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Regaining Lost Ground: A Social Movement for Sustainable Food Systems in Java, Indonesia

Reprise de terrain: un mouvement social pour des systèmes alimentaires durables à Java, Indonésie

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Abstracts

English Français

Since the 1960s, Indonesia has industrialised agriculture, following the model promoted by the global bio-tech research complex and development agencies. Alternative approaches favoured by local grassroots organisations and NGOs include solutions grounded in moral economic systems of communal solidarity, small-scale production, local knowledge and the localisation of distribution and consumption networks. To illustrate the viability of such alternatives, we explore new Indonesian farmers' movements that seek to produce high-yield, high-quality low-cost food using ecologically responsible food production methods and 'symbiotic cooperation' strategies founded upon a moral economy ethos. Our case studies contribute to a model for a worldwide transition to socially and ecologically sustainable regional food systems.

Depuis les années 1960, l'Indonésie a industrialisé son agriculture, suivant le modèle préconisé par le complexe mondial de recherche biotechnologique et les agences de développement. Les approches alternatives privilégiées par les organisations locales et les ONG incluent des solutions fondées sur des systèmes économiques moraux de solidarité communautaire, de production à petite échelle, de connaissances locales et de localisation des réseaux de distribution et de consommation. Pour illustrer la viabilité de telles solutions, nous explorons de nouveaux mouvements d'agriculteurs indonésiens qui cherchent à produire des aliments à haut rendement et de haute qualité à faible coût, en utilisant des méthodes de production respectueuses de l'environnement et des stratégies de « coopération symbiotique » fondées sur un esprit d'économie morale. Nos études de cas contribuent à un modèle de transition mondiale vers des systèmes alimentaires régionaux durables sur le plan social et écologique.

Index terms

Mots-clés : production alimentaire durable, réforme des chaînes alimentaires, coopération symbiotique, mouvements paysans, relations État-paysans, Indonésie

Keywords : sustainable food production, food supply chain reform, symbiotic cooperation, farmers movements, farmer-state relations, Indonesia

Full text

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Introduction

1 The food on our plate is one end of cultural, technical, ecological, political and economic processes we refer to as food systems. The strength of anthropological approaches lies in holistic, systems-based analysis and locally grounded, ethnographic research data on such food systems. To begin the analysis, we first we must ask, what primary purpose informs the logic of food systems? We suggest the primary imperative that has driven all food systems is food security. Two decades ago Johan Pottier (1999) argued that the anthropology of food should engage with this reality and is uniquely positioned to contribute to solutions beyond mainstream discourse. Despite apparent food abundance in many countries today, the primary imperative of food security is likely to remerge and escalate under conditions of growing population, mounting environmental stress and inequality (FAO 2018). The first part of this paper assesses these core issues and considers prognoses and debates around sustainable food security solutions. We then turn to the case of Indonesia - a country with one of the world's lowest levels of food security resilience in a recent study (EIU 2018:33).

2 Mainstream policies shared by the global agri-food research complex, agro-corporations, international development agencies and many national governments tend to focus on capital investments into agroindustry, new technologies, opening national food markets, increasing production of high-profit export crops, and intervening in markets to protect consumers and maintain political stability. Such policies favour agro-corporations oriented to profit rather than food security. Despite the resulting corporate domination of global food in terms of area under cultivation, most of the world's staple foods are actually produced by small farmers and fishers whom these policies tend to ignore or disadvantage (Braun 2008; Reuter 2015). In Indonesia, for example, the main staple, rice, is largely produced by smallholders who struggle to make a living. Government interventions have long protected the interests of poor consumers over those of farmers (McCulloch and Timmer 2008:34), indirectly subsidising low-wage manufacturing industries. For disadvantaged consumers fluctuations in market prices are nevertheless a growing concern (Kompas 2017). The second section of this paper presents a brief history of how changing state policies have impacted on Indonesian food production.

3 An alternative approach to food security advocated by small-farmers organisations, NGOs and some researchers, is grounded in local knowledge, traditional farming, and locally sovereign systems of production, distribution and consumption. International agencies too are increasingly supportive of alternative approaches, as pathways toward meeting the United Nation's Sustainable Development Goals (SDGs) (FAO 2018).

4 The radical disjuncture between these two approaches leads their proponents to talk past each other, hindering collaboration and potential development of integrated models combining the advantages of both. The third section of this paper, based on a total of eight months of multi-sited, ethnographic field research in Central Java, conducted between 2016 and 2019, seeks to address this disjuncture by exploring new farmers' movements promoting ecological and socially responsible methods, while improving livelihoods, productivity and food security. These initiatives work across the gap of understanding by

addressing issues of capitalisation, technology, insurance and market access. They protect both consumers and producers from market volatility, using an approach based on moral economy principles we refer to as 'symbiotic cooperation'. Some of the case studies presented may serve as models for transitions to more ecologically and socially sustainable food systems elsewhere.

5 While this article serves the conventional academic aims of documenting and analysing contemporary food systems as a contribution to the anthropology of food, we seek also, following Pottier (1999:7), to identify trends and models of practical relevance to an emerging global food crisis. Our four case studies together provide a comprehensive overview of different actors within an emerging movement for sustainable and morally responsible food production and distribution in Indonesia.

