

THE SURVEY REPORT
ON
JAPANESE FARMER'S LIFE

1976

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Rice cultivation and its extension Course
Uchihara International Agricultural Training Centre

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PROGRAMME OF FARM HOUSEHOLD PRACTICE

1. Purpose

Purpose of the practice is to impart the practical information of rice growing area, the environment of rice growers, and technical standard of rice cultivation to participants by sharing daily routines in Japanese farm households with their counterparts.

Content of Training

To attain the above objective, participants were particularly suggested to call attention to the following items while in practice.

a) Farmers

To get a complete view of their life, behavior of the family members, farm management in general, the technical standard of rice cultivation and technical analysis of each factor which materialized high yielding, through out the stay.

b) Rural milieu of the farmers

General condition of the community (Buraku) to which host farmer belongs, and their history if there is anything worth mentioning organization or human relationship, customs, etc.

c) Others

The relationship among host farmers and public organizations like Agricultural Cooperatives, Agricultural Training Center, and Agricultural Extension Office, etc.

2. Place

Kawanishi-Cho, Higasiokitama-gun, Yamagata-Ken

3. Duration

From 26th to 31st of July, 1976 (5 nights 6 days)

THE LIST OF FARMERS AND COUNTERPART PARTICIPANTS

1 9 7 6

| NAME OF HOST FARMER AGE | FAMILY MEMBER | A BRIEFING OF FARMING CONDITION | NAME OF COUNTERPART PARTICIPANT AND COUNTRY |
|----------------------------|------------------|---|---|
| HEIICHI ITOH (51) | M - 3 F - 3 | Lowland 4.6 ha Upland 0.2 " Cattle 4 heads | 1) Nassir A. (Aghanistan) 2) U.T. Aung (Burma) |
| HIROSHI NAKAGAWA (41) | M - 2 F - 5 | Lowland 3.6 ha Upland 0.05 " Cattle 2 heads | 1) T. Tokunaga (Brazil) 2) R. Sahu (India) |
| MIYOKICHI USHIYA (52) | M - 3 F - 4 | Lowland 2.0 ha Upland 0.2 " Apple 0.54 " Swine 4 heads | 1) N.K.Bhunya (India) 2) Kusnandar (Indonesia) |
| HANA KATSUMI (43) | M - 2 F - 2 | Lowland 1.8 ha Upland 0.2 " Cattle 4 heads | 1) I. Andi P. (Indonesia) 2) A.F. Paye (Liberia) |
| CHIKUHEI WATABE (36) | M - 3 | Lowland 4.5 ha Upland 0.1 " Cattle 2 heads | 1) B.M.S.Basnet (Nepal) 2) H.C.D.Cruz (Philippines) |
| KAZUKO SUZUKI (48) | M - 3 F - 3 | Lowland 4.7 ha Upland 0.2 " Cattle 2 heads | 1) Solis Q.Q.(Philippine) 2) G.B.Navaratne (Sri Lanka) |

Farm House Practice (Farmers and Farming in Japan)

Nassir Ahmad (Afghanistan)

As a part of our group training programme in Rice Cultivation and its extension course we had farmers house practice from 26th to 30th of July, 1976 in Yamagata Prefecture. The main purpose of this practice was to know the practical information of Rice growing areas, environment of rice growers, technical standard of rice cultivation and the Japanese farmers-way of life, culture and their customs.

We started from Uchihara agriculture centre on 26th of July, 1976 and reached there in the same day. After a general introduction with hosts farmers and staff members in agriculture extension office. I went to my host farmer named Mr. Eiichi Itoh's house to Takayama - Buraku with his son by his own car.

During four nights of my staying there I collected the following information on various activities from my host farmer, extension officers and other farmers of this Buraku.

General Information about Takayama:

Takayama (Buraku) is located in (Kawanishi Machi) Yamagata-Prefecture which is about (5 km) far from the city hall. There were total 24 houses in this Buraku, from which 19 houses were farmers houses and 5 houses non-farmers houses. Among the agriculturists 5 of them were part time workers and rest of the farmers spent their time only in farming.

The main crop of that area was (rice). Besides rice they also grow corn, bean, eggplant, tomato, potato, onion, garlic, pumpkin, cucumber, melon, water melon and radish, etc.

Family condition

The total members of Mr. Eiichi Itoh's family including himself were six person:

1. Eiichi Itoh san (51) years old graduated agriculture college (Farmer)
2. Soneyo Itoh san (70) years old graduated Junior high school (Mother)
3. Kou Itoh san (48) years old graduated college (Wife).
4. Toshuki Itoh san (26) years old graduated University (Son)

5. Shinuiko Itoh san (24) years old graduated University (Daughter-in-law)
6. Katsue Nori Itoh (6) months old (Grandson)

They were living in a quite good and lovely environment. Mr. Itoh was graduated from Uchihara Agriculture College in 1947. He is a progressive and leading farmer in his Buraku and also has a close relationship with other farmers. Besides his work in his own farm he is the Board member of (Co-operative association, City Hall) and member of progressive farmer's association. He goes to the city hall 35 days a year for getting information about economic situation and agriculture. Mr. Toshuyuki his son works with his father in the same farm.

Cooking food, arrangement of the tables, washing of the pots (dishes) cleaning and sweeping of the house was done by Mrs. Itoh and her daughter in law. His old mother also helps in cleaning and sweeping of the house but her specific duty was cleaning temple. They take bath everyday before dinner.

Relatives

Besides those 6 members of the family Mr. Itoh has two sons and one daughter. They are single and living separately.

1. Mr. Hiloyuki 24 years old, he works and lives in Sendai City.
2. Miss. Youko, 21 years old, she is a teacher of children's school at Tokyo.
3. Mr. Yoshinori, 19 years old, he is studying at University.

Among many relatives (Mr. Itoh) has four (4) brothers and one sister. They were married and living separately. Three brothers work in Febrics at Tokyo, Omea-Onezawa Cities and his other brother is teacher in Yokoyama City.

Residential Condition

Mr. Itoh's house built in two floors, construction of the building was mostly from the woods. The house consist of 13 rooms (sleeping rooms, working rooms, kitchen, dinning room, lodging room and reading room) with:-

1. Sufficient amount of furnitures, kitchen sets and meal dishes.
2. T.V. - 2 sets
3. Refrigerators - 2
4. Washing machine - 1

5. Electric heaters - 3
6. Gas stoves - 2
7. Radio - 2 sets

Religion

Their religion is Buddhism and they have two separate shelves for the God their house. All the members of the family pray every morning before breakfast. Mrs. Itoh offers food for the god every morning.

Meal Custom

Usually all the members of the family take meals together three times a day:

1. Breakfast at 7:30 am
2. Lunch at 12:00 noon
3. Dinner at 8:00 pm

During my stay in their house usually menu was rice, raw, cooked and salty vegetables, noodles, fish, chicken, soup, buck wheat, fresh fruits, soft drinks and beer.

Farming Condition

Mr. Itoh has total 4.8 ha of the lands (4.6 ha of lowland and 0.2 ha of Upland) with four heads of beef cattles. His farm was very close to his house. The total areas of lowland were under cultivation of 6 different varieties of rice:

| | |
|-------------------|---------------|
| 1. Sasnishiki | 0.7 ha |
| 2. Khionishiki | 0.7 ha |
| 3. Yamato nishiki | 0.8 ha |
| 4. Toyeonishiki | 0.6 ha |
| 5. Mochi | 0.2 ha |
| 6. Sawanohana | 0.6 ha |
| Total | <u>4.6 ha</u> |

The method of rice cultivation in the paddy were fully mechanized. All the activities in the field were done by himself and his son Mr. Toshiyuki by the help of agriculture machineries.

Agriculture Machineries

| <u>Name of machine</u> | <u>Numbers</u> |
|------------------------|------------------|
| 1. 25 H.P. Engine | 1 |
| 2. Power tiller | 1 |
| 3. 35 H.P. tractor | 1 |
| 4. Transplanter | 2 and 4 row each |
| 5. Sprayer | 1 |
| 6. Duster | 1 |
| 7. Combine harvester | 1 |
| 8. Pumping sets | 2 |
| 9. Tillers | 2 |
| 10. Thresher | 1 |
| 11. Huller | 1 |
| 12. Drier | 1 |
| 13. Pollisher | 1 |
| 14. Cars | 2 |
| 15. Truck | 1 |

Nursery preparation and Seed rate:

In the first week of the month April (Soaking time) treatment of seed with (Omi) chemical for controlling of diseases. Sowing is started from April 15th in (30 x 60 cms) boxes nurseries. Seed rate for each boxes (170-200 gm) 20 - 22 boxes were needed for 10a of land.

Transplanting and Fertilizer Application

According to my observation in the field:

Seedlings were transplanted on May 10th (25 days after sowing) by machines.

1. The distance between two plants = 13.5 - 15 cms.
2. The distance between two rows = 30 - 33 cms.
3. Total no. of hills per 3.3 sq. meter = 72 hills.
4. Total no. of tillers per hill = 20

They used two kinds of chemical fertilizers in rice:

1. Compound chemical fertilizer (N.P.K.) for Basic application.
2. Urea form chemical fertilizer for the Nitrogen application in top dressing.

| | N | P | K (kg) per 10a |
|---------------------------------|-----|------|-----------------------------|
| a. Basic fertilizer application | 3 | 14.5 | 10.5 |
| b. First top dressing | 2 | 2 | 2 (70 days before headings) |
| c. Second top dressing | 2 | 2 | 2 (54 " " ") |
| d. Third top dressing | 1.5 | 1.5 | 1.5 (20 " " ") |
| e. Fourth top dressing | 1.5 | 0 | 0 (7 " " ") |
| Total | 10 | 20 | 16 kg. |

Weed control

For controlling of weeds they used chemical herbicides, three times after transplanting:

1. In the month of May (4-6 days after transplanting) MO-chemical (4-5) kg per 10 a.
2. In the month of May (14 days after transplanting) MO-chemical 3-3.5 kg per 10a.
3. In the month of June (27 days after transplanting) Lamito-Chemical 3-3.5 kg per 10 a.

Diseases and Insects:

Leaf blast, Neck blast and Sheath blight were the common diseases which I observed in the rice field. They used Kilasuno-chemical which was applied at the rate of 3 kgs. per 10a by duster (20-30 days) after transplanting. Neck blast and Sheath blight: - Mixed chemical (Kasumon) applied at the rate of 3 kgs. per 10a (5 - 7 days) before heading.

The symptoms of the stem borer was seen 20 days before heading. (Hino-batito) 150 liter chemical was used with 1000 liters of water for controlling of this insect. They practiced spraying 5 - 6 times.

Irrigation

The main source of supplying water for irrigation of the paddy was river and they are getting irrigation water by pumping stations. They keep water in the rice field about 5 cm deep for 10 days, after transplanting then

drained the field one to three centimeter depth controlling of water in the rice field done two times:

1. 35 days before heading.
2. 20 days before heading.

Harvesting and Processing

They grow six different varieties of rice so, time of harvesting vary according to each variety. They harvest all varieties by his own combine machine. Drying and processing done at house by their own machines.

Yield

According to the last year's record of the farm product the yield of rice differ according to varieties. And the yield component factors for the last year were as follows:

| | |
|--|----------|
| 1. Number of hills per square meter | 24 |
| 2. Number of tillers per hill | 20 |
| 3. Number of panicles per square meter | 480 |
| 4. Number of spikelet per panicle | 80 |
| 5. Ripening ratio | 85 % |
| 6. Weight of 1000 grains | 22 grams |

By this way the product of last year was 34.960 tons of brown rice from 4.6 ha of land. Average yield was 7.6 ton/ha. Under the same attention 8.0 ton/ha (brown rice).

Farm Income (recorded from last year i.e., 1975)

The main income of the agriculture from farm was from the selling of rice. Non-agriculture income was from hiring his farm machineries after completing his farm works. Mr. Itoh's son work with his machines in those farmer's field who needed for puddling, planting and harvesting.

Income

| | |
|----------------------------|------------|
| 1. From Rice sale | ¥8,475,000 |
| 2. Non-agricultural income | ¥ 500,000 |
| Total income | ¥8,975,000 |

Expenditure

| | |
|----------------------------|------------|
| 1. House hold expenditures | ¥4,620,000 |
| 2. Production cost | ¥3,155,000 |
| | <hr/> |
| Total expenditure | ¥7,775,000 |
| Net income | ¥1,200,000 |

My impressions

Before my coming to Japan I heard about Japanese farmers and farming in Japan from the last two years participants from my country who participated the same course and the same programme in this center. It was very interesting for me to know how can Japanese farmers get high yield of rice per unit of land.

During my staying at my host farmer's house I got more informations. Now, it is clear to me that agriculture, specially rice cultivation in Japan is based upon a good technique, best scientific methods and modern agriculture mechanization. The main source of getting high rice production in Japan are:

1. More attention of the farmers in the field for soils fertility by use of chemical fertilizers in different stages of growth, using of improved and high yielding varieties of rice, diseases and insects control and proper water management in different stages.
2. Sufficient and helpful relationships of agriculture experiment station and agriculture extension officers for solving problems of the farmer.
3. Presence of agriculture co-operatives and agriculture banks.
4. Policy of the government in the price of production for interest of the farmers.

Really farmer's house staying was very interesting and more educatives. During my staying at Mr Itoh's house, besides agriculture activities in rural community I also got much informations about Japanese way of life, culture, customs, specially their kindness and hospitality. I will extend all informations which I got through my observation for improvement of the farmers of my country as much as I can, when I return to my country.

I am thankful to the authorities for organising such a nice and educative programme. I am also much thankful to my host farmer Mr. Itoh for the nice hospitality he showed to me during the entire period of my stay.

Farm's House Practice Report

Takanoli Tokunaga (Brazil)

Introduction

The aim of this report is to present some data about farming, living custom and communication of host farmer. On the other hand, it was presented as a information about community where the farm is located. The data were collected during farmer's house practice which was observed from 26th to 31st of July, 1976.

Address of host farmer

4912 Tamaniwa Kawanishi-Machi,
Higashi Okitama-Gun,
Yamagata Prefecture

Farm's location

It is located in Matsuo community, 15 km far from Kawanishi town.

Number of households in Matsuo community

| | |
|-----------------------------|----|
| Farmers household | 57 |
| Other households | 27 |
| Total households | 84 |

In this community only four farmers are full time farmers.

Facilities

Near the host farmer's house there are community hall, Shrine, Elementary School, Agricultural Cooperative, Post Office and several shops. Also there are electric energy, telephone service and bus connection between Matsuo community and Kawanishi town. In this area the land improvement and land consolidation took place two year ago. Now the irrigation canal from dam is being executed to resolve water insufficiency problem.

Host Farmer's family members

| Name | Age | Relationship | Education | Occupation |
|------------------|-----|----------------|-----------------------------|--|
| Hiroshi Nakagawa | 41 | House Master | Senior Agri. high School | Farming and bulldozer driver in winter season. |
| Tadao Nakagawa | 71 | Adopted Father | Law graduate | Member of Admini- stration commis- sion at Kawanishi town office. |

| Name | Age | Relationship | Education | Occupation |
|-----------------|-----|----------------|---------------------------------|----------------------------|
| Kiku Nakagawa | 62 | Adopted Mother | 2nd grade of Senior high School | Farming |
| Taka Nakagawa | 37 | Wife | Ladies high school | House work |
| Mikiko Nakagawa | 14 | Daughter | Student | Study & helping her mother |
| Kimiko Nakagawa | 12 | -do- | -do- | -do- |
| Ruriko Nakagawa | 8 | -do- | -do- | -do- |

Remarks:

- 1) House Master
- 2) No Payment

Farmers Area

| | | |
|------------------------|-----------|---------|
| Total area | | 3.65 ha |
| Paddy field | | 3.60 ha |
| Building Area & Others | | 0.05 ha |

Religion

Buddism

Meal Custom

| | | |
|-----------|-----------|------------|
| Breakfast | | 8:00 AM |
| Lunch | | 12:00 noon |
| Dinner | | 6:00 PM |

The meal's preparation and table arrangement are Japanese type and are served at dining room for visitors.

Residential condition

The level of living condition is very high. There are sofa sit, study tables, refrigerators, gas stove, television, heaters, and so on. There are following rooms:

Downstairs

| | | |
|--|-----------|---|
| Living room for visitors (Japanese type) | | 1 |
| Living room for visitors (Western type) | | 1 |
| Living room for family (Japanese type) | | 1 |
| Dinning room for family (Japanese type) | | 1 |

| | | |
|------------------------------------|-----------|---|
| Bed room for family | | 2 |
| Bed room for guest (Japanese type) | | 1 |
| Room for religious ceremony | | 1 |
| Kitchen room | | 1 |
| Bath room | | 1 |
| Toilet room | | 1 |

Upstairs:

| | | |
|---------------------|-----------|---|
| Bed room for family | | 1 |
| Study room | | 1 |

This house was built 200 years ago by farmer's adopted father relatives.

Farmers Communication

With cooperatives he is staff member of land improvement cooperative. On the other hand, he maintain communication with agricultural cooperative. From cooperative go down all inputs for rice cultivation and technical assistance also. Besides to selling his rice production is done through the agricultural cooperatives. With extension office, sometime he call extension workers to resolve some troubles in farming techniques. With Kawanishi town, Kawanishi town with 23,000 inhabitants is located 15 km far from the host farmer's house. The majority of materials necessary to daily life are purchased in Kawanishi town. Besides the medical assistance, senior high school, banks and other facilities are available.

