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## Young Farmers in a “Cucumber Village”: A Different Story of Family Farming in Agricultural Specialization from Hebei Province

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### Introduction

This village came to our attention by accident. Given the rural labour migration situation in China, especially in the mid-west, it was difficult to find a village with many young farmers. We came across this village, which is well-known in its adjacent areas for its specialization in cucumber cultivation and marketing. When reviewing the site’s agricultural development, the groups of young farmers gradually came to stand out. Huang village, which is a pseudonym, is located in Hebei province, about 430 kilometres south to Beijing and 10 kilometres from the county seat. The research team conducted fieldwork in the village in December 2017. We lodged in rural households during our fieldwork. We used both

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qualitative data, conducting semi-structured interviews as well as quantitative data collected via a survey. We also engaged in supplementary work in June 2018.

We sampled young farmers<sup>1</sup> using a combination of purposive and snowball sampling methods. Our household host provided the names of our first few interviewees and we were able to expand the sample through introductions by our interviewees. Most interviews were completed in greenhouses where cucumber farmers spend their days. We conducted the interviews while working with the farmers to gain an intimate experience of their daily lives and the hard labour required to keep the farm operating. We also interviewed village leaders, market managers, village technicians, shopkeepers of agro-inputs, and other key informants. Among the 48 interviewees under 45 years old, 27 were male and 21 were female. Most of them (39 interviewees) have only 9 years of schooling and only 7 finished 12 years of schooling. The average age of interviewees was 35.8 years old. Half of them were under the age of 35. Most of them started farming independently in the area in their twenties. They are indeed quite young compared to the general demographic situation of agricultural labourers in China. This chapter will reveal the atypical story of the village and its young farmers.

## Community Profile of the “Cucumber Village”

Huang is a small village with a total population of 1109. Among its 267 households, about 96 per cent are involved in cucumber production. The total farmland area in the village is 1246 mu<sup>2</sup> (about 83 ha), among which the 800 cucumber greenhouses occupy over 1100 mu, leaving the few remaining mu as farmland for corn and grain crops. Cucumber production has brought considerable profits to rural households. In 2016, the daily average trading volume of cucumbers was over 40,000 tons with an annual turnover of CNY<sup>3</sup> 400 million. The average per capita income

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<sup>1</sup> All farmers' names are pseudonyms in this chapter.

<sup>2</sup> 15mu equals 1 hectare.

<sup>3</sup> 1 CNY equals about 0.15 USD at the time of writing

in Huang village during the time of our interviews was about CNY 30,000. In 2018, the national average per capita income was CNY 39,251 for urban residents and CNY 14,617 for rural residents.

It took over 30 years for the village to develop its specialization in cucumber cultivation. Household responsibility land reform took place in 1984 in the village. Due to rapid population growth and limited farmland, land allocated to each villager was no more than 1 mu. With such a tiny plot of farmland, villagers continued to live in general poverty. Village leaders encouraged people to switch to cash crops in order to increase their incomes. They tried apples and apricots, among other crops, before they homed in on cucumbers. The village's climate and environment is suitable for growing and the high demand of labour input required also matched well with the person-land ratio. In order to encourage villagers to plant cucumbers, village cadres and Chinese Communist Party (CCP) members took the lead to construct the first batch of 46 greenhouses in 1988. This first generation were small and simple structures constructed with bamboo and timber with 0.6–0.8 mu of floor space. Cucumber production in the late 1980s rapidly increased producers' incomes. There was a saying in the village at that time that “one greenhouse and one small field, 300 yuan one year yield.” During the 1990s and early 2000s, the number of cucumber greenhouses increased from 40 to over 300 and, on average, each household kept one greenhouse. Although cucumbers generated higher profits than grain, due to the high labour demands and the low level of mechanization (it took an hour to manually roll up the greenhouse shutters), most households could only plant one greenhouse. The annual income generated from one greenhouse in 2007 was about CNY 20,000.

In 2007, cucumber production in Huang village encountered its first bottleneck. The price of cucumbers had declined and the greenhouse could not sustain the same number of labourers. Many young people gave up farming and travelled to the cities to work as migrant labourers. One retired village cadre recalled that “cucumber production of our village was in danger that time and it's possible that cucumber production would fail after almost 20 years' efforts.” The newly elected village leader during that period actively sought solutions to this crisis. In 2009, Huang villagers received a technological boost with the introduction of

greenhouse rollers in the county. This piece of machinery dramatically reduced shutter rolling time from an hour to a few minutes, increased illumination time in the greenhouse, and relieved a portion of farmers' labour burden. It was such a significant change that it allowed farmers to increase cultivation. In 2012, the village committee applied for support from the county government's agricultural poverty alleviation and development fund for agricultural transition. The village planned two large vegetable plantations and applied for a subsidy for 50 additional greenhouses. Thanks to generous subsidies and an upgrade to steel frame greenhouses, there were over 100 households submitting applications to the village committee in the first year alone. In 2017, to encourage increased production, the village committee applied for more funding from the county government to subsidize steel costs for newly built greenhouses. The village leader also applied for CNY 2 million loan from the Rural Credit Cooperative to help villagers develop cucumber production. All of the above economic and technical support has motivated villagers to sustain cucumber production. Since 2013, more and more villagers have returned from the city to resume an agricultural livelihood. Prior to 2018, there were only about 30 young people working outside of the village as migrant workers. Most of the villagers are smallholder farmers with 1 or 2 greenhouses, several big land holders have more than 10 greenhouses, but the average is around 4 greenhouses.

## Becoming a Young Farmer

When compared to tens of thousands of villages in China, Huang village is unique due to the number of young farmers in one village. In the context of a hollowed-out countryside, Huang villagers can make a moderate income and be prosperous in their agriculture endeavours in their home village by virtue of their own labour, supportive policies, and favourable market conditions. Their farming experiences reflect the characteristics of young people in rural society.

## Entering into Farming: Gender Differentiated Self-Choices

The traditional way of entering into farming in rural China can be called "natural employment" that there was no occupational qualification requirement for age, educational level, and so forth to be a farmer. Farming skills were usually passed to offspring from the older generation without formal training. Young people automatically became farmers once they worked on the land. There was no retirement system accordingly for farmers. The young generation becomes accustomed to farming from a very young age and is then able to take over the farm when they are older. For young farmers in Huang village, taking up farming is not natural employment. It is not completely strange to them, nor are they familiar with it. Most young farmers have certain childhood experiences from when they helped their parents with farm work. Most of them moved to the city when they finished junior middle school and have accumulated rich migration experiences. They were a part of the so-called new generation of migrant workers and their involvement in farming is not a natural process.

For 32-year-old Likai, her first experience with farming was at age 10 when she helped her parents with weeding. She is the family's eldest daughter and had to help her parents with farm work even if she was reluctant. She migrated for work at age 15 and her first job was packaging preserved ducks in a food factory in Baoding city, Hebei province. Two years later, she moved to a spinning factory in Shouguang city in Shandong province and then to a food processing factory where she worked for several years. She returned to the village at age 22 to marry and stayed. It is very common for young women like her to remain at home after marriage.

Wang Tao, 27 years old, only has a primary school education. She did not have the opportunity to attend middle school due to her family's poor economic circumstances and her parents' rejection of her education. She first worked in an ice cream factory in Tianjin municipality near Beijing and then at a clothing factory in Yantai city in Shandong province; her friends helped her to find and secure the latter job.

