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Understanding Food System Resilience in Bali, Indonesia: A Moral Economy Approach

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Abstract

Food systems in Indonesia and other developing countries have witnessed a rapid change in production, trade and consumption patterns. The central highlands and north-eastern coast of Bali form one such system, with centuries of documented regional trade relations between coastal and highland communities whose food products were complementary. This paper adopts a moral economy approach to explain the decline in local food security at a systemic level, and to explore also how it may be reversed. In particular, I explore how this regional food system operated, and how modernization since the 1990s has compromised biodiversity, ecological sustainability, social resilience and food security. Greater attention to this moral dimension of food systems, it is argued, will contribute to more successful agricultural development and food security programs.

Introduction

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Even if an overall adequate global food supply were to be maintained in the 21st century, against a host of countervailing trends such as population growth and global warming, history has shown that an adequate supply does not translate into universal food security. While today global food production is still sufficient to feed the world in theory, food security eludes 815 million of the world's poorest (FAO 2017). A neoliberal, market-based and entirely profit-oriented global food system has denied access to food to the most vulnerable populations (Reuter 2015). The consequences would have been even more severe if it was not for the fact that poverty-related food insecurity has often been ameliorated quietly within local moral economies wherein food access does not yet follow the market logic of profiteering (Devereux 1999). Moral economies are culture-specific moral frameworks of norms, values and practices of mutual aid that typically have operated within local societies and their food systems. This case study from Bali, Indonesia, reveals the vital contribution of moral economies to food security, the negative impact agricultural 'modernization' has had on them, and some recent attempts by local social movements to restore them.

The moral economies of local food systems have long improved resilience among many groups around the world that may otherwise have been food insecure, or more severely food insecure. Unfortunately, however, the resilience and moral character of local food systems are increasingly compromised, creating heightened vulnerability to food price fluctuations. This trend is part of a broader process of rapid transformation in the life of rural communities. Agricultural crops, inputs, land tenure arrangements, labor schemes, gift exchange patterns, transportation, trade and many other aspects of food systems have been radically transformed in the wake of the green revolution and under the structural adjustment programs imposed by creditor institutions on developing countries like Indonesia over the past five decades. Here I argue that moral economy needs to receive recognition as a central pillar of food security policy and taken into consideration as an alternative to dominant, market-based food security strategies.

The concept of 'moral economy' was developed by the English historian E. P. Thompson, and later popularized in anthropology by James C. Scott (1976) in his book *The Moral Economy of the Peasant: Rebellion and Subsistence in Southeast Asia* (see also Scott 1985). By 'moral economy' Scott means the way in which economic needs, and especially food security, are in practice "socially experienced as a pattern of moral

rights or expectations.” Therefore, he argues, “[while the study of food systems] begins in the domain of economics, [it] must end in the study of ... culture and religion” (Scott 1976:6). Drawing also on Karl Polanyi, Scott called for recognition of “economic” undertakings as inherently embedded within social and cultural contexts, and for consistent insertion of a moral dimension into political-economic analysis. This basic insight has been widely acknowledged, even by Scott’s critics (Wells 1994:292, citing Popkin). In summary, moral economy serves as a socio-cultural system of mutual insurance, wherein participants mitigate economic risks by sharing resources based on an ethos of mutual care, cooperation, solidarity and trust.

It is worth noting here that the role of moral aspects of the economy was very strongly acknowledged also by the founders of modern economics, most notably by Adam Smith (1759) in his *Theory of Moral Sentiments*. Proponents of the currently dominant but increasingly discredited neoliberal ideology of economics studiously ignore this early, foundational part of Adam Smith’s work, though they eagerly cite his later work to give their own views the flair of long-established wisdom. In keeping with their still dominant economic ideology, standard techno-economic development interventions in food systems have primarily aimed to increase productivity and liberalize trade, leaving debates on moral issues around food to consumer, farmer and environmental activist groups or humanitarian aid organizations.

Current debates on food security as a human right are inconclusive, in that they do not explore the effectiveness of moral economies empirically. While food and agriculture activists frequently frame their important policy critiques in moral terms, their moral concepts are abstract and prescriptive and not adequately supported by an evidence-based understanding of how and why actual moral economies succeed or sometimes fail to deliver food security in practice. Food aid programs similarly reflect a general recognition that morality needs to play a role in the global food system. Such aid does not challenge the entrenched immorality of this system (Reuter 2015), however, it only serves as a topical treatment of the symptoms thereof. Inequality will continue to be a key driver of food insecurity in the present, profit-oriented system of global food provisioning.