Global trends in food security and their implications for Indonesian food systems

6 Analysts of the global food system have long warned of an approaching crisis of supply, distribution and sustainability driven by factors including population increase, changes in consumption patterns, environmental and resource stresses, corporate ownership and inequality of access (Ranganathan 2013; Cameron 2014). In 2007 and 2008 some of these factors combined to produce a sudden shortage and price escalation of basic foods across the globe widely recognised as a "world food crisis" (McMichael 2009). That "business as usual" will no longer provide sustainable food security has become common knowledge and policy makers now call for alternative models (FAO 2018). We have suggested elsewhere (MacRae 2016a) that alternative models in fact already exist in long-established, traditional agro-ecologies all over the world (Altieri 2010) and are being rediscovered and reinvented by smallholder farmers and their communities.

7 In many traditional food systems, food insecurity was avoided or ameliorated by embedment in ecological and social relations understood in terms of moralities of reciprocity rather than economies of maximisation. Dove and Kammen (1997) describe such sets of interspecies relationships as a "moral ecologies". Others, following E.P. Thompson (1993) and James Scott (1976) use the term "moral economy" to refer to culture-specific frameworks of norms, values and practices of mutual aid through which food is produced, stored, distributed and exchanged in local communities. Thompson's seminal essay developed the concept specifically in relation to the right of consumers (in eighteenth century England) to an accessible and affordable supply of staple food. Scott's focus was on the right of peasant producers to security of subsistence. Since then the concept has been revalorised across the social sciences, including anthropology (Edelman 2005), and applied to a wide range of situations, but its origins and principles lie in universal fundamentals of food security. Popular moral-economic critiques tend to emerge when fundamental rights are violated by economic exploitation, revealing local norms otherwise left implicit (MacRae 2016b). We argue also, following Polanyi (1957), that moral ecological and economic arrangements embedded in local cultures have long provided food security and resilience to rural communities and disadvantaged people around the world.

8 We became aware of such arrangements in Indonesia in our ethnographic research across numerous contexts (MacRae 2005; 2016b). Our recent research explores these mechanisms in different food systems (e.g. Reuter 2017 a b). Strong moral economic principles and high resilience seem to be strongly correlated in most local food systems in Indonesia. They have however come under increasing pressure in the wake of agricultural 'development', precipitating a decline in social capital and heightened vulnerability to

supply shocks. We argue that moral-economic cultures can be rebuilt as foundations of alternative food security policy and strategies.

Food system change in Indonesia: a brief history

9 Recent transformations of Indonesian agriculture toward more equitable and sustainable practices are a grassroots response to the deleterious consequences of agro-industrial approaches to food security. Some historical context is needed to appreciate the significance of this shift. State, industry and international-sponsored interventions and 'modernizations' since the colonial era have pushed food systems beyond sustainable limits, compromised public health, dismantled moral-economic safety nets, decreased local food sovereignty and increased market volatility.

10 Before the colonial period, indigenous agriculture varied across the country but, certainly in Java, it was based primarily on irrigated rice. The Dutch colonial regime intervened in various ways, economic and social as well as technical and agronomic, to create a profitable food export sector (Geertz 1966:53-59), but indigenous subsistence agriculture was not fundamentally transformed. It remained dominated by smallholder farmers and landless sharecroppers, who managed to feed a fast growing population on a shrinking allotment of land. After the Great Depression, German occupation of the Netherlands in 1940, Japanese occupation of the Dutch East Indies in 1942 and a subsequent independence struggle, the new Indonesian state rebuilt its food system. Indonesia did not rapidly industrialise; hence the large peasant population had no alternative livelihoods. Land reform and social justice programs introduced by the Indonesian Communist Party (PKI) and its rural wing, the Indonesian Peasants Front (BTI), led to politicization of the peasantry. While rice fields formerly leased to sugar plantations were returned to rice in some areas, population in Java also quadrupled again in the remainder of the 20th century. Agricultural mechanization and fertilizer use began but kept to a modest scale given President Sukarno's hostility to foreign aid.

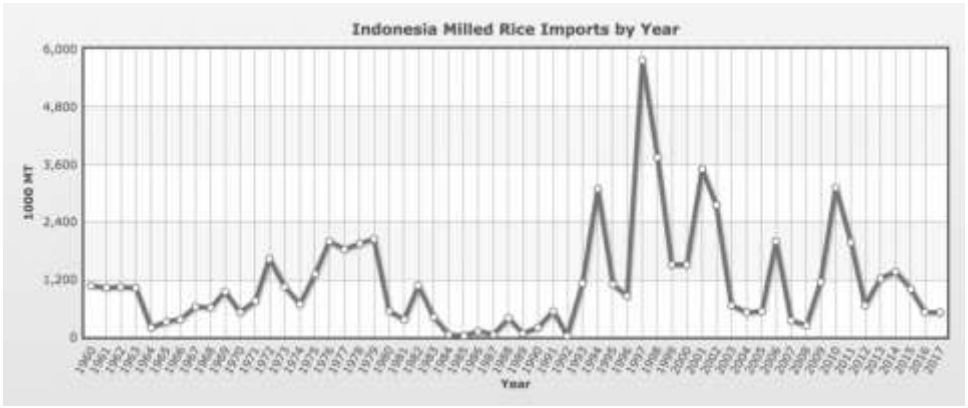
11 Following a military coup in 1965 and the massacre of communists, farmer activists and other progressive elements, the independent farmers movement was outlawed, its leaders killed or imprisoned, and all others forcibly depoliticized. Suharto's New Order regime welcomed foreign aid, notably the 'Green Revolution' (GR) – a new, technically, socially and ecologically aggressive agricultural model. State-supervised 'village unit cooperatives' (KUD) replaced independent farmers' groups. Farmers were recast as ignorant and their knowledge irrelevant and relegated to the receiving end of a bureaucracy led by the ministry of agriculture - 'brain washed' (*cuci otak*), politically and professionally and alienated from their own land (Winarto 2013). Customary social and ritual dimensions of agriculture largely disappeared, though some elements persist until today.

