OUTLINE OF THE LAMPUNG PROVINCE
RURAL DEVELOPMENT PROJECT IN SUMATRA, INDONESIA

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Japan International Cooperation Agency

CONTENTS

Preface

Since the end of the World War II the world agricultural production has repeatedly experienced a poor or rich harvest with a cycle of approximately ten years at which either a food crisis was pointed out or the Green Revolution was applauded and a cry for the expansion of food production was also raised or balanced distribution of income was advocated.

Recently agricultural production has been favorable and the emphasis has begun to be placed on measures for fairer distribution of income and the lower income group. In the meantime, regional or rural development has long been planned and carried out as part of social and economic development. However, in view of the past experience that when the means of development were thrown in piecemeal the effect was often small, attention has been paid recently to a more integrated type of plan whereby means of development are thrown in as a package.

It was from these two points of view that the World Bank published the Rural Development in 1975 and the FAO, in conjunction with the World Bank prepared the Guidelines for Preparation of Feasibility Studies--Rural Development Project in the same year. The ADB also published the Sector Paper on Agricultural and Rural

Development in 1978, giving a guideline for each type of development.

In Japan, however, integrated rural development has long been carried out centering on paddy cultivation with the village as the minimum socio-economic functional unit. Even today agrarian economics comes under the Department of Economics and agricultural civil engineering under the Department of Engineering at universities in other countries; but they belong to the Department of Agriculture in Japan as they developed as systems of study from agriculture.

Furthermore, construction of irrigation dams and farm roads, farmers' cooperatives, financing, processing of agricultural product, marketing, etc. are under the jurisdiction of the Ministry of Agriculture, Forestry and Fisheries, unlike other countries where they are under the jurisdiction of different ministries such as Ministry of Agriculture, Ministry of Public Works, Ministry of Labor, Ministry of Finance, Ministry of Industry, Ministry of Commerce, etc. Thus, rural development in Japan is integrated both in terms of academic study and in terms of administration and it has in fact been carried out comprehensively without meeting any resistance in and out of the country.

It may also be pointed out that the remark made by the international aid agencies that it is important to foster farmers' organizations from the smallest unit so that they may take part in planning and implementation is by no means a new approach to Japan where the Shūraku, the smallest functional unit, could easily be reorganized into an agricultural cooperatives.

Accordingly, in agricultural development cooperation provided by Japan the integrated method or the package approach being advocated by the international agencies recently has long been applied to a large number of projects such as the Janakpur Agricultural Development in Nepal and Rural Development Project in Dewahuwa, Sri Lanka, not to speak of the Lampung Agricultural Development.

The method applied in general to these projects was to foster diligent efforts on the part of farmers for establishing an integrated system, development of technology--provision of the basis and diffusion of techniques--production--processing and marketing, and powerful assistance to the system on the part of government agencies. The purpose of this paper is to outline, as an example of Integrated Rural Development Projects, the Lampung Province Rural Development Project.

In order to promote such regional rural development, it will be necessary to provide the basis of agriculture such as physical infrastructure, e.g., irrigation facilities and farm roads, social infrastructure, e.g., agricultural cooperatives, and also production, processing and marketing. Further, cooperation in sectors other than agriculture, such as agro-industries, roads, ports and education will be necessary.

In the form of assistance, too, it will be necessary to apply appropriate input to appropriate fields; technical cooperation as well as loans, grants, cooperation on a private basis in marketing and provison with agricultural goods seems to be done more effectively than by government agencies. Accordingly, it will also be necessary for Japan to take part in planning based on a strategy adjusted between government agencies, OECF and JICA which provide capital assistance and technical cooperation respectively private business.

Two different methods may be adopted in rural development tactics. In Lampung Provice there exist both land with traditional farming established already and land newly reclaimed by migrants. Traditional farming is in many cases a rational way of farming for given social, economic and natural conditions; drastic modernization of one sector may result in an imbalance among the various conditions, requiring, therefore, gradual introduction of modernization.

For instance, the rather slow adoption of the paddy rice varieties of the IRRI line is not due to the rice price or the taste. It is because of the lack of transportation and the means of drying for an easy shattering habit varieties, and stalk is the form which avoids the loss from primitive way of transportation by bicycles, carrier bars and drying on earth. On the other hand, it is desirable to adopt balanced modern farming techniques form the beginning in the case of openning new land.

While promotion of rural development is thus faced with some difficulties, Lampung's tomorrow is bright with promise owing to the habitual diligent efforts of farmers for many years. The reporter takes this opportunity to express its appreciation and thanks to Indonesian officials concerned and Japanese experts for most industrious activities on the project.