Longer-term agrarian development programs tend to be more thorough in their approach to food security than aid programs, but they too often lack in-depth knowledge of cultural aspects of local food systems and especially their moral

economy aspects. The disparate moral expectations of various stakeholders may be one reason why new conflicts often arise in the wake of agrarian development projects. In addition, state-sponsored development has often favored the accumulation of capital and land in the hands of fewer, larger farmers and agribusinesses (Oxfam 2013), and thus has contributed to a general decline of tight knit, small farmer communities with strong mutual moral obligations.

This paper takes a step toward addressing these issues by posing an empirical question: In what way and to what extent do particular moral economies impact food security? This question is addressed through a Balinese case study that was designed to reveal how food production and consumption were embedded in, and powerfully supported by, the social and moral order of a local society, as well as the detrimental consequences of the recent and partial disembedding of this food system. The aim is to help develop methodological foundations for an empirical social science perspective on the moral aspects of food systems, which until now have been evaluated predominantly from an economist or ecologist perspective (Pinchot 2014; Francis et.al. 2003).

My ethnographic methodology draws on data collected in the course of food system-focused field research in 2015-2018,¹ as well as on a much larger body of data on socio-economic change collected in the course of my long-term ethnographic study between 1994 and 2014 (including 4 years of actual fieldwork). Field research on the local food system was designed to trace all local food pathways from the point of production to the point of consumption, through participant observation, thematic interviews, and focus group discussions with farmers, fishers, local consumers, government officials and grassroots food and farming activists. Supply chain links were checked with a representative sample of wholesale buyers and traders at all levels. Norms and moral codes pertaining to food-related interactions among local people, with outsiders and also between humans and the natural or supernatural environment were charted through observation of ritual, private and market place exchanges, as well as interviews with local residents and cultural experts, such as local priests. This was complemented with archival research on food and agricultural

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imports and exports in Indonesia, to better understand the different set of moral codes operative in these extra-local interactions.

A Balinese Food System Case Study

The local food system explored herein is located in the central highlands and on the northeastern coast of the island of Bali, Indonesia. The two adjacent but ecologically different regions are highly integrated culturally, forming a single and distinct indigenous ethnic group known as Bali Aga. Villages in the highlands have long-established traditional trade links with communities on the northern coast that can be traced back for a millennium, which is also the limit of written evidence available within Balinese historiography (below). Archeological evidence dating to the first century further shows that interisland trade from India and China through the Java Sea to Bali's northern coast was already flourishing at the time (Ardika & Bellwood 1991). The same evidence also suggests that local, inland-oriented trade networks running from the coast through the mountains were already in place two millennia ago, and that local trade networks' international linkages provided a conduit of external influences on Balinese culture, most notably Hindu-Buddhist religion.

In the highland region of Bali, horticulture and dry rice cultivation were the main agricultural activities for many centuries. Agricultural cycles were deeply embedded in, and dependent on, a complex ritual system regulating the seasonal rhythm of planting, harvesting, and communal food consumption in the village and region. This system featured regular labor sharing, which is now in decline. It also was and largely continues to be based on a communal land allocation system (*ayahan desa*) steeped in ritual obligations and closely intertwined with the social organization of highland villages (Reuter 2002:55-65,123-25; Reuter 2006). Communal food consumption, especially of rice and sacrificial meat, was and still is very significant, and takes place frequently on ritual occasions, such as temple festivals and the new and full moon gatherings of village elders and communal land users.

[Insert Figure 1: Mountain and Coastal Old-Balinese Villages: A 2000-Year-Old Food System]

Traditionally, commercial activity around food was limited to inter-local trade, comprising a lively exchange of essential foods between the highland communities and the fishing and interisland trade-oriented villages of the northern coast. Kintamani is the most important market (*pasar*) town for the entire region, and its market is held on every first day (*Pasah*) of the three-day week within the Balinese permutational calendar, which regulates market rhythms. The market was relocated from its original location in the neighborhood of Kuta Dalem in the village (*desa*) of Sukawana, a few kilometers down the main road to Kintamani, on the initiative of the Dutch colonial government in the 1930s. There is still a shrine marking the location of the original market in Kuta Dalem, called Pura Mas Melanting, and a similar temple (*pura*) was built in the new market. All over Bali temples of this name are found near traditional markets, showing that commerce and religion were not sharply distinct concerns. Personal offerings are made at Melanting temples by those who seek divine support for material success in business or trade from the deity Ratu Gede Subandar, the 'Lord Harbormaster'. Prohibitions also underline the link between ritual and trade. For example, the people of Batur are forbidden to trade during the harvest festival at the regional temple Pura Batur, from the tenth full moon until the following new moon.

