Hokkaido Farming Methods in Manchukuo in 1940s

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Abstract

In 1940, the Japanese Empire made the Plan for Self-Sufficiency in Food Production within the Yen Block. The Plan was a reaction of the Japanese government provoked by the severe food shortage in Japan and the outbreak of the war in Europe in the previous year. In other words, Japan needed to produce more food in Manchukuo and import it to Japan in order to relieve the food shortage in Japan.

The Research Project for Agricultural Policies in Japan and Manchukuo was embodied for this purpose. Indeed this Research Project brought together the brightest young scholars and technicians. A goal set by these scholars and technicians was a revolution of farming methods by introducing the Hokkaido farming methods into Manchuria.

There, however, are several problems for the Research Project to promote the Hokkaido farming methods in Manchuria.

In this paper I discuss farming problems of Japanese emigrants in Manchuria that led to the introduction of the Hokkaido farming methods to Manchuria, differences between the conventional farming methods in Manchuria and the Hokkaido farming methods, measures by and the extent to which the Hokkaido farming methods were spread, agricultural researches carried out by the Research Project and so forth. Lastly I examine the attempt to promote Hokkaido farming methods not only among Japanese emigrants but also among Chinese farmers in order to boost food production in Manchukuo.

Key Words: Manchukuo, Hokkaido Farming Methods, Japanese emigrants, technology transfer

1. Introduction

In July 1940, the second meeting of the Research Project for Agricultural Policies in Japan and Manchukuo was held in Manchukuo, a puppet state established by the Japanese Empire in northeastern China (Manchuria). One important matter discussed at the meeting was the new *Ten-year Plan for Increasing Food Production*, a hastily-devised plan by the Japanese government to cope with severe food shortages in Japan and the outbreak of war in Europe in the previous year. Japan was forced to increase food production in Manchukuo to establish food self-sufficiency within the Yen Block.

Farming methods were a subject of heated argument in the meeting. Kato Kanji, a symbolic figure of Japanese immigrants to Manchuria, criticized bitterly the Hokkaido farming methods being introduced by the Reclamation Bureau. Kato

sensed technocratic rationalism and scientism in the Bureau's promotion of the Hokkaido farming methods.

Kato's instincts were correct. In contrast to the irrational spiritualism advocated by Kato, increasing food production in Manchuria required using the latest scientific techniques. In an all-out war, all resources had to be mobilized, and science and technology were particularly important. The Research Project for Agricultural Policies in Japan and Manchukuo was established to bring together the brightest young scholars and technicians. The goal set by these scholars and technicians was, in a sense, to bring about an agricultural revolution in Manchuria.

This paper discusses such topics as the issues of employed labor and the introduction of the Hokkaido farming methods; the differences between traditional and Hokkaido farming methods; measures used to disseminate the Hokkaido farming methods and the extent to which they spread; and research conducted by the Research Project for Agricultural Policies. Finally, I set out the reasons why these farming techniques did not reach native farmers in Manchuria.

2. The Sino-Japanese War: A Turning Point

1) Inflation, Labor Shortages and Rising Farm Household Incomes

Around the time of the start of the Sino-Japanese War that broke out in July of 1937, farming villages in Japan went through some drastic changes. Conditions shifted from economic deflation, overpopulation and impoverished farmers to a period of inflation, labor shortages and increasing farm incomes. A price index setting the 1934-1936 average as 100 showed that prices had recovered since 1931 after the Great Depression, jumping by over 20 percent in 1937 with the outbreak of the Sino-Japanese War, and continuing to rise in the following years. The farm day laborer wage index also boomed, outpacing the price increase (Figure 1).