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1. General Condition of Lampung Province

Lampung Province is situated on the southern end of Sumatra occupying a total area of approximately 28 million ha centering around 5°S. The highest mountain in the province is about 1,200m high and the western part is occupied by hills of 400-500m, gently inclining to the east with a steep slope on the west, and a large river flows west-east. Soil texture is podzol and latosol with large acid content and high phosphoric acid absorption coefficient.

The climate is tropical with a total annual precipitation of 2,500mm-3,00mm, with the rainy season lasting from November to April. Though the months from May to October for the dry season, monthly total precipitation is seldom below 50mm.

According to the population census of 1971, the province has a total population of 2.8 million with the rate of increase of 5% per annum. With an estimated annual natural increase of 2.5%, therefore, an estimated total of migrants is about 70,000 a year.

The Capital of the province is Tanjung Karang/ Telkubetong which is also the County Town of the Southern County. The Middle County Town is Metro and the Northern County Town is Kotabumi. Agriculture is the sole industry of the province.

2. Outline of Agriculture in Lampung and the Development Policy

Paddy farming and upland farming the main forms of agriculture in Lampung with few forestry products and poor accumulation. The stock farming is relatively active with 60,000 buffaloes and 70,000 cattle. However, the development possibilities are not yet clear. The same applies to fisheries, though they produce a total catch of 30,000 tons of fresh-water and sea-water fish.

1) Agriculture in terms of land use (as of 1972)

Agricultural land amounts to 600,000 ha, accounting for 21% of the total area of Lampung Province, which may be broken down to: industrial perennial crops 160,000 ha; paddy fields 80,000 ha; ordinary upland 100,000 ha; shift farming 100,000 ha; fruit tree 15,000 ha; estates 15,000 ha; and gardens 130,000 ha.

The population of Lampung is expected to reach 3,800,000 in 1980. A total of 160,000 ha of paddy fields will then be necessary if the annual consumption of polished rice per head is 100kg (75kg at present). Accordingly, we thought that a large scale irrigation work and an increase a yield of paddy rice were urgent tasks.

Further, burnt fields covered with Alang-Alang and not used for production amount to 400,000 ha, and their development as agricultural land or for afforestation is also an important problem.

2) Paddy farming (as of 1972)

Of 80,000 ha of paddy fields in Lampung, 40,000 ha are in the Southern County; many of them are either rain-fed fields or served by small irrigation channels. The Middle County occupies 36,000 ha mostly with irrigation facilities, and most of the rain-fed fields of 10,000 ha in the Northern County are rain-fed fields.

The double cropping ratio of rice for the province is mere 20%; the remaining 80% is not planted during the dry season except for some vegetables. If the method of utilization is developed, it will be very effective.

The farmers are well aware of the effect of fertilization through the BIMAS Program, whereby fertilizer and agricultural chemicals are supplied in package by the Indonesian Government by means of credit.

The level of cultivation techniques is higher in the south. For instance, varieties belonging to the IRRI line are already on the decrease in the

south, being replaced by Indonesian high yield varieties. The IRRI varieties account for nearly 30% in the middle part and still penetrating; but there are hardly any in the north. The irrigation channels served by Argogruh headwork are currently undergoing rapid expansion and reclamation is also in progress.

3) Ordinary upland (as of 1972)

In general, farmers have land of about 2 ha each and try to maintain soil fertility by rotation at a cycle of 2-3 years. In the rainy season upland rice is planted in about 80% often with corns. Only cassaba is usually planted in the dry season. Since upland rice has low yield and unstable, it forms the bottleneck in increasing agricultural income. With the accomplishment of paddy field development and increased yield, therefore, upland rice will be replaced by other advantageous crops such as corns and soybeans. Then per capita GNP will easily reach $100. Further, exports of these cash crops will play an important role in acquiring foreign currencies for Indonesia.

Though exports of corns had reached several ten thousand tons a year, mildew which broke out in the eastern part in 1973 spread to major corn crop

areas in 1974, making planting almost impossible. From the wet season crop of 1975, the situation became stable due to the adoption of a disease resistance variety by the Tegineneng Agricultural Development Center, though the damage to those farmers using non-disease resistance varieties is still very extensive.

With increased national income it will be necessary to make a shift to industrial perennial crops such as clove, pepper, coffee, etc. to increase the income of the farmers of the province. For that purpose capital accumulation through cash crops on ordinary upland is desirable.