Figure : survivals of traditional food culture in Java: giant 'Gunungan' offerings, Yogyakarta Royal Palace, 2017

Credit: Thomas Reuter

12 The GR involved replacement of indigenous rice with high-yield hybrid varieties, driven by increased irrigation, petrochemical fertilizers, herbicides and pesticides, and some mechanization (Fox 1993b). Yields rose spectacularly and self-sufficiency in rice was achieved briefly in the mid-1980s. However, the GR also had severe ecological impacts, including soil degradation, declining soil fertility, nutrient deficiency, erosion and water pollution, with associated public health issues (Fox 1991; Buresh, Witt and Pasuquin 2007). Yield increases plateaued by the 1990s (Fox 1993a; Ricepedia 2018) and dependence on imported rice resumed.

Figure 2: Indonesia rice import fluctuations (adapted from Index Mundi 2017)



Source: https://www.indexmundi.com/agriculture/?country=id&commodity=milled-rice&graph=imports

13 In the early years the state forced farmers to accept so-called 'seed-fertilizer-credit' packages (Booth 1988:148), accompanied by top-down farmer re-education programs. Sometimes, the state's agenda was advanced through intimidation or destruction of local variety rice fields by the military (Thorburn 2015). An element of continuity was that the New Order state, like the colonial state before it, expected farmers to subsidise industrial and agribusiness labour (Subejo 2013). While yields and overall production increased, farmers' incomes were kept low by interventions of the national logistics agency, BULOG, which stockpiles grain and releases it into the market at strategic moments to keep

consumer prices below a predetermined ceiling price – at farmers' expense (Jakarta Post 2018:1).

Figure 3: rice depot, Indonesian State Logistics Agency (BULOG)

Credit: Thomas Reuter

14 In 1986 a massive brown plant-hopper (BHP) infestation devastated rice crops in Java, triggered by loss to pesticides of predator species that had previously held BHP in check. President Suharto issued a decree (INPRES 3/1986) banning the most harmful pesticides, and initiated a new Integrated Pest Management (IPM) model. This required more active farmer participation and engagement, implemented through Farmer Field Schools (FFS). While there is debate about the effectiveness of IPM (Resosudarmo and Yamazaki 2011), the BPH outbreak was brought under control, only to re-emerge over a decade later when a new government abandoned FFS-based IPM programs (Winarto 2004). The more participatory FFS approach also had unexpected side effects on farmer morale: "[As] farmer groups [trained in FFS programs] began participating in local Independence Day parades and other festivals, [...] IPM in Indonesia took on the hallmarks of a movement" (Thorburn 2015:11).

15 FFS thus may have paved the way for the resurgence of farmers' movements after the fall of Suharto's regime in 1998. Newly independent farmers' movements with a social justice agenda multiplied and regained political clout (Bachriadi 2012).

The revitalisation of sustainable smallholder agriculture and moral economies

16 Indonesian food systems today are hard pressed by climate change (IFPRI 2009), rising demand, approaching environmental limits (such as soil degradation) and land-use change, as well as global supply shocks in staple foods. While these problems present themselves as economic and environmental ones, they are also moral ones, in both social and ecological senses. Traditional or new variants of small-scale and 'organic' farming address this issue by preserving local ecologies and also the moral economies of farming communities. They can offer viable, long-term solutions.

17 Halberg and Muller (2013), for example, have provided evidence of the positive influence of organic farming on smallholder food security and livelihoods. Smallholder agriculture indeed remains the backbone of food production in the Global South, and there is growing international recognition that small-scale farming is vital to food security (Altieri 2004; Altieri and Toledo 2011). Small and relatively biodiverse farms feed two-thirds of the world with healthy food on less than a quarter of arable land used for corporate farming (Herrero 2017). A report by IIASTD (2008) has recognised the potential of small scale, organic farming to feed the world, and expressed concerns about plans to launch another, GMO-based GR.

18 In Indonesia organic farming is booming, based on grassroots initiatives with some government support. Rapid growth in organic farming, from 40,970 to 238,872 ha between 2007 and 2010, began with grassroots movements. The government became involved (Sertori 2011) with its *Go Organik 2010* campaign, envisaging Indonesia as the world's biggest organic food producer (Kementrian Pertanian 2010), and by providing technical and marketing advice along with a national certification scheme. The national standard (SNI No. 01-6729-2002) has proved too rigid for many farmers, however, and high compliance costs are exacerbated by rent-seeking officials. Certified organic farms actually declined in 2011 because of certification problems, leaving 59.8% of organic farms uncertified (Mayrowani 2012). Since then private schemes have developed, such as Pamor (supported by *Aliansi Organik Indonesia*), which utilize self-monitoring principles to reduce costs.