[Insert Figure 2: Ritual Networks among Old-Balinese Villages are Supporting Trade Links]

Trade with the north coast is underwritten by intense ritual connections maintained through the institution of regional 'domain temples' (*pura banua*). The largest of these regional temples is Penulisan, maintained jointly by more than fifty highland and coastal villages. Kuta Dalem, where the largest market of the region, Pasar Kintamani, was also originally located lies right at the foot of this regional temple, further linking ritual and market activities.

The ritual ties among communities supporting this ancient state temple have been in place for many centuries, and trade has been part of the story from the beginning. For example, a 1200AD inscription (Prasasti Kintamani E) states the specific privileges held by the traders of Kintamani (over those from the villages around Lake Batur or *wintang danu*) with regards to the cotton trade from the mountains to villages on the coast, including Julah. Another inscription from 1300AD (Prasasti Sukawana D)

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grants similar privileges to the people of Sukawana. Production of surplus food for the purpose of regional trade between the mountains and the coast is thus an ancient practice.

During my doctoral research in 1995, I recorded that local food products traded between coastal and mountain villages included salt, palm-sugar, fish, coconuts and coconut oil going uphill, and bananas, maize, root vegetables, spices, coffee and meat going downhill to the coast. Traders traditionally travelled by foot with their packhorses from Pasar Kintamani (later on Hari Pasah) to the market in Desa Penuktukan the next day and back to Kintamani two days later, allowing more time for the uphill journey. Exchanges of goods in the market place have been 'monetized' for as long as anyone could remember. The turnover is small (today about USD 100/day for coastal and USD 50 for highland food traders). Profit margins have always been slim, and net earnings are similar for the upland and coastal participants (about USD 40/day of earnings after expenses, which are much higher for fishers). There are some full-time traders with modest livelihoods (less than USD 100 net profit/day), but most small traders are the wives of farmers or fishers, who also handle most of the food processing where needed. In short, this was for all practical purposes a rather balanced system of food distribution with an extremely short supply chain that delivered a high degree of food affordability. Prices do vary seasonably but there are no reports of profiteering or excessive margins being extracted. Market dependence was limited to food items that were locally unavailable in the highlands or at the coast (less than 15% of all food consumed), although these traded foods were vital for a balanced diet. Bateson and Mead (1942), for example, noted a high incident of iodine deficiency in a highland village located just outside of the ritual alliance system described above, caused by a chronic lack of access to sea salt and fish.

All other foods were available from subsistence production at the household level or from cashless gift exchange among neighbors and kin (below). Food was not produced for profit and was not sold at all at a village level or among villages with a similar range of products. Consumption of locally produced beef (from Bali cattle) and pork was and is almost entirely restricted to communal ritual meals associated with ceremonial animal sacrifices. All food was organic at least until the late 1970s. Diets were extremely varied and there was hardly any imported or processed food. Finally, the environmental impact of agriculture was modest, given that highly

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biodiverse mixed gardens predominated. In the early 1990s I would typically encounter between 30 and 80 different food, condiment, and medicinal plant species within a single highland garden.

This traditional system of morally sound and sustainable inter-human and human-environment relations was gradually transformed from the colonial period (1908-1949) onward. A first step was the establishment of plantations of cash crops, including clove, coffee, cacao and citrus, destined for distant markets outside the island of Bali. While plantations were few in number and area, largely thanks to the inalienability of 'communally owned village land' (*tanah ayahan desa*), cash cropping did spread as individual farmers mimicked the plantation's economic model on their 'privately owned land' holdings (*tanah milik*), gained through individual forest clearing.

The authoritarian New Order government under General Suharto (1966-1998) actively encouraged a shift away from the subsistence gardening model described above to cash crops. This led to a number of economic crises, for example when one of Suharto's sons, who had monopoly control of the clove industry, squeezed farm gate prices, leading farmers to fell all their clove trees in protest. Another crisis occurred when a fungal disease decimated citrus orchards in the foothills toward the northern coast, ruining many farmers. It is thus unsurprising that, in the 1990s, about two thirds of farmers in the highlands (precise statistics not available) still continued their traditional mixed garden horticulture as a subsistence activity in parallel with some cash cropping and non-intensive livestock raising (Bali cattle) for the purpose of participation in inter-local trade with the coast, as this continued to be perceived as the safest livelihood strategy.

