

Realities of Contribution of a Large Scale Afforestation Project on Rural Development

— A case of RP-Japan Forestry Development Project in Central Luzon —

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Introduction

To ensure the projected life and the continued usefulness of Pantabangan Dam, the largest multipurpose dam in the Philippines, the national government launched a number of special projects which aimed at restoration of forest cover in the watershed. RP-Japan Forestry Development Project which started as a bilateral cooperation by governments of the Philippines and Japan in 1976 was one of those projects. The more specific aim of the project was to develop an appropriate technique necessary for rehabilitating open/denuded land through test plantations using the designated hillside of 8,100 ha, the vegetation of which had long been disturbed by improper land use by inhabitants in the watershed. After 11 years of implementation the area of plantation reached 6,800 ha, mainly with fast growing species, and the project succeeded into the second phase in which emphasis is put on introducing long rotation species and developing measures for implementing community based plantation program.

Though the main objective of the project was to develop necessary afforestation technique, it is considered that the upliftment of economic conditions of local people was also a vital part of the overall objectives. In this regard, as an essential part of research work, a field survey to assess socio-economic effects

of the project on neighboring communities was conducted. The specific aims of the survey were to examine the changes in socio-economic conditions of local people as well as their perception on the importance of plantation program. This paper summarizes the major findings of the survey¹⁾ and comes up with some implications for more pertinent project design for the second phase.

General condition of the project site

The project site is located within the municipalities of Carranglan and Pantabangan, the province of Nueva Ecija, 185 km northeast of Manila (Fig. 1). It covers a part of water catchment of Pantabangan dam, the first multipurpose dam constructed at Upper Panpanga River Basin in 1974.

The climate of the area is tropical and monsoonal with an average annual temperature of 27°C and annual rainfall of 1,850 mm²⁾.

The land use of the catchment is characterized by two components, wide open grassland from rolling hill to steep mountain ridges and rice field at gentle/flat land of lower elevation. The hilly areas with poor vegetation have long been subjected to improper land use, such as shifting cultivation, grazing domestic animals etc., by the inhabitants of the watershed³⁾ (Plates 1 and 2).