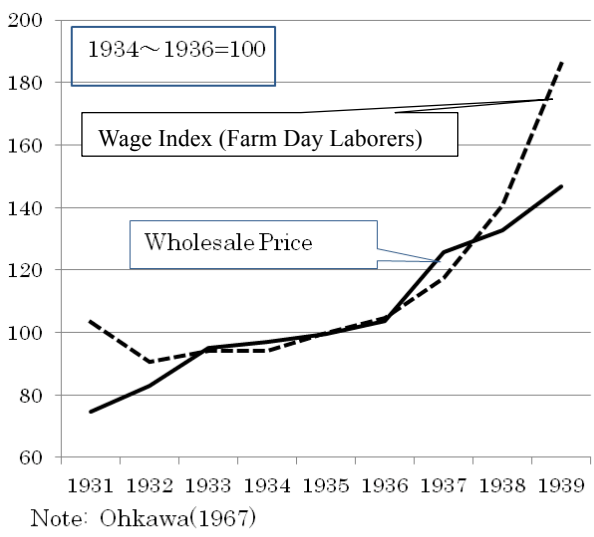


Figure 1　Change of Price

The number of male farm workers began to decrease in 1930, with women making up for the decrease and surpassing men in number in 1935. The number of men working in the secondary industrial sector hit bottom in 1932, but by 1940 outnumbered the number of men who remained in farming, as men were absorbed from the agricultural sector. During the decade between 1930 and 1940, male workers in the farming sector decreased by 2.2 million while those in the secondary industrial sector increased by 3 million (Figure 2).

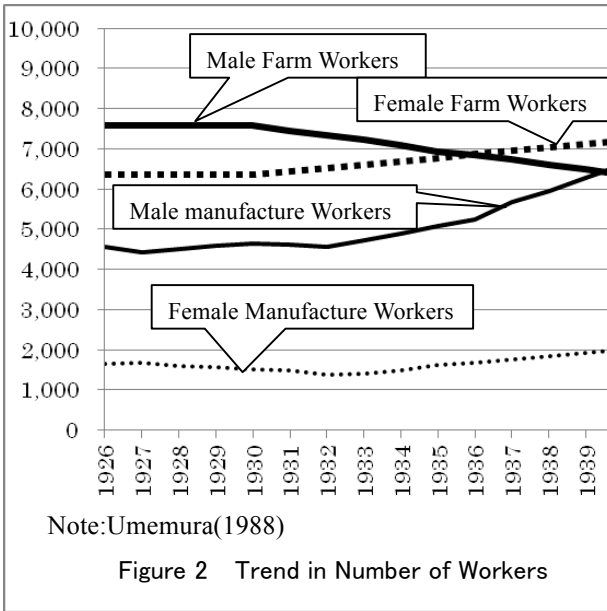
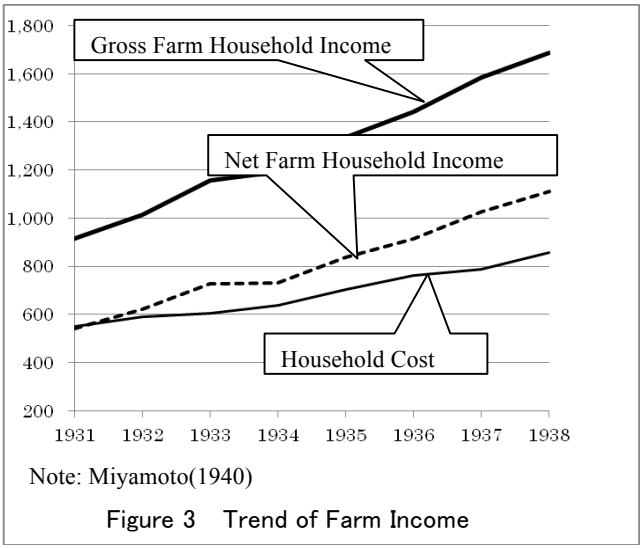


Figure 2　Trend in Number of Workers

Farm incomes made a steady growth after 1931 and rose rapidly after 1935, pushed by inflation. Farm income, which had stayed below household spending until 1931, began in 1935 to rise faster than the rise in household spending (Figure 3).



