

# Balancing Commodities and Culture: Alternative Agriculture and the Viable Indigenous Model

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I woke up to the sound of morning glory frying as my host mother, Pikoan Phanloed, cooked up breakfast before starting her morning chores on the farm. I was on one of my first home stays during my fall 2011 semester in northeastern Thailand, living with a family involved in the Alternative Agriculture Network (AAN)—a non-governmental organization that promotes sustainable agriculture. The sun was beginning to peak through the cracks of the wooden house, illuminating some of the dusty posters on the wall. Most of these were of the royal family—par for the course in any Thai household—but there was another that stood out. It depicted farmers, sweating and tired, digging up money from the earth in front of an industrial skyline. In the corner of the poster were the letters WTO (World Trade Organization) crossed out by a bold red line.

I was in Thailand to study human rights as they relate to global development policies and environmental degradation, focusing particularly on non-governmental organizations' opposition to these issues. During that first home stay, I had only just been introduced to the AAN and the concept of NGOs for sustainable agriculture, so my understanding was still developing. At that point, I had been engaging with activists and NGO leaders who explained how the government's agricultural policies and exploitative bilateral free-trade agreements had prompted their network of farmers to seek alternatives. Hyped up on these issues of environmental human rights and international political economy, I assumed that my host mother had that poster as an indication of her strong organic advocacy and fiery political drive. But when I asked her about it, she just laughed and explained that it was a gift from her sister—she didn't know what the picture represented, or what the World Trade Organization was. She simply stated, "It looks nice, that's all" (P. Phanloed,

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personal communication, September 21, 2011). And so despite the strong political messages I had heard from the AAN representatives, my host mother—an average farmer involved in the NGO—had a strikingly political poster for no other reason than its aesthetic value. Still working through issues of Thai politics, global trade, and non-governmental organizations, I was surprised by my host-mother's answer. How is it that a member of an organization with such politically charged leaders seems to have so little understanding or care of these issues in which she's involved?

Throughout my five months there, misinterpreting that poster wasn't the last of my confusions in experiencing rural Thailand, as I was also grappling with the collision of tradition and modernity. Houses with missing walls and rickety constructed floors had impressive televisions and karaoke machines, and monks' ordinations—a distinguished and spiritual event—were celebrated with neon lights and flashy dancers. The most common offering to Buddhist spirit houses and shrines was a bottle of Fanta soda, and farmers harvesting rice with a scythe would pause to answer their cell phones. I admit, naively, that I expected more tradition, and instead felt a disconnect between the social and cultural advocacy I had read about and the move towards homogeneity and modernity that I was seeing.

However, it was the complexity of these experiences and the surprising inaccuracies of my expectations, in combination with my studies of biology and political science, that fueled my research interest in the subject of Thai agricultural politics, alternative agriculture and agro-biodiversity, and non-governmental networks. The experiences during my semester abroad exposed me to bigger picture issues related to these topics, and introduced me to the networks of farmers responsible for the local movement. After returning back to the United States I realized that my understanding of the topics still had major gaps, leading me to formulate a number of questions. What role does the government play in shaping conventional agriculture and how do NGOs provide an alternative? What motivates farmers to get involved in these organizations and to what degree do they share the values and goals put forth by the NGO? How do these groups approach maintenance of traditional agriculture and rural livelihoods in the face of neoliberal development? These questions framed my research venture during the summer of 2012, as I returned to Thailand to revisit agricultural communities and take a more systematic look at the farmers involved in governmental and non-governmental organizations.

For this Thai case study, I conducted in-depth interviews and surveys in addition to ethnographic immersion, working on farms and living with families involved in various non-governmental organizations. The in-depth interviews were

conducted with over twenty key players including NGO representatives, government officials, and mill managers<sup>1</sup> in order to understand the structure and goals of different organizations.<sup>2</sup> The surveys were conducted throughout farming villages, and the sample farmers were selected randomly and through snowball sampling so to represent those involved and not involved in the non-governmental networks. The survey addressed questions of organization membership, rice-growing practices with regard to the types of rice being grown, the motivations for growing certain rice, the perceived importance of growing native rice, and the type of market pathways in which the farmer was involved. Furthermore, the survey asked about the value of rice varieties in Thai tradition and the degree to which the farmer practices these traditions.<sup>3</sup> Using these variables, my research analyzes how organization and market involvement affects farmers' crop choice, perceived importance of native rice varieties, motivation for the growing of certain rice-types, and practice of traditional rituals related to agriculture. I find that farmers in non-governmental organizations express a greater degree of engagement with alternative farming practices, value of native rice varieties, and practice of agricultural customs. However, I also find that farmers are primarily focused on markets, indicating the role of market pressure and practicality in their decision-making. I discuss these findings through the lenses of development frameworks, concluding that these alternative organizations are effective due to their successful recognition of the practical, short-term priorities of farmers on balance with long term goals of environmental and cultural resilience. More generally, I explore the political dynamics of NGOs and social movements to ultimately open up discussion about and grassroots membership and semi-elite leadership.<sup>4</sup> In doing so, I contend that these alternative agriculture groups are unique in their organizational dynamics, such they blend elements of both NGOs and social movements to create an effective hybrid network.

### **Food systems and development frameworks**

Food systems raise debates that are diverse and interdisciplinary, including climate change, loss of biodiversity, farmers' rights, biotechnological innovation, and food shortage. Of these various dimensions, I have chosen to narrow the discussion to the context of food security, which the Food and Agriculture Organization of the United Nations defines as the "access to safe and nutritious food" (1996). While the goal of food access seems straightforward in assuring the human right to be free from hunger, there are two positions to consider as a means of achieving this end. The first declares that we should continue along the path of improving agri-

cultural technologies to increase production on less land. The other argues that we must make holistic changes to the global food system, challenging current agricultural trade policies and Green Revolution methods of farming that reign supreme (Chappell & LaValle, 2011). In terms of crop biodiversity, the position calling for improved technologies considers biodiversity to be contradictory to food security efforts, as their methods favor mono-cropping for the highest output and simplified mechanized harvest (Avery, 2007; Emsley, 2001; Fresco, 2003). In the opposing arguments, biodiversity is seen as complementary to improving food security, as the return to smaller, more diversified farms is considered the most efficient and sustainable use of land (Badgley et al., 2007; Kirner & Kratochvil, 2006; Tipraqsa, Craswell, Noble, & Schmidt-Vogt, 2007; Oukpaew, 2011; Amnard et al., 1996). Both the conventional and alternative models have studies suggesting the triumph of their agricultural systems and project future successes and long-term benefits, which makes it challenging to determine a clear “winner.” Conclusions depend on the framework in which one wishes to consider the issue, as it carries with it heavy political and economic implications. My approach to this research is informed by values of biodiversity, environmental stability and resilience, and therefore focused on alternative agriculture models and the movements that are promoting small and diversified farming models.