Declining Ecologies and Moral Economies in the Wake of Agricultural Intensification

I have conducted research and observed socio-cultural and economic change in this region for many years, and the status of agriculture has changed in some interesting, non-linear ways during this time. Although it was the main occupation for the overwhelming majority in the early 1990s, agriculture was seen as old-fashioned and

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linked to endemic poverty. This poverty did not typically entail food insecurity so much as an inability to raise cash for consumer goods, which had entered people's imaginary through the introduction of electricity and broadcast media, especially television. It soon became the ambition of every young person to leave the village for work or study, and many did. But this trend has not persisted. I first noticed a reversal during a follow-up visit in 1999. In conversations with local farmers they laughed off the issue of the Asian Financial crisis that was then the greatest worry of many badly affected urban workers in Indonesia. Instead, they reported significant increases in the market value of their coffee, due to the devaluation of the Rupiah. Generally, successful farmers had become steadily more commercial and wealthier, and quite able to afford modern consumer goods. Today their income by far exceeds that of public servants, for example, who were once the envy of farmers for having a steady monetary income.

Massive demand in the hospitality sector for fresh fruit, vegetables, poultry, and beef, along with vastly improved roads and transportation facilitating market access, have led to a new boom in commercial cash-crop agriculture. This has benefited larger farmers more than those with small landholdings. Individual landholdings over the last few decades had declined at first, due to population growth and the associated division of estates through inheritance. Once plots became too small to sustain a household, they were purchased or leased by larger farmers whose landholdings thereby increased beyond what had been the typical sized, single-household-operated farm of the 1990s (about 0.5 ha). In short, farmers became richer but also fewer. Many land-poor farmers, if they did not leave the highlands altogether, were reduced to the status of agricultural laborers or sharecroppers.

Bali as a whole has seen a dramatic rise in demand for arable land, fueled by the food needs of a fast-growing population (2.15% per annum in the decade of 2000-2010; cf. Erviani 2011) and the millions of tourists arriving in Bali annually. It is also driven by massive irreversible farm land loss to residential and commercial development. During the 1980s in Bali, some 6,000 ha of irrigated land and the same amount of dry farm land were lost to agriculture, at an annual rate of about 1,000 ha by the end of that decade (Foley 1991). The rate of land conversion increased further to about 3,000 ha in the year 2003 (Bali Post 2003). In the highlands, this demand pressure has been less pronounced but significant and has been met in part by deforestation of

previously uncultivated land. These practices ignore a fact that is very well recognized in a ritual context at the regional water temple Pura Batur (Mertono 2007), namely that keeping the highland region well forested is of vital importance for the water security of the entire island, particularly given the added water demand from the tourism industry (Wright 2016). The demand for cash crop production in the highlands has thus been met at great ecological cost in ways that are not sustainable.

Almost the entire highland region is now occupied by citrus monoculture, while the traditional, highly biodiverse mixed gardens have all but disappeared. Coffee orchards have been largely displaced by the (for the time being) more profitable citrus farms. Unlike coffee, citrus does not require shade trees, which have all been felled now, nor is it interspersed with other plants. Grass and weed growth is controlled with heavy glyphosate use and the soil beneath citrus trees tends to be completely denuded of any other vegetation or life. The entire highland region will be devastated by the next major outbreak of a citrus disease or pest resistant to the chemical fungicides and insecticides currently used in copious amounts. The typically lightly forested landscape of the 1990s has disappeared and all land, including erosion sensitive steep slopes and ridges, is now cultivated with citrus, with the exception of a few patches of degraded state forest and coffee orchards.

Meanwhile, vegetable farms around Lake Batur are seriously threatening sweet water fisheries and the overall ecology of the lake with fertilizer and pesticide run-off from their fields. Fishing yields at the northern coast have also suffered severely from unsustainable practices, such as dynamite fishing and the destruction of coral reefs.

There are some mitigating synergies, insofar as the intensified production of chicken and beef, for example, produces manure that can be used for fertilizing fruit and vegetable crops, but there are also shortfalls in agricultural inputs that cannot be met locally. Some innovative local farmers are now buying land on neighboring islands, such as Sumbawa, where they grow maize that is then brought back to Bali for poultry feed. Maize used to be quite prolific in the highlands. It was used as a staple food in the 1990s alongside rain-fed rice. Now maize is thought to be no longer worth growing locally due to the greater value of alternative crops.

Highland Bali is emblematic of a dramatic global decline in food biodiversity (75%), which began as farmers worldwide replaced their diversified local cropping practices

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and indigenous varieties with monocultures and genetically uniform, high-yielding hybrid varieties (FAO 2004:1). In the early 1990s, the mixed gardens typical of highland agriculture contained at least 120 different food crop species overall, based on my records, assuring a highly varied diet as well as high resilience against total crop failure due to adverse weather or pests. Wild species were also foraged, including forest vegetables (e.g. fern fronds, *paku*) and some insect species (e.g. *dedalu*). Now that the region is almost entirely covered by citrus crops, fat and sugar rich, low-nutrient processed food is being imported to fill the lack of locally produced staples, transforming what was once a balanced and varied diet with a modern junk food diet in less than a generation. The typical diet now includes about 30% (in calories) of processed food, predominantly in the form of cakes, biscuits, sweets, chocolate bars, instant noodles and sweetened drinks, and this percentage is even higher among children. The result is a pattern Shrimpton & Rokx (2013:2) have labelled the ‘double burden of malnutrition,’ whereby over-nutrition and under-nutrition will coincide in the same population. Consequently, national population percentage rates of type-2 diabetes have doubled in Indonesia since 1980 (WHO 2016).

