for leveraging mobile communication technology for encouraging sustainable development of women-self-help-groups (SHGs) and small farmers across India. Through their *OneVillageOneWorld Network* platform, farmers can access farming advice through their mobile phones, and sell their produce through the *ekgaon.com* platform (EkGaon Technologies 2016).

Alterity/Distinctiveness: EkGaon seeks to create value chains for lesser-known, non-subsidised crops that also allows farmers get a better income. These crops tended to be a secondary crop whenever a primary cash crop (usually subsidised) was being grown. Millets, flaxseed, chickpea, sesame, turmeric, ginger, black pepper, and large cardamom are some examples. They did this through a practice they called *replacement pricing*, where the secondary crop would provide more income than the primary crop. They set up clusters, which they defined as a production area that would provide them with a maximisation of a production of their selected crop, allowing them to build economies of scale. The technology they use to help manage their supply chain efficiently also serves a double purpose of allowing the consumer to see where the produce is coming from. Using their own app and

barcode system, they provide customers with the opportunity to see information about where the product comes from, which they feel is able to get the same message as the organic label to a consumer without the need of a third-party certifying agency. Through this *know your farmer initiative*, EkGaon hopes to build empathy between consumers and producers.

VOIDS/GAPS BRIDGED: The lack of value chains for lesser-known crops is a key gap that EkGaon addresses. It also helps address the problem of little to no information and data support for these lesser-known crops. Further, the company thinks that there are too many companies that seek to maximise profit by procuring produce at the lowest price possible and then certifying in order to increase the final selling price, a major gap in a system that is supposed to help farmers get better prices.

CONSUMERS: The target consumer group are urban consumers who seek alternatives to organic certification. The farmers are also targeted as consumers of the field schools, bulletin services as well as the value chain services that EkGaon provides.

COMMON-POOL RESOURCES: By promoting crops that farmers are familiar with, traditional knowledge is valorised and mixed with information like weather advisories to create a knowledge system for lesser-known crops. By creating markets for these kinds of crops, EkGaon also creates a more diverse market that can cater to the needs of farmers. The simple and easy barcode information tracking system allows for information to be shared between producers and consumers about the provenance of the food.

4. Discussion and conclusions

This paper has used the NM concept to illustrate the different gaps that are currently being addressed through the diverse forms of agriculture in West Bengal, India. We also illustrate how the new NM interact with general markets and their mechanisms, but make use of common-pool resources to maintain environmental sustainability while ensuring a viable socio-economic model. The presence of CPRs allows us to find a periodic market where produce is sold at the same price but the farmers keep a larger share, a Farmer Producer Company that seeks to safeguard indigenous varieties, a company that converts waste into resources in order to ensure low-cost organic

products are available to consumers, NGOs that recognise the demand generated by rural consumers, and a social enterprise that builds new value chains for undervalued crops.

This paper also fills a gap in AFN and NM research conducted in the Global South (*Schneider and Cassol 2020*), although it joins a slowly expanding group, with studies in Brazil, Benin and Ecuador as good examples of the application of this approach (*Loconto et al. 2018*). We demonstrate that the NM approach allows us to engage with and identify the processes and practices that make food systems environmentally sustainable, instead of relying on certification as a proxy for environmental sustainability, an approach that has been questioned by many (*Seufert et al. 2017*). These critiques arise from the assertion that certification (with organic agriculture used as an example here) fails to enforce practices such as crop rotation, mulching and water conservation practices while focusing on the traceability of the product (*Seufert and Ramankutty 2017*).

More generally, the need to identify CPRs provides a way to read agricultural markets differently. It recognises the role played by the various stakeholders in the creation of resources that cannot be appropriated by any one actor, thus providing a way to prevent and perhaps move beyond conventionalisation (*Guthman 2004*). At the same time, there is a flexibility provided by the *nested* idea that allows us to identify the outliers within the existing markets. What is lost in terms of rigour in demarcating boundaries is more than made up for by the acknowledgement that the process of creating a market is an emergent one. We suggest that NM-informed methodology aimed to understand the diversity of responses is more suited for analysing AFNs than an attempt to grade degrees of alterity in the Global South, where institutional frameworks for certification may not be consolidated yet, or where multiple understandings of what constitutes an alternative may co-exist (*Abe Chatterjee 2020*). We argue that in the current context in India, farmers are facing problems that seem to be dealt with by turning to ecological production. However, the benefits of ecological production do not come from just higher prices (from price premiums of organic).

A final crucial point is that, while the concept of environmentally conscious products may make some consumers uneasy due to its associations with environmental activism or its associations with upper-class

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sensitivities (Beelen 2019), the new markets explored here attract these hesitant consumers through appeals to other motivations, possibly laying the ground for future adoption of such products. Through the familiar yet distinct NM, the stakeholders are engaged in the work of imagining and enacting a new normal, leading to larger shifts in consumption and production over time.

Notes

¹Van der Ploeg builds on Elinor Ostrom's seminal work on the commons (1990) to define Common-Pool Resources (CPR) as "the commonly shared and well-institutionalized capacity to generate joint benefits and at the same time to avoid these benefits being adversely affected" by opportunistic or unscrupulous behaviour of individuals (van der Ploeg 2014: 20).

²Pritchard et al. (2014) describe the Green Revolution as „the interlinked series of agro-technological innovations in the 1960s and 1970s that saw the widespread introduction of High-Yield Varieties (HYVs) of cereal crops“ (p. 41), and "a complex, but systemic, process of change" (p. 49). The authors provide a nuanced and critical discussion of its history as well as the social, economic and environmental impacts around India, with a focus on food and nutrition security outcomes.

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