While one element of food security lends itself to discussions of yields and environmental sustainability, the debate over the global food system can also be framed in terms of peasants’ rights and community development. In the 1970s, as agricultural modernization and global trade began infiltrating nearly every corner of the world, development theorists started taking special interest in the impact of traditionally rural, subsistence economies. How peasants of these regions respond to the vast array of impacts caused by globalization became a curious and contentious subject. What happens to local knowledge, the environment, and livelihoods of subsistence communities, and how do the members of these communities respond to such changes? A number of development frameworks have emerged that consider these implications, and I highlight three of them—James Scott’s moral economy (1976), Samuel Popkin’s rational peasant (1979), and Anthony Bebbington’s viable indigenous model (1996)—all of which put forth different theories of peasant engagement with modern agricultural development. Moral economists see a conflict between global agricultural trade and the maintenance of communal culture, such that neoliberal development may erode the peasant welfare of subsistence communities, and with it, their cultural traditions (Scott, 1976; Bello,

2008; Edelman, 2005). Rational peasant theorists, however, see market options and new technologies as opportunities to relieve peasants from the strain and poverty of subsistence communities, and ultimately provide a means of economic relief (Popkin 1979; Hewison, 2000). Lastly, the third option eliminates the dichotomy of these first two theories to propose a middle ground—the viable indigenous model—which contends that the ends of cultural preservation can only be achieved by embracing the inevitable role of the global economy in the rural agricultural sector (Bebbington, 1996; Rigg & Nattapoolwatt, 2001).

Traditional subsistence communities are rooted in the “subsistence ethic,” which means that peasants base their decisions on minimizing loss by minimizing risk. This ethic has informed Scott’s (1976) moral economy, which fosters a system of reciprocity, shared labor, and communal resilience to maximize welfare. In these economies, farming techniques such as growing multiple seed varieties are used to assure that some portion of the crop survives in the event of environmental changes. Communities also support one another through the sharing of crops, land, and labor so that personal property and wealth were accumulated equally. This set-up is the classical view of communal and cultural strength in the face of limited resources. Moral economists argue that the imposition of capitalism into these communities degrades peasant welfare, as it promotes economic inequality and allows for an individualized, stratified degrees of advancement (Scott, 1976; Feeny, 2003; Bello, 2008). Furthermore, these cultural activists<sup>5</sup> make the argument that neoliberal trade and development degrades local culture, as it inhibits the growing of native seed varieties and the practice of traditional farming methodologies and ceremonies (Kusanthia & Piyasilp, 2010). In this way, the opening of the global market has changed the economic, social, and cultural set-up of once-subsistence economies to a place of communal and cultural disconnect.

Though the moral economy perspective was presented in the early 1970s, the argument still has its place today. In fact, between free trade agreements, agricultural innovations, and breeding technologies, the global market has only become more powerful and the role of development in agricultural communities more contentious. The rise of international development organizations such as the International Monetary Fund (IMF) and WTO seem to have advanced the initial criticisms of international trade, and in response transnational peasant movements have formed to revive Scott’s arguments of the moral economy (Edelman, 2005). La Via Campesina serves as a prominent example, as it is an international movement aiming to bring social and environmental justice to peasants, especially farmers

in developing nations, in the midst of the destructive global food system. It particularly opposes large companies and transnational corporations that are overpowering the traditional way of life for small-scale farmers (La Via Campesina). They criticize the current agricultural system's homogeneity of crops for the sake of simple production and marketability on the basis that it restricts the farmer's ability to choose their crops, ultimately impacting the social and cultural traditions of the farming communities. In promoting alternative agriculture for the sake of crop diversity and farmer autonomy, these international movements for social and cultural rights of farmers exemplify a modern moral economic movement, as they believe that the global food system negatively impacts traditional communities and peasant welfare (Edelman, 2005).

On the other side of rural development discourse, however, rational peasant theorists oppose this idealization of peasant communities and welcome global markets as an opportunity for economic growth (Popkin, 1979). The rational peasant is not viewed as a victim of open markets, but rather as a problem-solver looking to maximize his or her benefits in the face of complex development issues. This framework contends that the pre-capitalist, rural community is often falsely depicted, as Popkin (1979) argues that "somehow what might have been the necessities or oppressions of one era came to be interpreted as traditional values in the next" (p. 3). He believes that the egalitarian subsistence communities and culturally conscientious farmers that moral economists proclaim is an idealistic, improper portrayal. In reality, their way of life is no more than a struggle for survival. That being the case, rational peasants embrace the coming of an open market, as it can allow them to be freed from the shackles of subsistence livelihoods.

In a Thai case study investigating the debate between local and global economic involvement, Hewison (2000) makes a more modern argument aligning with Popkin's rational peasant model, providing two reasons that the sustainable agriculture movement is not a practical alternative to neoliberal development. He first contends that alternative agriculture relies on rhetoric of rural-urban dichotomy, failing to acknowledge that the urban sector plays a critical role in the latter parts of agricultural production, such as processing, packaging, and transport. Second, the alternative agriculture movement is not economically viable, as the focus on small-scale agriculture is unrealistic in terms of economic expansion (Hewison, 2000). Without a viable option for growth, farmers ought to embrace the coming of the global economy and the economic benefits it brings, as there is no return to the "hopeless idealization" of the moral economy (Hewison, 2000, p. 298).

The moral economist and rational peasant represent two ends of the spectrum in considering neoliberal development on agricultural communities, but there is also a middle ground which presents peasants that combine the aspects of the moral economy's call for cultural preservation and the rational peasant's acceptance of market involvement (Bebbington, 1996; Rigg & Nattapoolwatt, 2001). This fusion—the viable indigenous model<sup>6</sup>—contends that the use of modern technologies and market options, if locally controlled and implemented, can be a means of both maintaining cultural tradition and expression of rights and liberation (Bebbington, 1996). The reality for nearly all traditionally rural communities now is that there is no longer a dualism between rural/agricultural and urban/industrial (Rigg & Nattapoolwatt, 2001). These communities straddle the line between agricultural and industrial livelihoods so that the conservative efforts of moral economists to “save agriculture” are no longer practical or best for the economic and cultural success of the community. So instead, farmers aiming to maintain a communal and cultural component must be pragmatic in accepting their role in market involvement.

I will refer to the viable indigenous model as represented by the “pragmatic farmer,” and under this framework it is argued that culture is much more than traditional technology and seed types—it is primarily about keeping to a location and maintaining a community (Bebbington, 1996). This being the case, the ends of cultural preservation are justified by the means of embracing agricultural technology and global market integration. In some ways, adopting liberal development schemes may actually be empowering, as the traditional technologies of the past represent oppression and limits to development (Bebbington, 1996). Rigg and Nattapoolwatt (2001) explain that “seeking stability comes not from retreating into traditional forms of production but from embracing the new opportunities that are becoming available and, where appropriate and possible, allying these with more traditional pursuits” (p. 956). At this point in development, then, the call is to combine the rational peasant and cultural activist by engaging in the global market for the sake of empowerment, and using that empowerment to preserve cultural rights. Otherwise, the alternative is to lose economic viability altogether and to lose hopes of cultural success along with it.