The moral economy of the highlands is rapidly transforming in parallel to these other food system changes, even though local and regional ritual ties and ceremonial life remain fully intact. A separation of increasingly formalistic religious concerns and increasingly liberalized economic concerns is causing major tensions in the local status economy, with material wealth gradually becoming more important than ritual status. Most important in the context of food system analysis, however, is a significant reduction in the amount of social solidarity, which previously served as a source of resilience and insurance against food insecurity. The implicit risk of this development is not yet felt to be a problem by local people, because there is no great demand to tap into social capital at this point in time. The reasons for this lack of demand require some further discussion.

The cornerstone of the traditional moral economy in the highlands was, and to a much lesser degree still is, a system of cashless and time-delayed gift exchange of the kind described by Marcel Mauss (1990) and known in Balinese as *baang-ngidih*, which literally means “to give and to ask for.” The *baang-ngidih* system is designed for the exchange of reciprocal aid between persons irrespective of their kinship or seniority

status. This gift-exchange system provided a way of distributing excess and alleviating shortfalls in food production, as well as distributing all manner of other material resources. Another key result of such exchanges was the establishment or deepening of the social relationship between the two parties as an end in itself. Informants consistently described such relationships as providing a sense of personal satisfaction, safety, and social embeddedness.

The cultural rules of non-monetized exchange are subtle. Anyone has the right 'to ask for' (*ngidih*) common items such as food from a neighbor or other acquaintance, and a refusal is almost unthinkable unless such requests were to persist for an extended period without reciprocation of any kind, such as providing free labor. Asking for a more valuable object, such as a silver ring, is a way to test the relationship, to see if it can be deepened. The person making the request is said to require courage, because it causes at least temporary indebtedness, and hence the person receiving the request should thank them for showing the "courage to be indebted." The cultural predilection in the *Bali Aga* (indigenous Balinese) villages of the highlands and northern coast is for egalitarian social relations, although some mild status differences do exist. An unbalanced *bang-ngidih* relationship would compromise the status of a morally indebted person who cannot reciprocate in equal measure. A complete absence of reciprocity is extremely uncommon, however. Persons who owe you will, for example, attend your household or clan lineage ceremonies, and thus help to display your social prestige just by being there, and will generally also be able to offer practical help. While asymmetries in giving and receiving can and do occur (notably between patrons and clients), the general expectation is one of delayed reciprocity.

While still operating within families and networks of close friends and neighbors, this exchange system is currently seeing diminished use. The reason is a decline in sociality and reduced dependence on mutual aid, which is the result of an extremely vulnerable but currently buoyant cash crop-based economy. Those who are poor and food insecure tend to hide the fact, because a current severe labor shortage means that unemployment is not a credible excuse for being unable to purchase food. Family and close associates do feed those who are affected by a personal crisis, such as death or divorce or illness, as a matter of strongly felt moral obligation.

Protracted and structural poverty, and associated moderate food insecurity, tends to be confined to landless farmers (about 15%) who sharecrop land on unfavorable terms (sometimes less than half of the harvest value, minus production costs), are not very successful as individual farmers due to a personal lack of skill, fall victim to destructive and increasingly frequent natural disasters such as unseasonable rain, drought, storm or outbreaks of plant and animal disease, or are ruined by fluctuations in the price they achieve for their cash crops. Many farmers with such experiences henceforth avoid entrepreneurial risks by working instead as hired farm workers. This renders them relatively income and food secure so long as the current labor shortage persists but leaves them exposed to the risk of future food price volatility or unemployment.

Outside the context of family and other close social ties, and outside the context of ritual food exchange at temple festivals and lifecycle ritual events, market forces are now dominating the exchange of food and other goods. At the market of Kintamani, for example, the market price for food shows little discrepancy between traders, and no allowance is made for buyers who are poor. There are moderate discounts for regular customers, and more so for bulk purchases. There is rarely any close-of-market discount because the market is now held every day and traders prefer to throw away what cannot be sold. There is no credit given in the market, and there is indeed little demand for buying fresh food on credit. The mainly Chinese-owned shops that sell food staples such as rice and flour and also processed food, however, do provide a lifeline of credit for those who cannot pay on the spot. Many local smallholder farmers and sharecroppers make use of this facility, especially in the lean period leading up to the harvest of their crops.