Note: Miyamoto(1940)

Figure 3　Trend of Farm Income

What do these changes mean? Until 1936 people in farming villages could see nothing but endless stagnation with deflation, overpopulation, and poverty. This paved the way for the February 26 Incident, a failed coup attempt by young military officers. With the outbreak of the Sino-Japanese War in 1937, however, inflation and labor shortages were recognized as serious problems.

In other words, two of the main factors that pushed farmers to immigrate to Manchuria – overpopulation and poverty – disappeared rapidly from Japanese farming communities after 1937.

2) Characteristics of and Realities for Farm Immigrants to Manchuria

The immigration of farmers to Manchuria, from its beginning to the end, was planned and promoted by the Japanese Army in China (the Kanto Army), as part of its bid to prepare for a war against the Soviet Union. Experimental immigration began in 1932 when the Kanto Army took advantage of the unrest after the May 15 Incident of that year to begin pressuring the administration of Makoto Saito. The surge of immigrants after 1937 was also driven by the *One Million Households Immigration Plan*, a national policy approved by the Koki Hirota administration under the influence of an army faction that had grown even more powerful after the February 26 Incident. As the result, Full-scale immigration of farmers to Manchuria began in 1937 when labor shortages emerged, not during the earlier years of deflation, overpopulation, and poverty (Table 1).

These policies resulted in extensive immigrant settlements being established along the border with the Soviet Union. When the Soviet Union invaded in August 1945, however, the Japanese Army abandoned these reclamation settlements as initially planned, leaving the settlers to face the Soviet troops on their own. In fact, the touted cause of promoting immigration for the benefit of restructuring Japanese agriculture and creating “Proper-sized Farm Households” was an after-the-fact rational made up to justify sending immigrant farmers to Manchuria.

Previous theories that farm immigration to Manchuria was driven by class conflict or “social Imperialism” in Japanese farming villages (Takahashi, 1997; Young, 1998) are completely wrong.

Labor shortages and a booming economy made it extremely difficult to recruit immigrants to Manchuria. Initially monetary subsidies provided some motivation for volunteers, but later the national government resorted to conscripting farmers from every corner of Japan, from Hokkaido to Okinawa.

Table 1　Progress of Immigration to Manchuria

	Number of Households		Number of People	
	Households	per Year	People	Per Year
1932-36	3,106	621	13,334	2,667
1937-41	42,635	8,527	127,683	25,537
1942-45	46,498	11,374	78,921	19,730
合計	102,239	7,303	230,968	16,498

Note: Okurasyo-kannrikyoku(1985), p.182

Even workers from the manufacturing and commercial sectors of such big cities as Tokyo and Osaka were recruited and sent out as farm workers.

3) Increase of Food Production as the Central Mission

Another reason underlying the national policy of promoting farm immigration to Manchuria was the absolute necessity for the national government to increase food production. This necessity was dictated by the outbreak of the Sino-Japanese War. In addition to increased production of soybeans, oats and peanuts for the export market to earn foreign currency, Japan required quantities of sorghum and corn to feed its own livestock.

By 1939, the food supply in the Japanese Empire had worsened. Severe drought in Japan and the Korean Peninsula delivered a harsh blow to rice production, and a food panic erupted in Tokyo. Combined with the higher rates of inflation and industrialization, the poor harvest flipped Japanese food supply from excess to shortage. For this reason, Manchuria was expected to supply millet to Korea, which in turn would send its rice harvest to Japan.

The outbreak of World War II in September 1939 ended any plans for the economic development of Manchukuo and replaced them with policies to provide steel, coal and farm products to Japan. To this end, the government reorganized the Department of Industry, folding it into the Department of Agricultural Development in July of 1940. Zhang Jinghui, Prime Minister of Manchukuo, addressed this when he spoke to the Research Project for Agricultural Policies in Japan and Manchukuo mentioned in the Introduction:

> In this fiscal year, in response to the new international circumstances, we will establish a plan for food self-sufficiency in the East Asian block. In addition, we will revise the current development plan and shift focus from heavy industry to make agriculture, on which 80 percent of Manchukuo's population depends, the foundation of national development. Thus we will move to expand the government's administrative organizations to raise high the flag of agricultural development. (Shenyang office of the Research Project for Agricultural Policies in Japan and Manchukuo, 1940a: 3)

As a result of these policy changes, the nature of immigration to Manchuria also changed. The word "immigration" was replaced with "reclamation" in the *Basic Outline for Manchukuo Reclamation Policy*, formulated in 1939. This replacement was largely aimed to "rigorously dispel the native people's impression of invasion" (Kita, 1944: 253), as well as to emphasize more strongly the new mission of increasing food production.