Thus, the frameworks for understanding cultural traditions as they relate to agricultural development leave peasants with three choices: resist all development for the sake of their agricultural knowledge and accompanying cultural traditions, embrace neoliberal development entirely for the sake of economic development and modernization, or accept the role of technologies and markets for the sake

of surviving as a community and hopefully maintaining some degree of cultural tradition. My research aims to assess which framework the Thai non-governmental organizations and its farmers are operating under, specifically by understanding the importance of both the market and cultural tradition in farmers' growing decisions.

### **Thailand: rice, culture, and development**

Thailand is home to a rich diversity of culture, represented by the various ethnicities of different geographic regions. These ethnic groups include the Thai-Khmer in the southern part of the northeast region, the Thai-Laos of the northern northeast region, Thai-Muslim along the southern Malay border, and the "hill people" of the northern and western borders, comprised mostly of the Karen, Lahu, and Lisu (Central Intelligence Agency, 1974). In this paper I focus on the population in the Northeast, referred to as Isaan, which is strongly influenced by the culture of its neighboring countries, Laos and Cambodia. Relative to the country's five regions, Isaan has the largest population, 18.8 million (28.7%) (National Statistical Office, 2011). This region is considered the rice basket of the country, as it constitutes half of Thailand's rice fields (Feeny, 2003). More than 90 percent of rural households produce rice, and of these households, 60 percent are subsistence, producing rice primarily for their own consumption, while the other 40 percent are commercial (Ekasingh, Sungkapitux, Kitchaicharoen, & Suebpongsang, 2007).

In Isaan there is traditionally a strong sense of culture related to rice and the spirituality of farming. The Thai word for rice and food is one and the same (*khao*), and the common greeting between two people is to ask whether you've eaten yet (*gin khao rootyong?*). Based on its different geographic regions, Thailand historically has been home to hundreds of native rice varieties, all with particular localities in which they grow best and are traditionally preferred. In the most general sense, rice can be divided into two types: non-glutinous (*khao jao*) and glutinous (*khao neow*). *Khao jao* is the term for a "normal" grain, usually grown in the lower, moister areas of Thailand's central plains, which is prepared by boiling and the cooked grains are translucent and separate from one another. *Khao neow*, which is typically grown in drier regions such as the northeast, is traditionally steamed, has higher sugar content, and contains gluten that makes the cooked rice sticky and malleable (Golomb, 1976; Lefferts, 2005).

In Isaan, where glutinous rice is more commonly preferred, the significance of rice and its diversity is closely related to Buddhism, particularly the *Heed sib-*

*song Klong sib-si*. These are ceremonies that take place each month of the year, according to the Buddhist calendar, many of which relate to the stage of the rice season—plowing, planting, transplanting, and harvesting (Kusanthia & Piyasilp, 2010). Before transplanting it is tradition for farmers to make an offering to the rice goddess by putting dust on the field and also offering a boiled chicken and whiskey. After harvest, farmers invite the spirits of harvest into their rice storage house to protect their crop. Once the rice season is complete, *Boon Khun Khao Yai* is a ceremony in which farmers all bring an offering of rice to the center of the community and donate it to the temple (Kusanthia & Piyasilp, 2010). Outside of these 12 Buddhist celebrations, rice plays a role in other ceremonial traditions, including funerals and weddings. Each ceremony traditionally has its designated rice-based treat, or *kanom*, and different types of *kanom* require certain native rice varieties for them to be made properly. For instance, *kanom jean* (rice noodles) are best made with *Hom mali deng* (red rice) and *khao tod* (a steamed rice treat) is meant to be made with *khao neow dom* (black sticky rice). In any case, rice farming and different rice varieties have played an integral role in the cultural traditions of northeastern Thais.

The cultural traditions of the northeast have changed, however, as industrialization, particularly the Green Revolution, swept even the most rural regions of Thailand in the mid-20<sup>th</sup> century. During this time, a variety of technological advancements in agriculture arose, including chemical fertilizers and pesticides, and a shift towards mono-cultures, for which seeds were selected and narrowed based on beneficial genetic qualities (Baker & Phongpaichit, 2005). Thailand established a Rice Breeding Division of its Rice Department, which collected and designated *Khao Dawk Mali 105* and *Kor Khor 6* to be the country's mainstream varieties. *Khao Dawk Mali 105* is commonly referred to as Jasmine rice, or Jasmine 105. It is a non-glutinous variety that is popularly noted for its soft and fluffy grain that smells like jasmine flower when cooked and is the country's primary export. *Kor Khor 6*, which I will refer to as sticky rice 6, is a glutinous rice variety that is less widely known on the international level but popular domestically and around Southeast Asia. These two rice varieties are considered mainstream rice, as they are promoted by the government for the sake of high yield and market consistency.

The transition to mechanized agriculture and mainstream seeds improved the agricultural sector in terms of yields, income, and overall production. Rice yields in the mid-late 20th century went from an average of 1.55 tons/ha (1961/62) to 2.26 tons/ha (1997/98) and agricultural land was expanded, indicated by the amount

of forest cover which dropped from 45% in 1961 to 14% in 1985 (Panyakul, 2003; Feeny, 2003). This expansion led to an increase in the country's GDP, as well as an increase for the Isaan region, opening up its economy to the realm of industrial agriculture.

In more recent years, however, the dynamics of Thailand's economic growth have been changing. In the late 1980s, Thailand acted on the World Bank's recommendations to speed up its growth by using foreign investments to implement large development projects. In 1995, however, the stock market began to slip and exports decreased, resulting in a near collapse of the financial system, now referred to as the "economic crisis of 1997." As a result, much of the industry management shifted into foreign hands, weakening the domestic economy and putting Thailand in a position of greater foreign dependency (Baker & Phongpaichit, 2005). Following the economic crisis, the country began focusing on policies for an economic rebound, at which point the development rhetoric and action began to diverge. Just after the 1997 collapse, King Rama IV made a speech on the "sufficiency economy plan," which pointed the country toward inward reflection on Buddhist work values and stressed the dangers of dependence on the global market (Baker & Phongpaichit, 2005). Since then, the sufficiency economy plan (SEP) has been promoted through projects for rural development by request of the King, and is preached by rural farmers and politicians alike (Summary of the Eleventh National Economic and Social Development Plan, 2011). Despite the SEP's seeming popularity among politicians and planners, it does not seem to find its way into practice and is instead no more than a "rhetorical bow" to the King (Unger, 2009, p. 41). The written policies and departments of Thailand provide an overall message of sufficiency, but a deeper analysis indicates that the country still focuses on global development.