4) Industrial perennial crops (as of 1972)

160,000 ha of industrial perennial crops are mainly managed by the natives of Lampung (population ratio of 40%), of which 55,000 ha are planted with coffee, accounting for 24% of the total export value. Clove occupies 40,000 ha or 38% and coconut 40,000 ha. However, coffee is stagnant due to the shortage of labor for weeding and papper under the effect of the disease. Accordingly, expectations are placed on clove because of the cash income it brings.

5) Joint venture with Japanese business

The three trading firms of Mutsui, Mitsubishi

and Itochu are established in the province. In particular Mitsui developed the method of mechanical reclamation for Alang-Alang. However, the development of corns planned by Mitsui and Itochu had to be abandoned because of mildew and were forced to switch over to the production of mainly cassaba and upland rice. With the promotion of the development of field farming, these enterprises will play an increasingly important role in marketing and provision with agricultural goods.

3. Background of the Project

The Survey Team of the Ministry of Agriculture and Forestry sent in February, 1971, carried out project finding and exchanged notes between the Japanese Government and the Indonesian Government concerning yen loans in respect to way Djapara irrigation (completed), state oil palm estate (implemented by IDA), 60km-Meize Road (under construction) and the ferry between Meraku and Bakauni. Three irrigation projects at Way Ump, Way Rarem and Way Penbuguan and the southern section of Sumatra Highway are also expected to be taken up and a feasibility study, etc. are in progress.

In 1972, two long-term survey experts were sent for one year to carry out survey of farm management and follow-up study of economic cooperation projects and also to formulate a technical cooperation project. Thus the Agreement between the Government of Japan and the Government of the Republic of Indonesia concerning Technical Cooperation for the Lampung Agricultural Development Project was signed in November, 1972.

On the basis of the Agreement, the first experts arrived in March, 1973, followed by the arrival of agricultural goods provided in May, commencing the implementation of technical cooperation. Further, financing and technical guidance through the dispatch of experts are being provided for joint venture companies. In addition, 15 Rural Extension Centers were established by grants in 1977.

4. Implementation of Technical Cooperation

Thus the 5-year Agricultural Technical Cooperation has been extended by two years and is currently in progress. The scope of the project consists of three subprojects: Tegineneng Agricultural Development Center, paddy cultivation and upland farming. Japan's cooperation consists of provision of machinery and

materials (totalling approximately $5 million by 1978), dispatch of experts and receiving counterparts for trainees (31 by 1978). The Indonesian side is to provide funds for the construction of the Agricultural Development Center (ADC) and the Totokatong Demonstration Farm to be described later.

The Japanese long-term experts sent in 1977 were: leader, 2 for agricultural extension, 2 for paddy cultivation and upland farming, 4 for plant protection, soil and fertilizer, farm management, agricultural machinery and irrigation, and 1 liaison officer, totalling 15. They are provided with 1 Indonesian counterpart each.

1) Tegineneng Agricultural Development Center (ADC).

The ADC has the following functions:

a) Various adaptability tests of paddy rice and upland crops.

b) Collection, analysis and distribution of information (by the attached Agricultural Information Center).

c) Training of key farmers (by the attached Agricultural Training Center).

d) Seed multiplication.

In order to perform these functions, various facilities which had previously functioned as the Corn Center were first improved. Thus the establishment of 5 ha of testing upland field, 5 ha of experimental paddy field, small irrigation dam, irrigation pump and irrigation and drainage facilities were completed.

At the same time, construction of the office, laboratory, warehouse, living quarters is almost complete and testing began in 1977. Guidance is also given for the trial manufacture of agricultural equipment. The paddy field rotary weeder became particularly popular and several hundred units have already been sold.

With regard to the collection of information, on the basis of the survey of farm management (systematic sampling with sampling ratio of 1/10) conducted by the long-term survey experts before the commencement of the project and similar surveys to be conducted in the future, it is hoped that measurement of the effect of extension will be possible and a guideline for the improvement of extension may be obtained.

With regard to the training of experts, training in various fields of agriculture was carried out for extension personnel, Ketjamatan officials and key farmers concerning rice cultivation, ordinary upland

farming, perennial crops and migrants, and agricultrual college students and high school students have also been accepted for training.