19 In general, top-down initiatives led by the state or commercial actors have struggled to inspire farmer engagement in the post-*Reformasi* era (MacRae 2011), while grassroots initiatives tend to be more robust. This applies in particular to farmer-led initiatives grounded in a simultaneous revival or recreation of 'resilience communities' of the kind Greg Bankoff (2003) has described in the Philippines.

20 Common to all these initiatives is the use of moral-economic principles, leading to what we call "symbiotic cooperation". Emile Durkheim (1997 [1893]) pointed out long ago that social relationships entail too many unforeseeable contingencies to rely entirely on contractual agreements, and that efficient transactions presuppose the existence of 'moral norms of reciprocity and solidarity'. Max Weber (1921:409) came to similar conclusions. More recently, Schanze (1991) has referred to such governance structures as 'symbiotic arrangements' and, on the basis of a comprehensive review of the literature, argues that such arrangements are essential for the viability of long-term relations. At a more abstract level, Raub and Weesie (1993) have illustrated the logic of symbiotic arrangements from a game-theory perspective. Meanwhile, James Scott, in his seminal work on moral economy, made the point that while such arrangements work well horizontally, among peasants of roughly equal power and wealth, they can also bind together those of unequal power and wealth (1976:5-7) in cooperative relations, sometimes glossed as "patron-client ties" (Wolf 2014).

21 We stress the element of cooperation to highlight that, as with 'mutualistic symbiosis' in ecology (Hunter 2006), symbiotic relations in human societies may be symmetrical or asymmetrical. We also argue that while symbiosis in social contexts is often packaged in terms of cultural expectations and rules of conduct, it is also conscious, deliberate and strategic. Furthermore, mutualistic symbiosis in biology is not just binary but drives complex co-evolutionary processes that sustain diverse and healthy ecological systems (Hird 2008) and we argue that, similarly, strong, resilient societies are built upon interlocking webs of symbiotic cooperation.

22 We now present four case studies from Java, illustrating a spectrum of sustainable farming movements. Each exemplifies a different type of initiative and together the cases serve to illustrate and outline a new, transformative socio-ecological movement in Indonesia, based on symbiotic cooperation principles.[1]

Case studies

Case 1: a localised farmer-led initiative

23 One of the thousands of independent farmers' cooperatives that have formed across Indonesia since the Reformasi era is Rukun Makaryo in Central Java.[2] Its founder, Hadi Paiman, remembers the introduction of chemical inputs in 1969. He believes such substances leave residues that compromise the health of consumers and wildlife. As an innocent victim of the repressions of 1965 and ex-political prisoner, he had no voice until 2000, when he began to speak informally to fellow farmers about organic production methods, sharing what he had learned over years of experimentation, even when imprisoned.[3] Most villagers ignored him due to prejudice about his past and his being a primary school graduate only, rather than an "agriculture expert." Initially only 7% of them tried his methods. He developed and taught a course in organic farming between 2005 and 2010, free of charge, from which 30% of his students became organic farmers. In 2013 he started a farmers' college that was eventually accredited by Tunas Pembangunan University in Surakarta. In 2015 he returned to work and teach in his own village. His course covers production of various organic fertilisers, natural fungicides and insecticides, innovative forms of planting, traditional symbiotic crops (*tumbang sari*) and the use of local microorganisms (MOL) and natural substances for everything from soil repair to fermenting animal feed and treating nutrient deficiencies. His knowledge has filled 16 handbooks, and it is effective. Farmers following his methods were hardly affected by repeated plagues of BPH that devastate neighbouring fields, and production costs are reduced by avoiding industrial inputs.

24 Rukun Makaryo bypasses the expensive organic accreditation system. Their alternative is a 'certificate of good faith' (*sertipikat kepercayaan*), based on inviting customers to visit and experience directly farmers' commitment to organic production. They also keep their quality rice affordable by reducing their supply chain to only two links, producer and consumer. Members' produce, largely a local heritage rice, has its own label. Reliance on an informal regime of moral economic practice rather than legal formalism works well for all concerned, and supply cannot keep up with demand.

Figures 4a/b: liquid and solid fertiliser production at Rukun Makaryo

Credit: Thomas Reuter

25 Mr Paiman sees no fundamental difference between traditional and organic farming. The motto of Rukun Makaryo is 'KAELO' (*Kreatif Adopsi Ekonomi Lokal*), which means creative adoption of local knowledge. For example, Paiman has revived the making of ritual food offerings in the fields, which his ancestors had used for generations to culture and dispense local microorganisms (MOL).

26 The main features of other localised, independent, farmer-led initiatives in Java are similar.[4] These features include free intensive farmer education, social solidarity (Jav. *rukun*), consumer friendly prices, healthy food, direct marketing with social media technology, and, in one case (the TALES coop in Bantul), community-based credit provision with sophisticated financial management advice and account access through mobile phone applications. One-stop supply chains, reviving culture and community, and strengthening local food system biodiversity and resilience are key aims of most of these groups. Their networking and cooperation strategies are now being extended to include artisan workers and other local groups, and a model of 'symbiotic cooperation' is thus established to secure livelihoods for all participants. These local movements are rebuilding livelihoods and moral economy from the ground up.