Thailand's embrace of global development schemes can be seen in their recent economic trends, as its economy has rebounded since the economic crisis and continues to expand. While it is still a front-runner as the world's largest rice exporter, agriculture's role declined in the late 20<sup>th</sup> century as industrial exports began to increase (United States Department of Agriculture, 2013). The country now also specializes in export of industrial materials such as machinery and transport materials, petroleum oils, electronic circuits, and rubber products (United Nations, 2010). The rise of technological exports has taken place in the central and southern regions, while the North and Northeast remain the country's agricultural regions. As such, there is a growing gap in economic inequality between regions, as the three richest regions—Central, South, and Bangkok as its own region—share 70% of the

country's income with only 30% of the population, while the Northeast shares only 10% of the country's income among over a third of the population (International Monetary Fund [IMF], 2012). Ultimately, Thailand continues to promote economic development, despite the popular calls for a sufficiency economy, and perpetuates a disproportionate growth and economic inequality between its now industrial and agricultural regions.

### **Alternative agriculture and non-governmental organizations**

Throughout the process of Thailand's economic development, the Northeast has been notably disadvantaged and disconnected. Despite the economic growth from the rise of conventional agriculture, the benefits were significantly less than those achieved in the industrial regions, and conventional agriculture itself brought about new burdens. These drawbacks included negative health effects from pesticides, crop vulnerability via mono-cropping, debt due to the price of agricultural technology's inputs, and cultural change due to the limiting of rice diversity. In response to the shift to conventional, mainstream agriculture in the 1980s, and the continued move towards global markets that put Isaan at an economic and cultural loss, local non-governmental organizations (NGOs) began to form.

Gaining momentum in the 1980s, these NGOs argued that the development policies implemented by the central Thai government were not benefitting the majority of the country. One of the most notable cases is the Assembly of the Poor (AOP), which is a network formed in 1995 to rally around environmental issues for the local poor and take a critical stance on Thailand's development projects and policies (Missingham, 2003). The AOP is broken into groups, each representing different social and environmental issues of concern to the rural poor, including dams and water rights, land tenure, agriculture, slums and urban life, and fisheries. The group first made its mark in 1996, when thousands of its members gathered in Bangkok to protest the government's policies for neoliberal market expansion and development plans that abused natural resources (Baker & Phongpaichit, 2005). Since then, this movement has barred the construction of dams and mines, protested against pesticide import policies, and successfully gained land rights for displaced communities. Furthermore, each of the AOP's environmental subsets developed relationships with various local non-governmental organizations to organize the efforts of their movement and create a group with concrete goals and initiatives. The AOP is an example of an effective non-governmental network, such that a social movement combines with NGOs so to effectively unite and serve the interests

of the poor from the grassroots.

My research focuses on the agricultural subset of non-governmental movements for environmental human rights, and their response to the conventional agricultural system. The Alternative Agriculture Network (AAN) takes the center of the NGO network conversation as it acts as one of the more dominant facilitative forces in the movement for sustainable agriculture. The network's goals are to conserve local rice varieties for environmental and cultural preservation, build community resources, create relationships with government officials for the advancement of sustainable agriculture in policy, promote farming to the youth, and create alternative green markets throughout Isaan (U. Yoowah, personal communication, June 16, 2012). Some of their special initiatives include organizing workshops for activities such as making biofertilizer and compost, and cultivating community plots and seed banks where they can preserve local seed varieties through the sharing of knowledge and seeds (B. Mahtkao, personal communication, June 15, 2012; A. Saengubon, personal communication, July 20, 2012).

The AAN also aims to facilitate the growth of other organic farming groups, resulting in a number of "daughter" NGOs around Isaan that are linked up to and inspired by the AAN. These pockets of organic farming groups have started in numerous communities throughout the northeastern region, many of which are organic or in the process of transitioning to organic with the hopes of becoming more sustainable in their growing practices and expansive in their market options.

The Natural Agriculture Group (NAG) in Surin Province is a non-governmental organization that was established in 1992, independently of the AAN, but has a strong affiliation and some organizational overlap with it for the sake of support, networking, and resources. NAG is group of organic farmers who share goals similar to those of the AAN, as they educate farmers about the value of organic farming, integrated agriculture, seed saving, and preservation of local varieties. These farmers acted as major catalysts in the Thai organic movement and continue to expand organic membership as well as empower farmers through the establishment of alternative markets for their organic and local products on both the regional and the international level.

## **Results and discussion**

### **Case study demographics**

To explore the role of governmental and non-governmental affiliation in farming, six locations across northeastern Thailand were selected to represent varying

degrees of NGO involvement: Yasothon, Surin, Roi Et, Khon Kaen, Kalasin, and Chaiyaphum provinces (Figure 1). Surin and Yasothon represent the two major strongholds of the alternative agriculture movement (AAN and NAG), and Roi Et and Khon Kaen are developing small ‘daughter’ organizations in relation to the AAN. In Kalasin, a progressive government official recently worked with farmers to establish an organic group, now independent from the government, that practices alternative agriculture. And lastly Chaiyaphum has a number of farmers who neither affiliate with governmental nor non-governmental organizations.

Based on my sample (N=84), the farmers that were surveyed were an average age of 50 years old, owned about 16 *rai* of land,<sup>7</sup> and had a sixth grade education (Table 1). While the majority of the respondents were female, this was likely due to the greater availability and willingness of females to be surveyed, and does not indicate that they play a greater role in farming. Farm work is often divided between both the male and female in the household, with females transplanting rice and males harvesting.

Province	N	Male	Female	Age	Land (rai)	Grade level
Chaiyaphum	12	4	8	50.3	10.1	5.5
Kalasin	10	4	6	49.6	14.2	8.9
Khon Kaen	10	5	5	51	11.5	6
Roi Et	6	2	4	50.2	14.3	4.3
Surin	30	16	14	50	25.9	5.9
Yasothon	16	3	13	51.2	19.4	5.6
Total	84	34	50	50.3	15.9	6

Drawing from both quantitative and qualitative aspects of my case study, I find a number of significant results that lend themselves to a rich discussion with regard to the role of local NGO networks, development frameworks of NGO leaders and members, and the larger dynamics of the agricultural social movement in Isaan.

First, I describe Isaan’s rice commodity pathways, which depicts the role of the government and NGOs in each stage of rice growing and processing. I then analyze survey responses for two key results: (1) Isaan agricultural NGOs are successful facilitators of alternative farming practices and values. (2) These NGOs fit best within the viable indigenous model of development, as they consider the rational, market-based demands of its members on balance with the more abstract goals of



*Figure 1.* Map of Thailand, labeled by provinces in sample. Yasothon (1), Surin (2), Roi Et (3), Khon Kaen (4), Kalasin (5), and Chaiyaphum (6). This map is an adaptation of one available by NordNordWest under a Creative Commons license.

the leaders. And lastly, I discuss the nature of leadership, economic consideration, and political engagement in the agricultural network's unique organization.

### **Rice commodity pathways**

The different types of agricultural practices and networks with which farmers can engage are mapped out in the 'rice commodity pathway' (Figure 2). I created this figure based on a combination of surveys, ethnography, and literature-based research so to provide a generalized look at the relationship between the organizations farmers are involved in and the available types of rice mills and markets. Though this visual representation does not reflect the percentage of farmers involved in each of these groups—as the vast majority of farmers belong to government organizations and are involved in the middle, conventional pathway<sup>8</sup>—the rice commodity pathways figure captures the relationship between organizational involvement and mill and market access.