A system of 'labor sharing' at a personal (*nguopin*) or community level (*ngayah*), formerly was central to agricultural production, especially at rice planting and harvest time when larger working parties were needed. Such labor sharing (also known by the national Indonesian idiom of *gotong royong* from the 1950s onward) has now been confined to a ritual context, where *ngayah* is still compulsory and strongly valued. In agriculture it has been abandoned almost entirely, certainly in the village of Sukawana where most of my recent research was conducted. Larger farms hire day laborers now, for a fixed wage: For general agricultural labor (*jangkul rabas*) men receive 70,000 IRD/day (~\$7 USD) and women 50,000/day, for heavier work such as carrying loads

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at harvest time men receive 90,000/day. Sharecropping is a diminishing practice by comparison but is still practiced by many farmers with medium size land holdings who do not want to expand their operations by hiring and instead prefer to give excess land, which they cannot cultivate with their own household's labor, to sharecroppers. Sharecropping (*nyangkap*, or *nengah*, lit. '[to split down the] middle') is generally based on a 50:50 split of the harvest proceeds between tenant and landlord. Nowadays farmers who want to expand their business will prefer to pay a fixed price for leasing land from others who have given up farming for other occupations or have excessively small holdings. The leasing fee is usually paid annually in advance, at a rate that is fixed for a 1- to 10-year period. Average land holdings across different villages range more widely today, from as low as 1/4 to 2 ha or more. Overall, the rural labor market and the market for leasable land has been heavily monetized.

I also have noted significant changes in trade patterns. Coast to highlands trade is quite steady, while highlands to coast is reduced due to the shift to citrus monoculture. Another trend, pertaining to cash crops, is a concerted effort by young highland farmers to cut out middle men, aided by better communication and mobility, the proximity of a large tourism-based food market, and their exposure to urban networks as former high school or university students. When cash crops first became important they were sold at a very low price to wholesale buyers (*saudagar*) because end users in the urban areas of Bali were difficult for farmers to access directly. Nowadays many farmers sell directly to hotels and restaurants in the burgeoning tourism industry, taking orders by mobile phone.

Food trade in Bali still features important moral economy aspects nonetheless. For example, wholesale buyers of citrus fruit often have deals with farmers whereby they make the second half of their payment after they have made their delivery to, and received payment from, retailers, enabling them to buy up twice the amount of fruit, while farmers receive a better price per ton in return. This kind of deal depends on trust and reputation, in short, on moral principles and social capital. The remaining trade that is underwritten by ritual ties between villages still differs significantly from more commercial trade. For example, fish from the coastal village of Les tends to be cheaper, has a shorter supply chain, and is less likely to be laced with carcinogenic formalin (to keep the fish looking fresh) than fish from more distant coastal villages

where no direct ritual ties exist. Cashless direct exchanges of food are now less common but are more likely to occur still among ritual allies.

Finally, it is important to note that the highlands and northern coast cannot be separated from the fate of other parts of Bali, where some very disconcerting trends can be observed. Food price inflation and vulnerability to food crises are rising sharply in Bali and in Indonesia as a whole (Anggraeni 2014). For example, the collapse of a bridge on the main arterial road through western Bali that carries most of the road freight from Java to the population and tourism centers in southern Bali (Badung Regency), due to flash flooding in 2017, caused an instant food price explosion. While this may momentarily benefit some well-positioned farmers, other sectors of the Balinese population, particularly urban residents in low-wage employment and poor cash crop farmers, are vulnerable to such supply crises. In interviews, many reported that obtaining an adequate food supply is a daily struggle.

Revitalizing Sustainable Agriculture and Moral Economy

The food system of highland Bali (and of the island as a whole) is now hard pressed by exponentially rising demand against the brick wall of finite resources. There is little scope for further agricultural intensification, and indeed a need to take sustainability, biodiversity and water conservation measures to undo the damage already done to local ecosystems by agricultural activity. Considering also the increasing impact of climate change on agriculture in Bali and elsewhere (Cameron 2014), a shift to more sustainable agriculture is essential for enhancing the resilience of food systems in this region.

How can such resilience be achieved? A form of agricultural economy that is 'ecologically moral' toward the living environment in its methods of production will clearly be essential, given that diversified agriculture set within a healthy ecosystem is less vulnerable to external shocks (Murphy 2017). The present case study highlights that a resilient food system must also be 'socially moral' in what it produces (e.g. staples vs. cash crops) and in how it distributes food.

