

Upgrading of women's technical level for the improvement of rural life ...

Summary Report

**Upgrading of Women's Technical Level
for the Improvement of Rural Life:
Japan's Experience**

MARCH 1992

JAPAN INTERNATIONAL COOPERATION AGENCY

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**Upgrading of Women's Technical Level
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JAPAN INTERNATIONAL COOPERATION AGENCY

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This current English booklet, which is a translation of the Preface and summary of Chapter 1 (Introduction) and Chapter 2 (Extension Activities for the Improvement of Agriculture and Rural Life in Japan) from the Japanese report, outlines the results of the studies carried out in the first year of the project entitled: "Upgrading of Women's Technical Level for the Improvement of Rural Life".

We hope that this booklet will be useful for those concerned with activities relating to "Women in Development (WID)".

Preface

Recently, the importance of and need for the intensification of the participation and role of women in development (WID) have been internationally recognized. It is necessary to implement technical cooperation whereby women are the main agents of development. In developing countries, women play an important role, especially in agricultural production and rural life. Thus, if technical cooperation could result in the upgrading of the technical level of women, it would contribute significantly to the increase of agricultural production, the enhancement of the nutrition level and improvement of rural life.

Against this background and based on the proposal formulated in the report on sectorial study on "Women and Development" in 1990, in order to contribute to the implementation of cooperation for women in the sector of agriculture and forestry, Japan International Cooperation Agency (JICA) initiated a "Project on the Upgrading of Women's Technical Level for the Improvement of Rural Life" from 1991 to 1993. This project aims at gaining information about the actual conditions of the participation of women in agriculture and rural life in developing countries, and at outlining the experience of Japan as well as of international organizations and foreign countries. This formation should enable to devise a suitable strategy for technical cooperation with Japan, and to set up guidelines for international cooperation.

In the first year of the project, we carried out research and analysed the data from the Extension Service for Agricultural Improvement and Improvement of Living Conditions in Rural Households. We also collected information about technical cooperation for women from international organizations and foreign countries, and information about the actual conditions of women engaged in agriculture as well as of rural life in developing countries.

This report deals with the results of the study carried out in the first year. We do hope that this document will be useful for those concerned with technical cooperation in this sector.

Lastly, we would like to thank the staff members of the Association for International Cooperation of Agriculture and Forestry and the members of study and working group for the implementation of this project, as well as the members of the Ministry of Agriculture, Forestry and Fisheries for their assistance in this project.

March 1992

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Member List

I. Introduction

The movement seeking the improvement of the status of women, which was initiated in the seventies, in particular in conjunction with the "U.N. Decade for Women" starting in 1976, developed gradually from an activist forum movement to activities centered on U.N. institutions. In other words, this movement supports women as a socially and economically disadvantaged group in terms of status in the society and legal rights, and also evaluates the contribution of women in the process of economic and social development to upgrade and utilize effectively the intrinsic abilities of women.

The "United Nations Development Fund for Women (UNIFEM)" was established in 1976 within the U.N. organizations on the occasion of the "U.N. Decade for Women," and assistance was extended to projects which directly targeted women. On the other hand, in 1983, "WID (Women in Development) Guiding Principles" were adopted by the High-Level Meeting of the Development Assistance Committee (DAC) of OECD, as guidelines for cooperation by advanced nations in the development plan concerning women in developing countries. Furthermore, since the efforts for concrete policies concerning WID were discussed at the World Conference on Agrarian Reform and Rural Development (WCARRD) in 1979, FAO has promoted the implementation of projects centering on WID.

Not only international organizations, but also advanced nations have been actively involved in this task. In 1974, the U.S. Agency for International Development (USAID) established a WID office within its organization to upgrade the potential capacities of women and promote the implementation of projects that require the participation of women in development. In 1984, the Canadian International Development Agency (CIDA) adopted a strategy for the implementation of WID, and the British Overseas Development Administration (ODA) also introduced its WID policy through the "WID and British Aid Programme" in 1986. In addition, Germany and the Nordic countries actively promoted the upgrading and development of the various capabilities of women as well as cooperation in the improvement of welfare for women by accepting the "WID (Women in Development) Guiding Principles" formulated by DAC.

Japan, too, in conformity with the DAC's guidelines, has been addressing this problem since the latter half of the eighties. However it is generally recognized that Japan has a poor record in technological cooperation for upgrading the role of women in the development process.

Therefore, in February 1990, JICA established the "Development and Women" Support Study Group and embarked on a study of the basic guidelines regarding the WID program. In February 1991, the study group published a report outlining basic considerations on WID and Japan's strategy for extending assistance for the project. In the report, the concept on "Development and Women" was formulated and it was eventually recognized that women should not be considered as the passive beneficiaries of development, but should also be actively involved in the process of development. In most of the developing countries that have large rural populations, agriculture accounts for an important part of the national economy. Thus, the role of women in rural areas is essential to the promotion of agriculture and can not be disregarded. If one considers the fact that agricultural development contributes to the promotion of economic growth as a whole in a nation, the upgrading of the technological capabilities of women in rural areas in order to increase production and improve the living standards of the communities plays a major role in international cooperation in the field of agriculture.

Against this background, the Association for International Cooperation of Agriculture and Forestry (AICAF) was commissioned by JICA to set up a study committee and a working group composed of experts in problems such as agrarian and rural development in developing countries, extension of agricultural technology, and improvement of rural life. The study committee and the working group implemented a study entitled "Upgrading of Women's Technical Level for the Improvement of Rural Life."

The subjects under consideration were as follows: (1) Analysis of the actual conditions of the role of women in agricultural production and rural life in developing countries; (2) Analysis of Japan's experience in extension activities relating to agricultural technology and improvement of the living conditions in the rural households; (3) Analysis of information about technological cooperation projects aimed at women's conditions that are implemented by the international organizations and other DAC member countries; (4) Analysis of potential and limit of the application of Japan's experience in extension activities to developing countries; (5) Against this background, regional or country-specific guidelines and policies for technological cooperation to upgrade the abilities of women in order to improve agricultural production and rural life were formulated.