Based on my survey sample, most farmers are growing the government's mainstream rice varieties, which means that they are likely interacting with, buying from, or selling to a government organization (GO). Government farmers' organizations can include agricultural extension offices, cooperatives for loans, or milling groups (Ekasingh et al., 2007). Involvement in these groups is common, as they are accessible in nearly every district and made convenient to the farmers. However, such involvement impacts farmers' options along the commodity pathway, from seed selection to market outlets.

Mainstream rice varieties are promoted along the governmental pathway (the middle group in the figure), first by providing only these seed types at extension offices and cooperatives. Farmers in these organizations then sell their rice to government or privately owned mills, which I term "conventional mills," because they accept primarily the government-approved mainstream rice and have no regard to chemical use. The government and private conventional mills sell rice to various wholesalers, after which point the rice goes to "conventional markets," which distributes one third of the rice to domestic regions outside of Bangkok, one third to Bangkok, and the final third exported internationally (Ekasingh et al., 2007).

The alternative to these conventional practices and pathways promoted by government organizations, however, is often through involvement in a non-governmental organization (right-most path in the figure). Membership in a non-governmental organization provides services similar to that of GOs, however these services are usually more diverse in their seed access, mill, and market options. Moreover, NGOs also provide farmers with educational resources for alternative

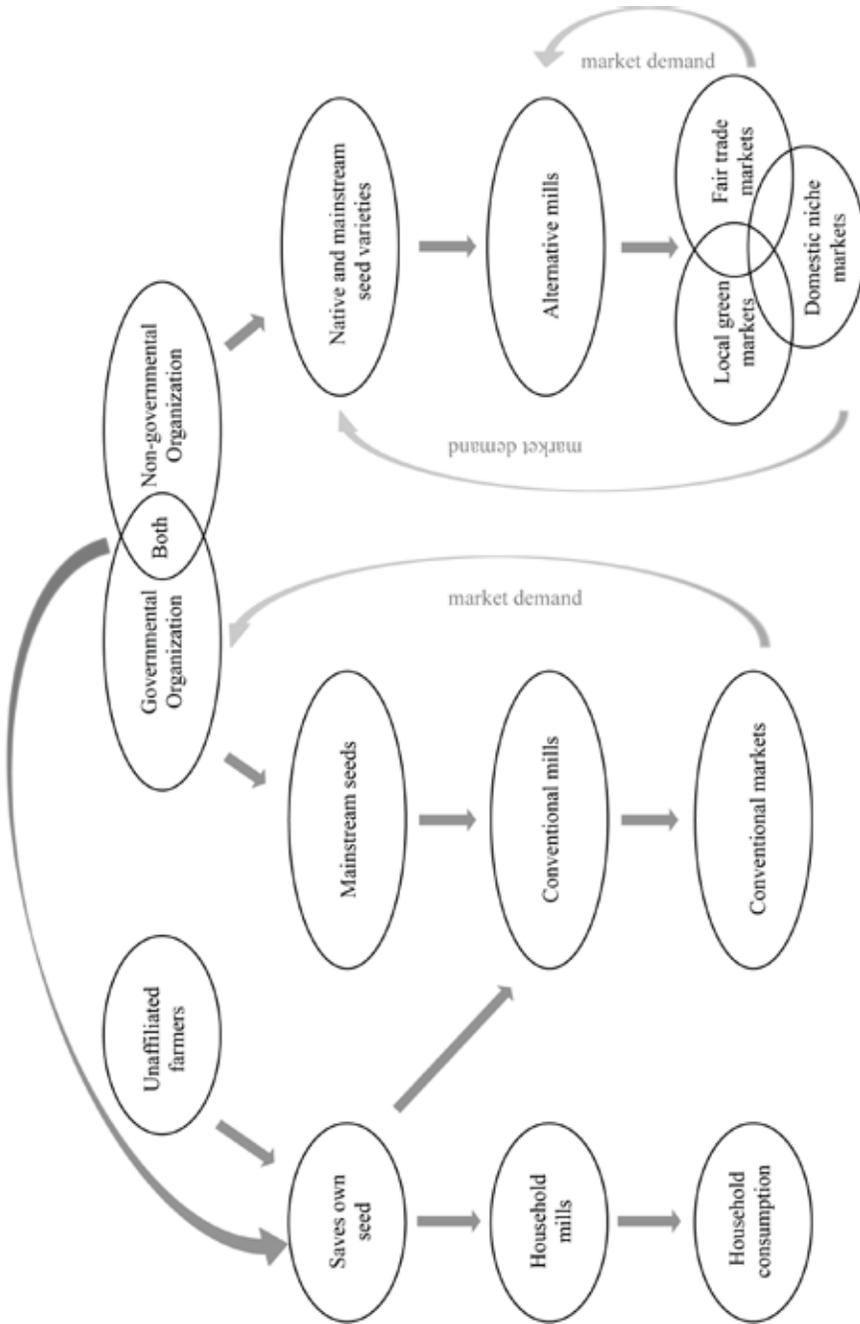


Figure 2. Rice commodity pathways<sup>11</sup>

farming methods (e.g. organic), and an extended network of alternative farming support. It should be noted, however, that not all farmers who are NGO members utilize all of the options available to them in the alternative pathway, as many still grow mainstream seeds and sell their crop to the government's conventional pathway.<sup>9</sup>

Among non-governmental organizations, a greater variety of seed types are available and often promoted for the sake of diversity maintenance. If growing these native seeds, or even mainstream seeds organically, NGO members then have the option of selling their rice crop to an "alternative mill." These mills are either NGO, community, or privately owned, and are considered alternative because they accept rice types other than mainstream varieties, and may also distinguish between organic and inorganic. Many NGOs and alternative mills then give access to alternative market options, such as local and domestic niche markets, or international fair trade, which specialize in native and organic rice. Local and domestic niche markets include local NGO-established Green Markets, hospitals, and specialty health food stores in metropolitan areas, especially Bangkok and Chiang Mai, where demand for such products is higher. The two international fair trade organizations in my study include Green Net (Yasothon) and Alter Eco (Surin), which sell in various outlets in the EU and US.

Outside of governmental and non-governmental organizations, farmers can also choose to be unaffiliated with any formal network. Typically, unaffiliated farmers save their own seeds from their community or family, then sell to private conventional mills or process their rice at a household mill for their own consumption. It should also be noted that the option of household milling for personal consumption is a route available and utilized by most farmers,<sup>10</sup> and it is common for at least one community member to have a small household mill who will share with others for household consumption and local sales.