27 Not all farmers cooperatives are fully independent, however. The government also establishes or recognises, supports and liaises with farmer organisations that conform to new rules of the Ministry of Agriculture established in the post-Reformasi period (Rule No. 273/Kpts/ot.160/4/2007). These are known as 'Association of Farmers Groups' (Gabungan Kelompok Tani, or Gapoktan). Unlike the state-dominated cooperatives of the New Order period, Gapoktan enjoy some independence but serve as a local government partner and recipient of training, subsidies, funding or in-kind material support. This system has value to farmers, but is also riddled with mismanagement. Government aid is often not well aligned with the needs of Gapoktan members. Rather than being sustainable, programs tend to subsidise chemical inputs and hybrid seed, which is lucrative for input manufacturers but keeps farmers industry-dependent and ignorant of cheaper organic alternatives.[5]

Case 2: a national farmers mass movement

28 A different layer of today's Indonesian farmers' movement are new, re-politicised national mass organisations (*ormas*) of farmers. These are federations among the countless small, local, independent cooperatives, they have proliferated since 1998, and are fiercely independent from government. The largest is *Serikat Petani Indonesia* (SPI, Union of Indonesian Farmers).[6] Originally known as FSPI (*Federasi Serikat Petani Indonesia*), SPI was founded at a national farmers' gathering in Sumatra in1998, marking the rebirth of independent farmer organisations after 32 years of political oppression.[7]

29 SPI, with more than one million members, has considerable political clout, enabling it, for example, to stage public demonstrations or bargain directly with political parties.[8] With branches in all main islands, SPI promotes sustainability, food sovereignty and agrarian renewal based on a blend of neo-traditional and modern organic farming methods and strengthening of local communities and economies. Human rights, land reform, fair trade and other agrarian justice issues are also central preoccupations. SPI encourages organic production but not to maximise prices, as this would compromise the human right of low-income consumers to healthy food. Farmers instead benefit from 'going organic' by reducing input costs, vulnerability to pests and diseases and increasing long-term yields.

30 Farmer education and training field schools teach preparation and use of organic fertilisers and pesticides; sustainable land management; prevention, identification and eradication of pests; crop observation; harvesting and storage; as well as organisational skills and human resources management. This education is continuous and long-term, with regular visits by trainers and community facilitators.[9] Education is largely peer-based, and grows exponentially, with many trainees becoming trainers. Some instructors are specialised in one area of expertise, such as organic, feed-sovereign fish farming or the use of microorganisms and herbal tonics for agriculture.

Figure 5: a shelf in Mr Udik's farmer laboratory

Credit: Thomas Reuter

31 Seed sovereignty is another key priority. SPI farmers have collected some 250 local rice varieties, as well as other food plants, which are shared through a seed multiplication scheme. Trade in 'uncertified' and 'non-standardised' seed is illegal in Indonesia, but SPI challenged this in court and were granted permission to produce and distribute seed on a local scale. They now produce high-quality seed below commercial prices, notably heritage rice and other crops, similar to many farmers in Europe and elsewhere (Bessière and Tibère 2011).

32 SPI see government policy as promoting the interests of agroindustry, but concede that the current government appears 'for the first time to be on the side of farmers,' at least partially, by providing organic certification and supporting fertiliser sovereignty and seed sovereignty (though still favouring hybrids). SPI therefore has opened up to cooperation with government agencies where possible, but conflicts persist. For example, a government field officer (*penyuluh pertanian lapangan*, or PPL) recently threatened a SPI-run organic catfish farm with closure, in the name of consumer protection, because they produced their own fish feed granules from abundant organic waste materials, rather than using the more expensive and chemical-laden but "certified" industrial version.[10]

This fish farm model is achieving sensational returns on capital of up to 20% per month. Apart from organic feed, it also uses local microorganisms to purify the water and prevent diseases.

Figure 6: an SPI-run organic catfish farm threatened by its own success

Credit: Thomas Reuter

33 Another initiative is an ingenious crop-failure insurance scheme, allowing farmers to use by-products such as manure or rice straw rather than money to pay premiums. With regard to community-based finance, SPI is not as advanced as some other local schemes (e.g. TYAS Manunggal, Bantul District), but knowledge transfer between organisations is rapid.

34 Another shared aim is to supply food directly from farmers to local consumers. The government is also piloting a direct distribution model. It recently trialled (2015) and launched (2016) an initiative through the food security branch of the Ministry of Agriculture, of 'Indonesian Farmers Stores' (Toko Tani Indonesia - TTI).[11] TTI stores allow farmers to sell through a supply chain of only three links, while elsewhere up to nine links are common (Wardhani 2016). In 2016, 1652 TTI shops opened, most of them in Java, but the scheme appears to have slowed since. There are also countervailing trends, however, as national and international food retail chains open thousands of branches in Indonesia (Suryadarma et.al. 2010). While some stock organic produce, prices are high and farmers report oppressive purchasing terms, with price gouging and long delays before payment.

Case 3: an NGO-led national initiative

35 Another set of actors in the movement are non-government organisations (NGOs), known in Indonesia as *LSM* (*lembaga swadaya masyarakat*). LSM are different from 'mass organisations' such as SPI in that their members are not necessarily farmers but more likely activists - often students, academics, food experts, consumer advocates, food industry experts or disadvantaged consumers. Rank-and-file members typically volunteer, but well-established LSM often have modestly salaried leaders and staff.

36 Food-related LSM position themselves variously between four stakeholder groups – international actors, government, farmers, and consumers. They usually depend on funding from international aid agencies such as USAID or global NGOs such as Oxfam. Constructively critical of national or regional governments, they advocate for improved policy on behalf of communities who may not have a voice.