Our project which was initiated in 1991 will cover a three-year period. In the first year, especially, the former three subjects were taken up. In the second and third years, the last two subjects will be taken up.

The contents of the Japanese version report of our study in the first year are presented in the following four chapters: I. Introduction; II. Extension Activities for the Improvement of Agriculture and Rural Life in Japan; III. WID Projects by International Organizations and Other DAC Member Countries; IV. Research Plan for the Actual Conditions of Women's Participation in Agriculture and Rural Life in Developing Countries.

Chapter II and III are the main parts of that report. Chapter II evaluates possible application of Japan's experience in extension activities to developing countries. Chapter III gives examples from WID projects implemented by International Organizations and Other DAC Member Countries.

This Report is a summary of the Chapter II mentioned above, and the experience acquired by Japan in the improvement of rural life through extension activities could be more useful than that of other DAC countries for the improvement of rural life in developing countries for the following reasons: (1) Before the extension activities were started, the conditions of Japanese women in rural areas were very similar to those of women in developing countries at present. (2) Japanese extension activities were carried out under the technological guidance of other advanced countries -USA- after WWII. (3) Japan has acquired a relatively recent experience in extension activities for upgrading the technical level of women in rural areas.

Thus, the experience, gained by Japan could serve as a basis for technological cooperation aiming at upgrading the technical level of women in rural areas.

However, it may not be possible to directly formulate guidelines for international cooperation on the basis of the analysis of the information presented in this report.

Japan's experience may not be utilized as it is by the developing countries, due to the differences in the social and natural conditions.

This report may serve as basis for studies that will be carried out in the second and third years during which the differences in the conditions will be analysed.

The feedback from the results of studies in the subsequent years will be essential for determining the orientation of technological cooperation based on Japan's experience.

II. Extension Activities for the Improvement of Agriculture and Rural Life in Japan

1. Japan's Extension Service Related to the Technical Upgrading of Women in rural areas

1) Cooperative Agricultural Extension Service

Japan's Cooperative Agricultural Extension Service (hereinafter referred to as the Extension Service) was started in accordance with the Agricultural Improvement Promotion Law enacted in 1948. At that time, Japan was occupied by the Allied Forces, mainly U.S.A. The extension system was introduced by the Research Extension Section, Agricultural Department, Natural Resources Office, General Headquarters, Allied Forces. The staff in charge, which consisted of experts from the U.S. Extension Service, had a long experience in the extension field.

The development of the U.S. Extension Service was one of the objectives of the establishment of state universities. The U.S. Extension Service at that time had already achieved a great deal by organizing a system of research, education and extension.

In Japan, the main objectives of universities did not cover extension but academic research and education for students. Universities were not considering of assuming the responsibility of direct technological extension for ordinary farmers. Thus, the Japan's Extension Service was created as a part of the government administration for agriculture and forestry under the technological guidance of the U.S.A.

The activities of Japan's Extension Service, in conformity with the Agricultural Improvement Promotion Law, are as follows.

(1) It is implemented jointly by the prefectural authorities and the Ministry of Agriculture, Forestry and Fisheries (MAFF) so that farmers can acquire, exchange and apply practical information regarding agriculture and living conditions in the rural households.

(2) Agricultural management and living conditions are closely related. To promote agricultural development, it is essential to improve the living conditions of the farm families which are responsible for this development. The extension of technology and information regarding the improvement of living conditions have been emphasized along with the extension of agricultural technology and information since the initiation of the Extension Service. There are two kinds of advisers in the extension offices, "extension workers for agricultural improvement" and "extension workers for the improvement of the living condition in the rural household".

(3) The objective of the Service is to promote self-motivated activities on the part of the farmers to solve problems related to agricultural production and living conditions. The extension advisers meet directly with the farmers to discuss the problems they face. It is thus a man-to-man educational guidance service aimed at the development of "persons", i.e. farmers who are able to solve their problems by themselves.

Because of the conclusion of the San Francisco Peace Treaty (1951), the Allied Forces ended the occupation in 1952, and Okinawa Prefecture was returned to Japan in 1972.

The Extension Service, which was established under the guidance of the U.S.A. in 1948, had been operated only by Japanese who assisted the rural communities from the mid-sixties onward.

Data relating to the Japan's Extension Service will be presented as references.

Table 1. indicates that the number of farm households and the farming population increased up to 1960 and decreased from 1970 onward. It also shows the importance of the role of women in agricultural production.

Table 2. indicates the fluctuations in the number of extension officers depending on the farming population. It also shows that the number of extension officers involved in agricultural production is larger than that of the extension officers involved in guidance relating to the living conditions in the rural households.

Table 3. indicates the fluctuations in the number of extension offices depending on the farming population as well as the expansion of districts where extension offices were established.

Figure 1. indicates the changes in the extension-related offices in MAFF.

Table 1. Changes in the Number of Farm Households and Farming Population

	1951	1960	1970	1980	1990
Farm Households (1,000)	6,099	6,057	5,402	4,601	3,834
Farm Villages (1,000)	na.	152	150	144	140
Farm Households/Farm Village	na.	40	34	33	28
Population in Farm Households (10,000)	3,756	3,411	2,659	2,136	1,729
Farming Population (10,000)	1,415	1,454	1,035	697	565
Ratio of Women in Farming Population (%)	49.5	47.8	61.2	56.1	60.3
Farmers Working in the Farm More Than 150 Days a Year (10,000)	na.	1,175	711	413	312
Ratio of Women among the Farmers Working in the Farm More Than 150 Days a Year (%)	na.	53.0	54.3	50.1	48.1

Data : Census of Agriculture, Survey for Agriculture by MAFF.