### **NGO efficacy**

Non-governmental organizations in Thailand play a unique and prominent role in the country's move toward sustainability, and are effective at promoting alternatives to the conventional agriculture system (Table 2). First and foremost, farmers in alternative agriculture NGOs are significantly more likely to grow organically, or be in transition to growing organically, than farmers in GOs. And while mainstream varieties account for the majority of all farmers' land, my surveys indicate that non-governmental farmers grow native varieties on a significantly greater portion of their land (21% of land) compared to farmers in governmen-

tal organizations (4% of land). Those involved in NGOs also grow a significantly greater number of native varieties than those in GOs, indicating that they have greater diversity of seeds along with their larger devotion of land to native varieties. In addition, NGO farmers place a significantly greater importance on the growing of native varieties (3.58 of 5 on Likert scale) when compared to GO farmers (1.87 of 5), demonstrating a stronger commitment to native varieties in terms of perceived value. A greater engagement with native varieties in term of number, percentage of land, and perceived value may indicate greater access to alternative types of seeds, a greater degree of freedom in growing choices based on expanded market options, or simply a greater interest and understanding of growing multiple seed varieties.

Overall, farmers in non-governmental organizations exhibit significantly more alternative practices and values with regard to native rice varieties. By these standards, much has been accomplished with regard to NGOs' goals for alternative agricultural practices. However, the causal direction of network involvement is indeterminable within this research, meaning that I do not know whether the network fosters education towards alternative farming practices or whether it is those who wish to practice alternative methods who find the network—or a combination of the two. Though the directionality of the study is unknown, it's clear that a critical part of the alternative movement is the network relationships and how those relationships facilitate a more diverse and engaged education, set of values, and practices.

### **Motivators and development frameworks**

Beyond the effectiveness of NGO involvement and alternative agriculture practices, a major focus of my research was to determine the factors contributing most significantly to the farmers' rice variety choices and discuss these findings in the context of the three development models: the moral economy, the rational peasant, and the viable indigenous model. I find that though the motivations and values of NGO members and leaders place them into different development models, the organizational structure aims to find a middle ground between the two, ultimately taking on long and short term goals reflective of the viable indigenous model.

In the surveys, farmers were able to freely respond when asked why they chose to grow certain types of rice, and their responses were categorized into one of six groups: price and marketability, seed and resource accessibility, environmental suitability, personal taste or health related preferences, quality of rice grain, and convenience or habit-related reasons. The results showed no significant differences in any of these motivations between NGO and GO farmers, indicating that motiva-

<i>Table 2</i>				
NGO and GO Farmers Alternative Growing Practices and Values				
Survey question	Organization	n	Mean	p
Grows rice organically	GO	24	0.33	
(0 = inorganic, 1 = transition, 2 = organic)	NGO	29	1.55	> 0.001*
Land area with native varieties	GO	24	3.71	
(%)	NGO	29	21.07	0.003*
Number of native varieties grown	GO	24	0.13	
	NGO	29	0.86	0.012*
Native varieties are important to grow	GO	23	1.87	
(Rank 1-5)	NGO	26	3.58	0.001*
Note: Data drawn from an independent t-test. Significance (p) is two tailed, equal variances not assumed.				
An asterisk (*) indicates a statistical significance ( $p < 0.05$ )				

tions are generally equal between groups. As a whole group, 43% of farmers were motivated by reasons related to price and marketability, and 25% were motivated by personal preference for taste or health. These categories exceed the four other response categories,<sup>12</sup> indicating that both groups are equally motivated by price and marketability as the primary factor, and personal preferences secondarily, in their rice-growing decisions.

The motivation rankings reveal that farmers fall into the framework of the rational peasant, as they respond best to non-governmental organizations when they find their involvement provides a practical and personal advantage. In many cases, farming is the household's main source of income, and so most farmers feel that they cannot commit to an alternative farming practice or seed variety if it doesn't bring direct financial benefits. In terms of personal health, nearly all of the farmers in NGOs explain that they initially joined these groups because chemical farming noticeably has harmed their health, and they wanted support and education in their transition to organic practices. Similarly, a handful of farmers explain that they grow certain native varieties, such as red or yellow rice, because they have health benefits including lower sugar and higher nutrients—making them nutritious and marketable (B. Mahtkao, personal communication, June 15, 2012).

While farmers' practical approach to alternative agriculture places them in the framework of the rational peasant, aspirations for crop biodiversity, resilience, and community food sovereignty—values present in the moral economy—can be found in discussions with NGO representatives. In reference to farmers' ability to choose and own their seed, an NGO community coordinator explains, "We just want to make the [farmers] understand that these are their resources and they belong to them on their farmland ... That is the most important in long term" (A. Saengubon, personal communication, July 20, 2012). He went on to express that the right to seeds is something that farmers share, and if that is taken away from them, then a part of Thai identity is lost. Furthermore, NGO leaders value keeping a diverse, healthy farm field for confronting environmental changes. Ubol, Isaan's policy coordinator for the AAN, states, "we know that if we grow less varieties it might have a huge damage. It is quite risky because every degree that it changes can affect the rice's ability to bloom" (U. Yoowah, personal communication, June 16, 2012). He explains the fear of specializing too much in one crop to meet market demand—even a native variety—as he is wary of the future environmental implications. Lastly, NGO leaders also emphasize the importance of keeping around native rice varieties for their use in celebrations and spirituality. In Surin there is a tradition in which

You lay the local varieties down including sesame, beans, and *Khao Niong Gewung* (native rice). They don't use Jasmine 105 in this ceremony. So when *Niong Gewung* disappeared from the area...people wanted it. It had been lost from the practices and experiences of the villagers...when we brought it back the villagers were excited and they were glad to be growing it (S. Jangsri, personal communication, June 23, 2012).

Overall, these NGO leaders communicate values beyond basic market needs and farmer practicality, as they discuss the importance of alternative agriculture in terms of food sovereignty, environmental sustainability, and maintenance of communal and cultural traditions.

While the NGO leaders talk comfortably about the value of native seed varieties for their environmental resilience and tradition, I was interested to know to what degree farmers share these values, particularly those that are NGO members. To do so, I measured farmers' awareness of native rice varieties,<sup>13</sup> the perceived importance of native rice in culture, and practice of traditional methods and ceremonies (Table 3). While every NGO member understood what a native variety was (i.e., could name at least one example), 18% of farmers in governmental orga-

nizations could not engage in discussions about native varieties because they did not know that they existed. This significant number of GO members that do not understand the concept of a native variety is the first indicator that there is a positive relationship between NGOs and education about native rice varieties.