In July, 1940, the second Fumimaro Konoe administration took power and announced its mission of "building a new order in Great East Asia." The Konoe administration positioned the farms of Manchuria as the food base for the Great East Asia Co-prosperity Sphere, and the immigrants to Manchuria as the personnel for increasing food production.

4) Labor Shortages and Farming Methods

Expectations of high food production in Manchuria were based on views of the vast, fertile plains in northern Manchuria, to the north of the Heiliao Watershed. A sample of these expectations:

> The great problem facing Manchukuo is the responsibility of developing the vast fertile farmland of northern Manchuria and supplying food from there to meet the food demands of the regions controlled by Japan and Manchukuo. (North Manchuria Economic Research Office, 1942: 1)

The shortage of seasonal labor, however, was a major obstacle. Farm workers, or "coolies" (苦力, Chi. *kuli*), usually came to northern Manchuria in large numbers from north China and southern Manchuria during the busy farming season, mainly to do weeding. Their number had decreased sharply for two reasons. First, similarly to Japan, much of the labor pool was being absorbed into growing mining and manufacturing industries. Second, immigration from China decreased once the Sino-Japanese War broke out.

The shortage of seasonal labor pushed up wages sharply, a blow to farming in northern Manchuria, reliant on immigrant labor to do the work of weeding. The farming methods in use were those brought in by farmers from north China, characterized by high ridge cultivation that retained soil moisture and drained water in the rainy season. This method used a *rijan* (犁丈), a conventional farming tool, to break the ridges from the previous year, but lacked measures to boost soil fertility, and the high ridges meant weeding work had to be done by hand.

Wages for weeding work was higher in northern Manchuria than in the south, and rose by nearly 50 percent by the weeding season of 1939 (Table 2). Every household of Japanese settlers was given 10 hectares of farmland, but "it was almost impossible for a family alone to farm this much land. Generally three to four hectares were farmed by the family, with the rest done by tenants. However, even for their own three or four hectares, families hired Manchu farm workers." (North Manchuria Economic Research Office, 1942: 4)

Table 2　Workers' Wages in Manchuria

Regions of Manchuria	Weeding Wages(Yen)		
	1938	1939	1939/1938
South	0.68	0.99	1.47
North	1.22	1.80	1.48

Note: Shenyang office of the Research Project of Agricultural Policies in Japan and Manchukuo (1940c) p. 231

All this changed when the introduction of the Hokkaido farming methods made it possible for a single family to farm all the 10 hectares of land without employing seasonal workers.

3. Introduction of Hokkaido Farming Methods to Manchuria

1) Experiment Farms for Reclamation Agriculture

Hokkaido, located between the latitudes of the cities of Shenyang and Harbin in Manchuria, shares a similarly cold climate. Hokkaido was settled after the Meiji Restoration in 1867, and the farming methods adopted there included plowing techniques borrowed from North America, and agriculture with livestock introduced from Scandinavia in the 1920s. These methods boosted soil fertility and reduced labor needs so a single family could cope with the demands of 10 hectares.

In response to proposals made by various parties, in 1938 the Manchurian Colonial Public Corporation brought two Hokkaido farmers to the region to work experiment farms as an experiment in dealing with the labor shortages and declining soil quality plaguing Manchuria at the time. The Reclamation Bureau took over the project in 1939, expanding it by stationing skilled Hokkaido farming families as master farmers at ten different settlements throughout Manchuria.