Agricultural machineries

| | | |
|---------------------|-----------|---|
| Rice transplanter | | 1 |
| Sprayer and duster | | 1 |
| Harvester (combine) | | 1 |
| Huller | | 1 |
| Dryer | | 1 |
| Polisher | | 1 |

Vehicles

| | | |
|-------|-----------|---|
| Car | | 1 |
| Truck | | 1 |

Animals

| | | |
|-------------|-------------|---|
| Cattle beef | , | 1 |
| Goat | | 1 |
| Rabbit | | 1 |
| Poultry | | 6 |

Rice Cultivation techniques

Seed selection by specific density

Seed treatment by fungicide

Nursery box soil treatment by tatigare-fun (fungicide) for dumping-off prevention.

Soaking

Sowing in nursery box: 200 g of seed per box

150 g per box of compound 13-13-13

Box arrangement: After sowing the nursery box is arranged on paddy field and covered by vinyl film. The aim of this vinyl is to keep high temperature. After germination, when the seedlings reach on 1 cm in high temperature this vinyl is removed. Besides it is made vinyl tunnel for seedlings protection which is remained up to the transplanting time.

Top dressing for seedlings: It is applied 5 g per box of urea when the leaves of seedlings become yellowish.

Pest control: It is done always when the insects and diseases appear.

Irrigation method for seedlings: The water is kept only in trench between the nursery bed.

Transplanting

It is executed by transplanter machine with four transplanting lines and by hand at the area where the stones occur.

Fertilizer application on paddy field

Basic fertilizer: Fertilizer was applied during puddling time. It is used at 20 kg/ha of N, P_2O_5 and K_2O by using compound fertilizer 14-14-14 or 16-16-16.

Top dressing on paddy field: It was done when the leaves of rice become yellowish by using the compound fertilizer 16-0-16. The amount of active ingredient was applied in 3 kg per 10 a.

Weed control

Herbicide: by using Mamite Sm in the puddling time.

By hand: Twice during the growing period.

Harvesting

Next year, combine will be introduced.

Water management on paddy field

Transplanting to recovering time: Shallow water depth

Recovering to maximum tillering stage: Shallow water depth

Maximum tillering to ripening stage: Intermittent irrigation

The water is pumped from river but in some area it is not enough. In this case the water is kept in all growing period.

Average yield

Last year: 600 kg per 10 ares

This year: 550 kg per 10 ares

Varieties

Sawanohana 1.0 ha

Tiyonishiki 0.8 ha

Toyonishiki, Hanahikari,
Yamatenishiki and sticky rice . 1.8 ha

Pest control

Blast diseases: It was done by helicopter once or twice during the growing period. Besides the farmer apply fungicide by using his own machine. About insect it was done by the farmers.

Farm economy

Inputs for rice cultivation per 10 ares (roughly calculation)

| | | |
|---|-----------|--------------|
| Fertilizer | | ¥3,500 |
| Fungicide, insecticide and herbicide | | ¥1,500 |
| Aerial spraying tax | | ¥2,960(once) |
| Irrigation water (energy payment for pumping) | | ¥1,000 |
| Tax for dam construction for irrigation | | ¥2,400 |
| Payment for land improvement | | ¥10,000 |

Labour for transplanting:

0.4 day x ¥3,500 per day ¥1,400

for harvesting:

0.3 day x ¥3,500 per day ¥1,050

Soil preparation (payment for tractor) ¥5,000

Total ¥28,000

Inputs in 36 ares:

¥28,810 x 36 = ¥1,037,160

Gross income per year

Per 10 ares

10 bags of 60 kg x ¥ 13,000 per bag ¥130,000

Per 36 ares

¥130,000 x 36 = ¥4,680,000

Total net income per year

Rice cultivation ¥4,680,000

Driving bulldozer ¥ 600,000

Total ¥5,280,000

Remarks:

This was the data as of last year

Opinion about farm house stay

It is very useful to see the rice cultivation techniques practiced by farmers. On the other hand, we can understand more clear the Japanese daily life.

During the farm house stay we have opportunity to know not only the techniques used in host farmer but by other farmers in the community. With Mr. Hiroshi Nakagawa guide us to visit the two progressive farmers in rice cultivation and dam construction for flood control. To generate electricity and to irrigation purpose of paddy field.

The duration and the schedule arrangement was very nice.

Farmers And Modernized Farming In Japan

Mr. Tin Aung (Burma)

Introduction

Farm house stay practice is one of the important programme for our rice cultivation and extension course. We have learnt theoretically advance techniques and cultural practices that stablized in the practical field of Japanese agriculture. But we are not satisfied with these lectures we want to know more about the farmers, the methods they used in producing the high yield of rice, and the way they live in the rural area.

As an Agricultural Extension Officer, myself, I take much interest how the Japanese farmers get their cultivation techniques and how they apply in the practical field of rice cultivation. Indeed, for every agricultural country, the development of her agriculture, is mainly depend on the farmers regardless of other factors, such as, advance science in agriculture, chemicals, new varieties, new techniques and modern farm machineries etc.

To complete our training programme, the farm house stay practice was participated from 26th to 31th of July. From this program, I hope every participant may collect the useful information about the farming conditions of the farmers as well as their culture, customs and ways of living in the rural area. It also may help us to improve the status of agriculture sector in our country and living standard of our farmers.

Aim and Object

1. To study, how the Japanese farmers get the advance technic and cultural practices, how they apply in practical of rice cultivation.
2. To observed the major activities of the agricultural cooperative associations, Agricultural Extension Offices and Agricultural Experimental Stations to fullfill the needs of the farmers in acheiving to gain the highest yield of rice under the guidance of the prefecture government.
3. To know how the culture and customs of the Japanese people, especially the rural life of a Japanese farmer and also to exchange the culture and customs of respective participants.

Location

(a) Prefecture

We are very lucky to have an opportunity to study in the Yamagata prefecture, which is a most famous for its high yielding of rice production. It was situated in the northern part of the main island facing Japan sea, about 600 km away from our centre. With her population of 1,210,000 and 377,483 km sq of land, was famous not only in high yield of rice but also in highest quality of rice, especially produced from Shonai area. It yearly produces 570,000 ton of brown rice from 100,300 ha of paddy land, which is considerably higher than the national average yield. It was also well-known by the production of grape, pear, cherry and other vegetables. The raising of beef cattles also added her fame.

(b) Okitama Zone

The Yamagata Prefecture is divided into four Agricultural Zone a. Murayama, b. Mogami, c. Okitama and d. Shonai. My host farmer's house situated in the Okitama Zone, near Kawanishi town. Okitama is the southern part of Yamagata Pref. In this area, the total paddy area is only 14,420 ha but the total production of brown rice is 85,900 ton in 1975. The average yield per ha is (5.95) ton which is higher than the Pref., average and national average.

The total farm house hold of the area is 3354, out of which 2540 are full time farmers and the rest 854 are part time farmers. Average size of holding per household is (1.8) ha and the size of the plots larger than 0.3 ha. Okitama Extension Office has 12 agriculture advisors and 3 home advisors. The Kawanishi town-ship agricultural cooperative association and its seven branches office, has given the needs of the farmers from seed distributing up to purchasing of the paddy.

Family Condition

a) Members of Family

My host farmer was Itoh san of 51 year old. He was a graduated of Uchihara Agricultural College in 1947. He was a member of the progressive

farmer as well as board member of the Kawanishi Agricultural Cooperative Association. He was also a leading farmer in this community. He has three sons and one daughter. He has also four brothers and one sister of all are married and stay seperately in Tokyo, Yokohama and Yonezawa City.

1. Eiichi Itoh 51 year Farmer Agri. College
2. Eiichi Soneyo 70 " Mother Junior High School
3. Eiichi Kou 46 " Wife College
4. " Toshiyuki 26 " Son University
5. " Shinzuiko 24 " Daughter in law University
6. " Katatsunori 6 months Grandson

b) Daily Life of Family

Itoh san leads in both farming and family affairs. But, being a board member of the Agricultural Cooperative and also member of the municipal of the town, he always busy with outside affairs. His wife, son and daughter in law, are engaged with farming works as well as the household works.

Every morning, the wife and daughter in law get up early, cleaning, sweeping and cooking has done by one of them alternately. Old mother also seldom help them for cleaning and sweeping, but her specific duty is to clean the temple and prepared for the offering and praying. His son gathers the grass from the field to feed the cows. All the family members are well united and self understanding of their own duties. Their behaviors are quite cooperative, kind. I felt that the family as a whole was well disciplined and peaceful.

At about 8 am they came back from the field and worship the Buddha before their breakfast. Then they did again their own respective work up to the 11 am. Their lunch usually take at about 12 to 1 pm. They take rest from 1 to 2 pm especially the hottest time of the day. Then, again continue their own works in the field up to the darkness. They take bath before their dinner usually start with some drinks and ended with eating at about eight.

I noticed that as one of the Japanese typical character, they take bath only once in the evening in hot water.

After dinner they take rest in the living room, watching and listening the television, reading and discussion the next day's programme of work. They usually went to bed at about 10 pm. Thus, the daily life of a Japanese farmer was a quite and peaceful and daily works are performed smoothly.

c) Meal Custom

In every meal, they had different menu of vegetables except rice and some staple souces and pickles. One of the typical Vegetables they take every day and every meal, is the rounded and short branjals.

| | | |
|-----------|-------|-------------------|
| Breakfast | | 8 A.M to 8:30 A.M |
| Lunch | | 12 " to 1 P.M |
| Snack | | 2 P.M to 2:30 P.M |
| Dinner | | 8 P.M to 8:30 P.M |

The rice is their staple food and soybean sources also the main one in all meals. They drink Osake, beer and some soft drink at the dinner before they eat. They spend only about 30 to 40 minutes for every meal which is considerable shorter as to compare with our custom.

Home Condition

His house was a big enough with two floor. There are all together twelve rooms, with four living rooms, five bed rooms, one dinning and bath room. All of them are equipped with modern facilities. He has 2 T.V sets, 2 electric heaters, 2 refrigerators, stoves, washing machine etc.

Religion

Buddhism is their main religions. They worship every morning before their breakfast. The offerings were usually rice, fruits, flowers, vegetables and other etable things and holy smokes and candle light. In every year they made twelve major services.

Community Condition

Their community consists of 24 household and out of which 19 are farmers and the rest 5 are non-farmers. The fulltime farmers is only 14 and the other 4 are part time farmers. The total paddy area is about 80 hectare, my host

farmer has 4.6 ha and he is a leading farmer in the community. They have their own tractor, planter, harvester and threshers.

Farming Condition

My host farmer has 4.6 ha and 0.2 ha of upland. The paddy fields are located in three places. The first plot about 2 ha was situated just in front of his house and the other two fields are about 500 meter away from his house.

Farming Equipments and Machineries

Itoh san has done his farming fully mechanized with the help of 35 H.P. big tractor, one power tiller, 2 transplanter (2 rows and 4 rows). He has also other equipments, power sprayers, dusters, grass cutter and combine harvester, huller, dryer, polisher etc. He besides this, he has two car and one truck, one motor cycle, two water pump ets.

Cultivation Season

The rice cultivation season start in early April with the sowing of seeds and ended in September after harvesting. The actual operation start in last week of March by plowing and spreading the compost.

Seedling Preparation

The selected seeds are treated with Homine (fungicide) and soaked at the end of March to 15th of April and sown in the boxes at the rate of 170 kilo grams per box which is a medium rate. The seedling boxes are shifted into vinyl house for one week and than placed them in the semi-protected field nursey. They are ready to transplant at the age of 25 days, their leaf age of (4.5 to 5). The transplanting has done by the transplanting machines at the 10th of May. The standard spacing is usually (30 cm x 13.5 cm) and the depth of planting is 3 to 4 cm.

Varieties Used

He sown four varieties namely:

- | | | |
|-------------------|---------|-------------------------|
| 1. Sasanishiki | 0.70 ha | High eating quality |
| 2. Kionishiki | 0.70 ha | High yielding quality |
| 3. Toyoenishiki | 1.60 ha | -do- |
| 4. Sawanohama | 0.60 ha | -do- |
| 5. Yamataenishiki | 0.80 ha | (Newly release variety) |

6. Mochi 0.20 ha (Glutinous, for home consumption).

Fertilizer Application

The type of fertilizer, the amount to use and the time and the methods of application are usually done according to the instruction of the Agricultural Extension Office. But, sometime the farmer used more fertilizer than the recommended dosage. My host farmer used the following amount of fertilizers in all varieties except the last one Mochi.

| <u>No. of Application</u> | <u>Time of Application</u> | <u>Amount of Fertilizer</u> | | | <u>Remarks</u> |
|---|-----------------------------------|-----------------------------|------|------|----------------|
| | | N | P | K | |
| 1. Basal | Just Irrigation & before puddling | 3 kg | 14.5 | 10.5 | All-kg |
| 2. 1st top dressing | 15 days after planting | 2 | 2 | 2 | |
| 3. 2nd top " | 54 days before heading | 2 | 2 | 2 | Compound |
| 4. 3rd top " | 20 days before heading | 1.5 | 1.5 | 1.5 | |
| 5. 4th top " | 7 days after heading | 1.5 | - | - | Urea |
| Total amount of Fertilizers | | = 10 | 20 | 16 | kg |
| (All amounts are interms of Active ingredients) | | | | | |

Weeding

Weeding is done by the use of chemicals herbicide. He applied two kinds of herbicide three times only. The use of these herbicides in rice cultivation is an effective practice for getting the maximum yield and with minimum cost of expenses.

| <u>No. of Application</u> | <u>Time of Application</u> | <u>Herbicide</u> | <u>Rate</u> | <u>Remarks</u> |
|---------------------------|---------------------------------|------------------|-------------|----------------|
| 1st application | 4 to 6 days after transplanting | MO | 3 kg/10a | In May |
| 2nd application | 14 days after plant | MO | 3 to 5 kg | " |
| 3rd application | 24 " planting | MO + Ma-meto | -do- | |

After these application the varnyard and other grasses are pulled out by hand. They used the grass cutter for those weeds and grasses along the side of the paddy field.

Plant Protection

Insecticides and fungicides were widely used systematically through out the fields. The major common diseases in these area were blast, neck blast and sheath blight. As regard to the insect pest stem borers and green leaf

hopper were common.

Common Diseases and their Control Methods

1. Blast

Kitagine P. chemical was applied by power duster at the rate of 3 kg/10a (20 to 25 days after transplanting).

2. Neck Blast and Sheath Blight

For both diseases the mixed chemical Kasumon was applied 5 to 7 days before heading at the ratio of 3 kg per 10a.

Pests and their Control Methods

Most in featus pests are stem borers and green leaf hopper. For both pests, Sumithion, 30 cc is mixed with 30 liters of water which sufficient for 10a. The first application done two week after planting. Sunithion granules are applied as second time, four weeks after planting.

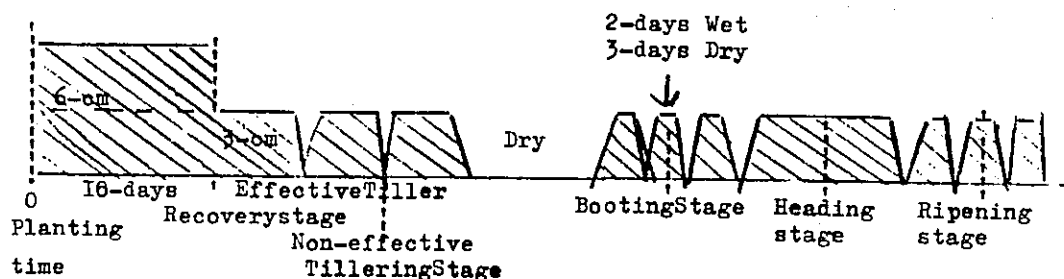
Aerial Spraying

The most effective and remarkable protection done by the cooperative union was areial spraying. It's first spraying done with helicopter, just one month after transplanting. The second aerial spray also done by helicopter, 7 to 10 days after heading. The summithion used in first spray and both Summithion and Fungicides were mixed and spray in second time. The cost of aerial spray for both is ¥1,080 per 10a. Thus, the farmers can expect to have the vumper harvest.

Water management

One of the effective cultural practice in producing the high yield of rice is the management of water through the season. Every earmer in that area pay a great attention for the water management, accordance with the guidance of the extension office.

The amount of water in the field maintain about 6 cm for 10 days after transplanting. Then it drained out to 3 cm depth upto the heading time. But the actual processes of management was done in practice is a little different from each according to the type of soil. The following diagram show the general form of water management in Yamagata Prefecture recommended by extension office.



Harvesting

Time of harvesting vary according to the varieties. The early variety usually harvest in the middle of September and the late varieties were harvested in the first of October. All varieties are harvested by combines., the seed drying, hulling, polishing were done by machines.

Yield Observation

Last year, Itoh san gained the total yield of 34.96 tons of brown rice from 4.6 ha i.e., the average yield is (7.60) ton per ha. This year he expected the lower yield than the last year (7.60) ton per ha. According to his experience, the cold and cloudy weather conditions were not favoured for the high yielding of rice, especially in the early growth period. This year, according to my observation his paddy fields, the yield may be the same as last year due to the following yield constituting components factors.

Yield constituting factors

| | | |
|---------------------------------|-----|--------------------------------------|
| 1. No. of hills per meter sq. | 24 | (i.e spacing 30 x 13.5) |
| 2. No. of tillers per hill | 25 | (actual) |
| 3. No. of panicle per meter sq. | 600 | (at booting stage) |
| 4. No. of spicklets per panicle | 85 | Average of the previous three years. |
| 5. Ripening ratio | 85% | |
| 6. Weight of 1000 grains | 22g | |

Farm Income

The main income is from the sale of rice. Last year, his rice was in third grade and the price of rice per 60 kg is ¥13,600.