<i>Table 3</i>				
NGO and GO Farmers Relationship with Native Rice Varieties and Cultural Traditions				
Survey question	Organization	n	Mean	p
Aware of native variety	GO	22	0.82	
(0 = no, 1 = yes)	NGO	29	1	0.042*
Native varieties are important to my culture	GO	24	2.96	
(Rank 1-5)	NGO	29	3.48	0.295
Practice of traditional ceremonies	GO	12	4.83	
(Rank 1-10)	NGO	21	7.29	0.051
Note: Data drawn from an independent t-test. Significance (p) is two tailed, equal variances not assumed. An asterisk (*) indicates a statistical significance ( $p < 0.05$ )				

Understanding what a native variety is, however, does not necessarily mean that these farmers consider them to play an important role in their culture. Farmers involved in NGOs and GOs placed similar value on the importance of native varieties in traditional culture and practices. There is perhaps the beginning of a significant relationship, as NGO members ranked the cultural importance of native varieties at 3.48 (of 5) while GO members ranked 2.96. As it stands however, the opinions of NGO farmers are across the board. Some excitedly describe, “Having the local varieties helps us keep up with the cultural activities. We need *Khao Jow Deng* [native variety] to make noodles. We need *Khao Gum* [native variety] to make *Khao Thom* [steamed rice treat] and black sticky rice can also be used as medicinal food for healing.” In other cases, farmers don’t think much of different varieties, explaining, “Our culture is about having a healthy farm and good production and harvest. So whether it is a local variety or a new variety, it is just about rice.” Lastly, I found that NGO membership has a marginally significant positive relationship with the practice of traditional ceremonies and rituals related to agriculture, indicating that NGO involvement is related to more frequent practice of, and greater dedication to, the traditional ceremonies of farming. This relationship may reflect

a more fundamental trait of Thai farmers, as those more engaged with the spiritual and ritual aspects of farming connect with the values of alternative farming.

Taken together, these results indicate that while NGO members are perhaps slightly more focused on native rice, its cultural values, and traditional agricultural practices, the trend is still weak and inconsistent. Particularly when balancing native varieties with market pressures, farmers seem to prioritize the market. In some instances, farmers are bluntly honest about how they prioritize their decisions between cultural and marketable: "I have heard that people who farm the local varieties, they are limited to the local variety cooperative because they have a local market. The local varieties aren't important if they can't make money." The sentiment that native varieties are only important "if they benefit me" is heard from a wide variety of farmers, reinforcing the motivation results presented earlier. However, some farmers seem a little more disappointed at the reality of the cultural-economic conflict: "*Niung Guang* [native variety] is better but we can't sell it. If the local varieties could make more money, people would turn back to grow these, but we don't have the market now." In either case, the role of the market is still the primary motivator for farmers, while NGO leaders have visions of values beyond just economic success, as they plan for environmental changes and foster traditional and cultural practices.

Pairing the average farmers' market-related motivations and tentative cultural engagement with the leader's insistence on goals of environmental and cultural value, the end result is the placement of Isaan alternative agriculture into the viable indigenous model of development. Proposed by Bebbington (1996), this approach to development holds that farmers will most effectively maintain their cultural identity by embracing the involvement in the global market and using it to their advantage. This way, farmers can be empowered by their new economic success, as well as control some levels of production to provide the greatest benefits for their community, and with those benefits, aim to preserve the cultural space and traditions other than agricultural technologies (Bebbington, 1996; Rigg & Nattapoolwatt, 2001).

In the case of these Isaan NGOs, they value cultural and environmental aspects of food, but recognize that farmers' primarily need to have a viable economic alternative in place. Without a financially stable crop or market, participation would likely dwindle, and so these NGOs promote niche and local markets, and in some cases, are the ones buying the mills and making direct connections to international buyers. These markets can be considered the means to the long-term goals of the

NGO, as an AAN coordinator describes, “The *process* goal is that rice can be sold in the market. But the *impact* goal is the ownership—the sense of belonging of these farmers with their seeds, with their varieties” (A. Saengubon, personal communication, July 20, 2012). Said simply enough, NGO leaders want farmers to recognize the value of native seeds, but to get to that point there has to be a market for them. So by taking the global economy into their own hands, NGOs are getting premiums that can be used to provide extra financial incentives for farmers to stay involved in alternative markets or aid in community projects to help educate about the longer-term goals of environmental human rights. Essentially, NGOs are fitting into the viable indigenous model by providing a practical economic alternative for its member farmers while promoting cultural and environmental values in hopes of empowering its members and engaging them more critically in the food system.

This compromise is not to say that goals of environmental or cultural sustainability should be forfeited, but rather, that they must be put on balance with securing the farmers’ wellbeing, financial and otherwise. In moving forward with this tactic, the hope would be that one would find an increased number of farmers connecting with the NGO’s broader values, and finding motivation in categories of environmental resilience or cultural preference on par with the market. With more members educated and passionate about goals beyond just the market, the NGO networks may begin to make changes that would benefit the greater farming population of Thailand. These changes may range from restricted pesticide importation and labeling and expanded seed promotion and education, to changing the standardization requirement of government mills. In this way, the non-governmental organization can serve as an access point for farmers to transition to organic farming and connect to alternative markets, both of which serve as a means of achieving longer-term goals of sustainability education and policy change.

## Conclusions

The findings presented in this paper draw novel analyses with regard to NGOs and alternative agriculture in Isaan. Overall, this network for alternative agriculture is an effective means of providing and promoting growing sustainable practices and values, particularly with regard to native seed varieties. There is still a disconnect, however, between the motivations and values of NGO members and leaders. Average member farmers are generally just as market motivated as farmers in governmental organizations, and do not place the same value on native seed varieties for their role in culture or environment as the leaders do. However, NGO

leaders are facilitating education for farmers so to try and lessen that gap, with the hope their education, in combination with providing viable market options for native seed varieties, will move farmers towards opinions more concerned with environmental human rights.

### **A broader political perspective**

Having discussed the efficacy of NGO networks and the different development perspectives between NGO leaders and its member farmers, I would like to think more broadly about the political discussions in which this research fits. Isaan's network of local NGOs for alternative agriculture is relatively unique compared to the NGOs and social movements portrayed in much of the scholarly literature (Bendaña, 2006; Earle, 2004). A social movement alone does not have the organization or professional capacity of an NGO, and an NGO alone runs the risk of being out of touch with the grassroots. So these Isaan networks find a middle ground—organizing like an NGO but gaining membership and participation from a larger network like the Assembly of the Poor—ultimately acting as NGO-social movement hybrid to engage its members in a successful participatory manner. The novel organization of these networks, however, does not exempt them from a critical analysis of its leader and member dynamics, and still merits further discussion about their position on economic achievement and political engagement.

Despite its grassroots nature, there is still a divide in terms of education and involvement between the leaders and members of Isaan's agricultural NGOs. NGO leaders often have higher incomes and a university education, and along with a few highly involved members, are typically the ones preaching the benefits of organic farming and coordinating outreach efforts for the education of sustainable agriculture, while the average members seem much less involved. However, this distinction between elite and average may be unavoidable, as the network might not be sustainable without the major active and organizational contributions of the academics dedicated to farming issues. Farming is a full-time job, and there are few other options than to have an "elite" of some degree (i.e. not a full-time farmer) take on leadership roles within these NGOs. As the coordinator of Green Net Fair Trade points out, "farmers are not supermen—they cannot do it all" (V. Panyakul, personal communication, July 4, 2012). In this conversation he explained that truly independent grassroots organization are unrealistic, and that an effective and sustained movement requires some leaders and partners with specialized and professional skills. Thus, the fact that Isaan's alternative agriculture organizations balances organizational characteristics of NGOs (which does often require elite

leadership) and participatory components of social movements aids in its viability for maintaining membership and making change.