The experiment farm project tested the suitability of the Hokkaido farming methods to Manchuria. The *Basic Outline for Manchukuo Reclamation Policy* of 1939 states that the project was expected to "actively develop new farming methods on the continent."

Unexpected resistance, however, emerged against the project. Kanji Kato, who with the Kanto Army had previously promoted immigration of farmers to Manchuria, now fiercely opposed the introduction of the Hokkaido methods. At the meeting

of the Research Project for Agricultural Policies in Japan and Manchukuo, Kato dismissed the Hokkaido farmers, saying they "put profits at the center of everything they do." He criticized the experiment farms, saying "we have to think carefully about introducing many Hokkaido farmers who think only of profits" into settlements where farmers were working for an ideal of cooperation and harmony between people (Shenyang office of the Research Project of Agricultural Policies in Japan and Manchukuo, 1940a: 104). Kato feared that the farm immigrants to Manchuria would lose their initiative to technocrats' intent on imposing rationalism.

Taijiro Yasuda, responsible for the experiment farms for reclamation agriculture, also commented that, "Initially, there was opposition to the introduction of Hokkaido farmers to Manchuria. We've had to negotiate a rather thorny path (North Manchuria Economic Research Office, 1942: 4). " Kanji Kato's influence was so strong that in order to defuse objections, the Hokkaido farming methods were instead referred to as the "improved farming methods." The effectiveness of the Hokkaido farming methods was confirmed at the experiment farms for reclamation agriculture in 1940 (Table 3).

2) Traditional Farming Methods and Hokkaido Farming Methods

The test results did not come easily. Manchuria and Hokkaido differed in climate and soil features. The spring of Manchuria was drier and windier than that of Hokkaido, and seeds and soil were blown away if seeds were simply placed in the soil. In the traditional farming methods, three people work together, with one steering a horse-drawn *rijan* (犁丈) plow, followed by a second person putting seeds on the ground. Finally the third person covered over the seeds and pressed the ground to make the high ridges that kept moisture in the soil and prevented surface soil from being carried off by the wind. Since the high ridges were also effective for draining water in the rainy season, these traditional farming methods were well-suited to dray farming in Manchuria.

In contrast, in the Hokkaido farming methods, farmers plowed deep furrows in the ground by turning over the soil in early spring, and then leveled the ground, usually with a disk harrow, before finally putting down seeds. A pass with a cultivator covered the seeds with soil, but the ground was not pressed in general. As a result, surface soil and seeds blew away in the dry air and wind if too much time passed between the steps of work. Thus the Hokkaido

Table 3 Management Results of Experimental Farms in 1940

Name of Experiment Farms	Number of Households	Cultivated Area(ha)	Income (Yen)	Cultivated Area per Household(ha)	Income per Household(Yen)	Income per 0.1 ha(Yen)
Iyasaka	1	8.2	1,335	8.2	1,355	18.3
Kumamoto	7	23.8	3,189	3.4	456	13.4
Hadaho	11	60.8	13,266	5.5	1,206	21.8
Kabahayashi	12	62.1	12,185	5.2	1,015	19.6
Suikyokuryu	18	172.2	35,959	9.6	1,998	23.3
Yakumo	4	33.4	3,736	8.4	934	11.2
Oeibo	1	10.4	2,419	10.4	2,419	23.3
Tuhoku	5	41.2	10,343	8.2	2,069	25.1
Kitagakuden	6	30.0	8,386	5.0	1,398	28.0
Arinho	6	23.9	1,991	14.0	332	8.3
Total	71	460.6	92,809	6.6	1,307	19.9

Note: Yasuda(1941).

farming methods were held to be unsuited to dry regions. As a countermeasure, the repetition of cultivation, ground leveling, seeding and pressing in small lots of land was encouraged.

Meanwhile another problem was that the soil of Manchuria was sticky and heavy, and often stuck to the mould board of a plow, which hampered the important step of soil turnover. In addition, during the rainy season of June, July and August, the flatter rows resulting from this method did not allow rain water to penetrate into the soil, causing a drainage problem. The introduction of carbonized steel mould boards, effective in black soil regions, dealt with the first of these issues; and measures were worked out for rainy season, including adding in the high ridges as used in traditional farming methods after the weeding work.