Table 2. Changes in the number of Extension Officers

Fiscal Year	Agriculture		Living conditions in rural households		Total
	Subject Matter Specialists	Extension Advisers	Subject Matter Specialists	Extension Advisers	
1948	—	5,828	—	—	5,828
1950	316	9,394	16	689	10,415
1955	577	10,750	89	1,476	12,892
1960	584	10,818	92	1,820	13,314
1965	633	10,672	233	2,207	13,745
1970	677	10,438	224	2,171	13,510
1975	673	9,697	183	2,025	12,578
1980	613	9,552	164	1,960	12,289
1985	585	9,115	142	1,892	11,734
1989	557	8,843	125	1,771	11,296

Table 3. Changes in the Number of Agricultural Extension Offices

Fiscal Year	1951	1958	1960	1970	1980	1985	1989
Extension Offices	one in a municipality	1,630	1,632	630	617	611	605
Area for extension	Small	Medium-sized		Wide			
Vehicles used	Bicycles	Motorbikes		Automobiles			

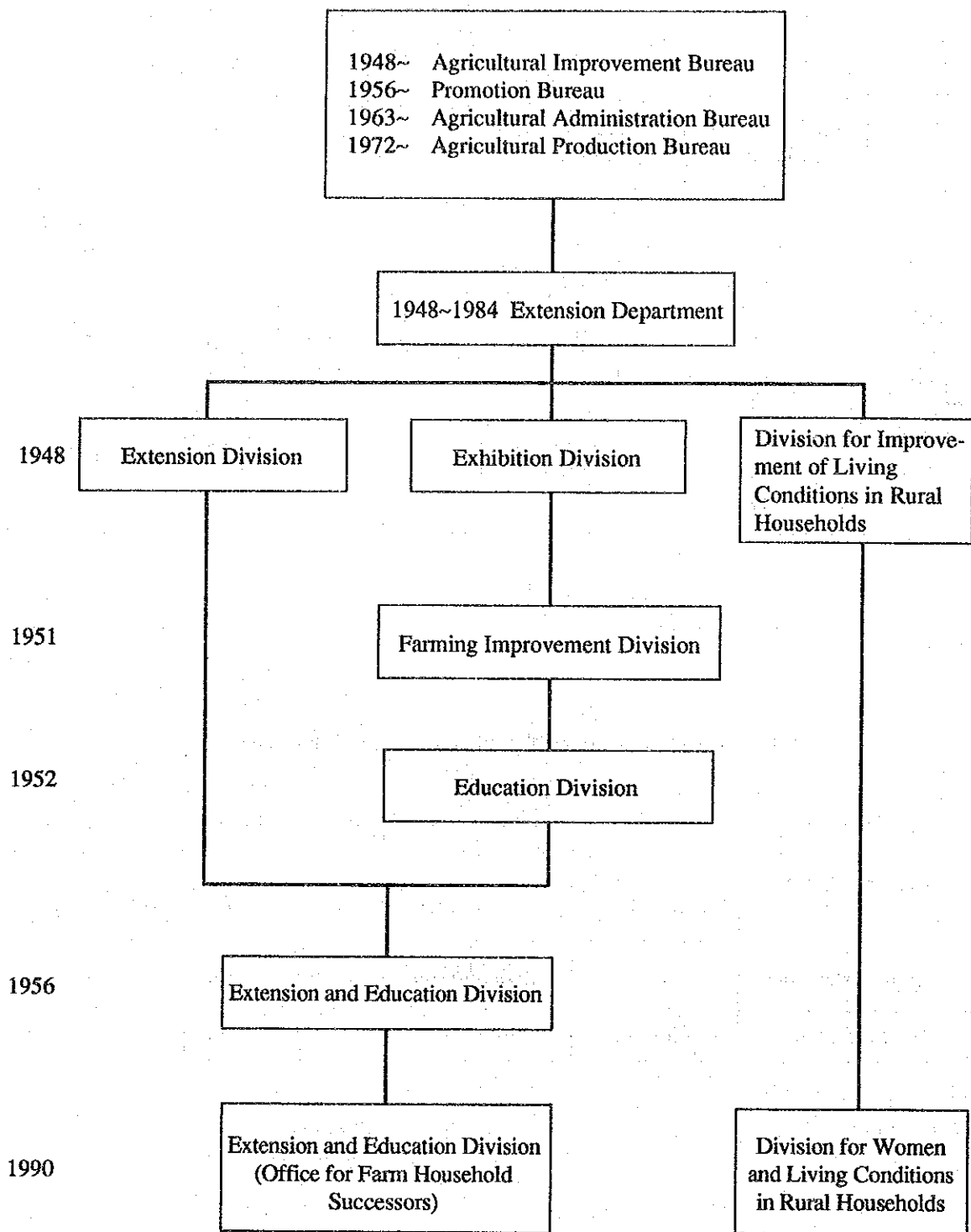


Figure 1. Changes in Extension-Related Sections in MAFF

2) Relation between improvement of agriculture and living conditions in rural households

Ever since the Extension Service was developed it has considered that a well-balanced relation between agricultural development and the improvement of the living conditions in the rural households was essential for the prosperity of the farm households.

As the quality and quantity of farm products can be raised through the former measure, the farm income increases. Through the latter measure the members of the farm households can lead a more comfortable life. The increase in the farming income results in the improvement of living conditions in the farm households. A more comfortable life is an incentive for the farmer to further improve agricultural activities.

To achieve this balance, the Extension Service should receive the same budget, the same number of staff and same institutional assistance for both objectives.

However in practice, activities of the Extension Service for the improvement of agriculture and living conditions, although often compared to the wheels of a bicycle, did not receive the same priority.

As indicated in Table 2, the number of extension officers in charge of the improvement of the living conditions in the rural households has remained comparatively small. The 5/1 ratio for agricultural improvement and improvement of the living conditions was eventually obtained twenty years after the establishment of the Extension Service. This situation indicates that it was impossible for the extension officers in charge of the improvement of the living conditions to adopt the same methods as those for agricultural improvement.

The only exception was Okinawa Prefecture. The Extension Service in Okinawa Prefecture was established under the direct administration of the U.S. military occupation and remained affiliated with the U.S. Extension Service until the Okinawa Prefecture was returned to Japan. In the Prefecture at that time, an equal number of extension advisers was assigned respectively to activities to agricultural improvement and the improvement of the living conditions in the rural households. With the return of Okinawa to Japan (1973), however, the Okinawa Extension Service became similar to that in the other prefectures of Japan. The number of extension advisers was reduced, with one person in charge of the improvement of the living conditions for every five persons in charge of agricultural improvement.