(i) Income

Sale of rice 34 tons = ¥8,475,000
Non-agri. income = ¥ 500,000
Gross income = ¥8,975,000

(ii) Expenditures

Household expenditures = ¥3,420,000
Cost of new datsun car = ¥1,200,000
Production costs = ¥3,155,000
Total expenditure = ¥7,775,000

(iii) Net income

Gross income = ¥8,975,000
Total expenditures = ¥7,775,000
Net Income = ¥1,200,000

Non-agriculture income got from heiring of his farming machines. After completing his farm works, his son goes to work other needy farmers, for puddling, planting, harvesting, threshing, etc., he also gets from hulling and polishing of rice which the farmers used for their home consumption.

Relation with other organization

Itoh san being a board member of the Kawanishi cooperative association and also the member of the progressive farmerm he has close related with such association. The extension officers came to his field at least twice a month and himself went to the office and discussed except winter season. As regard to the cooperative, he has to take in-charge once a week. Beside that, he always took keen interest to step up the yield of the rice in that area. The mutal meeting and discussion about the new techniques and practical experiences, held among the progressive farmers of their community is very effective contributing for the benefit of the other farmers. This should be noted as a nice spirit for the improvement of agriculture production for the developing nations.

General Impression

The farm house stay practice is a most splendid and successful program for me. From close discussion and living together with the farmers I have clearly known their technical knowledge and experience and methods of rice cultivation. The relationship between the farmers and technical agencies, such as Agricultural Extension, Agricultural Experiment Stations and Agricultural cooperative association, were also so quick, efficient and smooth.

Their experience on rice production is vast. They pay a great attention to increase the yield of rice more higher and higher. They are not ordinary farmers, they always discussed about the new technic and practices which give them maximum income (output) with minimum expenditure (input). They are semi-researchers as well as the commercial farmers. Now, they are trying to change their trend of agriculture towards the diversified mixed farming for getting higher income. Thus, the Japanese farmers still stood first as a major factor in developing the future agriculture of it's nation.

The net works and other facilities of the cooperative association were the most important and main supporting body in developing the agriculture sector. In other words, the agriculture cooperative association were the back-bone of the whole agriculture sector. They are always finding the best ways, to meet the needs of the farmers in every respect. For instance, marketing purchasing, supplying, polishing, storing, financing, insurance, utility services and technical guidance were done by these agricultural cooperative associations. By this way, I would like to mention that the agricultural cooperative associations were the only main body of the whole structure of the advanced farming in Japan.

The activities of the Agricultural Extension, Agricultural Experiment Stations and Training Centers, were also added up the rapid growth of the Agriculture. The impressive research works and training of the agricultural experiment stations, the technical guidance and advices of the agricultural extension officers shoul be noted as two suporting arms in promoting their agriculture.

The remarkable development of the agriculture sector, laid by the government is the land reforming project carried out from 1945 to 1950. In other words, the land reform is regarded as having laid the foundations of the rural modernization and the rapid growth of Agriculture production. It is also note worthy, the price support in case of rice given by the government has motivated the farmers to increase their rice production.

Conclusion

The farm house stay practice is a very interesting and successful program for me. I am sure, all participants will satisfy and gain many new useful practical knowledge of rice cultivation as well as the cultural and customs of the Japanese rural life which is far differ that we know from our lecture and books. The only difficulty for all of us, is the language problem, but it also over come to some extent by using the dectionary from both sides.

I would like to express my heartfelt thanks firstly to my host farmer Mr Itoh and his families who treated us so nicely and kindly as their own relative. I also haste to thanks to Mr. S. Itagaki, Prefectural Governor, Mr. Watanabe, Area Deputy Director, of Agricultural Extension Office who arranged our stay very successfully. Lastly, I want to mention my great thanks to all the authorities concerned, for the arrangement of this program. I hope, these experiences and new techniques gained from the trip, will help me to some extent for my country in the improvement of rice cultivation for the betterment of our farmers by adopting them, according to the situation and conditions of my country.

A Japanese Farmer

Niranjan Kumar Bhunya (India)

Miyokichi Ushiya of Motozuku Buraku in Kawanishi-Machi (town) will be glairing memory in mu future days to come, where I availed the opportunity of living with his family from 26th to 31th of July, 1976 and gathered various experiences as a part of our training programme in Japan. It is a rare opportunity to study and compare the standard of living, thier agricultural technology, social and cultural life, with that of our own, which will definetely help me to pick up some oftheir good qualities for cultivators in our own country.

This Buraku belongs to Yamagata Prefecture which is famous for rice production in Japan where 75%of total income come from rice cultivation. And next important contribution to income is fruits cultivation such as apple, grapes and etc. As per statistical datas available from agricultural extension office, population of Yamagata prefecture is around 10% and budget for agricultural development is also 1% but thier contribution towards rice production is 4.6% so far whole Japan is concerned. It's basin area are surrounded by hills, 90% of the total area is consolidated and improved introducing full mechanization to save labour and their by cutting sown expenditure to a minimum. They are also provided with very effective drainage and irrigation facilities along with good communication.

This Buraku consists of twenty two families and out of eleven having both paddy and upland and among them Ushiya san is purely fulltime farmer and income of rest ten farming families come from agriculture as well as non-agricultural sources while remaining eleven families depend solely on non-agricultural income. Each and every family is on a very sound economic footing and have got at lease one car, one television set, refrigerator, telephone and all other modern appliances for well planned family life. Houses are made of wood on a raised concrete base, attached by either straw or sheets but mostly by tiles. Floor is also made of wood and covered by mat called (tatami) except kithchen and veranda. A beautiful rock garden with different types of plants and flower plants including one very small tank with coloured fishes are part

and parcel of all houses. Houses are sometimes double storied, well ventilated and lighted through sliding doors and windows set with glass which completely prevent cold wind coming in during winter season. They are also fond of decorating their almiraah with rare articles such as dolls, flowers and handy craft articles.

There is no caste system in this Buraku, so also in Japan everybody respects each other, so very congenial atmosphere is developed through self respect and cooperation within the villagers. They prefer peace and natural understanding in every respect, but never criticize or become envious of others. This Buraku has one Buddhist temple (otera), one Branch Agricultural Association and one Public Office. All villagers are member of cooperative and are Buddhist by religion. There is one Buraku-cho is head of the village committee elected by the villagers and all sorts of negotiations, social, cultural or official are done through him. An elementary school is also situated in the Buraku town. All villagers are provided with nice system of medical facilities covered by insurance besides that each and every old man and woman gets old age pension from the basis of outside income only is given below along with family size and landed property which shows their high economic standard also.

| No. | Name of family | # of family member | Landed property | Occupation | # of member serving out side | Type of job | Earning per month from outside |
|-----|----------------|--------------------|-----------------|-----------------------|------------------------------|--|--------------------------------|
| 1 | Ushiya San | 7 | 257 A | Cultivation | nil | nil | nil |
| 2 | Sunayama San | 4 | 165 A | Cultivation & service | two | Factory worker | ¥150,000 /month |
| 3. | Takeda San | 5 | 157 A | -do- | one | Govt. Service | ¥ 90,000 /month |
| 4. | Minagawa San | 3 | 139 A | -do- | one | -do- | ¥100,000 /month |
| 5. | Yokosaya San | 5 | 36 A | Cult.&Masson | one | Casual masson | ¥300,000 /month |
| 6. | Koyojima San | 5 | 128 A | Cult. & Automi | one | Automi | ¥130,000 /month |
| 7. | Thaira San | 6 | 45 A | Cult. & Business | three | Postman, shop keeper Factory worker | ¥350,000 /month |
| 8. | Funayama San | 5 | 164 A | Cult. & service | two | Driver & Factory job | ¥150,000 /month |
| 9. | Ushiya San | 3 | 48 A | -do- | two | Shop & Factory job | ¥300,000 /month |
| 10. | Ishibasi San | 3 | 25 A | Cult. & Business | one | Restaurant | ¥250,000/ month |
| 11. | Sato san | 6 | 5 A | Cult. & service | two | Teachership | ¥250,000 /month |
| 12. | Koseki San | 4 | nil | Business | two | Shop | ¥200,000 /month |
| 13. | Otanabe San | 6 | nil | Service | one | Factory work | ¥ 80,000 /month |
| 14. | Abe San | 4 | nil | Business | one | Shop & work shop | ¥ 70,000 /month |
| 15. | Sasu San | 4 | nil | Service | one | Factory work | ¥ 80,000 /month |
| 16. | Ushiya San | 4 | 1 A | Business | two | Barber & Carpenter | ¥500,000 /month |
| 17. | Staw San | 3 | nil | Business | one | Blacksmith | ¥300,000 /month |
| 18. | Otanabe San | 3 | nil | Naishoku | one | Naishuko | ¥60,000 /month |

| No. | Name of Family | # family member | Landed Property | Occupation | # of member serving out | Type of job | Earning/month from outside |
|-----|-----------------------------------|-----------------|-----------------|-------------------------|-------------------------|---------------------------------------|----------------------------|
| 19. | Khaneko San Husband-Buraku-cho | 5 | 1 A | Business & Carpenter | Two | Barber & Carpenter | ¥300,000/month |
| 20. | Ito San | 3 | nil | Service | two | Factory work & Job in school | ¥150,000/month |
| 21. | Koshik San | 3 | nil | Service | one | Police | ¥120,000/month |
| 22. | Uchiya San | 4 | nil | service | two | Factory work & Ele- ctric mechanic | ¥250,000/month |

Ushiya san's family consists of seven members:

| | | | | |
|----|------------------|--------------|-------------|--------------------------|
| 1. | Miyokichi Ushiya | 52 years old | Housemaster | Agri. High school passed |
| 2. | Mitsu Ushiya | 51 " | Wife | Elementary School passed |
| 3. | Miyoji Ushiya | 82 " | Father | Agri. high school passed |
| 4. | Cho Ushiya | 76 | Mother | Elementary School passed |
| 5. | Kiyomi Ushiya | 24 | Son-in-law | High school passed |
| 6. | Sengiko Ushiya | 24 | Daughter | -do- |
| 7. | Mitchiko Ushiya | 3 months | Grand son | - |

Ushiya san has no son. So his son-in-law is living with the family as an adopted son. But he had one brother and two sisters. According to Japanese cultural custom his brother had been separated and settle in a city and doing business with initial money of five million yens from his father for his settlement. Arrangements for marriage of two sisters were also done to well-to-do families without any downy except some marriage clothes. According to Japanese family custom, eldest son will enjoy the paternal property and live with parents and others will go out of family when they grow old. This system is helping in a greater way to stop fragmentation and subdivision of holdings.

He has a two storied house constructed in the year 1964, present valuation may be ¥15,600,000 although its construction cost was only five million yen. Pattern of room arrangement is different. Drawing room is attached to kitchen. All together there are ten rooms in the house, having attached bathroom and others. Besides that one separated house to accommodate swine, goat, poultry birds and other agricultural implements and inputs had been constructed in addition.

So far, furnitures and appliances are concerned, his house is well equipped with car, truck, motorcycle, bicycle, television (2), refrigerator stereo, fan, heater both electric and kerocine, foot warmer, telephone, clock, tables, almirah and various types of kitchen utensils.

They are Buddish by religion. But father belongs to sodonshu, a branch of Buddhism. Generally twice they go otera and twice to grave yard (Hakaba), where they light up candles and offer food for departed soul and pray in the belief that they will come and dim with them. Ushiya san has also a religious room in his house.

Food are generally prepared by his wife assisted by the daughter. They generally like food all at a time being encircle around a table. Breakfast at 7 PM after taking hot water both, along with three times green tea (O-cha) are general schedule of their daily food. Rice is prepare in morning and served all time along with egg, tohu (card), fermented soybean (Nato),

Season wise vegetable at breakfast, soup meat or fish, vegetables, pickles at lunch and dinner some delicious foods prepared and served during our stay maybe noted as Nachina, Idamame, Kamaboku, Shushi, Norimaki, Inarishushi, Tokoroken, Kurumikuri, sasimi, Ankomochi, Ozan, Imtanmochi, Natomochi, Tendon, Sunomono kuri, Dango etc. One Speciality of their preparation is that all items are prepared without spices except onion and chillies. They little care for taste but concious about balance nutrition. Vegetables they like generally green or half boiled only. Although Japan is full of forest, instead of burning wood, they use gas for cooking. Pure water is also supplied to each family from town office along with electric supply.

Ushiya san is one of the most progressive farmers in this Buraku. He is practicing mixed farming for economic utilization of family labour. His farming includes rice cultivation, orchard-viz, apple and pear, cattle-viz, swine, goats including vegetable cultivation out of which paddy cultivation and orchard constitute main source of income.

According to the records available, he sold 15 tons of brown rice after keeping his home consumption out of 2 ha of paddy land. Average yield per hectare was 7.8 tons last year. He is following most improved method of rice cultivation along with labour saving devices and farm is being managed by four family labours excluding father and mother who are very old. He is also equipped with all agricultural machinerics such as one 16 H.P tractor, two transplanter, one sprayer, one duster, harvester, drier, huller, polisher and one pumping set along with his own irrigation arrangement for his orchard.

Ushiya san is earning a lot from his orchard of apple and pear on a plot of 54 ares besides additional income from two swine (sale of kids), 32 poultry birds (sale of eggs) and one goat for milk. Vegetable cultivation is only for home consumption.

This year he cultivates four varieties of paddy viz. Sasanishiki, Hanahikari, Fuke 104 and Toyonishiki. He believes that raising of good seedling

is the half success in achieving high yield. So he starts selection of good seeds by the method of salt water selection followed by disinfection by soaking seeds in chemical solution of (Benlate) for 24 hours and spreading in shade for 48 hours for drying. Rest seeds are soaked in water having temperature of 10°C for 10 days for accumulated temperature treatment of 100°C. If temperature of water is 20°C soaking will be only for 5 days. Seeds are taken out and again soaked in hot water of 30°C for 18 hours, when seeds are just show sign of opening take out and are allowed to cool down not permitting further growth before boxes are ready for sowing.

28 - 30 boxes are required for 10 a and each box contains 780 holes. Depending upon tillering habit of variety 2 - 4 seeds are sown in each hole and 3 kg of seeds per 10a. Seeds are covered by commercial soil used for sowing, having necessary nutrient ingredient irrigated by sprinkling and arranged on a plot prepared with optimum moisture condition and covered by polythen papers under viniard house. At this time temperature vary round about -5°C at night and 10°C at day time and gradually increase to 30-40°C. He removes polythem mulch at 2 $\frac{1}{4}$ days for mentaining temperature at 30-32°C and compost is applied. Temperature gradually allowed to come down to 24°C and mentained for 5 $\frac{1}{2}$ days and again reducing it to 21°C on 7th date. Still temperature is allowed to come down and try to give cold tolerance to seedlings and from 10th to 20th dates 17°C temperature is maintained. For last 10 days seedlings are kept open ie., from 2.5 leaf stage to 3.5 leaf stage when those are transplanted at age of 30 days. Nutrient per subo (3.3 m²) applied N₂ - 60 grams, P₂O₅ - 90 grams and k₂O - 90 grams. Temperature control is done by polythem cover as well as by covering and opening of viniard.

Land preparation starts from the 3rd of April of this year with shallow ploughing by tractor to incorporate shopped straw and paddy husk of previous year followedby second deep ploughing to a depth of 12-15 cm on the 29th of April and puddling on the 9th of May to 13th of May. Basal fertilizer applied per 10 a interms of NPK sasanishiki - 20 kg (10 : 16 : 20), Toyonishiki

15 kg (12: 18 : 16), Hanahikari and Fuke 104 10 kg (16 : 16 : 16).
Transplanting by machine, 2 - 3 seedlings per hill at a depth of $1\frac{1}{2}$ cm and spacing of 33 cm x 14 cm and water depth being 1 cm. One week after transplanting, water depth is increase to 5 - 7 cm for 6 days and M. O. (herbicide) 4 kg per 10a was applied. First top dressing is done, at drying stage with N_2 - 2.8 kg, P_2O_5 - 4.0 kg, K_2O - 1.2 kg and water level was again increase to 5 - 7 cm. Second application of herbicide "Mameto" was applied after 15 days.

Pesticide was applied once at 3rd dose of herbicide and second top dressing with compound fertilizer 30 kg (N.P.K - 0 : 17 : 17 + Khudo 5% + Manga - 20%). 45 days before headings plots to plots was again irrigated. Top dressing in small quantity is applied time to time till 25 days after heading depending upon the color of plant on the basis of color charts supplied to them from the extension office. 20-27 days before heading either drying or interfaul irrigation is practice. Ultimate aim is to keep 3-4 leaves of each plant, still yellow at the time of harvesting. 10 days before heading Kitazen is also applied for blast control. Another important thing to note that he always try to keep water in the paddy field, cool by passing fresh water during heading time on sunny days to avoid enhaustion of stored energy by fast rate of respiration.

During our survey, variety Sasanishiki shows 29 tillers per hill, 72 hills per shubo. According to him 1000 grams and 21 grams in weight and the average number of spicklets per panicle is 90, he expected 7.8 tons of brown rice this year also on the basis of above factors of yield and 80% supposed the ripenning percentage is provided and there is a natural clamity.

His yield receipt and expenditure and net profit were also calculated on the basis of last year's datas which includes all sorts of earning and expenditure towards paddy cultivation on orchard, cattle and also all family expenses as follows

E X P E N D I T U R E

| | |
|----------------------------------|------------|
| Fertilizers | ¥350,000 |
| Chemicals | ¥300,000 |
| Agricultural machinery | ¥350,000 |
| Cost towards animal | ¥350,000 |
| Cars and truck | ¥300,000 |
| Different taxes | ¥400,000 |
| Internal expenses | ¥1,800,000 |
| Insurance | ¥350,000 |
| Pocket expenses | ¥200,000 |
| <hr/> | |
| T o t a l | ¥4,400,000 |

Notes:

Tax includes income farm for national and prefectural government and town office, Tax for structural improvement, medical health, general welfare tax and special tax for infro-structure and agricultural tax.