The population in the two municipalities was

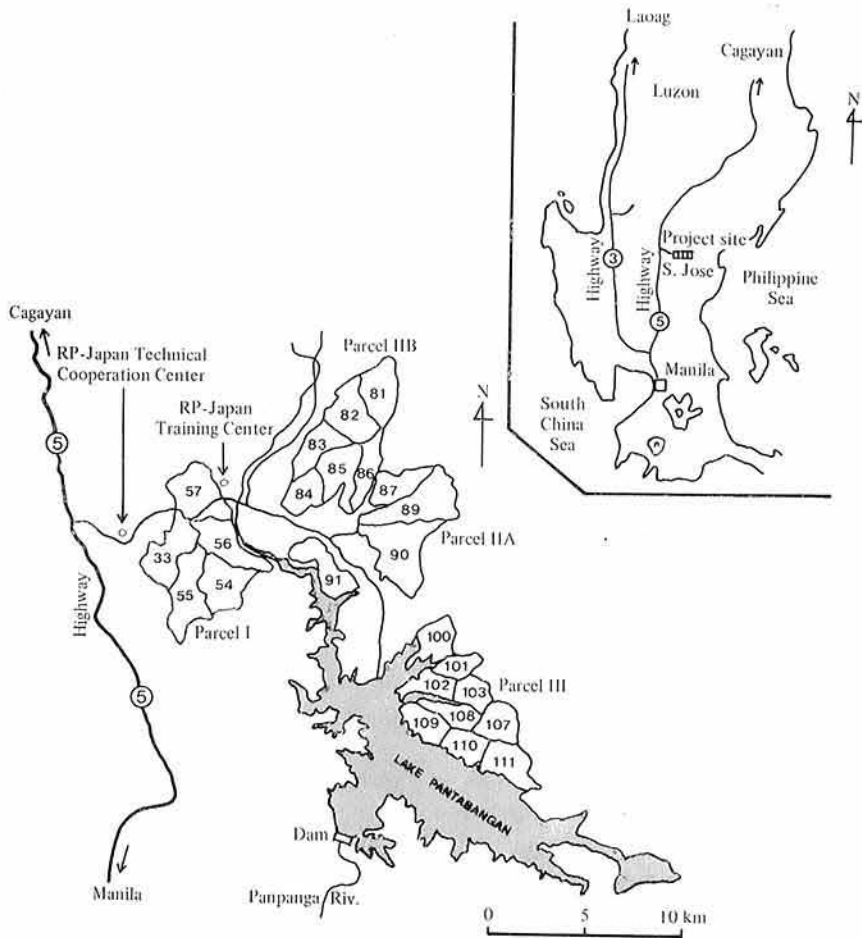


Fig. 1. Location of the project site



Plate 1. Landscape of the project site

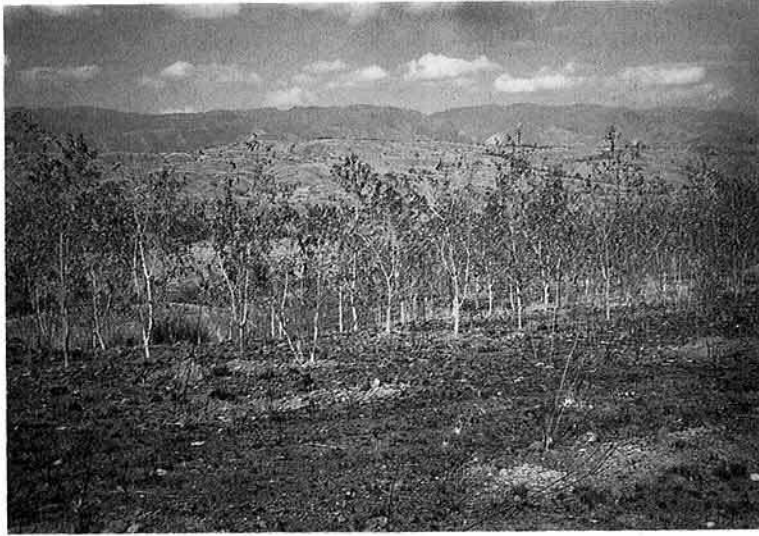


Plate 2. New plantation damaged by fire

estimated at 35,300 persons in 1980, with 6,300 households. For a couple of decades, with higher birth rate and a large number of settlements from outside the population of the watershed increased at a higher rate, e.g. in Carranglan 3.3% per annum during 1975-80, as compared with 2.7% of national average.

Agriculture is the most important economic activity in the area and the majority of people depend on farming for their main source of income. Another important component is the wage work in government afforestation programs.

Farming activities in the watershed are categorized into two types, lowland rice farming and upland farming. The area cultivated for rainfed and irrigated rice farming is estimated at around 8,500 ha and its structure of production is characterized by landlord and tenant system, smallness in size, and high dependency of labor work on landless poor. With unstable yield, especially on rainfed farms, and the high payments for tenancy and input costs, the economic conditions of lowland people are not better off but suffering hardship. Upland farming is performed by subsistent farmers, including tribal people, migrants from lowland, and other types of uplanders.

Changes in economic conditions

The major factors which determine the kinds and the extent of socio-economic effects on rural communities are the number of laborers employed, the amount of wages paid to workers by the project and the employment policies the management adopted.

According to official record, the number of local people employed by the project reached more than 2,000 in the peak year (Table 1). Supposing the number of people at working age, more than 15 years old, in neighboring communities around 8,000, the fact tells that approximately one quarter of them obtained employment opportunities in the project. In terms of wages paid it comes up to 5.7 million pesos in average for 1981-85 period (Table 2). With rough estimate the figure accounts for about 7% of the total income in the neighboring communities, which consists of two main sources, i.e., rice farming (includes self-consumption) and wage works in government afforestation programs. This proves that the implementation of the large scale plantation operation had provided exceedingly favorable income opportunities, especially in terms of cash income, to inhabitants of the watershed.

The data obtained through interviews with

Table 1. Number of workers/laborers hired by RP-Japan Project, 1980—1985, during planting season (June—September)

	1980	1981	1982	1983	1984	1985
Staffs and other personnels	55	123	183	296	212	145
Laborers						
Nursery operation	300	250	153	248	200	110
Planting operation	600	860	725	820	705	685
Plantation maintenance and protection	362	695	619	610	99	299
Forest engineering	60	50	64	68	11	15
Research	50	60	25	25	15	21
Total	1,427	2,088	1,769	2,067	1,242	1,275

Note: Laborers working for forest protection and maintenance were engaged in replanting, fertilization, and weeding during planting season.