As a practical method to achieve such twofold resilience, ecological and social, the best option available would seem to be a revitalized and augmented form of organic,

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community-based farming. Indeed, one of the four key principles put forward by the International Federation of Organic Agriculture Movements is that: “Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment (principle of care).” (IMO 2007).

Halberg and Muller (2013) have provided convincing evidence that organic farming has a positive influence on smallholder food security livelihoods and communities, and my own observations similarly suggest that the simultaneous restoration of sustainable agricultural production and community-based moral economies of distribution are two inseparable parts of a whole. Moreover, these two ingredients are prominently recognized by new, food-related social movements that are promoting organic farming in Bali today. The evidence available to date further suggests that, among such initiatives, their success is grounded in a simultaneous revival or recreation of ‘resilience communities,’ as Greg Bankoff (2003) calls them. In such resilience communities, the dominant model of social discourse and practice is a moral economy ethos.

One agent promoting organic agriculture in Bali has been the provincial government. Since 2006 the government has pursued a ‘Bali Green and Clean’ initiative, specifically promoting organic agriculture through its Integrated Farming System Program known as SIMANTRI (Sertori 2011), in collaboration with private businesses and the certification body LESOS (Lembaga Sertifikasi Organik Seloliman). In addition, the government has set up an Organic Trade Centre in 2012 to provide assistance with marketing organic products, as well as education and research support.

One motivation for the government was the need to preserve some of the island’s newly UNESCO World Heritage-listed agricultural landscapes, such as the terraced rice fields on the southern slopes of Bali and a new UNESCO Geo Park in the highlands, which are both significant tourism sites. Between 2009 and 2012, 22 farmer cooperatives were certified (an area of about 400 ha), but the burden of excessive compliance costs (USD 1500 initially and USD 500 per annum thereafter) poses an impediment to further expansion (Budiasa 2014).

Many of the high-tech solutions promoted by the government do not have a transformative effect on communities, who are still positioned as passive recipients. For example, some token projects in the highlands have provided a few farmers with funds and technical assistance to build small plants for methane capture from the fermentation of animal manure. These methane plants also produce properly fermented manure. This is a vital sustainable agricultural input, and a general shortage thereof has been recognized as another major impediment to the expansion of organic farming in Bali (Budiasa 2014). Unfortunately, the government methane/manure systems were far too costly for farmers to maintain and repair, let alone replicate, and were received by local communities with a mixture of envy and ridicule. Similar grassroots initiatives have succeeded, however, because they use extremely low-cost, locally made, repairable and community funded devices.

The greater strength of community projects based on moral principles also becomes evident in relation to the problem of rent seeking by organic accreditation bodies. A number of farmer cooperatives studied as part of this project were found to be successfully bypassing the cumbersome and costly organic accreditation system by shortening their supply chain and marketing organic products under their own labels, which have gained the well-deserved trust of consumers – thus replacing legal formalism with moral economic practice. The consumers are regular visitors at the organic farms where they purchase, and interaction with farmers engenders mutual trust and commitment (MacRae 2011).

Some efforts at rebuilding community and moral economy around farmer cooperatives are now also emerging in the highland region of Bali, though the focus of production remains on cash crops for now. Most of the government mandated and forcibly depoliticized ‘village-level cooperatives’ (*kooperasi unit desa* or KUD) that had been established under the military dictatorship of General Suharto, and which I witnessed in the early 1990s, have now vanished. Some new state- or private sector-led farmer networks emerged in the post-Reformasi period but similarly failed to inspire lasting local engagement and disappeared (MacRae 2011). Local, farmer-managed initiatives are only just beginning to take their place.

One example is the local grassroots cooperative KSU Bale Dana Mesari, established in 2004, which now has 16 local subsidiaries and 1700 members. This cooperative

provides members with access to shared machinery, low interest loans and, most importantly, allows farmers to sell their products at a fair price through collective marketing schemes. Where previously farmers' share of the price of coffee, for example, was less than two thirds, they now collect up to 95% of the retail price by creating their own organic label and gaining direct market access. Direct export through a fair-trade network is commencing also. This cooperative is proud of its self-reliance. While they do apply for government subsidies occasionally, they also have refused inappropriate assistance, such as over-sized and expensive-to-run machinery for processing raw coffee. Governance of the cooperative is transparent and fair, and rotating leadership is used to create a sense of solidarity that strongly echoes traditional, egalitarian values and social organization patterns characteristic of Bali Aga culture and society (Reuter 2002). Unfortunately, the focus is still on coffee and other cash crops, although there is a growing awareness among farmers that the extreme dominance of citrus orchards in the Kintamani district is a great economic hazard for local communities.