Thirty-year-old Hu Ting had a very similar experience to Wang Tao. Ting also migrated for work after primary school. She worked in a restaurant in Handan city in Hebei province for years before her marriage. Although she is a farmer now, she told us that her migration experience had a very important influence on her farming career. "We interacted with many different people and experienced many different things, and have become more outward. It is also a very useful experience when we deal with other people as a farmer."

Young women farmers in Huang village are usually the returned migrants. In accordance with village conventions and parents-in-law's willingness, they quit migration post-marriage and stay in the village of their husbands to take care of children. Young women do not have contract land in the village of their husbands and sometimes assist their parents-in-law with farming responsibilities. While young women stay in the village for family care, their husbands often continue working in cities. This situation and these women's experiences reflect the influence of traditional gender norms on rural women's occupational development. In contrast, the reasons for young men's return are more diversified and proactive. Family is only a minor element in their reasoning as most returned to the village to pursue farming as a result of the push-pull effect in rural-urban society, that is, being pushed away by the marginalized migrating experience in the city and pulled back home by the prospect of cucumber production in the village.

Wang Zhichao, age 38, was a migrant worker many years ago. In 2001, he worked in a machinery store in Handan city in Hebei province where he sold combines for grain harvesting. His salary was around CNY 500 per month and this work only lasted for six months. Wang is a National Basketball Association (NBA) fan, and during the finals one year, he left work to watch the game without asking his boss' permission. When he returned to the job site, his boss scolded him and said that he would dock his salary for half a month. Wang was very angry and could not abide by such humiliation. He decided to return home to farm.

Now I've been farming for over 10 years. I will not change my job, it's very difficult. For young people in our village, we don't have special skills nor a high level of education. We can only do hard labour worker in the city and earn 3000 to 4000 yuan a month. Planting cucumbers at home is also very hard work but we can enjoy the freedom and don't need to be disciplined. One summer a few years ago, I went to a construction site for short-term work when my greenhouse fallowed. It was burning hot at noon in August, but we still need to work in the sun. It's very impressive for me. Cucumber production requires intensive work, but I can be my own boss and have a bit higher income than migration. It's more comfortable than migrant work.

When we met him, Wang was planting three cucumber greenhouses. He had various migrant labour experiences on construction sites, in the oil field, and in different factories, among others. He lasted only one or two months at any one job. "No skills or knowledge, it's difficult for us to settle down in the city." Wang returned to the village to plant cucumbers after careful thought and consideration. He had three key reasons for doing so: one, an income earned from agriculture in the village is better than he could earn via migration; second, he can live with his family; and third, after decades of development, cucumber production has stabilized in the village.

The return of young men to the village is the driving force for family farming and agrarian transition. This reverse migration is also a key factor in reshaping young women into vocational farmers as the joint work of couples has organizational advantages that fit well with the intensive labour demands of cucumber production. This is not to deny the possibility of independent young women farmers. There are some left-behind women who farm successfully when their husbands are working in the city. General agrarian transition in the village provides favourable conditions for farming. However, in spite of women and men's differing reasons for entering into farming, it is the joint commitment of young couples to farming that enhances the foundations of family farming and further brings about agrarian dynamics in Huang village.

## Household Split: Establishment of New Farming Households for Young People

The return of young men has accelerated household split, which occurs at the same time as the reproduction of a new farming unit. In rural society, household split indicates, on one hand, the birth of an independent son's family and, on the other hand, the distribution of household wealth and means of livelihood among sons to allow for the reproduction of each son's household. In traditional agricultural society, the means of production in agriculture were under the full control of the father, with the son obtaining his share of means of production via a household split. Along with social transformation, the one-off mode of household split prevails in rural society instead of the multiple mode of household split. The timing of household split has also shifted to earlier in a son's life. Usually a son would split with his parents immediately after his wedding. In regions that generally produce low agricultural revenues, household split has more social and cultural implications than economic purpose. Low agricultural revenues provoke young people's migration, and regardless of any household split, it is usually the elderly who remain in the village to run the farm, hence the phenomenon of "grey agriculture." In Huang village where agricultural production is more profitable, the household split has equal cultural and economic significance for young people. Young couples become an independent farming unit after a household split and need to plan and organize agricultural production by themselves. Very often they can only get a few means of production from their parents. Some young farmers are unlucky and do not acquire any land from a household split.<sup>4</sup>

The number of greenhouses in Table 7.1 for the 13 cases is from one greenhouse to nine greenhouses. Some young farmers can inherit one or two greenhouses through household split or build the greenhouses with

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<sup>4</sup> The average family size in Huang village was 4.15 in the time of investigation. According to the seventh National Census in 2020, the national average family size is 2.62, dropping from 3.1 in 2010 and showing the tendency of miniaturization. In Huang village, as in many rural regions of China, couples in their 30s and 40s usually have two children. If the first-born was a daughter, they were allowed to have a second one in the time of birth control policy. The nuclear family with two children is common in rural area. Married adult son may split with parents in householding but still live in one single yard.



**Table 7.1** Farming scale in some households of young farmers

Interviewee	Number of greenhouses	Greenhouse through household split/built with parents' assistance	Greenhouse built by young couple
Hu ting	3	1	2
Cui Weiyang	9	0	9
Li Caixia	1	0	1
Yu Kun	2	0	2
Dai Qiuyan	1	0	1
Wang Jing	3	2	1
Wu Xia	7	0	7
Han yan	4	2	2
Cai Hong	4	2	2
Wu Xin	7	1	6
Yao hui	2	1	1
Chen	6	1	5
Hongge			
Xiao Qing	4	1	3

parental assistance. For others, they must secure a greenhouse through their own efforts. Inherited greenhouses are usually constructed in the old style—smaller buildings with bamboo frames. In all cases, young people have managed to expand their scale of production due to their hard work; some even grew to be large holders in the village. In our research, we found that the average household land area for a young farmer is 2.76 mu. For the 21 young farmers who received land as part of a household split, the average area of inherited land is 1.09 mu. This land, however, may be too small and scattered to be able to construct a greenhouse. In such situations, the young farmers have to rent land. It is important to note that the intergenerational transmission of land and greenhouses constitutes a necessary foundation for young people to launch their own farming careers. However, what is more central is their labour and accumulation and acquirement of community resources.

Wang Weichun and his wife operate five greenhouses. They are both 38 years old. Their first greenhouse was constructed in 2005. After their marriage, Wang split received 1.6 mu in farmland from his parents as part of a household split. The young couple wanted to build a greenhouse but had no money. The wife borrowed some money from her family and the couple built their first greenhouse on the land that Wang's parents

provided. The second and third greenhouses were built in 2007 and 2009, respectively. For convenience, Wang rented land from his neighbours near his first greenhouse. He can take care of the three greenhouses with minimum transport costs. The first three greenhouses were bamboo frame structures, which meant that the investment cost was minimal—it costs about CNY 30,000 to build a bamboo greenhouse. With two years' revenues from the first greenhouse, Wang was able to accumulate extra capital to expand the scale of the couple's production. The fourth and fifth greenhouses were constructed with steel frames at a cost of CNY 70,000 each. Although the investment increased, it was not difficult for the couple to build the last two greenhouses given the realized accumulation from earlier phases of production.