I N C O M E

| Commodity | Gross income | Expenditure | Net income | Recovery % |
|-------------------------------|--------------|-------------|------------|------------|
| Paddy | ¥2,580,000 | ¥840,000 | ¥1,740,000 | 65% |
| Orchard | ¥2,600,000 | ¥500,000 | ¥2,100,000 | 80% |
| Sale of birds and eggs | ¥ 40,000 | | | |
| Sale of swine meat, kids etc. | ¥ 800,000 | ¥400,000 | ¥ 400,000 | 50% |
| <hr/> | | | | |
| T o t a l | | | | ¥6,020,000 |

Cost benefit ratio of paddy cultivation, orchard and that of cattle is very satisfactory. And after meeting up all expenditures of family life including all other costs he could save an amount of ¥1,620,000 per year.

He sold his product through cooperative and purchases all agricultural inputs from cooperative. There is a close relationship in between farmer and farm adviser attached to both cooperative and agricultural extension

office regarding farm technology and others.

My farm house stay was very usefull and I could collect lot of informations from this programme. Better facilities for irrigation and drainage, land consolidation and structural development, services rendered by cooperative, price support for agricultural products as well as inputs from fovernment, along with much improved knowledge of farming technology of Japanese farmer are the factors leading to high average yield in their field. They are sincere to their duty and cooperative to each other with in the family and outside to other families in the community. Moral development, as well as spread of literacy helped them much to grow nationality and capacity to judge good or bad and accept promptly good things and adopt it to their practices. This is prompted through mars education media like concerned well organized literatures like IE-no-hikari, television programmes etc. Although economic status of each farmer is high enough still they all sorts of facilities on community basis regarding marketing, storing, processing, loans at lower interests with easy instalments, protection from all sorts of damage caused by natural clamity. Each and every farmer has very through knowledge how, to raise best quality seedings, maintain soil fertility, after care of crops, water management, handling all sorts of machineries, so as to get high yield in most economic ways, crops of all farmers seems to be uniform and good indicating that all of them are progressive. They always keep close contact with cooperative establishment, Agricultural Extension Office and Experimental Stations to knw new Scientific Development and new methods for still higher production.

Lastly I am very much grateful to the staffs who planned this programme and fulfill my desire to know cultural social life and economic condition of Japanese farmer along with their modern scientific know how and present development which will help me to teach the counterparts in my country. I also convay my thanks to Mr. Ushiya and his family members local cooperative staff and staffs attached toAgricultural Extension Office who cooperated in all respect to fulfill this programme.

Report on Farm Household Practice

Rama Chandra Sahu (Indian)

As a part of my training programme I had to stay in one of the Japanese farmer's house from 26th to 30th of July, 1976 to acquaint my self with his daily life and practical aspects of his rice growing by sharing the daily routines of his family.

My host farmer Mr. Hiroshi Nakagawa (41) resides in 4912 Tamaniwa, Kawanishi Machi, Higashi Okitama-gun in Yamagata Prefecture. The community is Matsuo about 15 kms away from Kawanishi town. There are 84 households in this community out of which 57 are farmers and only 4 are whole time farmers. In this community there is a community hall, shrine, elementary school, agricultural cooperative, post office and many shops. Land consolidation and improvement was made in this area 2 years back.

The family consists of 7 members. Mr. Hiroshi Nakagawa (41) house master, his wife Mrs. Taka Nakagawa (37), father Mr. Tadao Nakagawa (71), mother Mrs. Kiku Nakagawa (62) and three daughters Mikiko (14), Kimiko (12) and Ruriko (12). Mikiko and Kimiko are senior high school students and Ruriko is in elementary school. All of them reside together in their own house consisting of 13 rooms built 200 years ago and equiped now with modern amenities like television, freeze, heating and cooling arrangements, sofa sets, tables, chairs and cots etc. They are Buddhist by religion.

There is complete harmony for work among the members of the family. Each member beginning from 8 years Ruriko to 71 years Oji san, share some responsibility of the family. Every body is aware of his own job and none need reminder for this. Early in the morning at 5:30 am Mr. Nakagawa goes to field, the house wife remains busy in the kitchen, children in cleaning and polishing the rooms and Obasan and Ojisan work in the flower and kitchen garden. They meet at 8:00 am at the breakfast table.

The house master remains busy through out the year in his farming work except the off period from December to March when he works as a part time bull dozer driver for clearing snow from the roads. The house wife as well

the Obasan help in farming work after attending to kitchen work. They take lunch at 12 noon and dinner at 6 pm. The food are all Japanese style consisting of rice, fish, chicken, pork, beef, different kind of vegetables and soups. Sake and soft drinks are served at dinner. In between these principal meals they take some fruits snacks and soft drinks too.

Rice Cultivation Technique

Mr. Nakagawa is in possession of 3.65 hectares of land out of which 3.60 hectares are put under mono crop of paddy. The rest are occupied by building and kitchen garden etc. The machineries possessed by him are given in annexure 1. He has also got one beef cow, one goat for milk and six poultry birds. All his plots have been laid out to the size of 10a and properly levelled. He strictly follows the methods for his paddy cultivation as suggested by the extension staff as well as the staff of the cooperatives.

This year he used varieties Sawanohana, Toyonishiki, Hanahikari and Yamatenishiki. He raised seedlings by box nursery system following seed selection by gravity, seed treatment by fungicides and schedule dose of fertilizer application.

He puddled and levelled his field by hired tractor and planted by his own transplanter adopting 30 x 15 centimeters spacing. Basal application of fertilizers 20 kgs of N.P.K each was made through 16 : 16 : 16 compound fertilizer at puddling. Top dressing was done with 16 : 0 : 16 compound fertilizer when the plants showed hunger symptoms. For controlling weeds he applied herbicide "mamite" at puddling time and hand weeding was done twice during growing period. Plant protection measures were taken in time by aerial spray as well as spraying by his own sprayer. He maintained shallow water depth from planting to maximum tillering stage constantly and then alternate irrigation and drainage till ripening. The crop was in pre-flowering stage when I visited.

Last year his average yield was 600 kg. per 10a. This year he anticipates about 550 kg/10a.

Cost of Cultivation per 10a

| | |
|---|----------------|
| 1. Cost on fertilizers | ¥3,500 |
| 2. Cost on fungicides, pesticides & herbicides | ¥1,500 |
| 3. Charges for aerial spraying | ¥2,960 |
| 4. Charges for irrigation | ¥1,000 |
| 5. Tax for dam construction..... | ¥2,000 |
| 6. Annual payment for land improvement charge | ¥10,000 |
| 7. Hired labour charges for planting and harvesting | ¥2,450 |
| 8. Tractor hiring charges for land preparation | ¥5,000 |
| Total | <u>¥28,410</u> |

Economics of Farming

(A) Gross income per year

From rice cultivation

100 bags of rice (60 kg each bag) per hectare
3.6 ha x ¥13,000/bag = ¥4,680,000

From bulldozer driving = ¥ 600,000

Total = ¥5,280,000

(B) Total expenditure in farming

¥28,410 cost of cultivation per 10a x 36 = ¥1,022,760

(c) Net income (A - B) = ¥4,257,240

Thus my host farmer Mr. Nakagawa is definitely a successful rice grower as evidenced from the fore-going descriptions. The main factors lying behind his success are improvement of land, assured irrigation, raising healthy and vigorous seedlings, maintenance of proper number of panicles per unit area, timely plant protection measures and above all his own interest to study the ins and outs of the rice plant and nurish it as own child. The technical guidance by the extension staff and provision of all round facilities by well organized cooperatives are also the key factors for his success in rice growing.

This programme of farm house stay has really imparted me with the practical aspects of high rice production and a clear picture of a happy and peaceful farm life. I was really charmed by the hospitality given to me by my host farmer during my stay in his house and I am much grateful to him for this. I am also thankful to my friend Mr. T. Tokunaga for helping in communication with the host farmer. I am also thankful to the authorities for organising such a nice and educative programme in the training curriculum.

Annexure - 1

List of machineries possessed by the farmer.

1. Rice transplanter 1
2. Sprayer cum-duster 1
3. Combine harvester 1
4. Huller 1
5. Drier 1
6. Polisher 1
7. Car 1
8. Truck 1

Report on the Farmer's House Practice

Andi Patiroi (Indonesia)

Introduction

As a part of training program and to get a close touch to the Japanese farmer's life, so at the last week of July, 1976 the participants stayed for 5 days in a farmer's house at Kawanichi-machi, Yamagata-Pref., and one night at the Miyauchi Agricultural Training Center.

My host farmer was Mr. Manabu Katsumi. He is living in Shimokomatsu Community (buraku), 4 km far from Komatsu town. He has one son and two daughter, the elder daughter is living in Tokyo. In the case of my host farmer I got some datas as follow:

Family Condition

| No. | Name of family members | Age | Final education | Occupation | Remarks |
|-----|------------------------|-----|--------------------|--------------------|--------------|
| 1. | Manabu Katsumi | 47 | Junior High School | Farmer | House master |
| 2. | Hanako Katsumi | 43 | -do- | -do- | Wife |
| 3. | Iwawo Katsumi | 21 | Senior High School | Electrical company | Son |
| 4. | Tomoko Katsumi | 14 | Junior High School | Student | Daughter |

In the Buraku of Shimokomatsu there are 141 houses and divided into 6 sub buraku. Mr. Katsumi belongs to the Konoichi-Ban sub-buraku, which covers 9 households. Among of the 9 households member, there are 7 members as farmer and 2 member as non farmer, as given below:

| No. | Name | Family members | Land holding (are) | | | | Cattle | Car |
|-----|--------------|----------------|--------------------|--------|-------|--------|--------|-----|
| | | | Paddy field | Upland | Grape | Forest | | |
| 1. | Mr. Katsumi | 4 | 200 | 20 | - | 30 | 5 | 2 |
| 2. | Mr. Hosoya | 6 | 240 | 10 | - | 80 | 1 | 2 |
| 3. | Mr. Hirata | 4 | 190 | 0.7 | - | - | 2 | 2 |
| 4. | Mr. Ishida | 7 | 200 | 10 | - | 100 | - | 2 |
| 5. | Mr. Hunayama | 5 | 100 | 0.2 | - | - | - | 2 |
| 6. | Mr. Kurosawa | 4 | 190 | 20 | 30 | - | - | 2 |

| No. | Name | Family members | Land holding (are) | | | Cattle | Car |
|-----|---------------|----------------|--------------------|--------|-------|--------|-----|
| | | | Paddy FIELD | Upland | Grape | | |
| 7. | Mr. Shimanuke | 4 | 30 | 0.5 | - | - | 1 |
| 8. | Mr. Yitensha | 2 | - | 0.2 | - | - | 1 |
| 9. | Mr. Hirate | 2 | - | 0.2 | - | - | 2 |

Some of the Buraku members has a son working at the company and as Taxi driver. The last two members really non farmer, but they have a shop. According to the above datas, Mr. Katsumi can ne classified as a quite better farmer among the members of this buraku. Because beside his paddy field 200a, he also has 5 cattle-beef.

Residential Condition

| | |
|-----------------------|---|
| 1. Television set | 2 |
| 2. Radio | 1 |
| 3. Reizoko | 2 |
| 4. Telephone | 1 |
| 5. Stereo | 1 |
| 6. Cassette | 1 |
| 7. Tape recorder | 1 |
| 8. Washing machine | 1 |
| 9. Cleaning machine | 2 |
| 10. Refrigerator | 2 |
| 11. Electric fan | 3 |
| 12. Fire estinguisher | 1 |
| 13. Gas stove | 1 |
| 14. Oil stove | 3 |
| 15. Car | 2 |
| 16. Motor cycle | 1 |

Daily Life

Mr. Katsumi is the master of the family. Cooking, table arrangement, sweeping and cleaning of the house was done by Mrs. Katsumi and her daughter.

Their son is working in the electrical company at Komatsu town. They have a good relation (friendship) with the villagers.

Regarding food, it stated that all members take food together. They take breakfast at 7:30 am, lunch at 12:30 noon, and dinner at 7:00 pm.

Religion

They are Buddhism faith. Mr. Katsumi pray every day in their own shrine room. They go to pray to the shrine (jinja) 3 times in a year regularly, and on the special occasion.

Farming Condition

Mr. Katsumi has 200 a of paddy field, divided into 5 different location, about 1 - 2 km far from his house. To manage this farm land, only two labours were available i.e., Mr. Katsumi and his wife. But sometimes his son also going to help them. He has never engaged labour to execute his farming.

The agricultural facilities that appropriated are:

| | |
|-------------------------|---|
| 1. Power tiller | 1 |
| 2. Transplanter machine | 1 |
| 3. Harvester | 1 |
| 4. Binder | 1 |
| 5. Sprayer | 1 |
| 6. Huller | 1 |
| 7. Thresher | 1 |
| 8. Polisher | 1 |
| 9. Grass cutter | 1 |
| 10. Mini truck | 1 |

Rice Cultivation Techniques

In this season (1976) he cultivated 5 varieties as shown below:

| No. | Variety | Acreage | Sowing date | Transplanting date |
|-----|-------------|---------|---------------|--------------------|
| 1. | Kiyonishiki | 70a | 15th of April | 20th of May |
| 2. | Sawanohana | 60a | 10th of April | 15th of May |
| 3. | Toyonishiki | 40a | 15th of April | 20th of May |

| No. | Variety | Acreage | Sowing date | Transplanting date |
|-----|----------------------------|---------|---------------|--------------------|
| 4. | Sasanishiki | 20a | 15th of April | 20th of May |
| 5. | Himenomochi (glutinous) | 10a | 15th of April | 21st of May |

He prepared his own seedling by using of 20 seed-boxes per 10a.

Fertilizer Application

Cattle manure, Compost and chemical fertilizer are applied. In the fertilizing of Compost he applied 1000 kg/10a. Chemical fertilizer application method per 10a is given as follows:

| Fertilizer | Basal dressing | Top dressing | | | Total |
|------------|----------------|--------------|-----|-----|-------|
| | | I | II | III | |
| N | 6.8 | 1.3 | 1.3 | 1.6 | 11.0 |
| P | 10.2 | 1.3 | 1.3 | - | 12.8 |
| K | 6.8 | 1.3 | 1.3 | 1.6 | 11.0 |

| | | | | |
|-----------------------------|---|----------------------|---------------------|--------------------|
| Kind & amount of fertilizer | 17 - 17 - 17 (40 kg) + 0-34-0 (10 kg) | 13-13-13 (10 kg) | 13-13-13 (10 kg) | 16-0-16 (10 kg) |
|-----------------------------|---|----------------------|---------------------|--------------------|

| | | | | |
|---------------------|-----------------------------|-----------------------------|--------------------------------|--------------------------------|
| Time of application | 5 days before transplanting | 25 days after transplanting | 20 days after 1st top dressing | 15 days after 2nd top dressing |
|---------------------|-----------------------------|-----------------------------|--------------------------------|--------------------------------|

Herbicides

Herbicides was applied as follows:

| | |
|--------|-------------------|
| MO | 4 - 5 kg per 10a. |
| Saturn | 3 kg per 10a. |
| M C P | 3 - 4 kg per 10a. |

Application of herbicides given three times as long as growing period of the crop.

Insecticides

To control pest and disease, insecticides and fungicides was applied as

| | |
|-------------|---------------|
| - Sumithion | 3 kg per 10a. |
| - PMP | 4 kg per 10a. |

Pest and disease control also conducted by aerial spraying (helicopter) by using insecticide mixing with fungicide. This aerial spraying has been conducted on July 15 and July 25, 1976, particularly to control blast disease as a major disease in this area. The cost of aerial spraying was ¥3,300/10a.

The crop is scheduled to be harvested in the second fortnight of September and Mr. Katsumi was expecting a yield of 660 kg/10a as much as the last year (1975 average yield 660 kg/10a).

As mentioned before, the main disease of this area is blast, and Mr. Katsumi's crop also attacked by this disease for about 20a. This attacked area is hopeless to be harvested.

Annual Income

The main income is getting from the sale of rice. Last year 12,729 kg of brown rice was produced. From this amount they consume 720 kg and sold 12,000 kg as a grade III and the price fixed by Government was ¥16,500 per unit 60 kg. So by selling 12 tons of rice Mr. Katsumi got ¥3,300,000.

His son as an employer of electric company at Komatsu town, getting a net income as ¥1,200,000 as of 1975. Thus the total income of Mr. Katsumi and family are ¥4,500,000 in 1975.

Related Organization for their Life and Farming

1. Agricultural Cooperative Association

The sale of farm produce and the supply of agro-inputs like fertilizer, insecticides, herbicides etc., was done by the Cooperative, Union Inukawa Agricultural Cooperative Association. Mr. Katsumi is one of the members of cooperatives.

As a member of Cooperative he holds membership card. By this card he can get easily all agro-inputs and others necessity through credit system. Credit period of each material such as fertilizer, insecticides, herbicides etc., are as follows:

| | |
|--------------|-------------------------------|
| Fertilizers | 3 months (November - January) |
| Insecticides | 7 months (April - November) |
| Herbicides | 4 months (April - July) |

Notes:

Farmer getting fertilizers in November and the payment in January. Some of the agricultural chemical prices can be noted, as price in 1976.

