igue Text Book No.6

PROGRAMMING OF A DEMONSTRATION FARM IN INDONESIA

— Revised —

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PREFACE

The demonstration farm is a nucleus of agricultural extension service level -- at the farm as well as a basis to develop a farmer's group into a Himpunan tani and, more over, it is being expected to lay the foundation for development of the Himpunan tani into an agricultural cooperative association.

It is expected that by the development of this program the agricultural extension service will be firmly established enabling it to contribute to the increased food production of the country and the improvement of farmers' income and their living standard.

As a result of repeated efforts over the past four years, and since we are optimistic and confident in the performance of the program, we have made a revision of this textbook. We hope that this book will be of use in the development of demonstration farms. The contents will be revised and updated based on the results of review meetings which will be held each year.

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1. Progress of Demonstration Farm Programs

In order to increase food production, it is necessary to create interest and willingness to work among farmers. The Government of Indonesia and chemical makers have set up Demonstration Farms (unit area: about 0.1 ha) at one thousand several hundred places and have been holding technical demonstrations displaying varieties of grain, and fertilization and pest control techniques.

However, since well-conditioned lands of upper class farmers were selected, it seemed to be doubtful whether the demonstration could spread among most farmers or not.

By setting up demonstration farms with unit area of 3 ha, conducting intensive guidance and cooperation in rearing seedlings, practicing pest control and irrigation (It is hoped that the resulting high yields crop), will encourage farmers to increase their food production and will increase participation of petty farmers, thereby serving disseminate techniques and skills among peripheral farmers. Discussions at the demonstration farm center meetings will make efficient use of farmers' experiences.

After an extensive discussion with the former extension service director and his staff, as well as an observation of the practical application of technics two rice seasons during (1970–1970/1971 period), we are confident that this project will succeed.

This project got seriously underway in 1971 at the seven Kabupatens selected out of twenty Kabupatens in West Java.

In each season, three to four demonstration farms were newly set up in each Kabupaten. Some demonstration farms succeeded in establishing extension service, and one of them expanded its area to 82 ha (total area covered by farmers participating in the production system practiced by demonstration farms) within two seasons.

In unsuccessful demonstration farms, the harvest yielded an average of 3.5–4 ton/ha in wet weight of purified unhulled rice.

In such unsuccessful cases, without exception, the leaders of demonstration farms and extension workers in-charge lack interest in their work, resulting in a breakdown of technical extension service.

The diligence of extension workers will influence success or failure of demonstration farms.

Since the demonstration farm is the nucleous of the network, careful discussion must be made on how agricultural techniques can be dispersed from there to peripheral farmers. In order to increase food production, it is a matter of first priority to enhance the-will-to-produce among leaders of farm-households in the rural communities, and at the same time it is also important to create enthusiasm and practical skills among extension workers. For this purpose, the above mentioned seven Kabupatens have set up two Rural Extension Centers respectively.

A noticeable tendency is that these facilities are being used for multiple purposes such as rural youth and women's education. Hopefully these efforts will develop successful programs in other provinces, establish extension service, and increase food production.

II. The Purpose of Demonstration Farms

The purpose of this program is as follows:

1. Provide a nucleus in rural communities of extension service.
2. Increase food production through intensive technical guidance, and by maturating and encouraging inefficient, small scale farmers.
3. Disseminate techniques through cooperation and exchange of experience among participant farmers and non-participating farmers.
4. Initiate a widerange of profitable cooperative activities in seedling raising pest control, irrigation, and purchasing of farm management materials such as seeds, fertilizers, and farm chemicals.
5. Encourage peripheral farmers to participate voluntarily in the production system of the demonstration farm resulting in future development of Himpunan tani as a cooperative association.
6. Utilize the credit system of Bimas, to increase peripheral farmers participation in the demonstration farm.

III. Selection of Demonstration Farms

Selection of site, organization and staffing of demonstration farms affect success or failure.

1. Demonstration farms should be selected in a topographical location suitable bar seedling rearing, pest control, and irrigation and other technical guidance.
2. A demonstration farm must be organized within the same village. When it extends over two villages, it is difficult to perform cooperative work through mutual consent.
3. The leaders of demonstration farms must be trusted by fellow members enthusiastic and hard working, and concerned with the welfare of all members.

   If leaders and extension workers are earnest, and men of character, the programs will succeed.

   Even capable leader of high-level technical skill, will not success in organizing a Himpunan tani and a cooperative association unless he is trusted by member farmers.
4. It is important to gain the cooperation and support of the Camat (head of district), Lurah (head of Village) and P.T.D. (village agricultural official).
5. It is convenient for farmers to have a demonstration farm within the Bimas area, so that they can utilize the Bimas credit system. However, this is not a necessary requirement. The credit of Bimas can be utilized even when a demonstration farm is set up outside the Bimas area.
6. A year-round adequate water supply is essential.
7. To facilitate public relations work and increase the frequency of visits to demonstration farm, they should be located conveniently, with easy access to the Rural Extension Center.