In our fieldwork, we discovered several explanations for the limited intergenerational transmission of agricultural resources in Huang village. First, parent generations do not have abundant resource to dispose of, especially land. They also face production scale limits. Before the cucumber production boom in Huang village in 2013, each household had only one or two old-style greenhouses. Given the scarcity of land when compared to the population, there were limited production resources that the older generation could pass down to their children in a household split. The second important factor is the special life cycle of the parent generation. As young farmers in Huang village are in their thirties and forties, their parents are mostly in their sixties, an age with a moderate capacity for labour and in urgent need to prepare for their later life. Rural citizens can voluntarily join the New Rural Social Pension Insurance, a policy launched nationwide in 2009 to guarantee older adults above the age of 60 a regular pension. In Huang village, the pension is about CNY 80 per month. In rural society, adult children usually do not provide economic support or living expense for their parents if the latter still have the capacity to work. Therefore, the older generation has to rely on agricultural production to maintain their livelihood and save as much as they can for later life. The high profits from cucumber production mean that older people cannot easily give up their land and pass it on to their children. Although a parent's household and a son's household are separate independent calculation units in agriculture, it does not exclude their intergenerational reciprocity in specific production activities, especially

intergenerational support from the older generation. Production scale is often smaller in the parent's household. When they have finished their own farm work, parents often help out with routine chores at their children's greenhouses or collect their grandchildren from the village school. Strong family cohesion and solidarity remains after a household split, which is the foundation of Chinese culture and peasant agriculture.

Yao Hui is 30 years old and has an eight-year-old daughter and a five-year-old son. She has been living in her home village since she married. The couple stayed with one set of parents in the first several years after returning to the village. They didn't need to worry about daily expenditures but lacked economic autonomy. When Yao's daughter was three, her in-laws proposed a household split. Huihui's husband and his brother each inherited one small greenhouse from the parents and jointly share their parents' living expenses. After the split, the whole family were engaged in cucumber production. As the older brother planted three greenhouses and Yao's family only had one, her parents-in-law provided assistance to their older son. If Yao and her husband were very busy, the parents and older brother would come to help. “Although we are not in one household (with the in-laws), we still have very close interaction, just as before and our relationship is very good.”

### **Acquirement of Knowledge and Skills: Active Learning Through Limited Ways**

From migrant worker to cucumber producer has been a huge occupational transition for young farmers in Huang village. To become a farmer requires skills, experience, and knowledge that forms the basis for their own farm work after they settle into their new household. There are four major paths for young people to acquire knowledge and skills in cucumber production, which also reflect this group's different demands for technology as production evolves. The first channel to acquire basic knowledge in production is usually within the family. As Huang villagers have 30 years of cucumber production experience, knowledge transfer to young farmers was initially an intergenerational transmission within

family. Parents, parents-in-law, and sometimes spouses were farmers' first teachers.

Thirteen years ago, Wu Xia married into a family that lives in Huang village and began cucumber cultivation with her husband. Wu's own parents own cucumber greenhouses in an adjacent village therefore she came to the marriage with production skills. Cai Hong, on the other hand, became acquainted with cucumber production only after she married and moved to the village. She gradually learned the necessary methods and skills from her parents-in-law. Her husband also provided instruction. "It's not difficult. Almost all of the villagers are planting cucumber here, you just need to observe and follow your parents, then you know how to do it."

Secondly, young farmers can receive technical support in everyday production through communication at the community level. Although young people can learn basic production technologies from their parents, they may encounter various and changing technical problems in pest control, seedling management, and so forth in specific production that require outside expertise. The three decades of cucumber cultivation in the village have provided a favourable and supportive environment for young people. Many of them told us that "many villagers have rich experiences in production and they could be technicians beyond our village." After setting up their own greenhouses and as they engage in production, young farmers face new problems that they cannot resolve with internal resources or for which they need new technical inputs. For this reason, communication with other farmers and producers is very important to young farmers. They frequently visit neighbouring greenhouses to provide help and also learn from each other. There are six village technicians who are experienced producers and grassroots experts; these "cucumber doctors" provide technical support to local farmers. From neighbours and local technicians to seedling raisers and agricultural material suppliers, there are diversified sources of technical support that young farmers can draw on at the community level.

The third way to gain technological expertise is from public training services that the village and government provide. The local government has given the village and its vegetable production special attention as a model of cash crop plantation. Inviting external experts to conduct

training for the villagers is one form of public service. There is, however, a gender difference in the way in which young farmers acquire this knowledge. For a young couple, it is usually the husband who participates in public training and later shares the information with his wife.

While farmers welcome training provided by the village or local government as necessary, it cannot substantially meet farmers' technical demands. As many young people commented: "the external experts usually have more theories than practices. When it comes to farming practice, they even don't know more than us. Generalized theories are not always applicable in our regions." When compared to generalized abstract training, young farmers prefer to learn technologies and information suitable for their own needs from the internet or via smart phone apps. Most of the young farmers, including many young women, have installed various technology and marketing apps on their phones. Some listen to podcasts on technology in the greenhouse when they are working. The internet, mobile phone, and other information and communications technology (ICT) are very common and popular among young farmers who use them to access flexible and customized information. This special channel in knowledge acquirement also separates young farmers from their parents in terms of farming and marketing methods.

In Yao's family, she and her husband use their mobile phones to access the internet for training and other knowledge acquisition, including a technology program accessed via WeChat.

This technology account has a lot of information that suits for the production condition in my family. We all plant cucumbers in the village, but each greenhouse is different in terms of location, soil quality, illumination, ventilation, species, etc. So we should not fetish the so-called experts and have to choose the information and knowledge that really suits us.

Dai Qiuyan is 34 years old. Her husband is a fish wholesaler in the provincial capital and she takes care of the greenhouse at home. She is very active in increasing her knowledge about cucumber production. When watching television or reading news on her cell phone, she is constantly on the search for related news. "I have many apps on my phone. I can search for the price fluctuations on my phone for the national

market. Sometimes, different regions have different marketing prices. What we got from the internet is just a guideline, you have to have your own judgement.”

Previous research showed that there is significant gender differentiation in the acquirement and application of agricultural technologies. Even on farms where women provide the majority of labour, they are still passive in learning new technologies and subordinated in technology extension activities. Many rural women are confined to communication with family or neighbours and reluctant to try new technologies. In Huang village, in contrast, we found that both young men and women farmers are highly motivated to gain new knowledge and modernize their operations. Unlike their parents, they are accustomed to the ease of finding knowledge via the internet. Young farmers agreed that when compared to their parents, they are pursuing a kind of modern agriculture that requires increased adaption and pursuit of knowledge and technology.

### **Labour Division for Young Farmers: “Man Outside and Woman Inside” in the Production Sphere**

Cucumber cultivation is very labour intensive during a season that in Huang village runs from September to June of the next year. Cucumber harvest is 50 days after planting. In autumn and winter, farmers need to pick cucumbers every other day, and in spring, they will pick the vegetables daily. In addition to harvesting, farmers need to adjust the seedlings’ height and water and apply chemical fertilizers and pesticides, all of which require a lot of manual work. The farmers told us that “every day there is work waiting for us and we’re tied to the greenhouse.” In winter, farmers work in the greenhouse from 8:00 am to 4:00 pm. There is a two-hour break at midday for lunch and a rest. Farmers close the greenhouse at 4:00 pm, but related farm work is often done with a head lamp after dinner. In the summer months, due to the hot weather, farmers work from 5:00 am to 11:00 am and then continue from 4:00 pm to 8:00 pm. “We don’t have spare time. Even during Spring Festival we need to work in the greenhouse. On the first day of new year, we visit family and

**Table 7.2** Daily work in the greenhouse

Task	Frequency (times/day)
Rolling shutters	2/1
Harvesting	1/1–2
Marketing	1/1–2
Falling the seedlings	1/1–2
Applying chemicals	1/2
Mist spraying	1/6–7
Watering	1/4–5

relatives in the morning with new dress and then in the afternoon we change to working clothes in the greenhouse. We can only rest for two days even during the new year’s holiday” (Table 7.2).