Accepting this local NGO-social movement hybrid as elite-run, but still highly accomplished model for enacted change, I now turn to discuss how these types of groups fit into the frameworks of economic and political engagement. Alternative agriculture is often perceived by the western world to be a movement that reaches beyond material demands and focuses on more abstract values (Lyson, 2004; Constance, 2008; Barrat-Brown, 1993). Considering the goals of the network in Isaan, some of the leaders promote values that are less-economically focused, but for the labor class of a rural region, the primary means by which the NGOs' alternatives have value are to provide a material, direct benefit. With the personal benefit still being prioritized above the post-material, the Isaan farming movement does not fit into this ideal. Rather, these farmers are still struggling with issues of health, financial stability, and lack of empowerment within their class, giving them a long way to go before they address the greater goals of sustainability for sustainability's sake.

Politically, the network takes on two approaches. It focuses on short-term, piecemeal policy changes but, over time, also uses these as steps towards longer-term whole scale systematic change. Again, however, I find that the opinions of the leaders and members differ, this time on their stance over political engagement. The network leaders aim for both small scale and large-scale political change, but the political opinion of the member farmers is less deliberate, and sometimes non-existent. The NGO aims to work with the government to initiate policy changes, and also involves members in protests and movements to rally attention towards political issues. However, not every farmer considers this a political movement. For members of the alternative agriculture community, organic farming is less of a political statement than it is a movement towards a more unified and supportive community. The insecurity of Thailand's politics, in combination with the threat of political imprisonment in relation to *lèse-majesté* laws often leads many to feel disconnected from the government, resulting in either faithlessness in policy-based solutions or hesitation in engaging with politics directly. In this case, it is hard to distinguish between political disinterest, fear for political defamation, or a meta-political tactic of a new social movement. There seems to be political *engagement*, but the reasoning or objective behind that engagement is unclear. In either case, the farmers seem to prioritize a sense of community and support resulting from their political behavior and don't directly link that to policy or systematic change, while the network leaders directly take on both short and long terms efforts for making

### political change

Ultimately, the agricultural networks in Isaan are unique, such that they do their best to balance organizational, economic, and political values. The networks utilize the organizational qualities of NGOs and the grassroots rallying of social movements; they reconcile the short-term, economic and practical needs of its members while its leaders don't lose sight of the long-term, larger ideals; and aim for both short and long term political change while allowing its members to focus less on politics and more on their community. It is this variable and flexible nature of the movement it that makes it so effective, as it plays on the strengths and needs of each group to implement change.

### Notes

Liza Wood, from Boardman, Ohio, graduated summa cum laude from the Honors College at the College of Charleston in 2013 with degrees in Political Science and Biology. "Balancing Commodities and Culture" is derived from her Honors thesis, which she completed under the supervision of Claire Curtis and was based on her summer's research in agricultural communities of northeastern Thailand. Liza is now working towards a masters degree in Sustainability Science and Policy at Maastricht University in the Netherlands through a Maastricht-Fulbright Student Grant. She plans to continue engaging in issues of environmental governance, food security, and agricultural politics throughout her academic and professional careers

1. Major interviewees included: AAN Policy Coordinator for Isaan, AAN Isaan Regional President, AAN Yasothon President and "local seed doctor," AAN Surin Farmer Outreach Coordinator, Natural Agriculture Group (NAG) President, NAG Coordinator and Surin Rice Fund (SRF) market liaison, NAG seed specialist, SRF mill manager, *Rak Thammashad* (Green Net Yasothon) mill manager, Sai Na Wang District Government Representative, Khon Kaen Organic Group Leader, and Roi Et AAN leaders.
2. This research methodology was modeled after Friedland's (1984) and Dixon's (1999) commodity systems analysis. Specific to this method is the premise that commodity systems have a "social reality," in which there are a number of dynamic interactions that go into the food system—production practices, labor, technology, marketing, distribution, and organizations structures. In order to conduct this analysis, Dixon (1999) proposes monitoring every step of a com-

modity's process—growing, processing, community organizing, regulation, and policies. I used this approach as it allows me to understand the distribution of power, which informs the roles of government policy and market standards in the decision-making processes of farmers and NGOs.

3. In order to measure the practice of traditions relative to agriculture I combined responses to three highly correlated questions ( $p < 0.001$ ) on the subject, including whether or not the farmer practices any agricultural rituals (0-1: 0 = no, 1 = yes), how seriously and passionately these rituals are practiced (1-5: 1 = least passionate, 5 = most passionate), and what particular rituals are practiced (0-2: 0 = no practices, 1 = only a fraction of the practices such as only planting or only checking the “good day” on the Buddhist calendar, and 2 = doing all of the practices). The number of respondents who fully answered the survey with enough data to complete this measure of culture was smaller proportionate to the full sample ( $n = 33$ ).
4. This paper is a shortened version of my Bachelor's Essay, which also addresses social movement theories, organization and development of NGOs, and perspectives on alternative agriculture from the global North and South, as well as recommendations for field practitioners.
5. I have coined the term “cultural activist” to be understood as the actors in a moral economy.
6. The term “viable indigenous model” is not explicitly used by Bebbington (1996); however, I draw from his word choice to coin this term.
7. 1 *rai* = .244 acre, 16 *rai* = 3.9 acre
8. While no exact data could be found on the percentage of farmers involved in NGOs in Isaan, I estimate that less than 3% of the country's farmers are members of these alternative groups based on discussions with NGO leaders about their membership relative to their province.
9. Based on my sample, 47% of NGO members are also utilizing resource or mills of government organizations, indicating that NGO involvement does not exclude them from still engaging with GOs.
10. In 2005, one fifth of the rice production in Isaan was kept for household consumption (Ekasingh et al., 2007)
11. Beyond the routes themselves, it is also important to consider the ways in which these pathways feed back into one another via market demand (represented by the lighter gray arrows). In the conventional pathway, the demand of the market, most powerfully the international market, feeds directly back into

the governmental organization. The global market is what informs the Thai governments' prices and policies on export, and ultimately dictates the standardization of mainstream rice varieties and the subsequent step of uniform milling. In the alternative pathway, the market still has power, but the non-governmental organization itself is not directly impacted. Rather, market demand puts pressure on other stages, such as the alternative mill, or even on the farmer themselves.

12. Environmental suitability: 16%, convenience or habit-related reasons: 11.1%, quality of rice grain: 3.7%, and seed and resource accessibility: 1.2%
13. In measuring awareness of native varieties, this simply refers to whether or not the farmer knew what a native variety was. Because the government has been promoting mainstream seeds since the mid-20<sup>th</sup> century, there were instances in which farmers were unable to discuss the role of native varieties, as they did not know they existed.

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