Although the system of Extension Service in Japan was unbalanced, good results were obtained for both the improvement of the living conditions and agricultural improvement.

As is well known, the agricultural improvement service has contributed significantly to the increase of agricultural production and the achievement of self-sufficiency in rice. Similarly, the Extension Service for the improvement of the living conditions in the rural households has been highly appreciated.

Based on studies carried out in 1958, the number of farm households in which improvements through the guidance by the Extension Service, were adopted were as follows: improved oven - 1,510,000 households; improved kitchens - 140,000; preserved food during the peak of farming activities - 1,570,000; vegetable gardens - 530,000; improved working clothes - 890,000; purchase on a community basis to acquire daily necessities at a low price - 77,000; spraying on a community basis to eradicate mosquitoes and flies - 1,210,000.

Among a total of approximately 6,050,000 farm households, each farm household adopted one kind of improvement, and almost ten percent adopted two.

In spite of the imbalance in the extension system, the improvement of the living conditions was achieved by the effort of extension workers involved in these activities and people in the rural areas, mainly women.

Especially, the women took the lead in improving the living conditions within farm households following the improvement of life in the rural communities as a whole.

For details about the improvement of agriculture and living conditions that promoted the upgrading of agricultural technology, self-consciousness and status of women, please refer sections 2 Agricultural Improvement Extension and 3 Women in Rural Areas and Extension Service for the Improvement of the Living Conditions in the Rural Households.

3) Other Measures

The Extension Service has contributed significantly to the increase of agricultural production, the improvement of rural life, the upgrading of women's technological level as producers and housewives, and the rise of women's status.

However, there were other conditions which contributed directly or indirectly to the improvement of the status of women, in addition to the Extension Service. It must be emphasized that, though the Extension Service played a major role, passive women in rural areas evolved into active responsible producers and housewives within the social and economic conditions prevailing in Japan. This aspect must be considered in the planning of international cooperation in this field.

(1) Contribution of MAFF

Some of the agricultural policies implemented by the MAFF, directly or indirectly promoted the development of the ability of women in the rural areas, because the purpose of MAFF establishment included the improvement of the well-being of the rural communities as well as the stabilization of food production.

- Agrarian Reform

Agricultural production increased due to the strong motivation of the farmers, who had acquired their own land.

- Agricultural Cooperatives

Farm production increased and welfare was promoted due to the democratic characteristic of the cooperation in the rural areas.

- Policies for adjustment, exchange, division and consolidation of arable land.

They reduced markedly the hardship of farmwork, and increased agricultural production.

- Rural Electrification

Through the use of engine-driven machines, it became possible to process the products and carry out farmwork throughout the year. The electrification of rural homes reduced the homework for women. In addition, it promoted the speed and volume of information from the mass media.

(2) Contribution of Other Ministries

Other ministries implemented policies that directly or indirectly promoted the development of women's ability in the rural areas as follows.

- Policies related to female suffrage.
- Policies related to the upgrading of the status of women, such as those related to the Equal Employment Opportunity Act.
- Social education and adult education to raise basic and applied scholastic ability.
- System for the standardization and inspection of household daily necessities.
- System for voicing complaints.

- **The National Health Insurance System.**
- **The National Pension System.**
- **Measures to improve and exercise for good health.**
- **Group medical examination.**
- **Mother and child health maintenance systems, including family planning.**
- **Mediation in family court.**
- **Measures to protect part-time workers.**

2. Agricultural Improvement Extension

1) Changes in Agricultural Production

The postwar period of Japan can be divided into the following four periods according to the development of agricultural production.

1. The period of increased food production (1945-1955).
2. The period of commodity production (1955-1965).
3. The period of overproduction of food (1965-1975),
4. The period of trade liberalization of agricultural products (1975-).

During the period of increased food production, various kinds of agricultural systems were modified after World War II and the increase in the production of rice, which was the staple food in Japan, was motivated by the scarcity of food.

During the period of commodity production, food production became stabilized and quality was considered to be more important than quantity for consumption. To address these problems the Basic Agricultural Act was enacted in 1961. The government encouraged diversification of agricultural production such as livestock farming and horticulture in addition to rice culture. As a result, the production of commodities was developed.

During the period of overproduction of food, agricultural production increased by 3.4% per year. As a result, rice production exceeded consumption and the conversion of rice to other cash crops has been major problem for the agricultural administration since 1970. As the national economy was characterized by a high growth rate, the farming population markedly decreased as many people abandoned their villages. The rationalization of agricultural production was therefore required.

During the period of trade liberalization in agricultural products, the high economic growth began to slow down after the oil crisis in 1973. The demand for agricultural products generally stagnated. There was an excess of rice and livestock production, while the production of wheat, barley, soybean and fodder was insufficient. Self-sufficiency rate in grain was only 37% in 1975 and wheat, soybean and fodder were mostly imported. The import of beef and oranges has been liberalized since 1985 and it is anticipated that the rice market will also be opened.

Japan's experience during the period of increased food and commodity production may be useful for the developing countries. Therefore emphasis will be placed on the first and second periods described previously in relation to agricultural technology, extension system and women's role.

2) Reform of Agricultural System and Extension Activity during the Period of Increased Food Production

(1) Reform of Agricultural System

After the war it was essential for Japan to secure food resources for the population.

Three new systems were developed as follows:

1. Agrarian reform (land ownership system for farmers).
2. Establishment of agricultural cooperatives.
3. Introduction of extension system for agricultural improvement

Most of the farm households in the prewar period, rented and cultivated land as tenants under the landowner system. Farm rent was usually equivalent to 40-50% of the yield with a high rate. After WWII, due to the agrarian reform tenants became farmers who owned land. As a result, all the crops belonged to them and the productivity increased.

A large number of agricultural cooperatives were established under the Law of Agricultural Cooperatives enacted in 1947. Agricultural cooperatives provided farmers with the following services: collection and sale of agricultural products; supply of inputs; financing; mutual aid; insurance; purchase of daily necessities; and guidance for management of farm households and living conditions.

In 1951, the Law of Reconstruction for Agricultural Cooperatives was enacted. According to this new law, agricultural cooperatives offered some guidance to the farm households for farm practices and living conditions.