During the busy production season, young couples divide their labour. Daily management of the greenhouse requires watering and mist spraying of chemicals; these tasks are labour intensive, but the latter requires certain technical expertise. Falling seedlings is the most tedious work in a cucumber greenhouse. In a 1 mu area, there are about 4000 seedlings. When they fall, the farmer needs to unlace the rope that supports the seedling, pull it down, and then retie it. This process takes between two and three days to finish in one greenhouse. It is usually the women who take care of falling seedlings and apply chemicals to flowers, while men are in charge of mist spraying, watering, and other chemical applications. Harvest and pick-up are joint tasks by the couple. When the cucumbers are packaged in boxes, the husband will transport them to the village market for sale. In such scenarios, men’s labour is largely technically oriented and outward focused, while women’s labour is more labour intensive and inward focused. Women work longer hours in the greenhouse than men. Such labour division in cucumber production to a great extent duplicates the conventional family labour division of “men outside and women inside,” which ascribes men as breadwinners and women as housekeepers. The labour division in the production sphere echoes traditional gender roles. Most male farmers described their work in watering, mist spraying, and chemical application as “managerial work,” while a woman’s job is basically “labour work.” For men, managerial work is key to a greenhouse’s production success.

However, for many women farmers, this kind of labour division in agriculture is not a complete duplication of the “men outside women inside” model in the family sphere. On one hand, women equally contribute to production and revenue. Women’s responsibilities are not unpaid work but an important role in the production chain that determines the quantity and quality of cucumbers. In Huang village, women farmers have built strong self-recognition towards their contributions in family farming. As they told us: “I’m doing my part and he (the husband) is doing his part. We have different tasks. It’s nonsense to say who is stronger and who is more powerful in agriculture ... it’s not competition but cooperation. Our works are complementary, and both of our work are very important. The production will be affected if either of us didn’t work well.” We should also consider that increased access to technology and relevant information needed for farming success keeps the gender labour division flexible. Women can and often do take on the roles that men typically hold.

Huihui and her husband take responsibility for one greenhouse each. They work in the greenhouses separately and work together when harvesting and applying chemicals. Huihui said, “I do not work less than him at all. The only difference is that he has more experience in planting cucumbers than me. We’re equal in agricultural production.”

In Cui Weiying’s family, she and her husband Wang Zhanling discuss important family affairs and take decisions together. Although it is Wang who usually takes on the technical work, it does not mean that Cui has to rely on him. “I can dispense the chemical as well. I can do all of the work by myself. It’s not difficult. When he’s busy or he’s not around, I would do the technical work.”

In households that manage large-scale production, women farmers’ involvement is not limited to greenhouse production. Due to high labour demands, large holders need to hire labour to work in their greenhouses. It is usually women farmers who are in charge of organizing and managing hired labour. As most of the hired labourers are middle-aged women from neighbouring villages, women farmers have a gender advantage in communicating with these workers.

Haixia and her husband plant seven greenhouses. They cannot manage the workload by themselves and regularly hire three or four labourers to



support production. In the busy season, this expands to five or six. Finding stable and responsible workers is the biggest challenge for Haixia, especially in the busy month of March. "In our experience, the market price in March is very good. All of the farmers would like to take the chance to sell as many cucumbers as possible. We have seven greenhouses and cannot miss the timing. Sometimes I need to put aside my work in the greenhouse to search for hired labourers in the villages."

Women farmers' involvement in agriculture and the family labour division in production impacts on labour division in the domestic sphere. Due to long hours working in the greenhouse, women farmers usually do not have the time or the energy to take care of housework. Many households do not cook lunch at home. In order to have more time in the greenhouse, they buy fast food from a village convenience store. Husbands cannot ask their wives to be a traditional "housewife." Moreover, given this shared workload in production, many wives ask their husbands to share equally in the housework. In both production and reproduction spheres, the formerly rigid gender boundary has been diluted for women farmers.

Cui Weiyang, for example, usually asks Wang Zhanling to help with chores around the house. He does not complain even when his wife affectionately mocks his efforts. All year round, the couple eat breakfast and dinner at home and have some bread in the greenhouse as lunch. At the end of a working day, they return home to prepare dinner together.

## **Community-Based Agrarian Transition and Its Implications for Young Farmers**

Huang village is a very special case in terms of agrarian transition in contemporary China in that there is no space for urban capital in the community. Family farmers organize all agricultural production, although a few of them are larger in scale and hire labour. There is no horizontal or vertical concentration by agricultural enterprises from outside of the village. Family farming, especially young farmers, is the major (or only) form and driving force for agricultural development in the village. This is due in part to the nature of the village's specialization

in cucumbers, which is highly capital-labour intensive and cannot be mechanized for larger-scale production. The critical variable in this case is the role of collective community, which provides important support to young farmers to guarantee their subsistence and a space for development. The collective community has been actively involved in resource distribution, land rent moderation, and innovation extension in cucumber production. The patriarchal role of the collective community partly explains the tendency of repeasantization in Huang village alongside its prosperous commodification. Community's value and obligation to safeguard livelihood of smallholders make it possible for young people to get access to land and involve in agricultural production in a more pleasant way—work on family-controlled land with family labour for the family well-being.

### **Land Transfer: Breaking Through Household Limits for Young People**

Access to land is the most important pre-condition for young people to start farming. It is true for both men and women, but especially for women. Rural women face many difficulties in accessing land. The land contract system<sup>5</sup> defines a rural household as a unit of land contract; however, the household head is usually the male and the land rights of female members in the household are often overlooked. It is common for women's land rights to be violated due to changes in their marriage situation. Because farmland is contracted in the unit of household, when a rural woman marries and settles into a new household, she will lose use right for the land contracted by her native family. According to a national All-China Women's Federation survey in 2010, about 21 per cent of rural women did not have access to land, among which 27.7 per cent lost their land after marriage. This unfair situation has passive impacts on their position in both family life and agricultural production. Landless women feel deprived and marginalized in their husbands' households. The

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<sup>5</sup> Rural farmland is collectively owned by the community in China. Households get their land contracted from the community based on headcounts. Current contract period is 30 years and size of land contract cannot change during this period.

landless situation also increases livelihood pressure for poor households. In Huang village, prior to 2005, some land was set aside to meet demographic changes and to offer to young women who married into the village. There was no communal farmland to redistribute at all after 2005 and this practice did not continue.

Young men in the village also face land scarcity. Land contracted from the village collective is minimal and scattered; 2 mu of contract land could be scattered over three locations. Most of the contract land runs from north to south. However, land suitable for greenhouse production should run east to west in order to maximize the availability of sunlight. In the 1990s, the limited land area meant that villagers built smaller greenhouses. There were limited land transfers among villagers. A larger piece of land suitable for greenhouse construction sometimes involved land rights of several households, and successful transactions meant communication and negotiation with different households. It was not an easy procedure for individual households, which strained the expansion of the scale of production in the village.