Most required in farming in northern Manchuria, however, was methods that did not rely on employing seasonal workers. The Hokkaido farmers in the experiment farms cultivated their land of 6.6 hectares without seasonal workers by using weeding harrows and cultivators. Some of the households were able to farm a full 10 hectares, bringing great hope for the future of farming in Manchuria (Table 3).

3) The Dissemination of the Improved Farming Methods

The Reclamation Bureau published the *Instruction Guidelines for Reclamation Agriculture* in January, 1941. In the section titled “Objectives,” the *Guidelines* state that the Japanese immigrants should serve as models for native farmers in Manchuria, establish an economic foundation, and “work to achieve the important goal of increasing food production in the Manchurian homeland, the food source for Greater East Asia.” It clearly defined the “improved farming methods,” saying “The farming methods of reclamation farmers should, in principle, be based on methods using improved animal-powered farm equipment (Hokkaido Nokai, 1943: 61-2).

Next, the Bureau laid out a five-year plan to achieve a production capacity of 19,000 pieces of equipment per year to be delivered to all farming households by the Manchurian Colonial Public Corporation, beginning with the transfer of 38 farm equipment factories from Hokkaido to Manchuria during the two years of 1940 and 1941. In all, in addition to other animal-powered farm tools, 6,090 and 11,180 plows were provided to immigrant farm settlements in 1941 and 1942, respectively.

Master farmers from Hokkaido were invited in to serve as consultants to 22 farming instruction groups, under the direction of the Reclamation Bureau, and traveled around to the immigrant farm settlements. In addition, highly-motivated immigrant farm households were selected to team up in groups of four (*four-household team*) to serve as designated reclamation farm-training households. These teams were provided with improved farm tools, and worked their farms according to the methods outlined by the farming instruction groups, keeping careful records. Under this system, 71 and 70 teams of training households were designated in 1941 and 1942, respectively.

Meanwhile, mid-level farmers from each immigrant farm settlement were sent to farms in Hokkaido as long-term trainees in reclamation farming methods from April to November in each year. Thus, 147 trainees were sent to Hokkaido in 1941, and 107 in 1942. Similarly, another policy decision sent prospective consultants for the farming instructions groups in Manchuria to Tokachi region in Hokkaido for a 4-month-long training program in reclamation farming. Forty-five people participated in the program in 1941, and 43 in 1942.

The *Second Five-year Plan for Manchurian Reclamation*, implemented from 1942, stated that “Special measures will be taken to ensure the widespread dissemination of improved farming methods to the settlements as set out in the previous

policies." Beginning in 1943, six more experiment farms for reclamation agriculture were added, a 50-percent subsidy was established for purchasers of improved farm tools, and two training farms (with training capacity for 50 people in plowing techniques and livestock feeding) were established.

4) The Reach of the Improved Farming Methods

The Reclamation Bureau actively promoted the spread of improved farming methods among the Japanese immigrant settlements, provoking a strong opposition from early and well-established immigrants. They had settled in southern Manchuria and employed traditional farming methods. Some had become land owners and rented land to tenant farmers.

In contrast, newly-arrived immigrant farmers generally tended to accept the instruction given by the master farmers from Hokkaido. One typical example was Kitagakuden Settlement, made up of people from Fukushima. Settling in the hilly region north of Qiqihar in Heilongjiang Province, they started farming in 1939. The settlement consisted of 531 people in 172 households.

Although they planted 400 hectares in 1939, they ended up harvesting only from 312 hectares, abandoning the remaining 90 hectares. In addition, because they relied on traditional farming methods, they had hired on 3,143 seasonal workers for the weeding work, paying nearly 10,000 yen in wages. Income from crop sales was only about 13,000 yen.