These cooperatives distributed goods to the farmers and were involved in farmer's movement and education.

As mentioned in the previous section, after the promulgation of the Law for Agriculture Improvement Promotion, advisers for agricultural improvement extension became responsible for the technical guidance in agriculture and were in contact with the farmers.

As a result, the farmers became independent and acquired agricultural technology.

(2) Development of Agricultural Technology

The following three agricultural techniques were promoted for rice cultivation which was the staple food in Japan, during the period of increased food production.

1. Early season culture based on the use of protected rice nurseries.
2. Methods for the prevention and control of pests and diseases.
3. Methods for the application of fertilizers based on soil analyses.

Traditional rice cultivation was characterized by planting in early June and harvesting in late September. During the September harvest, yields were unstable, due to damage by autumn rain and typhoons. Therefore as planting was advanced to harvest crop in August, the rate of ripening and yield increased due to the long duration of sunshine and suitable temperature. The technique for "protected semi-irrigated rice nursery" was developed and introduced to raise seedlings suitable for early planting and to obtain better seedlings. The rice nursery with a raised bed was covered with oil paper for a certain period of time and kept warm. As a result seedling growth was promoted.

In the new technique, damage by insects (stem borer) resulting from the change of the planting time was the main constraint. New agrochemicals such as BHC and Holidole were then applied.

After the abolition of governmental controls on fertilizers in 1950, the production of chemical fertilizers increased, and the use of fertilizer with rapid effect became widespread.

(3) Extension System

Public information was highly developed and the freedom of expression was guaranteed due to the spread of democratization. However, as mass media could not always readily reach the rural communities, information was still disseminated mainly from person to person.

Under these conditions, to extend new techniques such as "protected semi-irrigated rice nursery", the following methods were adopted:

1. Organization of demonstration fields.
2. Organization of Key Farmers
3. Organization of study groups.
4. Organization of system for awarding honors.

The Organization of demonstration fields was very effective in changing the farmer's attitude through the introduction of technology based on visual methods and dissemination of techniques to farmers who had completed compulsory education. In the rural communities lacking these fields, the agricultural improvement extension workers took picture of such fields in the areas and used them to show the beneficial effects of the application of new techniques.

Since generally farmers are reluctant to adopt techniques which have not been fully tested, farmers who took the lead in adopting these techniques were called "Key Farmers".

The key Farmers were generally the leaders of agricultural study groups and 4H clubs or those who held high positions in the rural communities. They had a strong sense of responsibility, and were trusted by the farmers. The success of the introduction of the method led to the systematic adoption of the techniques and promotion of extension of new technology.

The agricultural study groups were led by experts in farming who selected the most relevant studies and reported results.

The leaders of agricultural study groups were promoted to form the 4H club for young farmers. The 4H club originated from clubs of young men in the U.S.A., where the members displayed characteristics such as Head, Hand, Heart and Health (4Hs). Like in U.S.A., the extension advisers asked young farmers to organize voluntary study groups, aiming at the formation of a 4H club in a village. The 4H club as well as the agricultural study group formed associations with district and prefectural units, and exchanges were promoted by the organization of lectures and cultural events.

Former members of the 4H clubs became Key Farmers who assumed the leadership in the extension of new techniques.

The national rice contest was established as a project conceived by publishing company from 1949 onward. There were prizes targetted at a high production and at early growing culture and high production.

In the commendatory system the participants compete. They set up personal targets and attempt to achieve them. The winner of the contest becomes respected by many farmers who are interested in the techniques used by the winner, try to adopt them and participate in the next contest. Thus the commendatory system contributed to the purpose of extension. Extension advisers strongly advised farmers to participate in the contest.

(4) Women's Role

The farmers objectives consisted of the implementation of early planting of rice and the increase in food production.

Wheat and barley had been originally grown as an intercrop with rice. However since the harvest time of wheat and barley corresponded to the time of rice planting due to the adoption of early planting culture, intensive work was required during a short period of time in the farms.

Women in the rural areas were in charge of both agricultural work and housework. Therefore, early planting of rice increased the burden of women. They began to spend less time on domestic chores such as cooking, washing, child care owing to the long hours devoted to farming. As a result, their families could not get adequate food resulting in diseases and baby or infant mortality.

These problems had been addressed by measures taken for the promotion of health and medical care. However, it was eventually recognized that the problems could not be solved unless the living conditions in the rural households improved, including the decrease in cooking time, the introduction of nutritious food and the use of improved ovens with a chimney.

It is interesting to note that early planting of rice eventually led to the recognition of the need for improving the living conditions in the rural households.

3) Basic Agricultural Act and Extension Activity during the Period of Commodity Production

(1) Basic Agricultural Act and Extension Service

In the late 1950s, the supply and demand of food remained stable and the national economy began to register a rapid growth due to technical innovation in the heavy and chemical industries. A large manpower abandoned the rural areas to urban areas, in particular young people. While full-time farmers became old and consisted mainly of women, the number of part-time farm households continued to increase year by year, reaching a rate of 65.7% in Japan in 1959.

The price fetched by agricultural products began to decrease due to the increase in production. On the other hand, the volume of imports increased and since the cost of locally produced wheat and soybeans became comparatively high, the farmers discontinued the cultivation of wheat and soybeans.

This situation widened the gap in labor productivity and income between agriculture and industry. "The Basic Agricultural Act" was promulgated in 1961 to reduce the gap.

In the Act, the following measures were adopted to raise the self-sufficiency of farm households.

1. Selective diversification of crops.
2. Projects for the improvement of agricultural structure
3. Improvement of agricultural credit system.
4. Promotion of farmers' joint operations.

Quality became more important than quantity in food consumption. Thus the Act promoted the production of livestock, fruits, high-quality vegetables and beets and encouraged the adoption of technology to increase the labor productivity and to decrease the cost of production of rice, wheat, rapeseed, soybeans, etc. The act discouraged the production of sugarcane, cocoons, barley and rye.