37 Whereas farmer Ormas are oriented more toward social mobilisation and transformative action, most LSM are advocacy and policy-oriented. The line between them can shift over time, however, as farmers begin to self-organise and network beyond the local level. Leaders within national Ormas of necessity become activists first and farmers second. Conversely, many LSM activists also have field projects in farming communities to disseminate new ideas and technologies and bring about practical change. Some individuals are active in both kinds of organisations and hence LSM and Ormas are loosely allied, at times entering into more concrete partnerships to achieve specific objectives.

38 The *Institute for Promoting Sustainable Livelihood Approach* (InProSuLA) is the most active LSM on food security / sovereignty issues in Central Java and the 'Yogyakarta Special Region' (DIY). InProSuLA was founded in 2002. Its aims are 'socio-ecological', supporting disadvantaged communities and simultaneously protecting the environment.[12] With 17 paid staff, its real strength lies in its unpaid members, many of whom are representatives of local farmers' networks.

39 InProSuLA's main foci are sustainable agriculture and aquaculture, ecosystem and farmland restoration, local handicrafts development and rural credit. While an organic production model is used, the term '*organik*' is not, nor do they seek organic certification. Their priority is encouraging the production of healthy, nutritious food cheaply and sustainably. Teams provide training and mentoring for capacity building, including climate change and disaster resilience workshops. They also assist in organising farmers networks, consumer and women's groups, stakeholder fora and public consultations. One project, for example, incentivises production of organic fertiliser from manure by providing farmers with low cost, low maintenance, locally replicable technology for capturing methane for domestic use, which helps reduce pressure on forests from local firewood demand. This project has achieved better outcomes than comparable top-down, state-run biogas programs.

40 Another important aspect of InProSuLA's work is advocacy. The current director, Mr Saridjo, is an LSM representative on the multi-stakeholder 'Council for Food Security' *(Dewan Ketahanan Pangan*), which also includes academics, entrepreneurs and government officials. The council relates to incumbent President Widodo's plan for economic independence, which includes a food sovereignty agenda for self-sufficiency in the three key crops of rice, maize and soya (*PaJaLe; padi, jagung, kedele*). InProSuLA has lobbied for crop diversification and questioned the state's fetishisation of key crops, especially rice. InProSuLA policy reflects current international thinking on food security and sovereignty, and lobbies accordingly on behalf of farmers and consumers. Such knowledge is vital for securing funding from international donors.

41 Their most ambitious campaign aims to reform the controversial BULOG program "Rice for the Poor" or RASKIN (*beras miskin*), which has been running since 1998. In 2014, RASKIN officially provided 15,530,897 disadvantaged households with a monthly allowance of 15kg of rice at the subsidised average price of 1,600 IRP/kg, which was less than the cost of distribution alone (InProSuLA 2015). Based on extensive monitoring in 2013, InProSuLA argued that RASKIN was failing to comply with its own guidelines. They questioned the poor quality of rice, procurement costs up to double the market price, failure to identify all poor households, lack of monitoring and complaints management procedures, failures of distribution, and an overall short-term, band aid approach to poverty alleviation. This subsidised rice also undermines incomes of local farmers, many of whom are themselves impoverished, by depressing prices. Our own interviews with

farmers and recipients of RASKIN confirm these complaints. InProSuLA partnered with several Gapoktan to redesign the program and rename it RASDA or "Rice from the Region" (*beras daerah*). The idea is to source rice from local farmers rather than through long supply chains. Such decentralisation, it is hoped, would reduce corruption, distribution costs and failures of the current, centralised RASKIN system. It simultaneously would provide local farmers with a market for their rice and other local foods (*pangan daerah*, PANGDA).[13]

42 Public meetings and media briefings were held in 2013, as well as hearings with members of local parliaments and finally a national conference (12.-14. 12. 2013). The initiative was subsequently extended to additional provinces and a pilot project in Kulon Progo, DIY, with an MoU in 2014 between BULOG's DIY branch, the regent and the local Gapoktan (farmers' association), who have the supply capacity. Public servants are already being supplied with locally sourced rice. RASDA marks an important shift to a food sovereignty model strengthening local community-based economies, food systems and farmers' incomes, as part of an integrated moral economy approach to poverty alleviation (InProSuLA 2015).

Figure 7: farmers campaigning for RASDA (InProSuLA 2015: cover)

Credit: Thomas Reuter

43 Another InProSuLA initiative is *Koperasi Pangan Nusantara*, a network aimed at shortening food supply chains by educating and linking consumer groups with farmers' networks and eventually bypassing markets entirely, so that farmers can supply consumers directly with sustainably produced, healthy organic food at a moderately higher but more stable price. LSM such as InProSuLA fulfil an important lobbying role at the intersection between farmers, consumers and government. Such mediation is sorely needed. Even when governments adopt relatively enlightened policies, their programs tend to remain beyond farmers' control and subject to arbitrary political decisions.

Case 4: a government-led initiative

44 Top down initiatives tend to be less successful than farmer initiatives, but not necessarily so. Where there is consistent political will and sufficient local commitment and participation, success can be achieved. One example is the regency of Sragen, Central Java province, where a local regent (*bupati*), Mr. Untung Wiyono Sukarno, pushed hard for organic farming during his two terms (2001-2011) in office, aiming to convert a whole district and eventually the whole regency. This policy foundered under his successor, but has resumed under the current regent, Untung Yuni Sukowati (2016-), who is Untung Wiyono's daughter. This continuity has been vital to the success of the program.