Fertilizers

| | |
|---------------------------|--------------|
| Ammonium sulphate | ¥630/20 kg |
| Urea | ¥1,090/20 kg |
| Lime nitrogen | ¥1,720/20 kg |
| Calcium superphosphate | ¥ 770/20 kg |
| Fused Magnesium phosphate | ¥ 970/20 kg |
| Compound fertilizers | |
| 17 - 17 - 17 | ¥1,540/20 kg |
| 0 - 17 - 0 | ¥ 680/20 kg |
| 23 - 0 - 23 | ¥1,255/20 kg |

Insecticides

| | |
|-----------|-------------|
| Sumithion | ¥ 470/20 kg |
| P M P | ¥ 460/20 kg |

Herbicides

| | |
|--------|--------------|
| M O | ¥ 515/ 3 kg |
| Saturn | ¥1,055/ 3 kg |
| M C P | ¥ 430/ 3 kg |

Loan also given at annual interest of 5 to 10 %. For example, short term loan, the interest 10%/year. But for long term like for constructing house, the annual interest are 5%.

Besides getting agro-inputs material, they are also gets technical help from the technical staff of Cooperative Association.

2. Agricultural Extension Office

The Agricultural Extension Office is 10 km far from Mr. Katsumi's house. The farmers approach the Extension Office for obtaining advice on modern technology on rice cultivation and other crops. The staff of the Extension Office also visit oftenly to the farmers for advising them on the spot.

According to Mr. Katsumi, the extension worker visited them 23 times a year. And Mrs. Katsumi his wife visited the Extension Office for 7 times a year to join meeting or discussion on home improvement etc., Mrs. Katsumi is a regular member of home improvement meeting. Sometimes they also sent letter to the extension office for asking and getting any information regarding to their farming.

General Impression

During stay at the house of Mr. Katsumi, I felt that they are paid much attention for our being among their family. They are very kindly and always introduced me to their relatives either by telephone or visited their relative's house.

They engaged in farming were quite hard working, and was a well programmed schedule of work which they followed. The yield obtained were high. The family was only cultivating rice once a year, and they cultivating several crops on their upland like corn, eggplant, sweet potatoes, watermelon, but the yields were only for home consumption.

The difficulties I faced during my farmer's house staying was in understanding the Japanese language. Due to this difficulty I could not collect the maximum information to the desired extent from him. But anyway, on participating in farmer's house stay, I got the best opportunity to see closely the high standard of life of the Japanese farmer, their culture and customs. It will certainly help me to improve the status of the farmer in my country.

Report on the farm house practice

Kusnandar (Indonesia)

I Introduction

The purpose of this practice is to get the practical information of rice growing area, the environment of rice growers and technical standard of rice cultivation. According to the above mentioned purpose herewith, information was collected by hearing from farmers who were chosen as object. I stayed for four days in a farmer house at Motozuku Buraku, Kawanishi Town in Yamagata Pref., and one day in hotel at Miyauchi Agricultural Training Centre, between 26th of July to 31st of July, 1976. Only one day of this program have been used for observation of extension area covered by Okitama Extension Office.

II Farm house condition

My hostfarmer was Mr. M. Ushiya. He is the biggest farmer in the community. He is aged of 52 years old and his family consist of 7 members are as follows:

| | | | | | |
|----|------------------|--------------|-----------------------|-------------------|---------|
| 1. | Miyokichi Ushiya | 52 years old | House master | Agri. high School | Farming |
| 2. | Mitsu | " 51 | " Wife | Elementary School | " |
| 3. | Miyoji | " 82 | " Father | Agri. high School | " |
| 4. | Cho | " 76 | " Mother | Elementary School | - |
| 5. | Singiko | " 24 | " Daughter | High School | Farming |
| 6. | Kiyomi | " 24 | " Son-in-law | " | " |
| 7. | Mitchiko | " 1/4 | " Grand Daugh- ter | - | - |

He married without downy on 26 years ago. His father in law is Mr. Khichiji Funayama as farmer, stayed at Ide Town.

Residential condition

His house was constructed on 1964. Its costs is 5,000,000 yen by own money. The residential condition are as follows:

1. Three separate bedrooms for three couples.
2. Kitchen and also dining room.
3. One bathroom with hot water tub and a basin for cold water.
4. One lavatory having two compartments with one for bladder.
5. Religion room
6. Drawing room
7. Stored room for rice and other utensils.
8. One separate house for agricultural implements.
9. One house keeping swine, goat, poultry, yard and also agricultural inputs.

Furnitures

| | |
|-------------------------------|---|
| 1. Table | 2 |
| 2. Refrigerator | 1 |
| 3. Television (Black & white) | 2 |
| 4. Telephone | 1 |
| 5. Electric heater | 1 |
| 6. Electric fan | 1 |
| 7. Stereo | 1 |
| 8. Bicycle | 2 |
| 9. Motor cycle | 1 |
| 10. Truck | 1 |
| 11. Almirah | 2 |
| 12. Washing machine | 1 |
| 13. Clock | 1 |
| 14. Car | 1 |

Religion

They are Buddhists in good faith, except father. Every morning they pray in their own holy room. Beside that they are also pray twice a month at the temple of Otsuka. Father belongs to Soudoushu, branch of Buddhism. The head office of Sosoushu is located at Fukuoka, Aheiji.

Meal customs

They usually have meal three times a day. Breakfast at 7 a.m., lunch at 12 noon and dinner at 7 p.m. The house wife prepare meals and daughter help. Cooking by gas from Town office. They eat rice, vegetables, season-wise, eggs, tohu, fermented soybean. Rice per day 400 grams for all. All members of family take food together and cleaning of utensils by daughter. They prepare rice once in the morning for one day. They add only meat, fish in lunch and dinner. They are also take some tea and cakes at 10:30 a.m and at 2 - 4 p.m.

Relatives

He has two sisters and one brother as follows:

1. Kisuko, her husband is Mr. Sujuki Mosaku, having one daughter stayed at Nangai City, occupation is farmer.
2. Kiyoko, her husband is Mr. Suigao Simasaki, having two daughters, stayed at Tsunajuna Naio City, Occupation is farmer.
3. Koju Ushiya, stayed at Kaoshiki City, Occupation is business.

During marriage, Kisuko and Kiyoko were given only clothes. And Koju Ushiya had been separated from family at age of 21 years.

Farming condition

He has 2 ha of paddy field, 54 ares of apple garden and 5 ares of vegetable garden. The paddy field is located about 200 - 500 m from his house.

Cropping pattern

| Crop | Area | Season | Period | Yield | Average |
|-------|---------|--|--------------|---------------------|-------------------|
| Rice | 2 ha | May 15-19 to Sept. 18-25 | 126-129 days | 15,000- 15600 kg | 780 kg per 10a |
| Apple | 54 ares | May 13- (wase) Oct 5 (ogute) Nov. (toga) Nov. | 145 days | | |

The main crop is rice grown in one season. Apple was planted on 1962, and its produce is mainly sold to get profit. He grew vegetables like tomato,

eggplant, soybean, water melon, cabbage, onion, potato, sweet potato, cucumber and corn for home consumption. In addition to crop farming he is rearing swine 2 heads with kids 12 heads, goat 1 head and poultry 32 heads. The main purpose of rearing it is to get money by selling kids and eggs.

Work in the field

Out of all these members, four are engaged in farming. They are Mr. Ushiya wife, daughter and son-in-law. He used only family worker on working days in the field. Transplanting time and harvesting time is heavy work, but he was never yet lessing the labour.

Agriculture machinery

His farming is fully mechanized from soil preparing until processing of agricultural product. Agriculture machineries available with the host farmer are as follows:

- 1. Tractor 16 HP 1
- 2. Power tiller 1
- 3. Transplanter 2
- 4. Duster 2
- 5. Harvester 1
- 6. Huller 1
- 7. Dryer 1
- 8. Pollisher 1
- 9. Pumping set 1

Income

The main income is from sale of rice and apple. Beside that he had the addition of income by selling the kids of swine and the eggs of poultry. Last year, broadly the income was obtained by the farmer can be classified as follows:

| | |
|--------------------------------|---------------|
| 1. Rice | 2,580,000 yen |
| 2. Apple | 2,600,000 yen |
| 3. Swine | 800,000 yen |
| 4. Egg | 40,000 yen |
| <hr/> | |
| Gross Income | 6,020,000 yen |
| Expenditures (input) | 1,940,000 yen |
| <hr/> | |

Net Income 4,080,000 yen

Motozuku community

There were 22 house holds in the community out of which 11 were farm house hold and 11 were non farm house holds. The total population was about 95. The non farmers works as a shop keeper, factory worker, carpenter, barber, police, worker at school, electric mechanic and so forth. Among the farmers there are 10 of them were part time farmers and one farmer was full time farmer. He is my host farmer.

Average size of holdings is 12 ares of upland and 94 ares of lowland rice. Out of 11 farm house holds 7 families had power tiller. Four families had tractor. Two families had orchard. Two families were rearing cattle numbered 17 heads, and one family was rearing goat 1 head. The part time farmers works as a factory worker, shop keeper, teacher, driver to get more income. The farmers interest is organized by the Cooperatives, like the supply of inputs, credit, the sale of rice, etc. There are 498 members of farmers of Otuka Branch Agricultural Cooperative Association and 2 farm advisor.

III Cultivation technique for high yield of rice

My host farmer reported that the practiced of the rice cultivation for high yield are as fallows:

1. He used three different varieties of rice, namely Sasanishiki 70a, Toyonishiki 50a, Hanahikari 60a and Fuke 104 20a.
2. The seed was selected by the method of salt water with egg. Disinfection used Benlate with concentrate 100 cc per 50 l water for 24 hours, then 48 hours keeping for drying in shade. The seed soaking was done on March 26. The seed was sown by box nursery, where needed 28-30 boxes for planting 10a. Each box contains 780 holes, then each hole 2-3 seeds for good tillering variety, 3-4 seeds per hole for less tillering variety. Seed rate 3 kg per 10a. Age of seedling was 30 days, where leaves are at 3.5 stage.

3. Land preparation was done by machine. The first plowing on April 29 to May 3 with deep 12 cm. The second plowing on May 9 to May 13. At the time of plowing the used straw and husk as residue of threshing.
4. Transplanting was done between May 15 to May 19 by transplanter. Row spacing 33 cm, individual spacing 14 cm with 2 - 3 plants per hill.
5. Fertilizer application: At the time of plowing he used NPK compound fertilizer, for Sasanishiki 20 kg (10: 16: 20), Toyonishiki 15 kg (12: 18: 16), Hanahikari 10 kg (16: 16: 16) and Fuke 104 10 kg (16: 16: 16) per 10 ares. Then at the time of planting N 60 gm, P 90 gm and K 90 gm per 3.3 m². After 2 weeks he applied fertilizer N 2.8 kg, P 4.0 kg and K 1.2 kg per 10 ares. Then 45 days before heading was applied PK compound fertilizer 30 kg (0: 17: 17), Khudo 5% and Manga 20% per 10 ares. At 35 days before heading 15 kg compound fertilizer NPK was applied per 10 ares. Then compound fertilizer NK (16: 0: 16) 10 kg per 10 ares was applied at 20 days before heading. Further up to harvesting he used only Urea. Last top dressing was done at 25 days after heading.
6. Plant Protection: The main disease is blast disease. For controlling this disease was applied Kitazen at the rate of 4 kg per 10 ares at 10 days before heading. Beside that pesticide was applied at the rate of 3 kg per 10 ares for controlling some insects, mainly stem borer.
7. Weed Control: At 3 - 5 days after transplanting M0 herbicide was applied at the rate of 4 kg per 10 ares. After 2 weeks Masiho herbicide was applied at the rate of 4 kg per 10 ares. At 40 days before heading MCP was applied at the rate of 150 gm per 10 ares. Then by the same herbicide was applied at the rate of 200 gm at 35 days before heading. This herbicide had been mixed at the

rate of 250 gm with 3 kg of sand.

8. Irrigation: The irrigation plot to plot was kept at different levels according to the stage of rice growth. When the temperature is too high, the water in plot is to be heat. In this condition the water was drained out of plot to avoid heating which caused harm to plant in its connection with respiration.

Last year he got yield of 780 kg per 10 ares with component elements are as follows:

1. Variety : Sasanishiki
2. No. of tillers per hill : 29
3. No. of hills per 3.3 m² : 72
4. No. of grains per panicle: 90
5. Weight of 1000 grains : 21
6. Ripening ratio : 80 %

IV Achievement of Program

With four days of farm house stay and one day of observation, I got really the valuable experiences. I feel happy during I stayed at the house of Mr. M. Ushiya of Motozuku Buraku. All the members of the family had received me by cordial and hospitality. I became quite friendly and spent a lot of time together with them. My host farmer is a progressive farmer which having a good farming program. He is adapting a mixed farming system in order to get more income. The economic life is based on the commercial of agricultural income. I notice that it is enough for them to make both ends to meet the agricultural income. And I notice also that he had deposit money in the Agricultural Cooperative which provides with enough interest. Regarding agriculture activities he used only family worker, beside enough farm machineries and implements. That's probably the reason why his farm management was very high working efficiency and high labour efficiency. The technical input is supplied in enough amount and on time through the Agricultural Cooperative. Even he had positively a buffer stock of technical input, so that there is not obstacle when needed anytime he wishes.

I was just having at a glance that the farmers of Motozuku Buraku have advanced to carry out technical system for high yield of rice. In general it depends on the old generation to manage and cultivate it. The technical guidance from Agriculture Extension Office was already absorbed substantially by farmers. Beside that, there is closed relationship among them, so that the solution of their problem is easy exceeded. The experiences of farmers are also valuable to frame high yield. As the members of the Agricultural Cooperative, the farming community of Motozuku Buraku is very cooperative. The farmers interest are regularly organized through the agricultural cooperative, where the Government have given assistance by offering low interest funds for investment in the Agricultural Cooperative.

Opinion

My opinion in its connection with this program is useful. I got the best opportunity to see closely how the rice cultivation was practiced by farmers. Beside that, at a glance I had seen the way of life of Japanese farmers, their culture and thier custom which was quite new for me. In doing what we ought to do, there was some limited factor, so that it was very difficult to get the complete information. The above mentioned factor is mainly a short time of farmer house stay. We had so many things to do, but we didn't get much time for it. Therefore, it is better to prolong duration of farm house stay practice around one week. I want to get more information of rice cultivation and I want to know the influence of the good farm of a progressive farmer. For this purpose, I hope one sample of farmer is also taken from the surrounding lowland field of a progressive farmer.

Report On Farmer's House Practice

Andrew Fahn Paye (Liberia)

Introduction

Within a relatively short period of time since the Second World War, Japan had already attained self-sufficiency in the production of its staple food, rice to such an extent that a production-reduction campaign has been launched by the national government. Several factors are responsible for such a milestone of achievement. Among the multitudinal contributing factors said success, it is significant to mention a few: a) pure and applied research in rice cultivation, b) varietal improvement, c) choice of good plant types, d) timely intensification and use of the basic agricultural inputs - fertilizers, herbicides, pesticides, viable seeds and healthy seedlings, e) efficient soil and water conservation methods, f) advancement in agricultural machinery, g) efficient land consolidation schemes, h) efficient irrigation and drainage facilities, i) well organized and viable Farmer's Agricultural Cooperatives, and j) technically trained extension officers.

Members of the staff of Rice Cultivation and Its Extension Course being cognizant about this aspect of the Japanese Society organized each year the farm house practice to give each participant a chance to conduct an on-the-spot analysis of how rice cultivation techniques have been stabilized and assimilated based upon the guiding principles of rice growing. And finally, to give each participant an opportunity to keenly observe the life of an average Japanese farmer in situ, the role played by farmers in their cooperative association and the role of extension in the life of the farmer.

Therefore, in view of the foregoing, a program for farmer's house practice was organized between July 26 - 31, 1976, at which time I stayed for a period of 5 days in a farmer's house in Kawanichi-machi, Yamagata-ken and a night at the Miyauchi Agricultural Training Centre.

My host farmer, Mr. Manabu Katsumi, lives in the Shimokomatsu Community (buraku) which is about 4 km from Komatsu town. Total membership of his

family is five (5): a wife, one son, and two daughters (the elder of which lives in Tokyo).

The following episode is a tabulated data based upon information obtained from Mr. Katsumi apertaining to his family condition, residential condition, farming condition, his cultivation techniques, related farmer's organization for his farming life, annual income and finally my impression about the farmer's house practice.

Family Condition

| No. | Name of family members | Age | Final education | Occupation | Remarks |
|-----|------------------------|-----|------------------|--------------------|---------------|
| 1. | Manabu Katsumi | 47 | Junior High Sch. | Farmer | Head of House |
| 2. | Hanako Katsumi | 43 | -do- | -do- | Wife |
| 3. | Iwano Katsumi | 21 | Senior High Sch. | Electrical company | Son |
| 4. | Tomoko Katsumi | 14 | Junior high sch. | Student | Daughter |

Mr. Katsumi lives in Kawanichi-machi in the Shimokomatsu Buraku which contains 141 houses. The Shimokomatsu Buraku is subdivided into 6 subburaku and Mr. Katsumi is a member of the sub-buraku named Konoichi-ban which contains 9 households. Of the 9 households, 7 are full-time farmers and 2 non farmers (some own shops, employees of companies and taxi drivers).