The first project for the improvement of the agricultural structure covered the period 1962 to 1969. The development of land infrastructure and the introduction of facilities for large machines were implemented to enlarge the scale of operation to increase the productivity of the recommended crops. The highlight was the introduction of machines such as tractors, combines, and the establishment of rice centers.

The project was introduced into farmers' groups such as farmers' joint operations. These were formed in each mechanized facility and for each type of crop, i.e. joint use of tractors in rice cropping, contact farming for breeding seedlings of vegetables, joint operations for livestock raising, etc.

Various funding systems were introduced to increase the self-sufficiency of the farm households, to promote joint operations and to enlarge the scale of operations. In addition to the agricultural modernization fund established in 1962 as well as the agricultural improvement fund that had been established from 1956, the fund for motivating young people to succeed their elderly relatives in the form (successors) was set up 1964.

As agricultural production changed, the Extension Service was also transformed. In 1958, the Agricultural Improvement Promotion Law was reformed by promulgating the establishment of Agricultural Improvement Extension Offices throughout the country as a legal duty. With the diversification of cultivation, subject matter specialists for livestock, fruits, vegetables and agricultural equipment were stationed in each Extension Office.

(2) Agricultural Technology

With the growth of the national economy, rural manpower was absorbed into urban industries resulting in labor shortage for agriculture. Farm households were very much interested in the enlargement of the scale of operation and labor-saving mechanization and technology. As for rice cropping, the following techniques were developed.

1. Mechanization of plowing using power tillers.
2. Use of herbicide 24-D for saving labor for weeding.
3. Aerial spraying of agrochemicals by helicopter.
4. Common facilities for breeding seedlings.

These measures were promoted along the lines of the Basic Agricultural Act. Power tillers were rapidly introduced into the rural communities, as wedding presents. Labour shortage in agriculture promoted the use of the herbicide 24-D for weeding. The aerial spraying of agrochemicals by helicopter and use of the common facilities for the breeding of seedlings were implemented mainly in areas where joint operations were actively pursued.

The introduction of these techniques required changes in the management of farm households, the characteristics of farmers' groups and scale of farm land.

When farm households borrowed funds to adopt agricultural mechanization, guidance for agricultural bookkeeping was required for farming plan including repayments. It became necessary for the farm households to master techniques of management analysis.

In the process of diversification, new crops were introduced into each district resulting in the establishment of main producing districts, study groups for each crop and agricultural cooperatives centered in production systems and shipment. The agricultural study groups, which once had been set up on a regional basis and centered on rice cropping, could not adapt to the diversification of crops and membership. Such groups were reorganized into technical functional groups.

Land improvement projects promoted the use of power tillers. Plot units of paddy fields were rearranged to cover 30-50a instead of 10a and involved the construction of a system of irrigation channels and farm roads.

(3) Extension System

Various meeting places such as agricultural centers, youth training centers or centers for improvement of living conditions were established based on the Comprehensive Measures for Construction of New Rural Villages that had been initiated in 1956. Technical training for farmers was organized mainly in these facilities.

At the same time, wired radio system was introduced to disseminate information in rural areas. TV broadcasting started in 1953 and spread to the farm households gradually in the middle of the 1950s.

On the other hand, to publicize the activities of agricultural cooperatives, a nationwide bulletin "Ie No Hikari (Lights of Home)" and technical extension magazines relating to the activities in each prefecture such as "Agriculture in Chiba" were distributed by subscription in each farm household. As a result, a large amount of information was disseminated mainly through mass media by broadcasting and magazines.

People began to show much interest in higher education, and more than 50% of the students attended high school.

The information-oriented society was reflected in the Extension Service and the following methods were adopted for extending new technology.

1. Analysis of the applications of new technology.
2. Utilization of farm management models.
3. Utilization of mass media.

Like the demonstration fields in the protected semi-irrigated rice nursery, audio-visual methods were effective for the extension of techniques. However, the personal experience acquired by progressive farmers only with numerical data which was conveyed through lectures was effective in the promotion of labor-saving methods using power tillers.

The farm households, who gained information on advanced techniques adopted them for their own needs and obtained good results.

Farming management models were also effective in promoting the use of funding systems for selective diversification and achievement of self-sufficiency in farm households. Based on practical management conditions of farm households, the models presented ideal management plans by diagrams using various farming model types.

By the installation of the wired radio system and the dissemination of agricultural improvement magazines, these mass media were very useful in providing information to the farmers, especially the part-time farm households engaged in nonagricultural activities in the daytime.

(4) Women's Role

As husbands left agriculture farm households were characterized by the system referred to as "San-chan Nougyo (Farming by three persons)", consisting of the grandfather, grandmother and housewives engaged in farming activities.

Farmers introduced cash crops in the selective diversification systems including vegetable cultivation and rice cropping to repay money for the machines.

As the price of vegetables frequently fluctuated and was not guaranteed, farm households enlarged the scale of farming to obtain a stable income. As vegetable cultivation was not mechanized, the enlargement of the scale of operation was associated with heavy work, particularly for the women who were in charge of the farm operation in addition to housework.

However, under those circumstances, the women in the rural areas became involved in agricultural management. The mastering of agricultural techniques, the selling process of crops and the control of income transformed women in the rural areas into agricultural managers. Consequently their influence in the family increased which resulted in the improvement of their status.

They attended community meetings instead of their husbands and had an opportunity to broaden their knowledge.

On the other hand women played an important role in the extensive activities for the improvement of the living condition in the rural households including the implementation of non-working days, cooking on community basis, the simplification of various traditional ceremonies, etc. The improvement of the living conditions gave them the opportunity to reconsider the rural life itself. In such meetings as mutual financing groups, practice groups for the improvement of the living conditions or agricultural study groups, women, took the lead in addressing regional problems and solving them.

Therefore, as women became involved in practical farming management, their influence in the rural community as well as in the family increased.

4) Conclusion

To apply the experience of technical extension developed in Japan to developing countries, the following should be considered:

(1) About 40 years ago, although the status of women in the rural communities was still low, there were no religious or traditional limitations in the social participation of women. They could attend community meetings and agricultural study groups instead of their husbands who were engaged in non-farming activities.