In 2013, the scattered small-scale household production was changed by the community-led land transfer. As farmland in the countryside belongs to a village collective, village committee in Huang village made an overall change on major plots. While keeping farmers' land use right intact, the village committee withdrew land from individual households to consolidate into larger plots for greenhouse construction. After the land has been consolidated and infrastructure (including roads, pipes, etc.) installed, villagers who would like to plant cucumbers apply to the village for a greenhouse site. If it is approved, the producer obtains land use rights for the site and pays rent to the village. For households whose whole plot consists of contract land, their land contract rights remain intact and they pay rent annually as compensation. Village committee-led land was meant to promote land transfers that sustain and enlarge cucumber production. It simultaneously accelerated production as the consolidated land is more suitable for greenhouse production in a geographic sense. In general, greenhouses with more acreage have higher yields.

The villagers welcomed land consolidation as it reduced their transaction cost in land transfers and improved farmland infrastructure. As a resource allocator, the village committee applies related measures to ensure that land distribution is fair and effective.

1. It regulates the standard rent, which in Huang village is CNY 1000 per mu, which has been applied for both land transfers among villagers themselves and those between villagers and the village committee. This rent is much higher than in neighbouring villages where rent usually falls between CNY 600 and 800 per mu. This reflects the higher revenues associated with cucumber production while also protecting the interests of the original land contractor, especially the elderly and those who do not cultivate cucumbers.
2. It moderates rent collection. Due to the tiny area of contract land held by each household and the quantity of land transfers in the village, it is very difficult to calculate land rent for a single household. The greenhouse site that one household might contract from the village committee may involve contract land of several households. The producer would need to separate CNY 1000 per mu of rent by different households and then contact them in order to pay the rent. Some households may not pay their rent on time. To avoid such problems, the village committee set a fixed date in spring to collect land rent. All related households need to pay their annual rent to the village committee on that day. The village accountant then prepares the payments for those who rented land who can collect their rent payment the following day.
3. The village committee also regulates the term and period of land transfers. A land transfer contract is made with the village committee, renting producer, and the original contractor. A basic transfer period is 10 years. The producer has to guarantee that the land will be used for agricultural production; the village committee will reclaim the land if it is not properly used within two years of the transfer's signing. During the contract period, to protect the producer's interests, the original contractor cannot break the contract since greenhouse construction involves a substantial capital investment. To protect the

interests of the original contractor, if the producer wants to terminate the contract, he can sell the greenhouse to another villager with the village committee's prior approval or return the land to the village after restoring the landscape. These measures aim to protect the interests of the different actors involved and avoid land desolation.

4. It guarantees fairness in land distribution. When the village committee consolidated the land for greenhouse construction in 2013, it was divided into 100 plots for greenhouses with an average size of 1.5 mu, and it was numbered for selection. Households who applied for a contract paid a CNY 5000 deposit for each greenhouse and drew lots to see who would receive which plot of land. Land consolidation continued in 2015 and 2016, and all of the land sites were distributed through public lottery. The villagers recognized the value of this transparent procedure and it prevented potential conflicts in the competition for good land.

In the last decade and especially since 2013, more and more villagers have been able to secure land through land transfer to start or expand their cucumber production. Since 2013, farmers have built about 400 greenhouses thanks to community-led land consolidation. The village collective has surpassed the household as the primary allocator and moderator of land. It is an extraordinarily important process, especially for young people who do not have much inherited land.

Wu Xia and her husband operate seven greenhouses. Before she married and moved to Huang village, Wu had 1.5 mu of land in her home village, which that village's committee reclaimed after her marriage. Fortunately, she was able to secure 0.7 mu of farmland in Huang village after her arrival. Her immediate family—Xia, her husband, and two children—hold 2.6 mu in the family, by which they built their first greenhouse. In 2013, when the village committee started to plan for more greenhouses, the couple was very excited. In that year, their two children were in kindergarten and primary school and did not need as much care. Haixia and her husband decided to put all of their efforts in cucumber production. They contracted five greenhouses and later bought the seventh greenhouse from another villager.

Wang Zhanxue is 38 years old. He operates three greenhouses with his wife. His two children are in middle school. In the household split with his parents and his younger brother, Wang received only 1.5 mu of land. The land he uses now for his three greenhouses is 8 mu—all transferred from the village. His own contracted land was transferred to other villagers. He is very content with the family's current production of scale. "The three greenhouses are just right for me and my wife to work without using hired labour. With our own labour input, we can earn CNY 100,000 each year. It is not bad as a farmer."

Land transfer in particular provides the chance for young women to access land and pursue farming independently. For villagers, land consolidation and land transfer already blur the boundaries of land. In most cases, farmers work on land transferred from others and have their own contracted land transferred to other people as well. Whether a young man or a young woman, having his/her own share of contracted land does not matter very much in a young person's pathway to becoming a farmer. Family position for young women is not influenced just because they don't have land in their husbands' village because they are also entitled to transfer land from the village committee. There are cases in which young women farmers transfer land by themselves and pursue farming independently.

Forty-year-old Wu Xin operates two greenhouses on 3 mu of land. She rented the land three years ago from villagers for CNY 1250 per mu. It was higher than the "official" rent in the village because there was some greenhouse infrastructure for cucumber cultivation on the land already. There is another 3 mu of land in her family for maize and wheat, which is her husband's contract land. Her husband has been engaged in migrant work in the city and only returns home once or twice a year.

He (the husband) doesn't have time or efforts to take care of things in the village, transferring land and planting cucumbers is all my own idea and decision. I manage the whole procedure. I'm now very capable of cucumber production. If there is land available in the village and a subsidy policy, I'd like to build another greenhouse and make more investment. I have confidence to manage three greenhouses by myself.

## **Agricultural Programmes on Finance and Technology**

After land, finance and technology are the other important elements for young farmers who are engaged in developing their own cucumber production unit. For small-scale family farming, initial capital for cucumber production usually comes from family savings. With any profits, farmers are able to maintain simplified reproduction or expand the scale step by step. This is the general economic logic for family farmers who have tried to minimize risks and external dependence. When the local government promotes rapid agrarian transition, young farmers face both risks and opportunities in expanding production. Financial support from the village and local government is critical to reconfigure young farmers' careers. In 2012, the village committee received a subsidy from the county office responsible for poverty alleviation and development in support of the construction of 50 modern greenhouses. The subsidy's distribution was based on villagers' voluntary application. Investment for a standard modern greenhouse with an area of 1.5 mu was about CNY 80,000–100,000 at that time and the subsidy was CNY 60,000. In spite of the favourable policy, villagers were not very active in applying due to a funds shortage and the fear of associated risks. To encourage young people to expand and upgrade production, a village cadre tried to secure free loans from the county for them. With this support and inspiration, several young farmers took the lead and applied for the programme, which also established a foundation for them to later become large holders.

Wang Zhanling and his wife operate nine greenhouses and are one of the large holders in Huang village. They operated 11 greenhouses for some time but sold 2 greenhouses as they were too busy). The couple did not have any greenhouses when they separated from his parents. They received only 2 mu of land that was too barren to plant grain. They started planting cucumber in 2002. They constructed the greenhouses one-by-one with their savings and some money that they borrowed from relatives. With profits from the previous two years, they were able to build the next greenhouse every other year. During the aforementioned 2012 subsidy programme opportunity, the couple wanted to expand their production but were afraid that there would not

be sufficient land in the village in the future. The resulting financial burden also caused hesitation. They planned to build five greenhouses, but under the village leader's persuasion, they finally applied for seven greenhouses. To build them all in one year, they applied for a CNY 300,000 loan for one year. As the yields and market for cucumbers in that year were good, the couple was able to repay the loan with profits from their 11 greenhouses.