45 The upstream district of Sambirejo was selected for the program because of its low development, extant traditional farming pattern, uncontaminated water and ample manure from cattle and goats. The program began in 2001, in three villages. One organic cooperative in this district, Tani Sri Makmur, for example, involves 40 farming households.[14] All wet rice fields in the village came under organic cultivation. Across the district, 232 of 740 ha of rice fields are now organic. Sceptical farmers were instructed by government extension workers how to transition from chemical fertiliser to locally produced manure. They noticed their soil becoming soft and water-absorbing again, and populated with earthworms. Their first three harvests showed slightly reduced yields but they persisted and yields returned to previous levels, while production costs declined. Farmers keep their own seed for the next crop, while pests are uncommon and controllable with homemade natural pesticides. Microorganisms from local plants accelerate compost fermentation (rather than buying commercial products such as EM4). More efficient SRI-based or traditional (*jagar legowo*) planting patterns, which give plants more space and light, have also been introduced with success. By 2010 the return on capital for organic farms in Sragen regency was 2.83x, compared to 1.81x for non-organic ones (Mayrowani 2012:104).

46 Rice distributed to district government employees as a salary supplement is now sourced from local organic farmers. Assistance was also provided to obtain organic certification and farmers have renewed these certificates at 3-yearly intervals. Local government 'technical advisors' (PPL) attend the monthly meetings of farmer cooperatives to address problems, sometimes with direct aid. In 2017, for example, the government donated eight cows to boost local meat and compost production. Not all government support has been so useful, however. Complicated biogas equipment introduced to compost producers has failed and not been repaired, for example. The government regards Sukorejo as a model case nonetheless. There are frequent visits from officials, agriculture students and fellow farmers from other regions as well as some community-based agro-tourism (*kelompok sadar wisata* or PokDarWis). Some simply enjoy the village atmosphere, but many come for working holidays to learn about organic farming, emulating the international WWOOF movement, which also offers international placements in Indonesia.[15]

47 Farmers returns are not yet optimal, however, because they lack facilities to process their organic rice separately and hence are forced to sell it at the price for ordinary rice. Development of local processing capability is the next step and, already, Mr. Supriyanto, son of the founder, Ali Sutrisno, has begun milling and packaging sun-dried rice with government-provided equipment, to be sold in Yogyakarta at a much higher price. He lacks the capital, however, to buy the entire cooperative's rice crop right after the harvest. This family's long-term leadership shows how much successful government-led interventions depend on personal commitment at the local level. The lack of mechanical drying equipment or sun-drying space means that processing times exceed the patience of cash strapped farmers. The Tani Sri Makmur cooperative is developing a savings and credit scheme to address this lack of venture capital and to reduce desperation-selling at harvest time. Elsewhere, an independent farmer credit union, TYAS Manunggal, mentioned earlier, has already accumulated capital reserves 100 times greater than this scheme. The current Regent opened a new organic rice factory in 2017 and hopes to increase organic cultivation to 1200 ha. The factory will process local organic rice for export to global markets and is owned by former military (TNI) commander General Moeldoko. Time will tell whether farmers shall be paid fairly or coerced to accept prices that favour the factory owner.

48 Farmers have learnt from bitter experience that so long as they are 'led' by the government, they remain dependent and potentially vulnerable. The primary motivation of governments is economic, and state initiatives lack the socially transformative moral economy ethos of many grassroots initiatives, like those described above. Government initiatives can nevertheless have an impact, if they are persistent and enjoy local support. Short term economic motives, however, can produce very adverse, unintended consequences. An example is the Amanah Agrowisata (agro-tourism) complex in a neighbouring regency established in 2004.[16] Designation as an agro-tourism site has triggered an influx of outside investors seeking to profit from public infrastructure development in the area, and associated publicity. The Amanah complex has become essentially an amusement park, with swimming pools, water slides and rides for children, with a token 'organic garden' to justify the label '*agrowisata*.' Busloads of tourists arrive daily to visit a small city of hostels, restaurants and shops, for which fertile rice fields have been bulldozed. There is some education promoting the idea of sustainable farming among consumers, but whether this compensates for the environmental damage is questionable. Generally, such projects are heavy handed and disruptive, and capital inflows on this scale into poor rural communities almost always marginalise local people. Their land is often alienated and they are in no position to reap significant benefits. Government support is more likely to lead to positive change when it is aimed squarely at farmer empowerment and environmental conservation, rather than generating profits for rent-seeking 'green' investors. But even with the best of intentions, government agencies face a long road to rebuild their moral authority, eroded over the New Order period and by subsequent failures to reduce corruption.

Figure 8: bulldozing rice fields for Amanah agro-tourism resort

Credit: Thomas Reuter

Conclusions

49 The four case studies illustrate how local farmer cooperatives across Indonesia are rebuilding healthy, sustainable food systems from the ground up, how they are organised into a powerful national mass movement of farmers, how allied NGOs influence policy through lobbying and public relations work, and how the sustainable farming movement as a whole has learnt to navigate national and local state-scapes that range from hostile to supportive to their socio-ecological agenda. What we describe cautiously as a "movement" in fact consists of thousands of diverse initiatives at all levels, from the local to the regional and national. Our research also shows that there is much communication between the different actors through multiple channels, which lends cohesion to an Indonesian farmers' movement that has been slowly rebuilding itself since the repressive Suharto regime collapsed in 1998.