(2) The history of rice cropping in Japan is very old, and farm households had already acquired a great deal of experience and basic knowledge about rice cropping, required for cooperative activities aiming at water management, for example. Farmers were able to cooperate and set up groups on the basis of such experiences. For these reasons, the utilization of farmers' groups and key farmers was successful. This experience may not be applicable to societies that are not used to cooperate or are not group-oriented or for which upland field crops are the staple foods.

(3) Even in the prewar period, for female and male farmers, education was compulsory for 6 years. During the period of increased food production, almost all the farmers could read and write. In addition, during the period of commodity production, compulsory education was extended to 9 years. As farmers could fully read letters and numbers, management guidance was easy. In the countries with a low ratio of literacy, it is necessary to use illustrations instead of letters and numbers.

3. Women in Rural Areas and Extension Service for the Improvement of Living Conditions in Rural Households

1) Introduction

(1) Women in rural areas before WWII

(a) Women's Position

Half a century ago, women in rural areas were considered mainly as laborers and producers of the successors of farmers. Silent women were considered ideal. The housewives were unpaid laborers in the farm and house who occupied the lowest position in the family. No matter how rich or poor the family was, the position of the housewife was the same. This was well expressed in a traditional greeting at the wedding, "Congratulations on an extra-hand!" For women, self-assertion was considered as evil.

(b) Marriage and Family Registration

Most marriages were not contracted by love, but were arranged through a meeting with a view to joining two families of equal social position. It was only a formality for a man to see how his prospective bride looked like. The girl would only serve tea and make a bow, and everything else was decided for her by the man and both parents. There was no chance to speak to the groom, and no girls knew what their future husbands were like. In other words, only men had the right to choose.

The wedding would be elaborately performed, with borrowed money if necessary, in accordance with the family's social position. The registration of marriage commonly took place after the first son's birth. The divorce rates were low in those days, but there were many instances in which the brides were sent back to their families for reasons such as "the wife can not bear a child", "the wife does not fit to the ways of her husband's family" or "the wife does not bring enough bridal furnishing. The wife's parents would think that it was unfortunate that the marriage did not go well, and people around her would pity her or sympathize with her, but they also would think that nothing could be done.

De facto divorces not shown in statistics were often decided by the husbands, or by mothers-in-law who were once daughters-in-law themselves.

(c) Money Matters

The daughter-in-law had no income. Although the purchase of domestic articles and food was her task, like a child on errands, she received a certain amount of money and gave back the change.

In most cases, the family's money matters were handled by the husband's parents. Even when her first child reached the school age, the school fees were paid by the grandparents. In those days, 85-90% of the food were home-produced and cash spending was very low. There was no allowance for the wife at all. She would receive allowance from her parents when she went to her parents' house. On festive occasions concerning the children, such as birthdays, the boy's or girl's festivals, school entrance ceremony, etc., the husband's family expected presents from maternal grandparents, and the wife also took such customs for granted. These customs further lowered the status of women in rural areas. No wives would think that it was shameful to live with the help from their parents even though they worked the longest hours without receiving any income. Women could only manage the family's budget with the permission of their husbands when they themselves became mothers-in-law.

(d) Free Time for Women in Rural Areas

Because the farm labor depended on family members, the only free time women were able to get was when they visited their parent's homes. As annual activities in the rural communities were mainly associated with eating and drinking for the men, women's work load automatically increased.

Getting up first in the family, taking a bath last, and getting the shortest hours of sleep, did not enable ideal women to get free time.

(2) Characteristics of Extension Service for the Improvement of the Living Conditions in the Rural Households

After the WWII, the position of women in the rural areas improved due to various factors, the main one being the establishment of the Extension Service for the Improvement of the Living Conditions in the Rural Households.

The Extension Service was established based on the Agricultural Improvement Promotion Law enacted in 1948, including the Agricultural Improvement Extension Service and the Extension Service for the Improvement of Living Conditions in the Rural Households.

The characteristics of the latter Extension Service were as follows.

1. It is an educational guidance service, addressing the problems relating to the living conditions peculiar to farm households.
2. The Extension Workers are in close contact with the farmers to promote self-help by the farmers themselves for the improvement of their living conditions.
3. Thus, the extension workers disseminate information and technology for the farm activities and also urge farmers to become aware of the need for improving their living conditions.
4. The central government assigns extension advisers to each prefecture, and subsidizes the services.
5. The Extension Service is implemented according to the guidance from the Ministry of Agriculture, Forestry and Fisheries and the local authority of each prefecture.

2) Activities During the Period of the Increased Food Production

(1) Background

After WWII, in Japan, there was a shortage of food. The majority of the population struggled for survival. The main problems in this period were the rehabilitation of agriculture and the increase of food production.

The agrarian reform offered an opportunity for the democratization of the rural communities and the improvement of life of women in the rural areas. As farmers owned their land, they were motivated to increase agricultural production and also the women as producers participated actively in farming for their families. Moreover, women were eager to learn the techniques required to improve the farming and living conditions.

In those days, the living conditions in the farm household were characterized by the following problems.

(a) Food.

Farmers consumed small quantities of animal protein (24% of needs per day) and food was monotonous.

(b) Housing.

In most farm households, the stable and workshop were not housed in separate buildings. The oven was used without a chimney in the kitchen.

(c) Water.

Most farmer households did not have water service and the women drew water from a well.

(d) Clothes.

Special clothes for farm work were not available and along with the dissemination of the pesticides from about 1950, farmers needed appropriate working clothes to protect their bodies.

(e) Management.

Most farmers did not have an annual plan of consumption, saving and investment for cash income.

(2) Contents of Guidance

At that time, the extension workers promoted the following activities.

(a) Improvement of Eating Habits.

- Production of preserved food.
- Production of nutritious Miso (fermented soybean paste) with high calcium content
- Food preparation on a community basis during the peak of the farming season.
- Planting of vegetables.
- Organization of cooking courses and preparation of nutritious food.

(b) Improvement of Housing

- Dissemination of improved oven with chimney.
- Improvement of kitchen.
- Use of tap water.
- Use of solar tanks.

(c) Improvement of Clothing habits.