The statistics of the 9 households are presented in the table below:

| No. | Name | Family members | Land holding (are) | | | | Cattle | Car |
|-----|--------------|----------------|--------------------|--------|-------|--------|--------|-----|
| | | | Paddy field | Upland | Grape | Forest | | |
| 1. | Mr. Katsumi | 4 | 200 | 20 | - | 30 | 5 | 2 |
| 2. | Mr. Hosoya | 6 | 240 | 10 | - | 80 | 1 | 2 |
| 3. | Mr. Hirata | 4 | 190 | 0.7 | - | - | 2 | 2 |
| 4. | Mr. Ishida | 7 | 200 | 10.0 | - | 100 | - | 2 |
| 5. | Mr. Hunayama | 5 | 100 | 0.2 | - | - | - | 2 |
| 6. | Mr. Kurosawa | 4 | 190 | 20.0 | 30 | - | - | 2 |
| 7. | Mr. Hirate | 2 | - | 0.2 | - | - | - | 2 |

| No. | Name | Family members | Land holding (are) | | | | Cattle | Cars |
|-----|---------------|----------------|--------------------|--------|-------|--------|--------|------|
| | | | Paddy field | Upland | Grape | Forest | | |
| 8. | Mr. Shimanuke | 4 | 30 | 0.5 | - | - | - | 1 |
| 9. | Mr. Yitensha | 2 | - | 0.2 | - | - | - | 1 |

Looking at the above table from a comparative prespective, one can conclude with a wide degree of safety in relative terms that Mr. Katsumi is above average in the Konoichi-ban Buraku.

Residential condition

| | |
|-------------------------|---|
| Television sets | 2 |
| Radio | 1 |
| Refrigerator | 2 |
| Telephone | 1 |
| Stereo | 1 |
| Cassete | 1 |
| Tape recorder | 1 |
| Washing machine | 1 |
| Cleaning machine | 2 |
| Refrigerator | 2 |
| Electric fan | 3 |
| Fire extinguisher | 1 |
| Gas stove | 1 |
| Oil stove | 3 |
| Car | 2 |

Daily Life

By virtue of the fact that Mr. Katsumi is the head of the household domestic functions such as cooking, table arrangement, sweeping and cleaning for the house were performed by Mrs. Katsumi and his daughter. The Katsumi family is well discipline. Husband-wife relationship, and parent-children relationship were keenly observed. It was also observed that the Katsumi's were very popular among members of the sub-buraku and as such relationship were very cordial and informal.

Meals were served according to the following time table:

| | |
|-----------|------------|
| Breakfast | 7:30 A.M. |
| Lunch | 12:00 Noon |
| Dinner | 7:00 P.M. |

Religion

Mr. and Mrs. Katsumi are members of the Bhuddist Religion. Mr. Katsumi prays every morning in a miniature shrine before beginning his daily activities. The family visits the Bhuddist Shrine (Jinja) three (3) times a year and on special occasions as the needs arise.

Farming Condition

Mr. Katsumi has a landholding of 200 ares of paddy field located in five (5) areas about 1 - 2 km away from his house. This land is managed by him and his wife. As far as hiring of extra farm labourer is concerned he does not do it.

The agricultural machines which make it feasible for the efficient handling of his landholding can be enumerated as follows:

| | |
|-----------------------|---|
| Power tiller | 1 |
| Transplanting machine | 1 |
| Harvester | 1 |
| Binder | 1 |
| Sprayer | 1 |
| Huller | 1 |
| Thresher | 1 |
| Polisher | 1 |
| Grass cutter | 1 |
| Mini truck | 1 |

Rice Cultivation Techniques

For the year 1976 growing season 5 varieties were cultivated. All seedlings were prepared by him (using box nurseries at the rate of 20 boxes per 10 ares). The five (5) varieties used and their cultivated methods are shown in the following table:

| No. | Variety | Acreage | Sowing date | Transplanting date |
|-----|----------------------------|---------|-------------|--------------------|
| 1. | Kiyonishiki | 70a | 15th April | 20th May |
| 2. | Sawanohana | 60 a | 10th April | 15th May |
| 3. | Toyonishiki | 40 a | 15th April | 20th May |
| 4. | Sasanishiki | 20 a | 15th April | 20th May |
| 5. | Himenomochi (glutinous) | 10 a | 15th April | 21st May |

Fertilizer Application

In order to improve the fertility of the soil, Mr. Katsumi applies banyard manure, compost and chemical fertilizers. Compost is applied at the rate of 1000 kg/10a; chemical fertilizer application methods are shown in the following chart:

| Fertilizer | Basal dressing | Top Dressing | | | Total |
|-------------------------------|---|-----------------------------|--------------------------------|--------------------------------|-------|
| | | I | II | III | |
| N | 6.8 | 1.3 | 1.3 | 1.6 | 11.0 |
| P | 10.2 | 1.3 | 1.3 | - | 12.8 |
| K | 6.8 | 1.3 | 1.3 | 1.6 | 11.0 |
| Kind and amount of fertilizer | 17-17-17 (40 kg) + 0-34-0 (10 kg) | 13-13-13 (10 kg) | 13-13-13 (10 kg) | 16-0-16 (10 kg) | |
| Time of application | 5 days before transplanting | 25 days after transplanting | 20 days after 1st top dressing | 15 days after 2nd top dressing | |

Herbicide

Herbicide applied were done as follows:

| | |
|--------|------------------|
| MO | 4 - 5 kg per 10a |
| Saturn | 3 kg per 10a |
| M C P | 3 - 4 kg per 10a |

The above herbicides were applied three times depending on the weed population and the stage of the rice plant.

Pesticide

The control of pests and diseases is done by aerial spraying by helicopter. In this process insecticides and fungicides are mixed and sprayed periodically on July 15. This schedule had already been met before I arrived there. It is interesting to note that the rate of spraying is ¥3,300 per 10a.

Chemicals used for the spraying are:

| | |
|-----------|--------------|
| Sumithion | 3 kg per 10a |
| P M P | 4 kg per 10a |

The crop which is schedule to be harvested in 2nd week of September, 1976 is estimated to give an average yield of 660 kg per 10a as much as that of last year (1975, 660 kg/10a).

According to Mr. Katsumi, the timely spraying of pesticides doesn't permit an atmosphere for any outbreak of oests and diseases. But in some isolated cases there are scattered areas of blast attack which is perhaps the most prevalent disease of the area.

Related Farmer's Organization For His Farming Life

Mr. Katsumi is a member of the Union Inukawa Agricultural Cooperative Association. All sales of farm produce as well as supply of agro-inputs are channelled through this association. As a member of this cooperative all his inputs are gotten merely upon the presentation his membership card.

Besides acquiring agro-inputs, loans are also gotten at low interest rates. For example, short term loans have interest rate of 10%. But a long term loan, such as loan for the construction of a house has a rate of 5%.

Moreover, technical assistance is also extended to each member through the technical staff of the Cooperative Association.

The credit periods of various inputs are schedule as follows:

| | |
|--------------|-------------------------------|
| Fertilizers | 3 months (November - January) |
| Insecticides | 7 -do- (April - November) |
| Herbicides | 4 -do- (April - July) |

N. B: Payments for fertilizers, insecticides and herbicides are done in January, November and July respectively.

Insecticides:

- Sumithion ¥470/20 kg
- P M P 460/20 kg

Herbicides:

- MO ¥515/3 kg
- Saturn 1,055/3 kg
- M C P 430/3 kg

Fertilizers:

- Urea ¥1,090/20 kg
- Lime nitrogen 1,720/20 kg
- Ammonium sulphate 630/20 kg
- Calcium supersulphate 770/20 kg
- Fused Mg phosphate 970/20 kg

Compound fertilizers:

- 17 - 17 - 17 ¥1,540/20 kg
- 0 - 17 - 0 680/20 kg
- 23 - 0 - 23 1,255/20 kg

Agricultural Extension Office

The agricultural extension office which is 10 km away from Mr. Katsumi's home also play a major role in his life as a farmer. Specialist of the office periodically visit his home. According to him an extension worker visits his home about 23 times a year and in other cases the extension office sends out periodicals, leaflets, charts and newsletters on the modern rice production techniques. Mrs. Katsumi who is a member of the Home Improvement Committee visits the extension office about 7 times a year.

Annual Income

As a full time farmer, Mr. Katsumi depends wholly and surely on his sale of rice. In the year 1975 his total production was 12.720 kg of brown rice of which 720 kg was consumed and 12,000 kg sold at a price of ¥16,500 per 60 kg. Therefore, the gross income realised from the sale of rice was ¥3,300,000

His son who is an employee of an electrical company gets a net income of ¥1,200,000.00 per year. Thus the total income of Mr. Katsumi and family is roughly ¥4,500,000.00

General Impression

After the brief period of my stay at Mr. Katsumi's house, I figured out that the objectives for which the program was designed had been achieved. Practical information about the nation's granary, Yamagata-ken, were imparted; I had the opportunity to observe the environment of the rice growers, the technical standard of cultivation; a complete profile of the farmer's life; his position in the buraku in which he lived as well as his interaction with other members of the farming community; and finally his relationship with the Agricultural Cooperatives and the Agricultural Extension Office.

The Katsumi's were unusually kind to me during the entire period of my stay. Relationship between me and his family was rather cordial and very informal. I was rather touched by their timeliness and devotion to duty.

It was further realized that Mrs. Katsumi is indeed a very good organizer. This could be felt by the warmth and affection with which I was received into the homes of her relatives and friends as an inseparable constituent of her family, a manifestation of a typical Japanese hospitality to strangers.

But on the other hand, I felt and still do feel that my deep feeling of appreciation for their generosity was rather misunderstood since I did not have adequate vocabulary of Japanese to express myself. Be it as it may, I would tend to believe that they understood my position at the time.

I am fully convinced that other participants of this course can share with me the view that the 10 day Japanese conversation taught in this center is not sufficient and relevant for a specialized course. And as such, in order to help future participants of the Rice Cultivation Course attain maximum benefits from said farmer's house practice, that a relevant Japanese conversation class of three hours per week be included in the curriculum commencing from the beginning of the training program up to the time of farmer's house practice. If this is done, then, the entire essence of the course will be fully realized since in my opinion, this

farmer's house practice is the crust of the entire Rice Cultivation Course.

In conclusion, I wish to extend by heartfelt thanks and appreciation to the entire staff members of the Rice Cultivation Course and the members of the Agricultural Extension Office of Komatsu Town who made this program a success.

My four days experience with a Japanese Farmer

Basnet, Bhola Man Singh (Nepal)

Introduction

As I was very much interested to know the life of Japanese farmers, since I came to Japan on 3rd of March, 1976. This dream of mine came true when I reached to Yamagata Prefecture as a programme of Farm Household Practice, conducted by my Rice Cultivation & Its Extension Course from 26th to 31st of July, 1976. I was delighted with joy, when I heard that were going to Yamagata prefecture for a case study of Japanese farmers because while I was in my country, I had heard that Japan is one of the leading nation in the history of world's agriculture and when I came to Japan I knew that Yamagata is the best prefecture of Japan for producing highest rice yield per unit area, where I was going.

Thus, my appointed young farmer of Yamagata prefecture was Mr. Chikugei Watanabe who was living in one of the village of Yamagata prefecture named "Ohfune". That place was very calm and quite which is situated in the valley surrounded by the mountains like the situation of my country. During winter time that place used to get even two meters of snow. Mr. Watanabe was having other six members like his mother, wife, sister, two sons and one daughter. He was having 4.5 and 0.1 hectares of lowland and upland fields respectively including two heads of beef cattle and few number of poultry. He utilizes the upland for domestic consumption of vegetables. He was full time farmer and only couple were engaged in farm and other children had a good opportunity to devote themselves in their study only. They were having a sort of daily domestic assignments works and even his 65 years old mother was working according to her daily routines and they used to help each other too. Specially the aged members of the family used to get up early in the morning for their works.

Religion

They were Buddhists by religion but I found that they were worshipping lord Buddha and Shinto too. They were having miniature temples of Buddha

and Shinto inside their room. Specially, as a head of the family the mother of Mr. Watanabe used to worship every day in their room. I heard that they enjoy a lot during the Buddhist festival named "Obon" during 13th to 15th of August of every year.

Though the original place of Mr. Watanabe was Higashi Okitama-Gun and since hundred years his family was living in that Ohfune village of Yamagata prefecture. His house was very beautiful, clean and equipped with all the modern facilities and he used to study newspaper too. During my stay in his house, I also got chance to discuss with the relatives of Mr. Watanabe, as I found that they were friendly. Also Mr. Watanabe was having very good relation with the people of that village.

Meal Custom

Mainly they used to eat three times a day like breakfast, lunch and dinner at about 7 am, 12 noon, and 7 pm respectively. Their staple food was rice. I enjoyed a lot of Japanese foods over there. Mainly the foods were prepared by his wife but all the other female members used to give their helping hands to her and they used to eat, sitting together in a very happy manner. During my stay I was also one of the member of that family.

Related organization for his life and Farming

According to Mr. Watanabe the total number of household in Ohfune were 204 and among them 180 were farm households and only 24 were non-farm households. The best organization helping him was Agriculture Cooperative Association in his life and farming for inputs and marketing, which are the main problems of agriculture in under developed countries. And I too found it that really cooperative associations were helping a lot for him because that association was only 400 meters away from his house and he used to get every types of services of agriculture from that cooperative and no problem was left to be solve. Even the cooperative were helping him for his daily requirements, were housing, marriage ceremony etc. And one interesting thing was that even the hair cutting facility was available in that association in a moderate price. So I found that cooperative association was playing a vital

role as a guardian for the farmer and his field.

Agriculture extension office was about 25 km away from his house and he utilizes that office through the medium of cooperative association and sometime he directly approaches to that office too. Like he used to visit extension office about ten times a year for getting new techniques in mass and extension personnels to come in his house four to five times a year for advising and supervising his house and the farm.

There was also a community hall near to his house which was utilized for mass meeting, entertainment programme and for conducting home improvement class. They also discuss there each other as how to utilize cooperatives, extension office more efficiently for increasing the yield per unit area. Also the personnels of that community hall used to make Sports Day Programmes for the local people during middle of June and in winter season which are one of the source of entertainment.

Rice Cultivation Technique

Sowing and transplanting:

He used to sow the seeds during 15th of April and will transplant on 14th of May. He used to sow seeds in boxes at the rate of 24 boxes per 10a. Transplanting were done by transplanter and according to him it will take seven days for complete transplanting by two persons in his 4.5 ha of land.

Varieties and Acreage:

He was having different varieties of rice in his field as follows:

| <u>S. No.</u> | <u>Variety</u> | <u>Acreage</u> | <u>Remarks</u> |
|---------------|----------------|-----------------|---------------------------------|
| 1. | Sawanohana | 1.6 (ha) | For home consumption |
| 2. | Kiyonishiki | 1.0 (ha) | For marketing (highest yielder) |
| 3. | Toyonishiki | 1.3 (ha) | -do- |
| 4. | Himenomochi | 0.6 (ha) | -do- |
| | Total | <u>4.5 (ha)</u> | |

Time and amount of fertilizer application

He used to incorporate rice straw in the field itself as a compost and the other chemical fertilizer were as follows:

Rate of application per 10a

15, 20 and 20 kilograms of active ingredient of Nitrogen, Phosphorous and Potash respectively.

Basal dose (around 15th of April)

N = 5 kg

P₂O₅ = 15kg

K₂O = 13kg

Top dressing per 10a

1st top dressing (after 10 days of transplanting) N = 4 kg

2nd -do- (1st of June) P₂O₅ = 5 kg and K₂O = 3 kg

3rd -do- (middle of July) N = 2 kg and K₂O = 4 kg

4th -do- (after flowering) N = 4 kg only

Weeding

He used to destroy weeds by chemicals like:

Long Star 500 cc per 10a before transplanting as Pre-emergence control.

Mameto SM 3 kg per 10a in middle of June as post-emergence control.

And only one and the last hand weeding will remove the problem of weeds after second application of herbicides.

Water Management

There was a lake near his house which is used for irrigation. He used to maintain submerged condition during June and July, draining during August and September and again maintain submerged condition.

Diseases and Insects

Prolematic insect were stem borers and plant hoppers and blast and sheath blight as a major diseases. According to Mr. Watanabe due to continuous cool weather this year the incidence of blast was more in comparison to last year and thus a decrease in yield was predicted.

Chemicals

The farmers of that locality used to apply the following chemicals by helicopter which will be arranged by cooperative association.

A Spray Schedule:

- | | |
|-----|---|
| 1st | 20th of July (Insecticide + Fungicide) |
| | Bizet + Hinosan |
| 2nd | 27th of July (Fungicide) |
| 3rd | 5th of August (Insecticide + Fungicide) |
| 4th | 13th of August (Fungicide) |
| 5th | 25th of August (Fungicide) |

Harvesting

Harvesting will be done at the end of September to the beginning of October by combine (4 rows type). And harvesting alone will take one month because of different of maturity among varieties and sometime rain will obstruct the operation.

Farm Economy

According to Mr. Watanabe he utilizes 120 laborers per year and cost of cultivation per 10a was ¥70,000 and gross income from 10a was ¥1,700,000. Labour input per 10a was ten to twelve persons. Last year his average yield of brown rice was 7.06 ton per ha.

According to him 2 heads of beef cattle will cost about ¥20,000. Though Mr. Watanabe was having 4.6 ha of land but he was having power tiller, tractor, transplanter, sprayer, duster, combine, huller, dryer, polisher, grader, grass cutter, rotary weeder, which is rare case with the farmers of my country, though they are having more than that of his land.

Impression

As I was very much impressed by the hospitality shown to me by his family. Once, the wife of Mr. Watanabe told me to give my dresses for washing but I did not like to go in such extent. They were "Happy Go Lucky" type of family because I never observed them in serious mood. They were very much cooperative, disciplined and well behaved, including their children. The performance of standing rice in his farm was promising because I

counted and found that average number of tillers per hill were 30, which will naturally contribute for high production.

During those limited periods he carried me and showed various places like cooperative association, livestock farm, agriculture training high school, Kangai tunnel, Shirakawa dam, lake temples, shrines, dahlia park and etc., which were really unforgettable. He and his relatives offered me nice presents too. And at the time of departure I felt as if I was living my parents house for foreign country. I also got many ideas about high yielding techniques from my farmer.

