PUHAN RURAL COMMUNITY
SHANXI • CHINA

Rebuilding community ties as a pathway to cooperative-led local food systems

Women practicing traditional dancing in village square.

Photo: Yan Hairong 18
With the intention of modernizing Chinese agriculture and increasing productivity, the post-Mao reforms of the late 1970s replaced a thirty-year state-managed system of planned/collectivized production and consumption with a fast-growing free-market economy. Rural communes previously operating under a collective farming policy were phased out to make way for a ‘household responsibility system’. While the village collectives retained ownership of land, rural households were granted land use rights allowing them to make their own choices regarding production and marketing. This opened up unprecedented possibilities for selling food produced outside of state quotas at unregulated prices.

Yet, after four decades of marketization and rapid economic growth, rural areas are facing an increasing number of difficulties. Despite reforms, markets remain difficult to access and often unpredictable. China’s 230 million smallholder farmers – the backbone of the rural economy – remain economically and socially marginalized (Jen and Chen, 2017; Wen, 2008). A growing rural crisis has been acknowledged by the Chinese government, but policies have failed to stem the tide of rural decline. While 41.5% of the Chinese population still lived in rural areas in 2017 (FAO, 2017), over 900,000 villages have disappeared from the Chinese countryside since the turn of the century – and with them local culture, traditions, and knowledge (Johnson, 2014). The rural population is rapidly aging as younger generations flock to urban areas in search of alternative economic opportunities outside of agriculture, leaving a shortage of skilled farmers (Fenghuang Caijing, 2017).

Major environmental problems are also emerging due to overuse of chemical inputs, hormones and feed additives, accumulated waste from large-scale animal production leading to toxic runoff, and the rise of industrial pollutant emissions and contamination of farmland.

In this context, the agroecology and eco-agriculture movement in China has been gaining momentum. There is growing consensus that Chinese agriculture must transition towards agroecological practices to ensure food security while providing sustainable livelihoods for farmers and minimizing environmental risks (Luo, 2016; Wu Wenliang et al., 2016). The transition under way in Puhan Rural Community in Shanxi province has taken up this challenge. Initially established as a farmer training service, Puhan is now a multifunctional cooperative made up of 3,865 households from 43 villages in the Puzhou and Hanyang townships (58% of the local population), cultivating on some 5,300 ha of farmland (GiFT, 2017).

The first seeds of Puhan’s agroecological transition came when Zheng Bing, a local primary school teacher, realized that a lack of technical support to farmers was affecting decision-making, and allowing for over-use of chemical inputs and environmental damage. Zheng became a full-time organizer, focusing on technical training services to provide farmers with a broader range of knowledge. She organized lecture series and training sessions with agricultural experts that attracted over 400 farmers in the area.

However, obstacles to transition remained, and the process refocused over time on broader livelihoods and community-building activities in order to build the social foundations for shifting food and farming systems. It was only once community morale and solidarity had improved that an integrated, multi-functional farmers’ cooperative was developed. The cooperative’s activities range from organizing the production of bulk agricultural products and local handicrafts, to offering training in sustainable farming practices and crop protection, and delivering a series of social services to community members. Most of these activities
generate revenue and have become self-sustaining over time.\textsuperscript{41}

While 90\% of Chinese agricultural production is destined for external markets (Yan and Chen, 2015), one third of Puhan's production feeds community members, one third is sold to urban consumers in surrounding counties through CSA networks, and one third is sold through conventional market agents selected by Puhan members (Hua, 2016).

The Puhan cooperative's development highlights the potential for bottom-up processes of rural regeneration and community-building to spark wide-reaching agroecological transition. The initiative highlights communities' ability to develop their own locally-adapted solutions to the challenges they face – in a Chinese rural context still characterized by poverty and food insecurity.

**CHANGES IN PRODUCTION PRACTICES**

China is now the highest producer of GHG emissions in the world (FAO et al., 2015), although less than 15\% of emissions are related to food and agriculture (Liu, 2016). Irrigation of rural crops takes up 60\% of China's total water usage, severely depleting groundwater sources in a number of northern regions (Cui and Shoemaker, 2018). The country's use of chemical fertilizers has tripled over the past three

![Figure 11: Changing Agriculture and a Changing Society in China (1980-2015)](source: Chinese Ministry of Agriculture, 2017)

\textsuperscript{41.} In 2016, Puhan had total revenue of RMB 80 million ($11.8 million) and a net profit of RMB 2 million ($294,000). Initial capital came from mutual credit or Puhan's community fund.
decades, with usage efficiencies averaging only around 32% compared to a global average of 55% (Chinese Ministry of Agriculture, 2017). It is now estimated that soil contamination has affected almost one-sixth of land in China; in 2013, eight million acres of land were taken out of farming due to high levels of contamination (China Power, 2017; Ren et al., 2009).