In addition to the 2012 subsidy program, the village committee continued to apply for financial support for local villagers. In 2015, households could receive CNY 2000 subsidy for newly constructed greenhouses; in 2017, it was CNY 1000. As it is difficult for individual villagers to apply for bank loans, the village cadre applied for CNY 2 million in loans from Rural Credit Cooperatives in the name of the village cooperative to facilitate villagers' demands for finance.

The village committee has also been a promoter of technological innovation. Many sectors of cucumber production have been mechanized, including ploughing, shutter rolling, and chemical spraying. In 2009, the shutter roller for greenhouses was initially promoted in the county when there were only 2000–3000 such machines in the whole county. The village committee introduced the shutter roller to the village with a CNY 1600 subsidy for each machine. Technical innovation in cucumber production has had a very positive influence in improving labour productivity and working conditions for young people, especially since cucumber production is highly labour intensive, unlike grain production. With the promotion of the rotary tiller, shutter roller, and mist sprayer, farmers' manual work has been significantly relieved. It also has emancipatory implications for women farmers as they can more easily take up farm work independently with the support of machinery.

Ciu Weiying told us: "Vegetable cultivation is more laborious than grain farmers because wheat and maize cultivation is fully mechanized. It is good that the farming style has been innovated and we don't need to work as hard as before."

Wu Xin also recalled the challenges: "I remembered how hard it was without the shutter roller. I was standing on the top of the greenhouse to roll up the shutters by my hand. It almost took a whole day for me to do that. Now I only need to switch on the engine and it takes 10 minutes to do the work."



Qiuyan recounted for us: “We used manual pesticide barrels before. We carried the barrel and walked through the greenhouse. Because we don’t have much strength, it usually took more than one hour to finish the work. With the mist sprayer, I only need 10 minutes to finish one greenhouse.”

The introduction of technology has had a positive impact on equalizing gender positions among young farmers. Women farmers can engage in most farming sectors independently or replace the role of male farmers in production. With the application of such machines, women farmers also have more positive self-recognition of their role in agricultural production. As they told us: “We can do what men usually do on the farm. It is not difficult for us women to do farming.”

### **Providing Public Goods: Development of the Local Market**

The local cucumber market provides an important and stable outlet for young farmers’ production. It has taken over 20 years for the village to develop its own marketplace. In the 1980s, due to the lack of a marketing channel, cucumber producers had to go street by street with a three-wheeled bicycle to sell their product. In 1993, several small marketplaces formed at the entrance of the village and some “cucumber brokers” emerged. Farmers no longer needed to sell their product in the street. Instead, cucumber brokers would collect cucumbers from households and then sell them to wholesalers from the city. In 1996, the village built a marketplace with an area of 3 mu, which was the only cucumber transaction market in the adjacent area. Every day, farmers sent their cucumbers to the market directly from their farms. Cucumber brokers would organize and moderate the transactions in the market. In 2013, through the village committee’s organization and investment, the marketplace was further expanded from 3 mu to 40 mu. There is not only space to accommodate trucks and lorries, but also a warehouse, refrigeration storage, and shops for production materials to serve farmers and wholesalers. The daily transaction volume is about 200 tons, a five to six times increase than before the expansion. Specialized production has an associated stable source of marketing. Current wholesalers come from Beijing and

different cities in Hebei, Henan, Shandong, and other provinces. The village market has provided a stable marketing platform for cucumber farmers and farmers from neighbouring villages who also take advantage of the market.

The village committee not only built the market but also played the role of market manager. The three staff members working in the market as cashier, accountant, and gauger are retired village cadres or village party members. They weigh the cargo, calculate the trading volume, and make payments to farmers. The transaction is made through cucumber brokers who are local villagers with rich experience and social networks for marketing. Cucumber brokers organize individual farmers and contact different wholesalers to fix the price. Wholesalers need to pay 3 cents per half kilogramme to the village committee as a management cost. One per cent of this is the cucumber broker's commission, 0.1 cents is for the accountant and cashier as their salary, and the remaining 1.9 cent is for the village committee to pay land rent for the market and to maintain the infrastructure. At the initial stage of transaction, wholesalers transported the cucumbers first and then set the price when they sold the vegetable on the urban market, which meant that farmers did not receive the money immediately. Their payment was delayed and sometimes shrank due to changing market prices. To protect local farmers' interests, the village committee has regulated that wholesalers have to set the price at the time of transaction according to the price in Beijing and Shandong. Payment to farmers cannot be delayed to the next day. The market now has a formal mechanism for transactions. The market opens daily at noon. When wholesalers arrive, they prepay for the goods to the market's managerial staff. Farmers deliver their products to the market and await a price. If the price is good, they will proceed with the transaction. Farmers receive their payment from the wholesaler immediately. The market's regular operation via the village committee is key for the farmers. Without such a convenient and stable marketing channel, young people would not have the confidence to start farming. Many young people told us that this was the reason that they decided to become involved in farming. Wang Zhanxue shared:

The market in our own village is very convenient for us and it saved a lot of transportation cost. For farmers from other villages, when they come to the market, they have to accept the price no matter how low it was because they could not transport their cucumbers back. However, for us local people, we make transactions every day and have become very sensitive to the price. We can have information about the price anytime and gradually have grasped some rules. When the price was low, we're not in a hurry to sell. We can put cucumbers in storage for a few more days to wait for a better price. For example, when it is cloudy, cucumber production is lower; therefore the price is in an upward trend. It's also easier to store cucumbers in cloudy weather. So we can wait for several days to have a better price. There are uncertainties and fluctuations as well; everything is not so definite. We need to consult the price from different channels and pay attention to weather changes.

The local market is not only a platform for cucumber transactions, but also an important public space for villagers to socialize and exchange with the outside world. As cucumber production is highly commodified, the concrete marketplace and abstract market mechanism have become central to farmers. The local marketplace is the place almost every farmer visits every day. “Our daily activity is from home to greenhouse, from greenhouse to the market. We don't go to other places. We also don't have the time to go to other places.” Therefore, the cucumber market has become an important place for villagers to socialize and interact. Through involvement in market transactions, the busy farmers who work all day in separate greenhouses have the time to talk to each other. They discuss technical or management problems in the greenhouses, exchange experiences, and talk about deals in other provinces to expand their knowledge of cucumber production and marketing. With this information collected at the market, they can adjust their production or plan accordingly. The market is an especially active space for young farmers to build and enhance their social networks. After their market transactions, young farmers often gather in a restaurant with the money that they earned that day to share dinner and continue conversations about production and rural life. These social interactions, however, are largely confined to male farmers. As marketing is termed as men's work in a rural household,

women usually do not go to the market to sell their product unless the husband is busy or away. While the village market is open to all farmers, women farmers have yet to actively integrate into this aspect of farming life.

## **Agency and Challenges for Young Farmers**

### **Young Farmers' Perceptions of Farming**

With the technological upgrades in Huang village in 2009, young farmers gradually became the main body of agricultural development in the village. While many older farmers are still working in the first generation of greenhouses, young farmers are all working in modernized greenhouses, in technical and managerial terms.