2) Paddy cultivation

For the purpose of agricultural extension for approximately 10,000 ha of paddy fields served by Argogruh headwork, a pilot farm of 100 ha was established at Totokatong for demonstration to newly reclaimed areas against existing paddy fields.

a) Demonstration farms

Demonstration farms are approximately 5 ha per unit to which fertilizer and chemicals are supplied together with technical guidance. Further, semi-demonstration farms are provided around demonstration farms for technical guidance. At the same time, trial plots of 0.1 ha are established for carrying out tests on the three elements of fertilizer and also on dry season cropping of paddy fields. Demonstration farms are to run for two years or four crops, and a total of 41 farms was administered with 170 related societies (2, 160 households with 1,080 ha) in five years.

The single crop of rice is under 3 unhulled t/ha; but the demonstration farms recorded over 4 unhulled t/ha. Further, the test on dry season cropping of paddy fields conducted in trial plots shows the possibility of economic cultivation of green peas and vegetables. When the system of cultivation is established for each of these, it will be extremely important for paddy cultivation in Lampung with the ratio of double cropping of only 20%.

b) Totokatong Pilot Farm (100 ha)

While the demonstration farm is intended to improve traditional paddy rice cultivation techniques, the purpose the pilot farm is to establish an integrated system of modern techniques covering the provision of infrastructure, production techniques, processing and distribution. Irrigation facilities for 100 ha of paddy fields covered with one tertiary canal, construction of paddy fields and a rice mill have been completed and carrying out the activities as below.

i) Dissemination of crop growing standards established by ADC.

ii) Adoption of mechanized farm management system.

iii) Establishment of agricultural cooperatives

Four units of farmers' groups have already been formed centering around rice milling facilities provided. Countervalues of fertilizer, etc., which were provided, have all been collected and are being used for various cooperative activities.

iv) Survey of farm management, management evaluation, guidance, etc.

c) Extension activities

On-site lecture meetings on paddy cultivation techniques have been organized (two lecture meetings held in 1975 attended by 260 farmers):

Survey of fields in the project area has been conducted, while giving guidance regarding cultivation problems (guidance given to 120 farmers in 1975).

Study tour covering cooperative activities, disease control, vegetable cultivation, paddy fishery, etc. has been conducted four times, attended by 230 in 1975.

Film showing regarding agricultural techniques was organized at six places in 1975, attended by about 5,000.

These activities will no doubt be extended further in the future.

3) Upland farming

For the purpose of agricultural extension to major upland farming areas of 5,000 ha in the middle and southern parts of Lampung, group guidance on a village basis and trial plots, one for every 100 ha, have been established to conduct on-site testing and displays.

a) Village guidance

In upland farming there is already established traditional mixed cropping on the premise of using no fertilizer and it is an important task to improve this method. Similarly important problems are deterioration in quality due to inferior drying and storage techniques and exploitation in intermediate margin through mass purchase by brokers. Accordingly, the present project planned to give guidance on a village basis with the purpose of rationalizing processing and distribution by cooperatives. As of 1975 guidance was being given to about 50 villages (average size: 100 households and 100 ha) regarding mainly lending of power tillers, provision of fertilizer and chemicals, and technical guidance. This is highly evaluated by farmers, and particularly the three-fold increase in yield of upland rice due to

fertilization had a great impact on those farmers who had no experience of fertilization in upland farming.

The fact that the fund recovery ratio in respect to countervalues of fertilizer and chemicals reaches 75-95%, though it is lower than that in the case of paddy fields, is remarkable in Indonesia, and these funds are being used to construct drying facilities, farm roads, etc.

About 40 units of farmers' groups (kelompok), each consisting of 10-20 households, have already been formed and are being organized as Himpunan, or agricultural cooperatives, on a village basis. Kelompok has a group account and carries out activities under the guidance given by extension personnel. In 1975, a 3-day lecture meeting on upland farming was organized in 25 villages and travelling guidance was provided for 10 villages.