In 1998, the ‘Puhan Rural Community’ cooperative (from hereon Puhan or ‘the cooperative’) was founded by Zheng Bing, a local primary school teacher whose husband owned a small conventional agricultural inputs store. Conversations with customers allowed her to realize that a lack of technical support to farmers in her area was affecting their ability to make sound financial decisions for their businesses.

The dominant production model, based around large-scale mono-cropping, was promoted by central and local government policies. As public extension services were eroded, the technical advice on offer from agro-chemical companies reinforced input-intensive industrial production models. Zheng observed that chemical inputs were frequently being over-purchased and thus over-used by farmers, causing severe environmental pollution and health issues in the local area.

Puhan initially developed as a training program to improve knowledge surrounding the proper use of chemical inputs. The training sessions initially organized by Zheng brought growing business to the family store, as more farmers who attended purchased inputs on credit to be paid after harvest. Progressively, the cooperative focused on promoting closed loop farming practices and supporting on and off-farm biodiversity.

Early on, farmers were encouraged to adopt a number of traditional practices already familiar to the older generation of farmers: intercropping, crop rotations, green manures and composting, and integrated crop-livestock farming. The more than 5,000 hectares cultivated by
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members of the cooperative focused on crops suited to the local environment – wheat, cotton, beans, and fruit. Members have been allowed to shift practices gradually, starting with soil improvements on a very small portion of their land, as little as 1-5 mu.\textsuperscript{42}

Over time, an ambitious conversion process to organic agricultural practices was launched. In 2008, Puhan developed a ten-year plan, which included bringing 60% of its 80,000 mu arable land under organic practices. In 2010, the cooperative signed a sales contract with Mecilla, a Hong Kong-based company. The contract, which offered prices 20-30% above market rates, was put in place after organic practices in Puhan had been audited and validated by a third party (Tsui et al., 2017). Though Mecilla has requested Puhan further increase its cotton production to make an additional 30,000 mu available for purchase, Puhan has only marginally increased its cotton production area in order to avoid shifting to monocultures (ibid). Nonetheless, these market developments have allowed Puhan members to tap into new markets in major cities, alongside the direct marketing networks (CSAs) launched in nearby villages and towns.

Adopting a more holistic approach to livestock management, Puhan has also collaborated with the Rural Youth Training Program of Liang Shuming Rural Reconstruction Centre to introduce fermentation beds\textsuperscript{43} for local livestock. Young farmers who have settled in the area have created a demonstration farm to showcase ecological farming and husbandry practices, and as a model of rural youth engagement in organic agriculture (Tsui et al., 2017). From 2017, the technique will be introduced in over 600 households, the majority of whom are farmers over the age of 55.

Shifts in agricultural practices were contingent on the gradual development of fully-functioning cooperatives and the community relations underpinning them, which were rebuilt over several years (see below). Over time, eight cooperatives were launched under the overarching Puhan Rural Community cooperative, including in handicrafts, agroecological produce (grown on a collective 53 hectares), traditional foods, and a paint factory. Most failed within the first year, leading to further adaptation and adjustment, and further strengthening and diversification of Puhan’s activities.

CHANGES IN KNOWLEDGE GENERATION AND DISSEMINATION

Recognizing that local farmers were beholden to agro-chemical companies, Zheng Bing’s original intention was to empower local farmers with the necessary tools and information to farm more independently. Between 1998 and 2001, Zheng organized free quarterly technical training for local farmers, funded partly by her family’s input store and partly by the local government’s agricultural bureau.

Puhan Community now requires its members to attend four trainings a year for five yuan ($0.73) to learn new agroecological practices and receive up-to-date policy information. Members also elect 180 farmers from their cooperative to participate in a series of six large agricultural seminars that offer a variety of crop specializations. These farmers are

\textsuperscript{42} Mu is a Chinese unit of land measurement that is commonly measured at 0.067 hectares.

\textsuperscript{43} Thick natural woodchip or sawdust bedding that reuses animal waste as natural compost to improve soils. As a low-labour and low-cost technique, it also provides greater natural warmth to livestock during colder months, and helps prevent the outbreak of disease.
then tasked with sharing their knowledge and skills with other members of the cooperative. Informal information sharing is also facilitated by the small size of the community. By word of mouth and by observing each other’s activities, members have been able to collectively test new practices and adapt elements of each other’s more successful ventures.