Wu Zhiying said that young people are also more careful about farming. "We put a lot of effort and work into greenhouses. We pay much attention to pest control and disease prevention, and we have more sources of information to learn. That's the major difference between us and our parents' generation. Their way of production is very extensive."

Wang Zhanxue told us that while they are modern farmers, they are not producing an organic product:

We're pursuing modern agriculture because our farm work is highly mechanized. Although cucumber is very unique that it cannot be totally mechanized, we have had many machines in the greenhouse. But we're not real modern agriculture because we still highly rely on pesticides and chemicals. It's not organic farming. That is the way of agricultural development, but currently we cannot realize it. Without chemicals, the yield won't be guaranteed.

This is a paradox in young farmers' perception of farming. On the one hand, they are contented with the income from agriculture and proud of their freedom and autonomy. "Freedom," "living with family," and "stable" are the words that they most often use when asked about the merits

of family farming. On the other hand, those words are just another expression of their social exclusion in cities. "Stable" also means young people are bound by the hard work required to make a greenhouse successful. If they could secure decent employment in the city, some of them, especially the younger farmers, would migrate. Their perception and assessment of their own farming is based on a compromise of imbalanced rural-urban development and their social exclusion as migrant workers. For all of the young farmers that we interviewed, they do not want their children to become farmers. Wang Zhichao does not want his son to be trapped in farming:

I don't want my son to continue farming. Being a farmer is a symbol of (being a) loser. To do farming is very boring. I really admire those migrant workers. They have another kind of freedom to try different things. They can dispose their time after work. If I have a good job in the city, I definitely will quit farming. But now everything is settled. My life is almost fixed in this trajectory. I can't change it.

For Wu Li, their son's engagement in farming would be a last resort:

My son is 18 years old and he's doing migrant work in Handan city in Hebei province. If he doesn't have a good job or could not make his own family in the city, maybe in the future I will pass the greenhouses to him. There is stable income with greenhouses, at least he can sustain himself. But that is the last resort. As long as he can make a living in cities, I don't want him to come back. Nobody would like to be a farmer. We don't want to be farmers neither, how can we expect our children to be farmers just like us?

Better profits, technological advances, and labour-saving machinery have not removed the social stigma of being a farmer or the rural-urban barriers for villagers. Most of the young farmers want their children to finish high school and secure a good job in the future. In their imagination, a good job should be in cities, stable and less toilsome than farming. Farming is the bottom line for their livelihood security.

## **Young Farmers' Differentiation in Production**

Young farmers in Huang village are not homogenous. They have diversified in terms of production and life pursuits. According to the farmers' own definition, combining the greenhouse scale and use of hired labour, large-scale farmers in cucumber production are those with seven or more greenhouses, a medium-scale farmer has four to six greenhouses, and a small-scale farmer has three or less. Large-scale farmers have a huge capital investment in greenhouses and regularly use hired labour in production. In addition to the farming couple and regular hired labour, they need to hire additional help to harvest during the busy season. For medium-scale farmers, family labour is the mainstay though they may need to hire labourers occasionally during busy times. Small-scale farmers rely solely on family labour. During our fieldwork in Huang village, there were only four large-scale farmers, while medium-scale farmers make up 25 per cent of the farming population, and the rest, about 70 per cent, are small-scale farmers. Differentiation in agricultural production is not significant in Huang village. Production scale has gradually stabilized over the last 10 years and there is no tendency of proletarianization for small-scale farmers. Although hiring labour is very common in Huang village, there is no labour exploitation between larger holders and small holders because there is no agrarian overpopulation in farming households. Hired labour is generally from neighbouring villages that don't plant cucumbers and have a surplus labour force. When comparing small-scale and medium-scale farmers, the government favours large holders for policy intervention and subsidy opportunities. Large holders become models for the local government to propagandize, and they are in turn able to secure policy preferences and subsidies from the government. It has also helped large holders to accumulate additional social capital when dealing with government officials. They also become ideal promoters and advertisers for agro-businesses to sell their agrarian inputs.

*Large Holder: Zhai Jizhong*

Zhai Jizhong is one of the large holders in Huang village. He is 37 years old and operates nine greenhouses with his wife. His annual land rent is CNY 30,000. The couple were formerly employed as teachers. Zhai graduated from senior middle school in the 1990s, which was very unusual for a child growing up in a rural community during this period. After graduation, he was a village primary school teacher. The job's low salary pushed Zhai to start planting cucumbers in the late 1990s. His wife was a teacher in an urban school for migrant children. In 2006, when their first son was born, Zhai's wife returned to the village to care for their child and help her husband. Due to his capacity for social interaction, Zhai Jizhong developed a broad social network and became a cucumber broker in the market.

Zhai hired seven workers for his nine greenhouses, but he is not as careful a manager as small holders. Cucumber disease in his greenhouses is more serious than in those of small holders. His focus is profit and as long as his yield is high, the quality is less important. When compared to small-scale farmers, Zhai is more sensitive to technological innovation. He invited an agronomist from Henan province to conduct some biological experiments on one of his plots of land.

*Small Holders: Wu Xiaoen*

Wu Xiaoen and his wife Diao are 33 years old. They have two greenhouses. Cucumbers in their greenhouses grow much better than those of their neighbours, thanks to the couple's intensive management. There are small bricks hanging in the greenhouse to adjust the shape of cucumbers. They use reflective film to make sure that all of the cucumbers have sufficient sunlight. They apply medicine to each flower to prevent botrytis. As Diao told us: "managing a greenhouse is like raising your children. It will give you more reward if you take care of it very well. Greenhouses managed by different farmers would be very different." Indeed, Diao is very careful about her cucumbers. After she learned during a training session that some ingredients in makeup can impact cucumber growth, she had decided not to wear any in the greenhouses.

*Small Holder: Yan Liang*

Yan Liang is 28 years old and operates two greenhouses with his parents. He did not split the household with his parents because his older brother and sister are working in the city. He told us:

Cucumbers in our greenhouse are better than other villagers' because the land in the two greenhouses is ploughed by my father by hand, not using the tilling machine. When I harvested cucumbers I thought it's good to plant a greenhouse, at least it's stable. Each greenhouse can generate at least 30,000 yuan, it's not bad to live in the village with that income. In the fallow time of June and July, I can do seasonal migrant work in the city. Our life is not bad. Although my brother and sister work in the city, to be honest, I do not admire them. I have my own house and two greenhouses, and I already have two children because I married earlier than them. Now I can live with my family and parents and enjoy the family life. My brother and sister could not have feelings as I do. My sister is already 31 years old but not married yet. My brother is just engaged. They live in the city, but they face more pressure than me.

These cases of young farmers at different scales of production show their internal differences in farming modes. Large-scale farmers are more capitalist in their efforts to maximize production with hired labour, while small-scale farmers are more like peasants with their priority on quality using their own labour. Profit for a single greenhouse is higher for small holders than for large holders as labour-driven intensification is central to cucumber production. For large holders, in order to reduce wage costs, they try to diversify production varieties and use some of their greenhouses to plant tomatoes and beans, which are less profitable but require less labour input. For young farmers at different scales, the structure of cucumber production in Huang village is stable and most of them would like to maintain their current scale. Key constraints for scale enlargement include access to land and high labour inputs. Stable cucumber production implies that there is no more land available for expansion. Farmers who want to extend their production can only transfer land in neighbouring villages, which would increase transportation costs and is not convenient. Scale enlargement beyond a family's capacity requires more



hired labour and would increase wage costs. Moreover, all farmers face the risks of rising material costs and uncertain market situations. Given the current market price for cucumbers, depeasantization will not occur among small holders. This explains both the existence and limited differentiation of family farming led by young people.