In 1940, one master-farmer household and five experiment-farm households were settled in Kitagakuden, and the entire settlement switched to the Hokkaido farming methods, successfully working 570 hectares without hiring any workers for weeding work that year (Shenyang office of the Research Project for Agricultural Policies in Japan and Manchukuo, 1940b).

Table 4 Ratio of Improved Farming Methods

Province	1941			1942		
	Total Planted Area (ha)	Area of Improved Methods (ha)	Ratio %	Total Planted Area (ha)	Area of Improved Methods (ha)	Ratio %
Binjiang	15,809	5,850	37.0%	17,679	12,319	69.7%
Mudanjiang	6,346	2,507	39.5%	8,412	4,745	56.4%
Sanjiang	42,195	3,212	7.6%	35,014	7,684	21.9%
Dongan	19,687	3,022	15.4%	23,118	10,833	46.9%
Beian	16,556	4,195	25.3%	21,247	13,547	63.8%
Longjiang	6,628	4,308	65.0%	16,223	12,752	78.6%
Xingan Dong	977	44	4.5%	2,656	2,656	100.0%
Fengtian	3,026	602	19.9%	4,196	2,771	66.0%
Jilin	12,751	2,523	19.8%	16,763	10,147	60.5%
Jiandao	1,260	358	28.4%	2,248	1,379	61.3%
Heihe	215	–	0.0%	390	349	89.5%
Jinzhou	–	–		1,390	1,235	88.8%
Total	125,450	26,621	21.2%	149,332	85,017	56.9%

Note: Shenyang office of the Research Project of Agricultural Policies in Japan and Manchukuo (1943). p.24

The *Survey on Seasonal Workers in Immigrant*

Settlement (1941) stated that “The use of animal power is increasing in Kitagakuden Settlement” and “the ability to farm 10 hectares is now in sight” (Manchukuo National Reclamation Research Institute, 1941: 119- 120).

In this way the improved methods spread quite rapidly, accounting for more than 50 percent of farming throughout Manchuria by 1942 (Table 4). However, there was a clear difference depending on the year of immigration. Indeed, the Reclamation Bureau “did not necessarily prioritize early settlers, but, depending on the circumstances in different regions, focused instead on the most motivated settlements, and focused on giving advice to relatively new settlements” (Shenyang office of the Research Project for Agricultural Policies in Japan and Manchukuo, 1943: 20). Thus the area where the improved methods were used increased from 7.6 percent to 21.9 percent in Sanjiang Province where early settlers farmed large lots, while in Xingyadong, Heihe, and Jinzhou provinces, where immigration settlement began in 1941, 90 to 100 percent of the area was farmed with the Hokkaido methods.

4. The Research Project for Agricultural Policies in Japan and Manchukuo and the Technical Advisement Committee

The Research Project for Agricultural Policies in Japan and Manchukuo was established in June, 1939, with the membership of agriculture officials from Japan and Manchukuo, senior officials from agricultural organizations, and academic scholars with expertise in agriculture. The project had three goals: (1) coordination between the agricultural policies of Japan and Manchukuo; (2) collaboration between and integration of farmers and farming villages of the two countries; and (3) the general development of agriculture in Manchukuo. In truth, however, all research and study was aimed at increasing farm production and supplying farm products from Manchuria according to the needs of the Japanese Empire.

The Project held its first general meeting in September of 1939 in Manchukuo. It established technical committees in both countries; sponsored research and study on various themes; reported outcomes at general meetings; and made proposals to both governments when necessary.

At the First General Meeting, they adopted policy for matters such as the “demand for demand/supply policies of food and feedstuff.” This included decisions such as “reinforcement of unitary control on the export of animal feed produced in Manchuria, with a certain amount of feed ensured for Japan.” The Second General Meeting in July, 1940, adopted, in the midst of food shortage, the “request for increased production of farm, livestock and fishery products in both Japan and Manchukuo,” stating, “Since soybeans, soy meal and corn are Manchurian farming products indispensable to Japan, the following measures should be taken to ensure the supply of these items to Japan.”