- Use of working clothes.
- Improvement of underwear and means of keeping them clean.
- Improvement of homewear and children's playclothes.
- Rearing of sheep.
- Improvement of Futon (mattress and cover in Japanese bedding) and bed clothes.

(d) Improvement of Health and Hygiene.

- Eradication of flies and mosquitoes on a community basis.
- Drying Futon in the sun.
- Promotion of recreation.
- Washing hands after work and before meals.
- Disinfection of water.

(e) Improvement of Home Management.

- Improvement of housekeeping.
- Promotion of saving and group reserve fund.
- Holding of regular meetings.
- Implementation and use of non-farming day.
- Purchase of goods for daily necessities on a community basis.

(f) Improvement of Child Care.

- Organization of nursery schools in the peak of the farming season.

(3) Organization of Practice Groups for the Improvement of the Living Conditions in the Rural Households.

Women in the rural areas did not have enough experiences for changing their living conditions themselves. Therefore, group guidance was more appropriate than individual guidance for women in the rural areas.

The Extension Service adopted group guidance as an extension method and organized Practice Groups for the Improvement of the Conditions in Rural Households. These groups consisted mainly of women.

The Extension Workers for the Improvement of the Living Conditions in the Rural Household organized 2,600 groups with 102,000 members in 1949 and 3,900 groups with 107,000 members in 1953.

But, the workers also provided individual guidance for some of the problems faced by various members to protect their privacy, including matters relating to private income, married life, etc.

3) Activities in the Period of the Commodity Production

(1) Background

In this period, the agricultural policy promoted the selective diversification of crop cultivation, specialization and expansion of the scale of farm operations. The farmers had to decide whether they selected the expansion of the scale of operation or farming as a side-occupation. As industries were developing fast, young people abandoned rural areas for cities to secure jobs.

The commercialization of farm products required that high quality products be supplied on a stable basis, otherwise, the farmers could not compete with the products in other areas in Japan. Farmers were under pressure to secure labor and change drastically the production and marketing systems.

The role of women as producers became more important than hitherto in the farm households along with the expansion of the scale of operation or farming as a side-occupation. As a result, the status of women in the farm households was upgraded and the role of women as responsible housewives was strengthened.

In these days, the living conditions in the households were associated with the following problems.

(a) Health Conditions.

- The main source of nutrition depended on grains. The consumption of animal and vegetal protein, oils and fats, and green or yellow vegetables was very low.
- In the farmer's house, there were structural problems concerning lighting, cleanliness warmth in winter.
- The commercialization resulted in hard work for the farmers with few hours of sleep.
- The unsanitary conditions in the kitchen and bathroom led to outbreaks of infectious diseases, parasitic diseases, and disorders of the digestive organs in rural areas.
- Hard farm work, lack of proper medical care, malnutrition and defective housing led to farmers' occupational diseases (headache, difficulty in breathing, palpitations, pain in waist, numbness in hands or legs, etc.).

(b) Labor Conditions.

- Due to the lack of agricultural mechanization, farm work was heavy at the peak of the farming season.
- Labor-saving measures were very limited in the farm households. The rate of farmers' house with tap water was 25% in the rural areas. The rate of farm households with electric washing machines was 15% against 47% in non-farm households.

- In the farm households, since the husband was engaged in farm work and in other activities, labor for women as producers and housewives markedly increased.

(c) Social and Cultural Conditions.

- There was a lack of cultural facilities (movie theaters, recreation centers, sport centers, etc.) in rural areas.
- Women seldom had time for themselves in a day.
- Because children were employed as laborers in farm households, they could not sometimes attend school.
- The period of rest of mothers in farm households before and after childbirth was shorter than that for women in non-farm households.
- The infrastructure in the rural areas was under-developed (electricity, tap water, roads, gas pipe, etc.).

(2) Contents of guidance

In these days, the extension workers in charge of the improvement of the living conditions, organized the following activities.

(a) Improvement of Clothing Habits.

- Use of functional, clean and safe clothes.
- Improvement of the bedding in the farm households.

(b) Improvement of Eating Habits.

- Preparation of nutritious meals.
- Rapid preparation of food.
- Food preparation on a community basis.

(c) Improvement of Housing

- Improvement of kitchen, lavatory and bathroom.
- Introduction of new equipment (electric appliances) and new sources of energy (electricity, solar tanks).

(d) Improvement of Home Management.

- Promotion of labor-saving measures.
- Housekeeping plans.

(e) Improvement of Child Care.

- Establishment of nursery schools all the year round.

(3) Organization of Practice Groups for the Improvement of Living Conditions.

The farmers became eventually aware of the need for improving of the living conditions in each farm household as well as rural life as a whole. The Practice Groups played a major role in the improvement of the living conditions.

The number of groups increased from 5,800 with 134,000 members in 1955 to 15,000 groups with 284,000 members in 1964.

The scale of the group enlarged from small unit to one group per town or village. In 1964, the National Study Association of Practice Groups for the Improvement of the Living Conditions was formed as a nationwide organization.

4) Conclusion

Lastly, for the application of the experience of the extension service for the improvement of the living conditions in Japan to the developing countries, the following should be considered.

(1) Understanding of the Conditions Prevailing in the Respective Countries.

When the extension workers did not understand the prevailing conditions in farm households in detail, their activity was not successful. As the conditions continuously change, the extension workers should always attempt to understand the changes in the farmers' life, farm households and rural communities.

The extension workers should analyse systematically the requests from farmers, and work out with cooperatives or local authorities means of satisfying the farmers' needs.

(2) Teaching and Learning

The extension workers try to understand the needs of the women in the rural areas, emphasize their ability, and learn from them, especially from elderly women.

The extension workers should not impose their own views upon women in rural areas, take too much care of their activities, and be impatient. When women ask for assistance, the extension workers should listen to them and try to solve their problems.

(3) Regional Cooperation

To succeed in their activities, the Extension Service needs the cooperation from regional or local authorities and influential persons in the rural communities.

The exchange of information should also be promoted actively.

(4) Development and Application of Techniques

The extension workers should attempt to promote application of new techniques and instruments for the improvement of the living conditions which tend to change with time.

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