## **Challenges for Young Farmers**

Looking at family farming in Huang village as outsiders, its agricultural specialization and its core of young family farmers is quite dramatic and impressive. In this case, the village community played a strong and protective role in supporting the village's overall agricultural development whereby young people could have the opportunities and resources to enhance their family farming operations and maintain their livelihood. The village's collective economy has, in turn, strengthened to be able to provide more infrastructure (roads, environment improvements, etc.) and promote rural development. The county has awarded Huang village with model village status and it receives many visitors who come to learn about its experiences. However, underneath this "successful" case, the village and its young farmers are facing similar challenges to other agricultural villages and producers in China.

### **1. Fluctuations in the Hegemonic Market**

The wholesale market in the village provides a unique opportunity and convenience for farmers but also becomes a baton for farmers' production. Farmers could go to the market every day and sell their product with the help of local brokers, however, they are highly involved and dependent on the market just as farmers elsewhere. Farmers cannot foresee or cope with market fluctuations, nor do they have a say in market pricing. They can only delay selling for a few days to wait for a better price. If the market price keeps declining, the farmers have to accept the price because they don't have other outlets. It is possible for young farmers to break through the limits of the local market with quality products of new species, or by looking for space in retail markets further from

home. However, there is a gradual path of dependence among young farmers due to the convenience of the market. Its demands have determined local farmers' production structure—individual farmers cannot bear to take risks and bear the costs of market exploration.

Li Baoxiang shared with us these concerns:

Our market has been framed, and it's just within this (village) scope. We've seen fruit cucumber in other places, which are more expensive than the species we planted. But in our area it's unusual in the market. Species in small scale would not have a place in the market. No dealers would like to buy for such small quantity. It's impossible for us to change our species.

Wu Li reiterated Li's concerns:

The village market is our own way to sell cucumbers. We don't have other channels. There are no other wholesale markets in this area. You may have a higher price if you take the cucumbers to the county or to other urban areas but it's very difficult. You have to enter into a new market and compare the prices by yourselves. It's too difficult.

All of the young farmers that we interviewed are sensitive to and worried about the price fluctuations in recent years. As the government promotes agricultural specialization nationwide, vegetable production has been extended in many other villages in north China. Beyond the traditional vegetable production base in Shandong and Hebei provinces, those in the northeast are actively promoting vegetable production. The county government asked the Huang village committee to facilitate the construction of 100 greenhouses in a neighbouring village in one year. With the promotion of cucumber production and the rapid increases due to yields, young farmers in Huang village will face serious market competition if they do not innovate in production and marketing terms.

## **2. Ecological and Environmental Threats**

The declining ecological conditions and resource base is another challenge for sustaining cucumber production in Huang village. The decades of monoculture have generated many problems in the soil.

Farmers apply manure to the soil after ploughing to increase soil fertility. However, insufficient fermentation of manure increases soil hardening. Cucumber production requires significant irrigation but frequent watering also speeds up moss growth on the surface. In addition to common cucumber diseases such as botrytis and downy mildews, severe smog in winter and early spring is a new climate threat for cucumber cultivation. Heavy smog in winter reduces sunlight for cucumbers and aggravates sprout rot. Due to the village's specialized production, the ecological and environmental problems of individual farmers have a cumulative effect for the community. In July and August, manure adds to air pollution and induces a “disaster of flies.” In the fallow season of June and July, farmers cut down all of the cucumber vines. However, there is no organized plant waste disposal plan and vines are dumped in a remote area of the village. The vine piles are combustible in hot weather, and bacteria in the plants pollutes surrounding land and the river. Environmental problems are primarily the outcome of large-scale monocropping. As there are very few grain plantations in the village, farmers do not have enough straw to mix in with the manure for fermentation. Some farmers travel to neighbouring villages to procure it, but not all farmers make the effort to do so. As the environmental problems of large-scale production impact all farming households, it becomes an issue of village governance that requires collective action.

### **3. Lack of Social Organization and Insulation from Social Life**

For labour-intensive cucumber production, young farmers in Huang village show their tough spirits by taking up hard work. However, they spend most of their time in the greenhouses, which has, to a great extent, isolated them from the social life of the community. Most of young farmers do not have much spare time to spend with their families, let alone join in leisure activities and socialize in the community. Wang Zhichao compared life in the village to two points in one line—between home and the greenhouse:

We're always moving between these two points and even in a hurry when walking on the road. Take me as an example. My two greenhouses are a bit far from each other. When I have finished work in one greenhouse, I need to rush to the other one. When you see villagers on the road in the daytime, they're always busy running to different greenhouses, just like me. We don't have time to chat or talk on the road. We work until the last day of the year in the lunar calendar. We only rest on the first day of the new year and then continue work from the second day. Previously, when we visited relatives during the new year's holiday, we spent several days to visit each relative. Now we only take half a day to visit them and spend a few minutes with each relative. Due to the busy farm work, I feel like our relationships with relatives, friends, and neighbours are very loose and estranged. Everyone is busy. It's very sad but we can do nothing to change it.

Young farmers' complaints about their social isolation are common. Young women farmers and farmers in their thirties have a strong link to the world outside the village and would like to broaden their views (and those of their children) via travel and sightseeing. However, farm work is their priority. Young women farmers complained to us: "we don't have the chance to wear high heels and beautiful dresses. Every day we work in the greenhouse just like a country woman." They also do not have time to participate or voice their opinions in the public affairs of the village. Village cadres are mostly those with off-farm work and have the time to work for the village. There are no social organizations, informal or formal, among young farmers to take the lead in innovation or to address common marketing problems. Over the past decades, it has been the village committee that has steered agrarian transition and innovation. In the balance between innovation and stability, young farmers usually lean towards the latter. To break through their path dependence on the village committee, young farmers need to organize themselves and take an active role in social change with encouragement and institutional support from the local government.

## Conclusion

The stories of young farmers in Huang village are peculiar, not only to other countries but even to many regions in China. Is it too unique to represent the commonalities of young farmers in China? If we consider their stories in a different light, the case of Huang village also proves that it is possible for young farmers to settle in agriculture and sustain their households. In this case, the key to foster young farmers is the collective agency of the community. When small holders are involved in commodification and capitalized farming and in the face of the risks from infinite markets, it is widely believed that the best counteraction is the existence of organizations or collective actions among farmers. This is the reasoning for farmers' cooperatives and associations as well as various social movements. In the Chinese context, the natural form of rural people's organization is the village, especially their home village. The village is not only territory where people live in a compact and socially interconnected space, but also an interface between the government and the farmers. Through villagers' recognition of village authorities and mutual trust within the community, the Huang village collective was able to reallocate internal resources (land) to allow for the entrance and expansion of young farmers as well as strive for and channel external resources (e.g. subsidies and machinery) to strengthen the economic competitiveness of family farming. It is not the individual agency of single young farmers that facilitate the village's vibrant situation, but its collective agency as a whole. Considering the rural labour migration and increasingly atomized rural livelihoods, it is difficult for many villages and rural communities to organize for collective action in agricultural development. However, the case of Huang village once again confirms the importance and viability of such collective action. In this sense, it's a unique case with common implications (Map 7.1).



**Map 7.1** Study area. (Source: Ministry of Natural Resources Map Technical Review Center)

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