   If a demonstration farm fails, participating farmer come to distrust change and new techniques, making it difficult to introduce new methods in the future as well.

   Accordingly, demonstration farms must be selected carefully to assure success. To guarantee against failure, the number of

demonstration farms should only be decided after a realistic assessment of leaders' and extension worker's organizational ability and limitations.

IV. Preparation of the Plan

1. Operation Program

Using the textbook for reference, the extension workers and leaders of farmers groups should prepare an operations program. A site is selected and the cooperation of participating farmers is enlisted. Periodical evaluation sessions are held. To assure the program coincides with practice, the operating program should be periodically revised.

2. Guidance Program

Staff of rural extension centers establish program guidelines, explain the program to farmers, and lecture on rice cultivation techniques through text and demonstrated practical application of techniques.

After the harvesting, a review and discussion meeting is held, and the next term guidance program is revised accordingly.

V. Priority Items in Technical Guidance

A summary of the textbook and a picture book (for illiterate farmers) provides instruction in each field of operation. The farmers are requested to practice their field operation as outlined in the textbook.

Important points are as follows:

1. The rearing of seedlings

(1) The farmers are requested to recognize the importance of rearing healthy and disease-free seedlings in the cooperative rice seedling nursery.

(2) Fertilizer and seed must be uniformly distributed to

(3) Inspection of water control, systems insect pests and disease control, and rodent control must be conducted at least twice a day.

(4) When heavy rain threatens, seed bed field must be kept submerged below water run off level to prevent seeds and seedlings from lodging runing-off and uprooting and washing away.

2. Rice transplanting

Rice transplanting workers should be instructed to make a shallow transplant (3 cm in depth). Until this method become established after 2 to 3 rice planting seasons, a line drawn three centimeters from the finger tips, will serve as a helpful marker indicating appropriate planting depth.

If paddy fields are submerged or soil moisture is too high, the seedlings should be planted deeply to prevent them from uprooting. For this purpose, rice transplanting must be undertaken after the soil moisture is adjusted. Water level should be reduced to the degree that seedlings do not lodge.

3. Fertilization

(1) Basic fertilizer

Prior to the puddling day, paddy fields must be measured and the quantity of fertilize needed for each paddy field must be determined.

Watering must stop before puddling and the basic fertilizer must be then applied evenly on the surface of the paddy fields.

(2) Top dressing

Prior to top dressing, the water depth must be fixed at 5 to 6 cm through water supply control. Fertilizers are spread carefully. If there is uneven growth or discoloring of plant leaves, extra fertilizer must be spread on plants of retarded growth and on the discolored and unhealthy areas.

After the top dressing process is complete, watering must stop for 3 to 4 days so that soils can absorb fertilizers. After top dressing, fertilizers and soils must be mixed up well by using a hand weeder. This prevent the run-off of fertilizers.

4. Insect, Pest and Disease Control

Since liquid chemicals are generally sprayed at only 1/3 to 1/4 of the regular dose, a fixed quantity of liquid chemicals should be

sprayed evenly at the lower part of the plant stems.

If the nozzle dish and disk hole become larger, they must be changed for new ones. Large drops of spray, waste chemicals.

Liquid insecticides kill rice gall midge but are not powerfull enough to kill its larva, so it is better not to use it for this kind of insect.

Granules such as Diazinon and BHC are effective against these pests. If granules are used they must be sprayed evenly in the paddy fields, keeping the water at 4 to 5 cm in depth after closing off water intake.

Water must be stopped for 3 to 4 days after spraying. Paddy fields must be submerged, if granules are used. (For details on rice gall midge, see noxious insects in the textbook.)

5. Harvesting

Grain shedding occurs when rice harvesting is timed after maturation of rice panicles. Accordingly, it would be better to harvest about three days sooner than is now generally practiced.

6. Others

Some farmers, use fertilizers and farm chemicals, allotted to demonstration farms, on paddy fields other than those of the demonstration farm.

This may cause erroneous diagnosis.

After measuring each plot of paddy fields and determining fertilizer requirements, fertilizer must be delivered promptly to the farmer.

Extension workers must see that the quantity allotted to each demonstration paddy field is distributed as ordered.

VI. Communication

Enthusiasm and skills of participant farmers will be enriched by such activities as study tours to successful demonstration farms, discussion meetings or lectures and technical films.

VII. Extension Service for peripheral farmers around the Demonstration Farms

Extension workers must survey and review demonstration farms every year, in order to ascertain whether extension services to peripheral farmers around the demonstration farms are successful or not. These insights will improve future extension programs.

VIII. Guidance of Farm management

An efficient system of guidance for farm management is possible if farmers keep record books and economic survey, are conducted. Economic surveys should be concise and relevant. Results are after unreliable, when those surveyed tire from an overly long questionnaire.