Concluding remarks

More case study research in other parts of Indonesia and the world is required to pinpoint the various pathways by which a loss of moral economy has contributed to a decline in food security and food sovereignty within 'modernizing' local food systems and, conversely, how the implicit or explicit use of moral economy principles is contributing to the success of community-led initiatives to rebuild ecologically and socially sustainable food systems. It is safe to conclude, however, that food system resilience is significantly affected by the extent to which food production and exchange is supported by cultural values and social practices of mutuality and cooperation. Effective moral economies provide mutual insurance through risk and benefit sharing. The foundation is fairness and trust – not just within farmer cooperatives, but also between farmers and consumers. Looking forward, there is some hope that a renewal and redesign of traditional moral economies is beginning to take shape, with the potential to deliver better farmer livelihoods and more resilient food systems.

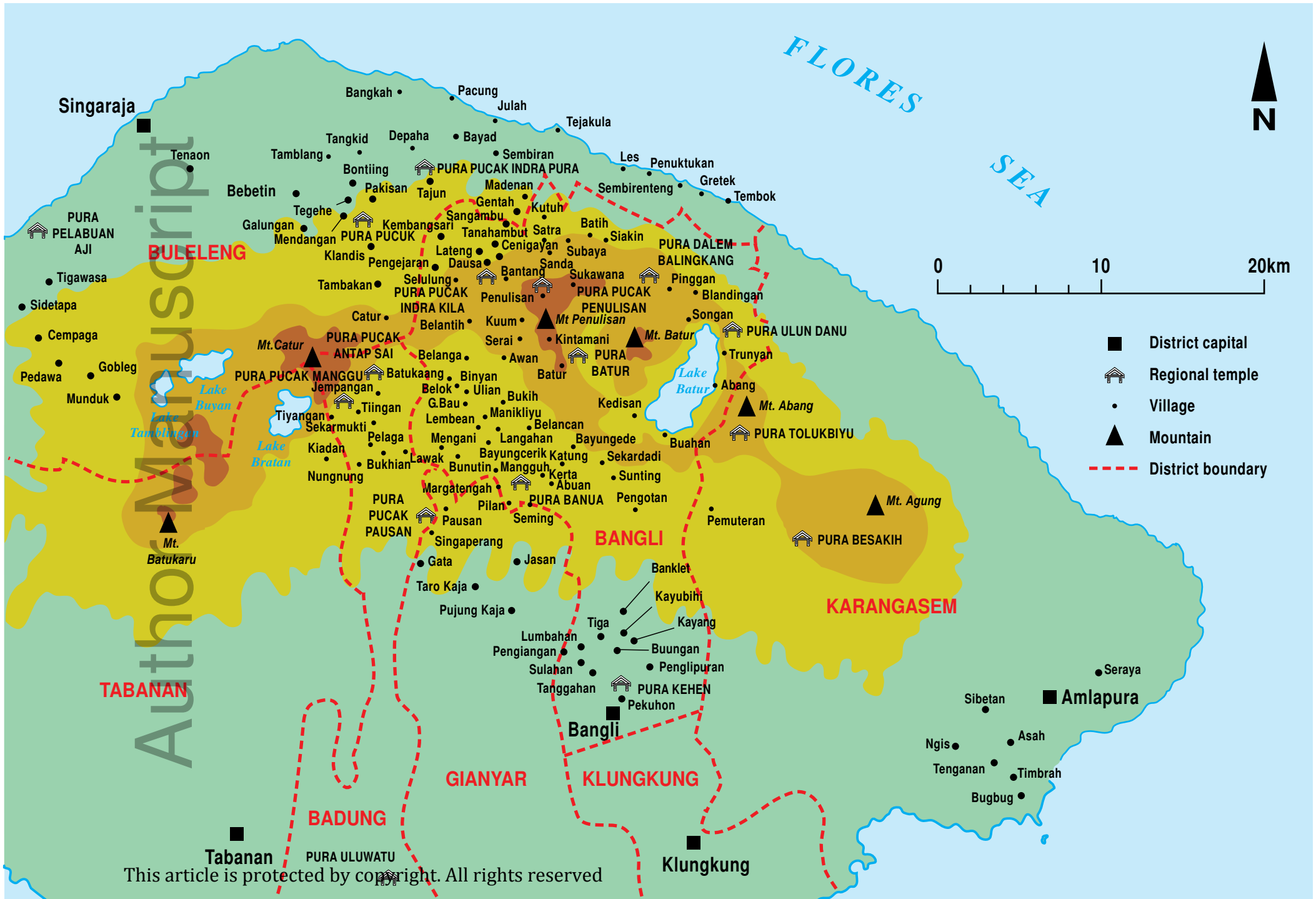
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