Conclusion

This programme of "Farm Household Practice" organized by "Rice Cultivation and Its Extension Course" was extremely useful for the participants like me to have on-spot techniques of high yield of rice from the hard working Japanese farmers. Besides, Mr. Watanabe I also got chance to visit Mr. Katakura's farm, who is one of the national prize winning farmer for getting high yield of rice per unit area. Along with him I also visited many other progressive farmers of Yamagata Prefecture and other related organization of agriculture concerning to that locality.

I was having one of my Nepali speaking Japanese friend named Mr. Fumio Ota in Yamagata prefecture itself, who had been in Nepal for about two years so he helped me a lot for getting above mentioned informations from my farmer. I had also learnt hard the fundamental Japanese language, especially for this programme. So, I did not feel difficulty. Moreover, the staffs of my course had also taught for ten days, which also helped me, but I request to my staffs that such classes should be conducted more than ten days in future programme of such kind. That is why staffs should not expect much informations from the participants because of the lack of language-barrier.

One thing I would like to suggest that the programme of night halt in farmer house should not be more than five days because during my stay, all of my farmer's family were always looking after me and I assumed that

their other systems, might have disturbed. Though during the month of July, farmers were nearly free from the farm works. On the other hand the programmes was so tight that I could not collect as much informations as I wished, so I think it will be better to stay outside the farmer's house after a few days and continue to case study of the farmer for some days more.

Besides, agriculture I also knew about the meal custom, religion, social behaviour and other things about the progressive Japanese people by practical experience which will help me a lot for carrying out plans and programmes after returning to my country.

At last but not the least I would like to convey my sincere thanks to my course staffs and the personnels of Extension Cooperatives Association and Administrative Offices of Yamagata prefecture for successfully carrying out this programme of "Farm Household Practice" in that prefecture, for all the participants of various nations. I will never forget my farmer Mr. Watanabe and his happy family for the kind hospitality shown towards me during my stay in his house and I will correspond him in future too.

Farmers House Survey Practice

Quirino M. Solis (Philippines)

Introduction

Rice Cultivation and It's Extension is one of the courses in Uchihara International Agricultural Training Center and it is a part of this course to have a farmers house survey on the different technology of farmers used in increasing their yield per unit area. Besides with this phenomena, participant from the said courses required to have a family dealings with the farmers life and they stayed on farmers house for at least a week. For these reason, rice cultivation participants with the good coordination of the instructor concerned to the different prefectural and municipal officials and through the guidance of the agricultural extension officers and agricultural cooperatives, these surveyed was conducted in Kawanishi town, Yamagata prefecture from 26 to 31st of July, 1976. Reliable informations on different farmers field activities and techniques were gathered from our host farmer, Mr. Suzuki and his nearby devoted progressive farmer Mr. Katakura and from the agricultural extension office.

General Information of the Community (Buraku)

The community is located on the western part two kilometers from the Kawanishi town proper. There are forty household family and the total area is seventy eight hectares. Sixty hectares of the total area are rice paddy field and eighteen hectares are upland area. Out of forty household family, thirty six of them are engaged in farming and they are full time farmers. The remaining four family household are non-farmers. The total population of the community is two hundred and the average hectares of farmers is one and ninety five per hundred hectares. The average production of farmers in term of brown rice ranging from six to seven tons per hectares. For upland areas, farmers raised vegetables of different kind and their production are mostly used for home consumption. The arrangement of the houses were built along the road and feeder roads were constructed in all farmers areas with almost equal distances. Irrigation and drainage canals can be observed on both sides of either main or feeder roads.

Family Condition

There are seven members in the family as inumerated below:

| No. | Name | Relationship | Age | Education | Ocuupation |
|-----|----------------|-----------------|-----|-----------------|-------------|
| 1. | Eikithi Suzuki | Head Master | 50 | Agri. H. School | Farmer |
| 2. | Kazuku Suzuki | Wife | 48 | Elem. School | Housekeeper |
| 3. | Eiichi Suzuki | Son | 26 | High School | Farmer |
| 4. | Yoko Suzuki | Daughter | 21 | Jr. College | Office work |
| 5. | Ithuko Suzuki | Daughter-in-law | 22 | Jr. college | Office work |
| 6. | Hathu Suzuki | Mother | 71 | N o n e | Housekeeper |
| 7. | Hideo Suzuki | Brother | 34 | Elem. School | Veg. raiser |

Among with this family members they performed different kind of job. Mr. Suzuki and his son were full time in the rice paddy field for the operation and management of his farm. Mrs. Suzuki and her mother-in-law responsible in house activities especially on kitchen job. The daughter and daughter-in-law do the office work while his younger brother do the watering and cultivating their vegetable plantation. Early in the morning and in the late afternoon, daughter and daughter-in-law help her mother in cleaning the house and the preparation of foods.

Religion

They are of Buddhist faith and have their separate holy shelf in their house for God. Every morning and in the late afternoon the mother of Mr. Suzuki offers food to God. They do not go to Shrines except on special occation which was celebrated once a year.

Residential Condition

| <u>Items</u> | <u>Number</u> |
|-----------------|---|
| House | 1 with 12 big rooms and well equiped facilities |
| Television | 1 size is 22 inches |
| Washing machine | 1 |
| Refrigerator | 1 |
| Electric fan | 4 |
| Radio | 1 |
| Stereo | 1 |

| | |
|------------|---|
| Gas stove | 2 |
| Gas heater | 1 |
| Bath room | 1 |
| Toilet | 1 |
| Bath tub | 1 |
| Shower | 2 |

Aside of this, his house is well equipped of heater especially during winter. His house is of model and it was inherited from his old parents for so many years ago.

Meal Custom

Usually the whole family eat three times a day. Breakfast was served early in the morning from 7:30 to 8:30 with different variety of food such as, rice, bread, fish, vegetables, soup and other Japanese menu. At noon time they served rice, meat, vegetables, soup, tea and other from 12:00 to 1:00 PM and in the dinner time they served almost same variety of food which served at noon time and it was served from 7:00 to 8:00 in the evening. Before eating in the dinner time Mr. Suzuki or his son prepare some men's drink which they believe that it is for palatability taste. Everyday Mrs. Suzuki change the variety of food she prepared to eat.

Farm House Records:

He has four and seven per ten hectares of rice paddy field and two per ten hectare of upland area. His total production in terms of brown rice last year (1975) was thirty two tons with an average production of six and nine per ten tons per hectare. For this year (1976) his estimation is almost the same as of the previous cropping season.

Rice Cultivation Methods

A. Seeded preparation - He used seedbox nursery in raising their seedlings. They prepared twenty five box of seedlings per ten ares. Proper care and management were made to produce good and healthy seedlings. It took one month in the nursery before it was transplanted into the rice paddy field.

B. Land preparation - Ordinary cultivation were used by him. Irrigation, puddling, leveling before transplanting was done. Before puddling of the big tractor organic fertilizers were applied at the rate of one to two tons per ten ares, and before final leveling for transplanting he applied chemical fertilizers within the recommended of the extension and cooperatives technicians for their basal application.

C. Transplanting of seedlings - These was done by the used of his four rows transplanter machine. The distance of planting is thirty centimeters between rows and fifteen centimeters between hills at the rate of four to five seedlings per hill resulting to twenty two hills per square meter.

D. Weed Control - By the used of chemicals like M.O. and other weed-icides and through to the up-to-date application from the early up to the late stages of rice growth, weeds were not a problems. Interculture was done as it need arises.

E. Pest and Diseases - During our visit on his farm, no pest and diseases appeared except the random symptoms of sheath blight, blast and stemborer. This might be due to the up-to-date preventive measures applied of chemicals by the group of farmers and cooperative joint forces to control them which they used helicopter and power sprayer to cover the whole area at the same time.

F. Fertilizers application - Actually our host farmer Mr. Suzuki followed strictly the recommendation rate of the Agricultural extension and agricultural cooperative from basal and two top dressing before heading time and it was illustrated on fertilizers charts given to each farmers cooperators the kind, amount and time of application. However, due to long experiences and rigid studies of his nearby devoted progressive farmers Mr. Katakura and his son which they were more concerned on the leaf color of rice plants, advices of them were followed and several application of nitrogeneous fertilizers were done after heading up to about to harvest time.

G. Water Management - Irrigation water came from the main irrigation canal by gravity. He maintained the deep of water from the early stage up

to the late stage of rice growth. His field was constructed of under ground drainage canals which the water could easily drained with out any disturbance or problems encountered to rice plants.

H. Harvesting and threhing - Harvesting was done by the used of his combine harvester. After harvested the palay it bring to his rice drier and dry it until a certain moisture content reach to thirteen to fourteen percent.

I. Production or yield (rice) - Based on his previous records (1975) crop season, his average production in term of brown rice was six hundred and ninety kilograms per ten ares equivalent to six and nine/ten tons per hectares.

His net income was itemized below:

| | |
|-------------------------------------|------------------|
| Agricultural products (rice) | ¥4,650,000 |
| Animal production (two beef cattle) | 72,000 |
| Non-agriculture (Office work) | 1,200,000 |
| Total net income - - - - - | <u>5,722,000</u> |

Farm Machineries and Equipments

| <u>Items</u> | <u>Number</u> |
|---------------------------------|---------------|
| Four wheel tractor | 1 |
| Power tiller | 1 |
| Transplanter (four rows) | 1 |
| Sprayer and Duster | 2 |
| Pick-up (truck) | 1 |
| Car | 1 |
| Harvester and tresher (combine) | 1 |
| Rice Drier | 1 |

General Impressions

During my stayed in my host farmers, I was observed that the family members live happily, peacefull and harmoniously. The son who had fully engaged in farming is quite hard working and he has a well programmed to follow to his schedule of daily activities in the farm. Mrs. Suzuki is very friendly to both extension and cooperative personnels and as to her Buraku

mates. It made me very interesting and the informations I learned from them would be very useful to adopt it to my country. Cooperatives and extension workers or officers provides the up-to-date informations to the farmers for the new tecinology arises. The agencies concerned on agricultural productions helps the farmers to avoid failure. I hope Japanese Farmers and the country as a whole continue this good examples and extend more number of years especially to under develop country for thier future generation.

A Survey of Japanese Farming Condition

Hilario C. Dela Cruz Jr.
(Philippines)

Introduction

This survey is part of the training program on Rice Cultivation and Its Extension. It was made possible through the painstaking efforts of the authorities concerned of JICA, Uchihara International Training Center and candid cooperation of the officials of Yamagata Ken, Kawanishi town, Agricultural Extension Office, Agricultural Cooperatives and host farmer.

The study had given me a chance to evaluate the factors contributing to high yield of rice in Japan particularly Yamagata Ken which has the prestige of having the highest yield average in the entire country and to witness the social status of a Japanese farmer.

The duration of the study was on July 26 to 31, 1976.

Location of Study

The place of study was in Yamagata Ken, district of Higashi Okitamagun, town of Kawanishi, Community Ohfune. The place is slightly rolling valley bounded by mountain ranges at the east, southwest and relatively plain on the northern side. Some parts of the eastern hilly side are newly opened land by group of farmers for grapevine yards and the others were terraced for lowland rice field. On the western hilly side, grazing land for beef cattle is a scene which is operated also by group of farmers. The upper southern side of the community is the site of a reservoir with a water surface area of ten hectares which has built by the community farmers through the financial support of the cooperatives. The reservoir can irrigate around 350 hectares.

There are 204 households sparsely located in the community. Only 24 households are non-farmers. All the rest are full time farmers. The main source of income of the farmers are derived from rice farming.

The village is headed by one elected Chieftain which has a direct link with the town mayor with regards to political life of the people in the community.

Host farmer

My host farmer is Chikuhei Watanabe (36) and his wife Sachiko (34). They have three children Akemi (13), Segenori (11) and Tomoyuki (9). Staying with them is the sister of Chikuhei, Seki (24) and his mother Sikeno (65).

House and Housing Facilities

The house is big but old with recent renovated comfort rooms and bath room. It is a tiled roof building with wooden wallings. The room are divided with sliding frame pasted beautifully with special white paper. It has several living rooms upstairs and downstairs. The kitchen, dining and receiving room are all downstairs. The floor of the rooms are covered with "tatami"mat.

The receiving room is near the entrance of the house, which is used to receive visitors and also for dining. Everybody was to sit on "Tatami" mat for there are no chairs or long legged tables. Each are provided with cushion to sit on. All the tables are collapsible and low legged. After using, the table is kept in the adjacent storage room. It is in this room also where some of the appliances like television, musical organ, tape recorder, telephone and others are placed. The Buddhist altar is located in this room.

The kitchen is well furnished with facilities of modern living like refrigerator, electric and gas range, washing machine etc. Adjacent the kitchen is the comfort room and bathroom. Japanese usually take bath in the evening in hot water in bath tub. No shower is provided.

The living room are provided with mattresses and blankets. Mosquito coils are used for insect protection during the night. The mattresses and blankets are placed in the built-in cabinets after using.

The house is provided also with one study room with several shelves of books and other reading materials. Heating system is available during the winter season.

History of the Family

The husband and the wife are both native of the place. The husband has three brothers and three sisters while the wife has two brothers and two sisters. They got married in 1962. The couple are both graduate of Senior High School.

Family relationship

The family has a very good relationship to each other. The parents are very kind to their children likewise the children are kind and helpful to their parents. The childrens helps a little in the daily activities. The eldest daughter helps the mother in cooking and serving. The two boys helps their father in feeding the cattle and chickens. The children however has more playful time enjoying their summer vacation. The eldest daughter is studying in the Junior High School (1st year). The two boys are still in the primary school. Education is compulsory in the Primary up to the Junior High School.

The husband's mother helps in the cleaning of the house as well as the surroundings of the house. The wife does the cooking, cleaning the house and assisting the husband in the farm. The husband's sister was in Tokyo that time due to sister's expected giving birth. Relatives of the wife and husband come to visit in the evening during our stay. They were very happy to see and play jokes with us as if no hindrance to Japanese conversation.

Religion

The family is of Buddhist- Shinto religion. Two small temples are built in the house for Shinto and Buddhist, the latter being more decorative. The Buddhist altar has the image of Buddha while the Shinto altar has no image, just white papers hanging with some writings.

Daily worship with food offering in the altar was observed. The prayers was always done by the husband's mother. It usually lasting for 5 to 10 minutes before breakfast starts. They worship in the Buddhist temple which they call "Obon" on August 13 to 15 every year.

Meal custom

There are three meals a day, breakfast, lunch and supper in which the wife always serve the food. They have a well balanced deit; boiled rice as the main source of carbohydrates which is served every meal and meat, fish, egg and vegetables are source of protein and vitamins. Dishes are prepared five or more kinds with vegetable soup. Every dish has a separate

bowl container. They do not drink water after eating which I have to do it also during the duration of my stay. However, a few minutes after eating green tea "Ocha" will be served in the case of lunch and supper while milk and tea will be served after eating breakfast. Snack time is not common to my host farmer maybe due to heavy meals they usually take.

Lying down on "Tatami" mat is common to them during their seista time, rest time and or after eating.

Clothing habit

All the members of the family wear simple neat clothes and not concern very much of fashionable clothings.

Farming condition

The farm is located near the house with a total area of 4.6 hectares. Lowland rice field has an area of 4.5 hectares and 0.1 hectare for upland field planted to vegetable for home consumption. The topography of the lowland rice field is gradually sloping towards the nothern side. The paddy fields are rectangular in shape. The parcel of rice field is divided by a farm road with open irrigation canal on both sides of the road. The field is provided with underground drainage. The land holdings is slightly bigger before the land reform which is about 5 hectares. Rice cropping is only once a year. Nothing is done in the field during winter time, November to March.

Farm Machineries

All farm machineries are supplied by the Agricultural Cooperatives in installment basis of payment. At the time of survey, all machineries are all paid by host farmer.

My host farmer owns the following farm machineries and equipments.

- a. 2 units rice combine 4-row and 2-row.
- b. 1 unit four wheel tractor, 28 H.P.
- c. 1 unit car
- d. 1 unit power tiller, 7.5 H.P.
- e. 1 unit transplanter, 2-row, 2.5 HP.
- f. 1 unit mist duster
- g. 1 unit dryer

- h. 1 unit hulling machine
- i. 1 unit brown rice grader
- j. 1 hand tractor with trailer
- k. 1 unit grass cutter
- l. 1 unit seed incubator
- m. 2 units vinyl houses for rice seedlings

The machineries and equipments are provided with shed. Fertilizer and other agricultural chemicals has a separate compartment in the implements shed.

Farm Operations

Land preparation - Rice straw are scattered in the field after harvest. Land preparation starts in the early spring during the month of April. Compost and animal manure are scattered in the field before land preparation.

Tillage operation is with the use of power tillers. Dry land preparation is a common practice. Puddling and leveling is done before transplanting.

Seedling preparation - Seed sowing starts in the middle part of April. Seeds are sown seedboxes with ready made or commercial soil. The seedbox has a standard dimension of 60 x 30 x 3 cms. Usually 200 grams of seed is sown in one seedbox. Twenty four seedboxes are needed to plant 10a or 240 seedboxes required for 1 hectares.

Raising of seedlings needs careful attention. The sown seeds are germinated in temperature controlled incubator (30°C). After germination, the seedlings are transferred in vinyl house maintaining the temperature at about 25°C. Care of seedlings are done in the vinyl house until it is ready for transplanting about one month old seedlings.