50 As we argued at the beginning, the case studies have shown that diverse participants in the farmers movement largely share a common, moral economy approach to the reform of food systems. Farmers' relationship with local ecologies, communities and economies is based on a morality of "symbiotic cooperation" that stresses the simultaneous need for health ecosystems, healthy food, fair incomes for farmers and modest prices for consumers. By adopting this approach, they are creating food production and distribution systems that are very different from those of agriculture and food corporations, which are based on the neoliberal market economics. They do so beyond and sometimes in spite of the state, but the state can and increasing has been supporting them to a certain extent, namely with organic food production and supply chain reform schemes.

51 Our observations contribute to a growing body of research that shows moral economy principles to be an indispensable part of any transformation toward sustainable food systems. Adopting a moral attitude to the environment and farmer-consumers relations is vital if local food systems are to deliver both food security to consumers and livelihood security to farmers, in a sustainable way. Promoting the health benefits of organic diets is not enough to motivate whole food system transformations, as elite organic products are

unaffordable for most consumers. A social justice-focused, symbiotic cooperation approach at multiple scales is needed to "sustain" farmers, consumers, communities and environments alike (see also Winnett 2011:iii).

52 Ecologically and socially responsible food systems are our best chance to address the global food gap and to support the livelihoods of small farmers who are committed to their communities. The foundation is a shared understanding of the moral nature of a healthy economic life, just as Adam Smith had argued in his early work (Smith 2002), though many neoliberal ideologues studiously ignore this, citing his famous passage on "the invisible hand of the market" out of context.

53 Traditional, local knowledge-based farming is not incompatible with tech-savvy modern organic methods, and Indonesian sustainable farmers are great innovators, as SPI's modular aquaculture system illustrates. New communication technologies, meanwhile, are revolutionising farmers' social and distribution networks, as evidenced by the use of locally designed mobile phone applications for farmers' credit union accounts and by the use of social media as a direct marketing or social networking tool by farmers.

54 There is scope for governments to assist small farmers, for example, through investment in rural infrastructure such as local roads, markets and sustainable irrigation, scale-appropriate mechanisation, a supportive regulatory framework, more localised food provision schemes for the poor, and smart, green technology. Most important, however, is that governments support fair incomes, empowerment and public recognition for farmers. The Indonesian state's default approach to keeping prices low for consumers through market interventions is understandable but short-sighted for failing to protect farm livelihoods. Farmers are achieving better outcomes by networking directly with consumers to take 'the market' out of food systems altogether. These developments will be the focus of a subsequent publication.

55 We hope the case studies will provide inspiration for transitions to socio-ecologically sustainable food systems in other parts of the world. Our analysis has shown that moral-economy principles are a key ingredient for the success of such transitions.

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Notes

1 These cases are drawn from a much larger set of field data, to be explored in more detail in forthcoming publications.

2 Data drawn from interviews with Hadi Paiman and other organic farmers in Pereng in November 2017.

3 For a detailed account of the Buru prison 'farming school" see http://ypkp1965.org/blog/2017/10/02/petani-dari-kampus-buru/

4 Three examples are the Joglo Tani sustainable farming school, the Bumi Langit permaculture project run by a Muslim community, and the Lumbung Tani Lestari cooperative with an associated Credit Union, TYAS Manunggal.

5 Interview with Mr Badri, head of a Gapoktan in the district of Polanharjo, Klaten Regency, Central Java.

6 http://www.spi.or.id/

7 Other organisations include the 'Fraternity of Friends of Farmers and Fishers' (*Persaudaraan Mitra Tani Nelayan*), the development conflict-focused 'Agrarian People's Communication Forum' (*Forum Komunikasi Masyarakat Agraris*, founded 22 December 2011 in Kulon Progo), the new umbrella organisation 'Farmers Movement of the Indonesian Archipelago' (*Gerakan Petani Nusantara*, founded 21 January 2016) and several others, all closely interlinked.

8 Data are based on extensive interviews with leading SPI members and several field visits to locations where SPI is running education and development programs in 2017 and 2018.

9 There is some collaboration with like-minded Indonesian academics, who are a minority in still agro-technology-dominated agriculture faculties, but SPI prefers to use its own experts.

10 Extension officers often double as salesmen of agricultural inputs.

11 http://tti.pertanian.go.id/

12 This and subsequent data are based on interviews with Mr Iwan Prasetyo and other InProSuLA representatives in Yogyakarta, June 2016 and June 2018.

13 The PANGDA concept is currently receiving significant attention and support from the National Development Planning Agency, Bappenas (*Badan Perencanaan Pembangunan Nasional*).

14 Data from interviews with the head of the cooperative, Mr. Sumardiyanto, the head of local agro-tourism, Mr. Sukamto, and others in 2017.

15 See https://wwoofindependents.org/hosts/search/location/indonesia-49937

16 www.agrowisataamanah.com

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	File	image/jpeg, 2.5M
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	Credits	Source: https://www.indexmundi.com/agriculture/?country=id&commodity=milled-rice&graph=imports
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	Title	Figure 3: rice depot, Indonesian State Logistics Agency (BULOG)
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