The project held an informal meeting in September, 1941. Members discussed not only “proposals for increasing food production in Japan and Manchukuo,” but also, for the first time, “proposals for the outline of Japan-Manchukuo collaboration in paddy field development and increase of rice production” to encourage rice-farming in Manchuria. In addition, they decided to set up a technical advisement committee. This makes it clear that the focus of their problems lay in farming techniques.

The First General Meeting of the Technical Advisement Committee was held in Manchukuo in August, 1942 (Tokyo office of the Research Project of Agricultural Policies in Japan and Manchukuo, 1942). Four tasks for the committee had been established before the meeting: (1) to study measures

for disseminating farming techniques; (2) technical research on increasing rice production; (3) conduct studies on establishing new farming methods in Manchukuo; and (4) technical research on increasing soy bean production. The committee's focus was on disseminating these farming techniques not only among Japanese settlers, but also among native Chinese farmers in Manchuria.

5. Conclusion

In the First General Meeting of the Technical Advisement Committee, members discussed such matters as increasing soil fertility by introducing stock breeding and crop rotation systems that incorporated root vegetables, and encouraging the use of plows and other animal-powered farming tools, even among native Manchurian farmers. National Agricultural Experiment Stations and Provincial Agriculture Promotion Model Stations would be established according to the needs of each region, and suitable techniques would be disseminated after trial in both experiment villages and successful settlements.

Based on these plans, in 1942, Manchuria was divided into seven districts and the *Instruction Guidelines for the Improvement of Agricultural Management* was published. Promulgated by the Department of Agricultural Development, the *Guidelines* included multiple sub-sections covering insect control, improved fertilizer techniques, increasing herd sizes, instructions for high-performance farm tools, and forest development. The *Gridlines* said that several villages should be established in each district with instructors stationed in them to advise farmers (Department of Agricultural Development, 1942).

In the Second General Meeting of the Technical Advisement Committee in June, 1943 (Tokyo office of the Research Project for Agricultural Policies in Japan and Manchukuo, 1943), it was emphasized that even the recommended techniques had not been disseminated among the native Chinese farmers thoroughly. Three reasons were given: (1) There was no local body responsible for conducting agricultural experiments and research; (2) There were too few technical advisors for teaching the techniques; and (3) the farmers were not organized.

There were no longer any fertilizer stores available for distribution to farmers; and though it may have been possible to improve yields by instead developing improved seed strains, there wasn't any well-established system for conducting research even on the all-important crop of soybeans. Although there were 3,000 technical advisors distributed across Manchukuo, most of them were Japanese and spoke no Chinese, and were so busy in the work of tending to the food crops that they had no time for technical instruction. There were farmers' organizations such as the Kyowa-kai (協和会, 'Cooperation Group') and the Kono Gassakusha (興農合作社, 'Prosperity Farm Cooperative'), but though the Kono Gassakusha had designated local cooperative groups, or Kono-kai (興農会, Prosperity Farm Group), they existed in name only, engaging in no activities.

In terms of how the new methods were disseminated, Manchukuo could not compare with Japan, where every prefecture had an agricultural experimentation station, and farmers were organized by the Farmers' Association into smaller clubs with technical advisors to implement new farming methods. With the special treatment of Japanese immigrant settlements in the form of supplies from the Reclamation Bureau and technical advice from the Manchurian Colonial Public Corporation, the improved farming methods were disseminated to a certain extent. Much of the equipment provided to the settlements, however, was defective, and there was a shortage of raw materials for manufacturing tools.

Thus the improved farming methods were not

disseminated to native Chinese farmers at all. Although the researchers and engineers brought together in the Research Project for Agricultural Policies in Japan and Manchukuo wanted to change farming practices in Manchuria by introducing modern farming techniques, they were unable to achieve these ends in the face of the war-time conditions in which what must be called the exploitation of food resources was placed above all else.

Note: This paper was presented as a keynote speech at the 12th International Conference of the East-Asia Agricultural History held in Chuncheon-si, Gangwon-do, Republic of Korea, May 3th, 2012

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