



International
Institute of
Social Studies

Ezafun



EL FUTURO DE LA ALIMENTACIÓN Y RETOS DE LA AGRICULTURA PARA EL SIGLO XXI:

Debates sobre quién, cómo y con qué implicaciones sociales, económicas y ecológicas alimentará el mundo.

THE FUTURE OF FOOD AND CHALLENGES FOR AGRICULTURE IN THE 21st CENTURY:

Debates about who, how and with what social, economic and ecological implications we will feed the world.

ELIKADURAREN ETORKIZUNA ETA NEKAZARITZAREN ERRONKAK XXI. MENDERAKO:

Mundua nork, nola eta zer-nolako inplikazio sozial, ekonomiko eta ekologikorekin elikatuko duen izango da eztabaidagaia

Water implications of Large-Scale Sugarcane plantation in China: the case of rural Guangxi

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Paper # 55

Apirila - Abril - April
24, 25, 26
2017

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INTERNATIONAL COLLOQUIUM

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Abstract

Sugar production is a pillar industry in Guangxi. To boost the “sweet industry”, from 2014 the local government has began to promote the construction of Double High (High Yield and High Sugar Content) Sugarcane Bases with the emphasis on large-scale mechanized farming. Facilitated by the government support and subsidies, private investors are attracted into sugarcane plantation, triggering large scale of land acquisition and also the reshuffling of water right allocation. With empirical material from fieldwork in Guangxi, this paper examines the implications of large-scale land acquisition for water rights of local smaller-scale land users. The study shows how the access to water is differentiated and reproduced among different water users and how the benefits and costs of accessing water are distributed. This study has found there is unequal access to water between private investor and local smallholder peasants. The extraction and enclosure of water by the private investor have not only excluded the local peasants but also reinforced the dependence of the smallholder peasants on the commodified water for irrigation. Besides, the local people are put into a more risky position to bear the adverse ecological effect brought by the water consumption of profit-driven private investor.

Field Notes:

The rise of large-scale sugarcane plantation in Guangxi

Sugarcane production in China is centered in the Southern and Southwestern regions, including Guangxi, Yunnan, Fujian and Guangdong province. Guangxi is the largest sugar production region in China and occupies more than 60% of the national total. Sugarcane is the the main pillar of the economy in Guangxi, contributing a lot to local government tax revenue. In recent years, affected by the fall in global sugar price and the rise of input costs, the area under sugarcane cultivation in China has shrunk significantly especially since 2014. Meanwhile, sugar import continues to increase due to the widening gap between domestic supply and demand. To maintain the sugar industry and secure adequate supply of sugarcane for sugar mills, Guangxi government in 2014 has launched a project which aims to develop 5 million mu of “high-yield (to reach 8 ton per mu) and high-sugar-content(no less than 14%)” production base by 2020.

According to the project execution plan (2015-2020) ¹, the target of the “double high” project is to improve the market competitiveness of sugar industry in Guangxi through the promotion of large-scale mechanized sugarcane production, the adoption of improved varieties as well as modernized irrigation

¹ <http://www.gxnj.gov.cn/show.html?ID=262d9b8c-6383-480f-96f8-b2500fee8746>

system. Government subsidies are granted for the land under “double high” project with the requirement to follow the standards in terms of land size, irrigation, seedling, deep plowing etc., mainly catering to the demand of mechanization. Besides, the project promotes land transfer from local villagers to entities who have capability to operate large-scale sugarcane plantation. Attracted by the government subsidies and support, private investors appeared in the arena of sugarcane cultivation in rural Guangxi. With the implementation of the project, lots of land formerly operated by family farming has been leased to large-scale investors. Since water is a key constraint to improving sugarcane productivity, the land control change triggered by the project further translate to water control change. The interest of this study is to examine the water control change underlying the large-scale sugarcane plantation with the focus on the distribution of benefits and costs among new and existing resource users. The following initial observation is based on two fieldwork trips in Dongmen Township in Guangxi from 2016-2017.

The process and impact of large-scale land acquisition

Kai Li agricultural company is the first private investor in Dongmen Township. It has leased 6000 mu farmland from two villages for 15 years(1800 mu in Babai Village from 2015 and 4200 mu in Balou village from 2016). The land rent is different in those two villages because there is a river nearby Babai village and it is easy for the company to get access to the river water. The annual land rent in Babai village is 1000 yuan per mu while in Balou village it is 900 yuan per mu. The land deal between KL company and the villagers is facilitated by the support of the local government. Because the latter should accomplish the “political task” of double high project assigned by Guangxi government. There are villagers who are reluctant to lease land to the company but has faced the pressure from village leader and township officials. The latter have used oral persuasion or threat to push villagers to sign on the agreement.