Intergenerational knowledge transfer has also been an important component of Puhan’s development strategy. Following the initial failure to develop cooperatives in 2008, core members of the community persuaded their children to return to the village. Puhan has made it a primary goal to pass the knowledge and experience of older farmers onto a younger, healthier generation. However, it took a year or two for the older and younger staff to overcome generation gaps. In 2008, when Puhan community registered 28 cooperatives through the new Chinese cooperative law, young people were assigned three key tasks: farm one mu (0.06ha) of land, engage in village activities, and follow the work of one cooperative.

Through these tasks, young people learned farming skills, developed solidarity with each other and with the older generation, reconnected with the land, and came to understand the cooperative business model – which stood in contrast to the company business model many had been trained for. As Zheng Bing put it, “If a young person does not know how to farm, they cannot really speak about respecting farmers. Respecting farmers is not about being polite towards them or about offering them money, but is about really understanding and experiencing their hardship.” These activities helped to rebuild perceptions of farming as a profession holding career potential. Since 2008, young people have progressively chosen to remain or return to the countryside. Today, over one hundred full-time staff work for Puhan, 85% of whom are under the age of 35.
Changes in Social and Economic Relations

Rebuilding community ties has played a decisive role in driving forward Puhan’s development. Changes to local social dynamics were a key entry point for unlocking transition, and a key outcome as the initiative unfolded.

Zheng and her team realized early on that the technical training on offer was placing too much emphasis on agricultural productivity, without creating space for the rural regeneration clearly needed in the region. They also discovered that while they had been successful in organizing technical training and other social activities to strengthen social solidarity, once cooperatives were established around economic activity, all other dimensions were neglected. When economic ventures failed on the back of insufficient trust and solidarity between members, they also witnessed a drop in solidarity in the community.

Indeed, the initial barriers to Puhan’s development were social and economic in nature. In 2001, farmers were unable to repay their debts following a drastic fall in the price of asparagus – the main local crop. Following this price collapse, some 30 households turned to raising chickens, although these businesses soon encountered difficulties. As the guarantor of their loans, Zheng found herself in major debt. However, Zheng noticed that a number of the household business actually had the money to repay her, but had chosen not to since other households were not repaying their loans. This convinced Zheng to refocus her efforts on building a community of ‘common interest’.

Rural livelihoods, rather than economic gains, had to become the primary objective. Indeed, it was only by improving relationships within the community that the cooperatives eventually took off. During the agricultural training courses, Zheng also took note that while some women attended the sessions, many still had little decision-making power in their households. Her goal became to allow for greater community interactions and preservation of local cultural traditions, while supporting a change of perspectives regarding traditional gender roles.

Yet a more holistic approach to community development took time to flourish. Zheng was inspired to organize the women in her village after seeing women in the city of Wuhan dancing in public spaces. Surprisingly, pursuing dancing as a leisure activity, and pursuing a women-only cultural activity, proved more controversial than hosting technical training programs for largely male farmers. Some women faced judgement in joining the activity, yet Zheng persisted. Within a month, 80% of village women were attending. By 2004, over one thousand women came together from 43 neighbouring villages to celebrate the lunar New Year.

Dancing as a cultural and social activity progressively changed the local mindset around women. Villagers began to notice a decrease in domestic abuse by men towards women and between women and their mothers-in-law. To tackle abuse, Zheng and her team organized village theatre to criticize abusive behaviours. Over time, women began to self-organize and take ownership of the process: six women have since become prominent activists of the Puhan Community.

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44. As shared by Zheng, “Most other cooperatives focus primarily on economic development. We focus more on bringing people together and transforming how people look at things” (GIFT, 2017).
By 2004, Zheng grew confident that the village as a whole could benefit from organized activities and would now be more receptive to change. In early 2004, the women in Zheng’s village sought to tackle waste management issues in their community. Shortly after a proposal on proper garbage disposal had been distributed to each household, residents were shocked by how clean their village became. Building on this newfound momentum, the women then proposed to repair village roads. Organizing a Village Construction Board with the participation of both men and women, roads were repaired within two months. By 2014, the cleaning activity covered 33 villages, with youth leadership in one of the villages. Maintaining public services became a means to bring villagers together.

The cooperative now offers a whole gamut of services, including group purchasing of household goods and farming inputs, cooperative sales of agricultural produce, microcredit loans, services for the elderly, childcare and education, and cultural activities (see Figure 12). This diversity of activities has been made possible due the funds reinvested in the community, enabled by growing incomes and social solidarity.

More recently, Puhan has shifted its attention to creating direct links between cooperative members and urban consumers. Puhan Ru-

FIGURE 12 - PUHAN COOPERATIVE’S MULTIFUNCTIONAL SERVICES
(Adapted from GIFT, 2017)
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The Puhan rural Community spent several months in 2013 surveying urban consumer needs before developing its urban consumer cooperatives. Aiming to provide seasonal, local, and agroecologically-grown foods, while informing urban consumers about rural experiences, Puhan built two centres in Yongji and Yuncheng to develop new consumer bases. In Yongji, Puhan recruited around 2700 households for its CSAs. In Yuncheng, Puhan has members across 18 neighbourhoods, with a dedicated staff person responsible for each neighbourhood.