Transplanting - Middle part of May is the start of transplanting season. The whole mat of seedlings are taken out from the seedboxes and fed to the transplanting machines. Two helpers are needed for transplanting end portions of field not covered by the machine and to feed the machine with seedlings. It needs 7 days to finish the transplanting operation of the whole area.

The varieties used and area planted are as follows:

- | | |
|----------------|--------------|
| 1. Sawanohana | 1.6 hectares |
| 2. Kiyonishiki | 1.0 " |
| 3. Toyonishiki | 1.3 " |
| 4. Himenomochi | 0.6 " |

Sawanohana is for home consumption. Kiyonishiki is the highest yielder among the varieties planted last year.

Application of fertilizers - Basal application of fertilizer is applied before puddling at the rate of 50 - 150 - 130 kg/ha N-P-K respectively. Top dressing is done as follows:

1. Nitrogen - 3 times; 10 days after transplanting, middle part of July and after flowering at the rate of 40, 20 and 40 kg/ha respectively.
2. Phosphorous - 1 time, first week of June at the rate of 50 kg/ha.
3. Potassium - 2 times, 1st week of June and middle part of July at the rate of 30, 40 kg/ha respectively.

Water management - Intermittent irrigation is practiced during the month of June and July and draining of the field starts on August to September. Irrigation water is coming from the communal irrigation reservoir. Gravity system of irrigation is used in an open canal. Water is continuously flowing from a regulated water gate in every paddy adjacent to the irrigation canal. Intermittent drainage and shallow irrigation is employed during the tillering up to maximum tillering. Thereafter, water deep of around 5 cms is maintained up to the reproductive stage. Complete drainage is done near the ripening stage.

Weed control - Herbicides (long star) was sprayed before transplanting at the rate of 500 cc per 10a. Second application of Mameto SM herbicide is done after rotary hand weeding about one month after transplanting at the rate of 30 kg/ha. The field is almost free from weeds.

Control of pests and diseases - The most common diseases are Blast and Sheath Blight (Mongare). Common pests are stem borers and hoppers. The control of pests and diseases is done by helicopter spraying. Five times

spraying is necessary during the growing period of rice plant. First spraying with insecticide mixed with fungicide started July 20 more two months after transplanting. Only fungicide (Minosan) was used all the rest of sprayings. Intervals of spraying is ranging from 7 to 13 days. The cost of spraying is ¥30,000 (\$100) per hectare per spraying.

The Extension Workers of the Agricultural Cooperatives are responsible in the spraying. The workers supervised the spraying and also determines the proper droplets of chemical in the farmers field with the use of film like paper printing the droplets falling from the helicopter. The droplets prints are given to the farmer to show that spraying is properly done. If not satisfied with the result, spraying has to be repeated.

Harvesting and processing - Harvesting starts during the month of September. Four-row and two-row rice combine are used for harvesting. Paddy grains from the field are brought to the dryer. After drying, the grains are hulled and processed and packed in Jute or paper containers (60 kgms) for grading and storage in the Agricultural Cooperatives ware houses. Hulling recovery is usually 80%.

Marketing - The Agricultural Cooperatives is responsible in the marketing of farm products. Sales of products is reflected in the saving accounts of the farmer.

Factors for high yield

The following are some of the factors contributing to high yield in my host farmer's field.

1. Seedbox nursey of raising seedling for early planting as well as being suitable for the transplanting machine.
2. Adequate nutrients
 - a. High Phosphorous application for maximum tillering. At the time of survey the average number of tillers counted as 30.
 - b. High nitrogen application with several times of top dressing to increase panicle size, number of panicle per m² (400-500), number of spicklets per panicle (80-90), ripening ratio (80-85%) and weight of grains (22 grams/1000 grains).

- c. High Potassium application for resistance to diseases and for balanced nutrition.
3. Proper management
 - a. Returning of crop residues in the field and application of compost and animal manure.
 - b. Thorough land preparation.
 - c. Adequate irrigation and drainage
 - d. Adequate control of weeds and pests and diseases.
 - e. Efficient machineries.
 4. Favorable weather - Adequate intensity of light during the reproductive stage, optimum temperature of not less than 19°C during the spicklet formation up to full development.
 5. Less occurrence of pests and disease. - No build-up of pests and diseases population due to winter season. Rat damage is not a problem.

The yield of rice this year has been predicted to be lower than of last year due to abnormal weather (Cold wind) and occurrence of Blast disease. Cold wind causes grain sterility. Last year's rice yield of my host farmer was 31.8 tons brown rice.

Host farmer income (1975)

| | |
|--------------------|--------------------------|
| Total gross income | ¥7.65 million (\$25,550) |
| Total expenditures | ¥3.15 " (\$10,500) |
| Total net income | ¥4.50 " (\$15,000) |

Two fattening beef calves is an additional source of income.

Related organization to farming

Agricultural Cooperatives - There are 7 branches of Agricultural Cooperatives in the town of Kawanishi, one being located in the community of my host farmer. The Cooperatives handles various functions for the benefits of the farmers such as financial support, marketing of farmer's products as well as responsibility for the farmer's savings account. It cover various business for the convenience of the farmers like the supply of machineries, agricultural machinery service center, fertilizer, agricultural

chemicals, fuel, warehousing, processing facilities, seed planting materials, home appliances and other commodities necessary for modern living.

Extension workers of cooperatives are likewise employed to help and advised farmers in their farm operations.

Agricultural Extension Office - The office conducts training at least 10 times a year on the new techniques of rice farming in which my host farmer always attend. Home demonstration is also the function of the agency to futher improve the living condition of the farmers. The subject Specialist supervises the Extension Workers in their respective area of assigment in the farm operation of the farmers. Usually the Government Extension Workers has more direct links with the Cooperatives Extension Workers and there- by the latter has more direct contact with the farmers.

Men's and Women's Club - The function of the Man's and Women's club is to promote the importance of cooperatives in their community, likewise, the women's club if for home improvement.

Conclusion

This survey reveals so many things in which a farmer especailly in the Southeast Asian Countries will have an inspiration, challenge and rooms for improvement to all authorities concerned with regards to agricultural policies.

Japanese farmer proud to be called farmer because the society respected them as such due to financial and social standings.

Rice farming in Japan is only once a year while tropical countries can do it two or three times cropping a year. Just a simple analysed of the facts the farmers of tropical countries should be better of than the Japanese farmer in spite of small national average land holding of 0.8 hectare. It is surprising to be the vice versa. Why? Is it due to varieties? I don't think so because improved Indica varieties now are also high yielding although Japonica varieties yields more than Indica varieties due to high ripening ratio and heavy seed weight. Is it the weather? Cold damage in Japan is also common to contribute in low yield. How about the occurrence of pests and diseases? Maybe to some extent. Diseases like Blast and Sheath

Blight in Japan are also serious but control measure is adequate, Forecasting system in the outbreak of pests and diseases are efficient. There is no continuous build-up of pests and diseases population due to the winter season. Plant protection with the used of chemicals are fast and timely due to efficient spraying equipment.

I should say therefore that the main reason to the high standard of living of the Japanese farmers is the HIGH NET INCOME. This is possible due to high yield and price support of their government. The price support this year is ¥15,570 per 60 kgms of brown rice or equivalent to more or less \$51.9. Just imagine the net income of my host farmer amounts to ¥4.5 million or \$15,000 as of last year's harvest.

Some of the reason of efficient and prosperous farming in Japan are as follows:

1. Cultural behavior - The Japanese people are generally honest, well disciplined and nationalistics. They plan and execute programs or projects in group rather than individually. Recent innovation in modern techniques in farming are easily accepted by farmers.
2. Efficient transport and communication system - Every household has a telephone and vehicles for transport. Railroad transport system is very efficient. Time element is very important and less time is wasted in carrying out their business.
3. Efficient machineries - Machineries reduces labor inputs like transplanting machine, tractor tillers, rice combine, truck or trailer for hauling and processing equipments.
4. Land consolidation - Most of the land were consolidated in rectangular shape for efficient handling of machineries. Roads, irrigation canals and underground drainage are well constructed.
5. Improvement of soil productivity - Application of compost or returning crop residues in the fields improves the physical and biological properties of the soil. Soil amendments with the application of mineral elements improves the chemical properties of the soil. The Japanese farmers are compost conscious people.

6. Well organized cooperative system - The cooperative is playing an important role in the success of rice farming in Japan. All farming operations and personal undertakings like weeding, construction of houses, purchase of appliances and others are taken care of the cooperatives in the form of materials and financial support.

Agricultural chemicals are generally cheap as compared to prices in other Southeast Asian countries. No limit in the use of fertilizers and other chemicals. The Cooperatives is getting these materials directly from the factory and sell it to farmers in minimum cost.

Lastly, I would like to express my thanks and gratitudes to Watanabe san and his family for their warm accomodation extended tome during my stay with them. I am extending also my deepest appreciation to my Course Staff Messrs. Seino, Shida and Miura for their endeavor in making the program a success and to Mr. Fumio Ota a Japanese Extension Worker who helped us in the technical interview with our host farmer.

Case Study of a Japanese Farm Family

G. B. Nawaratne (Sri Lanka)

Place: Yamagata Prefecture, Kawanishi-Machi, Higashi, Okitama-Gun.

Sample: Mr. & Mrs Suzuki and Family

Introduction

As a part of our training here in Japan, farm household practice is also one of the main objectives. I stayed with this family with a fellow participant for four days from 26th to 30th of July, 1976. I was very eager to know about the farmers life as well as their techniques. It was a good opportunity for me to gather practical side of farming systems in Japan.

My host family Mr. & Mrs. Suzuki shared with me all what they do to increase rice production and to obtain high yields. I give below the facts I have collected during my short stay with them.

Family Background

| | <u>Members of family</u> | <u>Age</u> | <u>Relationship</u> | <u>Education</u> | <u>Employment</u> |
|----|--------------------------|------------|---------------------|--------------------|-------------------|
| 1) | Mrs Kasuku Suzuki | 48 | Wife | Senior high school | Full time farming |
| 2) | Mr. Eikithi Suzuki | 50 | House master | Agri. high School | -do- |
| 3) | Mrs. Hathu Suzuki | 71 | Mother | - | - |
| 4) | Mr. Eiichi Suzuki | 26 | Son | Senior high school | Full time farming |
| 5) | Mrs. Ithuko Suzuki | 22 | Daughter in law | Agri. high school | Office work |
| 6) | Miss Yoko Suzuki | 21 | Daughter | Junior college | -do- |
| 7) | Mr. Hidio Suzuki | 34 | Brother | Elementary school | - |

This family comes from a traditional farming family. Mr. Suzuki's father and grandfather had been cultivating the same paddy fields and living in the same house. From time to time with the addition of rooms to the house it has become larger and larger. Now there are about 12 rooms. With compared to other non-agricultural households this family is far above average standard. Mr. Suzuki who is the house master comes from a big family of 7 brothers. Fortunately Mr. Suzuki had selected farming as his carrier and

inherited the farm house and the paddy fields from his father. Other family members are taken up to non agricultural employments. They all come from the same prefecture and their ancestors had been living in the same community.

Mr. Ekithi's son after graduating from the Senior high school has partly succeeded his father in farming. He is very hard working and keep to the schedule. Due to high mechanized farming systems very less labour is being required so Mr. Ekithi's daughter and daughter in law are working out side as office workers. Mr. Hidio who is the youngest brother of Mr. Ekithi is a sick person. He helps to raise home garden vegetables for home consumption.

Farming Techniques

Land holding:

| | |
|-------------|--------|
| Paddy lands | 4.7 ha |
| Upland | 0.2 ha |

Straw compost added at the rate of 20 to 30 tons per ha and harrowed during late winter. In the month of April box nursery were prepared under vinyl cover and transplanted in the month of May. Fertilizers application was done according to the chart giving by the cooperative advicers and Extension officers up to heading time. After heading fertilizers are being added according to Mr. Katakura's advice. Mr. Katakura is the most progressive farmer in the community and well known in Japan. According to him 4 - 5 times has to be applied depending on the colour of the leaves. A chart of fertilizer application and a time table is being displayed on the wall. Programming of work is one of the motives of the Japanese farmers which highly impressed me.

Every month they have a day to day programme and this they strickly followed. Weed control methods were mostly done with better tillage practice and afterwards weedicides were applied. This year only two times weedicides were applied. Application of pesticides up to end of my stay had been twice. According to my farmer twice application is more than enough. I observed only very little symtoms of blast and sheath bligh. Application of chemicals is being done at the correct time. This helps to control pest and diseases almost up to 90%.

Under ground drainage system is one of the most important cultural practices that one should observe to increase rice yields. Mr. Suzuki farm consists of a very good under ground drainage system. With regard to farm machineries this farmer possess almost every basic requirements.

Agriculture Machinery and Tools

| | |
|----------------------|-------------|
| 1) Power tiller | 1 |
| 2) Tractor 4 wheel | 1 |
| 3) Sprayers | 2 |
| 4) Combine harvester | 1 |
| 5) Dryer | 1 |
| 6) Pumping set | 1 |
| 7) Two wheel tractor | 1 |
| 8) Pick-up truck | 1 |
| 9) Car | 1 |
| 10) Available labour | 3 full time |

I should say that Mr. Katakura who is the next door neighbor to my host family has contributed more towards Agricultural development of the country. Almost all the farmers follow his techniques. Although his ideas does not agree with the researchers he is able to get substantial yield increase with his wide experiences. Mr. Katakura's this year yield target is set for 8-9 tons per ha where as my farmer's yield target is about 7 tons per ha. According to my own survey the crop of Mr. Suzuki is far above average standard.

| | |
|--------------------------------------|----------------|
| No. of panicles per m ² | = 500 |
| No. of spike lets per panicles | = 80 |
| No. of spike lets per m ² | = 40,000 |
| Ripening ratio | = 85 % |
| Weight of 1000 grains | = 22 grms. |
| Yield expectation | = 7.5 tons/ha. |

Apart from paddy field, upland area which is 0.2 ha is being cultivated with vegetables. This is mostly for home consumption. They also raise two beef cattle for extra income and for compost making. In every respect their cultivation standard is far above the average farmers,

Net Income

| | |
|------------------------|--------------|
| Paddy land | = ¥4,650,000 |
| Beef cattle | = ¥ 72,000 |
| Non agriculture income | = ¥1,200,000 |
| Total | = ¥5,922,000 |

Non agriculture income is derived from his daughter and daughter in law. They are working as office workers. With the availability of farm machinery ex-labour is not required. 4.7 ha could be easily managed with the available 3 full time workers.

Condition of the Community (buraku)

| | |
|----------------------------|-----------|
| No. of house holds | = 40 |
| No. of farm house hold | = 36 |
| No. of non farm house hold | = 4 |
| Acreage of paddy fields | = 60 ha |
| Acreage of upland | = 18 ha |
| Average holding | = 1.95 ha |

The community is a part of Kawanishi-machi, and the farmers are very prosperous, mainly due to the productivity of the land. Well known devoted farmer Mr. Katakura is also living in the same city or community. I have observed that very many visitors come to see Mr. Katakura's farm to get novel technology. It is obvious that buraku members are all following his advice and techniques. My farmer is very closely associated with Mr. Katakura, specially Mr. Suzuki's son and Mr. Katakura's son are very food friends. The average yield of the buraku is about 6 tons per ha which is very high. Almost all buraku members are united. I have observed almost every evening at least 5 - 6 members does courtesy calls to each and every house. They live like family members. During my stay many members came to greet us and to share experiences. In the community group work is mostly practiced. Specially spraying is done as a group. Unity among the buraku members is very appreciable.

All the farmers are members of the Kawanishi-machi cooperative society. Cooperatives play a vital role in the development of agriculture in Japan. Assistance is given in every respect to the farmers through these coopera-

tives, such as credit, fertilizers, farm tools, marketing facilities and etc. I was able to visit Kawanishi-machi, Cooperative society to observed the facilities given to the farmers.

| | |
|---|--------|
| No. of households belong to the Cooperative | = 3345 |
| No. of members | = 4451 |
| Part time non-agriculture members | = 87 |
| Farmers group | = 23 |

There are 20 board of Directors and 5 auditors. There are 191 employees 7 branch coops are situated in various places. Very low interest is being taken from agriculture credit scheme which ranges from 6-12% depending on the type of loan. Apart from agriculture loans private loans are also given at a little high interest rates. Last years this cooperatives has handed over 25,200 tons of rice to the government. Agriculture income of the area is about 88%. Mrs. Suzuki does all the dealings with the rural institutions such as cooperative extension office, machinery shops and etc. She is a very energetic women. At least once a month she visit extension office and cooperative more oftenly. Extension officer also visits this farm once a month.

Meal Customs and General Behaviour

Like other farmers this family takes 3 meals a day. They all get up very early. Mrs. Suzuki attends to the cooking and daughter-in-law and also his daughter helps her. Brother is engage with watering of home garden crops and feeding of cows. Their religion was Buddhism. Before starting the day Mrs. Suzuki offers Buddha with food. They have a separate place for it. Breakfast is served at about 7:30 am, after the breakfast daughter and daughter-in-law leaves for their work. Mr. Suzuki & his son attended to paddy field work. Lunch is served at about 12 noon and dinner at 6:00pm. Cleaning of table is being done by mother of Mrs. Suzuki. After the dinner visitors come to discuss about current problems with regard to agriculture & community. House is fully equipped with modern equipments.

Conclusion

The farm house hold stay programme was quite a experience to me have gathered much about farmers life in Japan. The relationship among the family

members were quite peaceful. Even the buraku members were all interested. I admire the cooperation and unity among the buraku members. I am very much thankful to my host family for the treatments given to me during my stay and also to the extension officials of the area to have arrange such a marvelous programme. Finally I thanks the staff of Uchihara for the kind assistance and guidance given to us to make this programme a success.

memorandum

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