The livelihood of local villagers has been influenced by the land acquisition. In Balou village, the average land holding size is around 70 mu after the reclamation of waste land(mainly unused hilly and slope land) from early 1990s, which is encouraged by the local government to plant sugar cane for the local sugar mill. Because of the land reclamation, the land holding size varies in each household. As in Balou village, the land under cultivation has reached 18050 mu, among which 13000 mu is newly reclaimed after the adoption of household responsibility system. Benefiting from sugarcane cultivation, most villagers in Balou village could live a decent life and there is no left-behind populations before the land deal with KL company. After the land transfer, most villagers claim their income from land has decreased because when they were working on their own land then could earn more by diversifying the land use such as interplanting watermelon with sugarcane. Besides, due to the payment of land rent in arrears, some villages find it is very hard to meet household needs. Some young men who formerly farmed at home begins to migrate to cities to earn money. Villagers has resisted against

KL company for delaying the rent payment, they have locked the gate of KL company twice to stop the machines to work in the field until they get the rent.

In the fieldwork trip in March, 2017, we found another company has contracted 10000 mu land in total in Dongmen Town in December of 2016, involving 6000 mu from Balou Village. In Balou village, the former total land size under sugarcane cultivation is 12000 mu. So far, only 2000 mu has left. How this affect the local villagers needs more exploration.

Water enclosure and potential impacts on local villagers

The climate in Guangxi is warm and temperate with significant rainfall throughout the year. The annual precipitation varies in different regions inside Guangxi. In Dongmen town, it ranges from 1000 to 1200 mm. Sugarcane is the main cash crop in Dongmen town. Besides, there are eucalyptus, fruits, vegetables, cassava. In Balou village, due to the lack of surface and groundwater, the sugarcane cultivation under family farming mainly depends on rainfall and the yield is around 4 ton per mu. Due to economic and ecologic reasons, eucalyptus is only allowed to plant on the forestland. Comparatively, the market demand of sugarcane is more stable than other cash crops because local sugar mills will buy all the sugarcane. Although local villagers need not worry there is no place to sell sugarcane, they cannot sell sugarcane freely. There is a zoning system proposed by the local government to ensure each sugar mill to have its own zone to purchase sugarcane. To avoid competition, sugar mills are forbidden to buy sugarcane across zones. Otherwise, they will face a fine. In contrast with sugarcane, villagers should collect market information and sell other cash crops on their own. In this way, planting other cash crops is more risky because of the volatile market.

To reduce market risk and gain more profit, lots of villagers choose to interplant watermelon with sugar cane. One villager has told us his net income for planting 20 mu watermelon last year is 50000 yuan. This revenue is higher than that from sugar cane (the latest price is 500 yuan per ton) when the market is well. The growing period of watermelon is short but has a high demand of water. Although villagers don't irrigate sugarcane, they buy water from private wells in neighbor village to irrigate watermelon. There is no groundwater everywhere. Even though some villagers could afford tube wells, there is no water under their land. To irrigate watermelon, villagers first use their car to carry a big tank to purchase water and then take the water to the field. The price for one tank which could holds 5 ton is 15 yuan. The last month before harvest is the key period of irrigation, otherwise, the watermelon won't grow well. It needs around 4-5 tanks of water per day for 20 mu watermelon. The private well owners have built wells primarily for their own irrigation demand then begun to sell water to local villagers.

As for KL company, during the fieldwork in 2016, it has invested more than 200 thousand yuan for the drip system of integral control of water and fertilization which could cover the irrigation for 1800 mu sugarcane field. The company has employed one Laotian expert to design the whole irrigation system. Two big pits has been built for water storage. The pit under use is 50 m long, 50 m wide and 7 m deep. Water diverted from the river nearby and fertilizer is mixed in the pit and then be pumped into the field. It could irrigate 500 mu one day. With the irrigation system, the yield per mu could has reached 7 ton per mu, 3 ton higher than household farming. The manager in charge of production said the productivity could be guaranteed if keeping providing water and fertilizer for sugar cane crops. On average, the pump could abstract 600 ton water per hour and works 6 hours one day. The company has planned to build another three wells because the water access now is not enough for irrigating all the land. For the water diversion from the river, KL company needs to apply water use permit from the local water conservancy bureau. How its water use affect the existing water users in the downstream needs more exploration. Besides, how surface and groundwater is actually governed in Dongmen and if there is any environmental impact assessment around the double high project needs more investigation (institutional arrangement & water governance system).

Different from land control change, the impact of water control change is less obvious, indirect and take some time to become apparent. Undoubtedly, water is a finite resource. How one use water reduce the availability for others. So far, the pace of land transfer and the promotion of large-scale mechanized sugarcane plantation is still accelerating. In a long run, the water demand and abstraction of these large scale sugarcane plantation investors will not only pose threat to local people's water access and their livelihood but also cause adverse ecological effect.

Nazioarteko Hizketaldia

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2017ko apirilaren 24 / 26. Europa Biltzar Jauregia. Vitoria-Gasteiz. Araba. Euskal Herria. Europa.

International Colloquium

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April 24th - 26th. Europa Congress Palace. Vitoria Gasteiz. Álava. Basque Country/Europe

Coloquio Internacional

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24 / 26 de Abril, 2017. Palacio de Congresos Europa. Vitoria-Gasteiz. Álava. País Vasco. Europa.

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