Puhan now sells one third of its produce through CSA schemes. The produce destined for CSAs comes from the farmers who have been practicing agroecology for at least three years and meet the requirements of Puhan's Participatory Guarantee System.

CHANGES IN INSTITUTIONAL FRAMEWORK

As described above, a rural crisis with implications for environmental sustainability, food security, and livelihoods has emerged in China. The central government acknowledged and responded to the crisis through the 2006 New Socialist Countryside policy, which sought to improve rural incomes and rebuild rural areas by abolishing rural taxes, making large investments in basic infrastructure, and providing subsidies to farmers (Wen, 2008). However, the plan has done little to strengthen rural resilience, with rural populations continuing to fall. The capacity for rural communities to coordinate and maintain public resources and infrastructure continued to weaken due to a lack of revenue and support. The policy's commitment to sustainability has remained limited to the development of large-scale organic monocultures.

More recently, the 2017 Rural Revitalisation Strategy aims to protect rural ecology, improve rural income, enhance agricultural modernization and food security. However, agricultural modernization is defined in terms of scale, specialization, and market integration, and therefore has problematic implications in terms of biodiversity and ecological protection. While rural revitalization is expected to be driven forward at the village level, the recent national policy of extending rural contract land leases has not sufficiently accounted for changing demographics within rural villages, and has instead served to maintain unequal access to land and weaken collective ownership of land.

Meanwhile, policies enabling the development of cooperatives, such as the Professional Co-operation Law of 2007, have enabled a mushrooming of rural cooperatives in China, although some of the benefits have accrued to existing elites (Yan and Chen, 2013). The policy allowed Puhan to develop a series of cooperatives differentiated by product. The new law also allows cooperatives to establish companies under their own management. Puhan hopes to leverage this new allowance by pursuing value-added processing opportunities and developing a more vertically integrated value chain, while decreasing waste of perishable foods.

In 2013, the 18th National Party Congress proposed a strategy encouraging state farms to operate according to a new national Ecological

45. Puhan's urban team also emphasises the need for face-to-face interaction between producers and consumers, and between consumers themselves, by organizing open activities including traditional dance, tai chi, information seminars, and handicraft activities for children. To connect to the countryside and learn about production practices, Puhan's urban support staff are also required to attend the cooperatives' weekly rural meetings, and are encouraged to bring urban consumers to experience rural life.
Civilization plan. This builds on wide-ranging agricultural reforms detailed in a 2015 national plan to reconcile environmental sustainability with economic development - including the development of model agroecological villages.

Together, these reforms hold significant potential to drive a nation-wide agroecological transition. However, their success may ultimately depend on supporting and harnessing local-level experimentation. While centralized planning continues to be the principal means to develop and implement policy, market actors and civil society organizations are increasingly playing a crucial role in shaping the outcomes of these policies. As displayed by Puhan, farmers’ cooperatives are key actors in the scaling out of agroecological practices, the transmission of traditional knowledge and the revitalization of rural spaces. Cooperatives can ensure fair economic conditions for their members while providing safe and healthy foods to consumers. And civil society organizations can raise environmental awareness and support local food consumption initiatives. As will be further discussed in Section 4, there may therefore be major potential for combining top-down strategies with bottom-up initiatives – such as those driven by the Puhan Rural Community – to meet the interests and needs of rural communities across the country.

Access to information on the Puhan transition was provided by IPES-Food panel member Yan Hairong, who has studied the case in detail. Extensive information on agroecological research projects around China and government policies on ecological agriculture were also provided by Professor Luo Shiming and a dedicated team of researchers. While it was not possible to use all of this material, it enriched the case study by providing deep contextual information on ecological transition in China.

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46. The following elements are included in the plan: i) ecological agriculture development, ii) restoration of forest areas, iii) ecological animal husbandry and restoration of grasslands, iv) degraded land restoration, v) wetland biodiversity conservation, vi) industrial pollution control, vii) ecological urban construction, and viii) development of clean rural energy.

47. The National Strategic Plan for Sustainable Agriculture Development (2015-2030) released in May 2015 includes the protection of grasslands, soil and water conservation and reforestation. Six hundred designated agroecology demonstration counties and more than 1,000 villages have been identified for development as model agroecological villages. In addition, effective science and technology models have been developed to conserve and control water consumption, reduce or even remove the use of synthetic fertilizers and pesticides, and efficiently use animal waste.