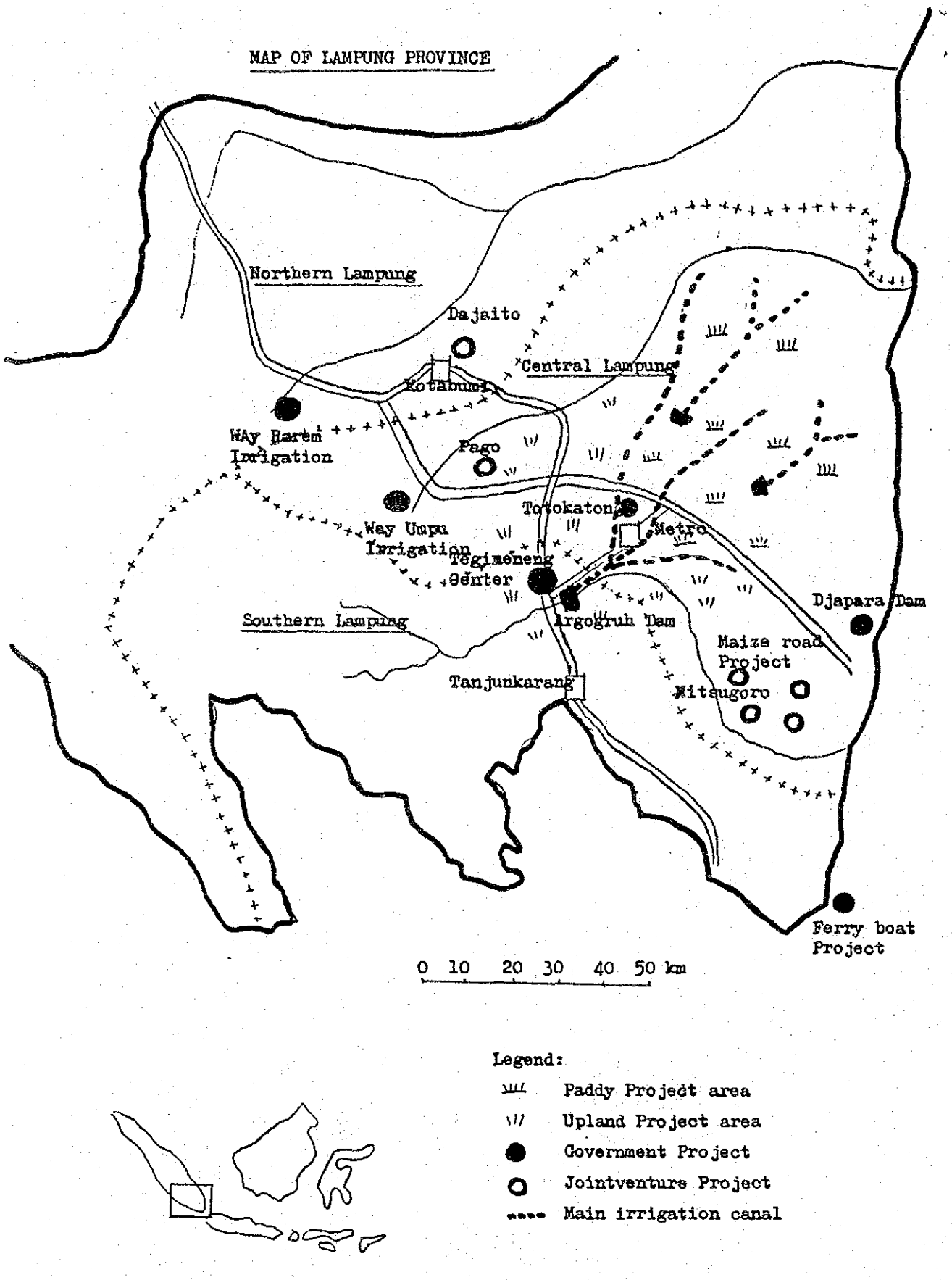
b) Trial plot

In order to gradually improve the traditional farming techniques, a total area of 0.3 ha has been divided into trial plots to ascertain and exhibit the effect of fertilizer and chemicals without altering mixed cropping, cropping pattern, drill sawing and other cultivation methods. These

trial plots totalled 50 by 1975. This method is expected to be employed for new cultivation methods in future.

Conclusion

As has been described, the Lampung Rural Development Project is intended to implement regional rural development for the purpose of increasing the income of farmers and production by incorporating Japan's past experiences in various types of cooperation and also by adopting new methods. As is clear from the fact that the Indonesian Government has proposed joint evaluation survey with the Japanese Government, the project has various problems to be solved in the future. It is hoped that the project will successfully be carried out and that valuable lessons will be learnt for rural development which may be carried out in the future.


MAP OF LAMPUNG PROVINCE
Northern Lampung
Dajaito
Central Lampung
Kotabumi
Way Harem Irrigation
Pago
Tokokaton
Metro
Way Umpu Irrigation
Tegineneng
Center
Djapara Dam
Southern Lampung
Argoguruh Dam
Maize road Project
Tanjunkarang
Mitsugoro
Ferry boat Project
0 10 20 30 40 50 km
Legend:
Paddy Project area
Upland Project area
Government Project
Jointventure Project
Main irrigation canal