Table 2. Annual wages paid to workers/laborers hired by RP-Japan Project, 1977—1985
(Unit: 1,000 pesos)

	1978	1979	1980	1981	1982	1983	1984	1985
Nursery operation	1,038	1,282	1,898	1,906	1,367	1,195	1,094	1,272
Planting operation	618	1,392	1,264	1,265	939	398	936	1,509
Plantation maintenance and protection	686	876	968	2,577	2,687	1,221	1,367	1,582
Forest engineering	734	1,812	475	638	1,084	318	236	303
Research	35	52	186	87	206	65	92	111
General administration	109	286	703	925	694	420	776	1,177
Total	3,219	5,701	5,493	7,399	6,977	3,618	4,502	5,954

Table 3. The changes of laborers' income between before and after employed by the project, by main occupation

Main occupation	Total income in 1985 (pesos)	Total income before employed (equivalent value of 1985) (pesos)
Laborer (N=11)	11,900	6,500
Laborer, agricultural worker (N=9)	9,700	6,900
Laborer, tenant farmer (N=7)	21,900	7,100
Laborer, land owning cultivator (N=3)	36,900	5,900
Average (N=30)	16,900	6,700

N: Number of data obtained by questionnaire.

laborers corroborates that there some distinct changes arose in household economies among people hired by the project (Table 3).

In addition to the foregoing data, employment policy adopted by the project gives another fact which endorses the positive effects on the economic welfare of poor people. The policy was based on two principles, to give first priority to poorer people and to divide

job opportunities equally among pertinent applicants. Owing to this thoughtful policy a substantial part of wages of the project had been paid preferably to lower income people, and consequently the project extended positive effects with respects to the improvement of economic conditions, especially of those suffering hardship under poverty line.

Changes in social conditions

Changes in social conditions closely connected to changes in economic conditions. Facts which endowed the influence on people's way of life are as follows:

- (1) With the decrease of jobless people, criminal acts such as robberies and stealings had ceased.
- (2) The number of settlers seeking job opportunities from outside had greatly increased.
- (3) Destructive land clearings for food crops had decreased.

On the other hand, as a negative effect, it was observed that local people had become excessively dependent on the job opportunities provided by the project, which posed problems on economic stabilities of neighboring communities after termination of the project.

Changes in people's understandings

In the past, there were some tendencies among local people to regard tree planting in the mountains as duties of government and it benefitted just providing job opportunities for them. To make people understand that the rehabilitation of forest environment brings beneficial effects on rural development over the long term, continued efforts were made. They were:

- (1) To educate laborers through daily job.
- (2) To disseminate knowledge through community leaders.
- (3) To induce local people be interested in tree planting through contract work.
- (4) To establish demonstration sites along main roads.

Although the effectiveness of these attempts is not fully examined, the results of personal interviews with laborers indicate some favorable tendencies in people's understandings on the indirect benefits of tree planting (Table 4). Since the effects of extension work are in gradual process, the foregoing tendency appears to prove the changing nature in the people's understandings toward more favorable

ones.

Achievements of Family Approach plantation program

As a trial of local involvement, the project introduced a new program for 1981-84 period. The program, called Family Approach, is the plantation work undertaken by applied families with contract basis. The major contents of the program were as follows:

- (1) Participants perform plantation work on assigned lots, average 4 ha per family, within a given period of 3 years.
- (2) Protection of stands is on the responsibilities of participants.
- (3) The project provides necessary materials for raising seedlings and vehicles for transplantation.
- (4) The payment for contract work consists of several installments according to achievements of each consecutive work.

The results of planting works by participants were not necessarily satisfactory to meet the requirements prescribed by the project. However, there observed a very little difference in the survival ratio and height

Table 4. Laborers' understandings about the benefit of the afforestation project by questionnaires as of 1986

Understandings	Number (persons)	Ratio (percent)
Beneficial	30	100
Give job opportunity	23	77
Meet wood requirements	24	80
Housing material	14	47
Fuel wood	21	70
Charcoal	8	27
Fodder, etc.	1	3
Rehabilitate soil condition	5	17
Prevent erosion	12	40
Conservation of water	6	20
Not so beneficial	0	0
No answer	0	0
Total	30	100

of trees between Family Approach and ordinary plantation programs, and what is more, the trial program was quite instrumental in preventing forest fire, which had hindered the project for many years. With respect to local appreciation, despite of the stringent requirements laid by the project, the majority of participants expressed their satisfaction to the payments and willingness to joint the similar program in another area.

Constraints and needs for improvement

The foregoing findings give some insights into the needs for improvement of project design and management.

The project provided exceedingly favorable job opportunities for local people in the watershed. However, there observed some tendency of overdependency on wage work among people hired by the project, and this implicitly poses problems of economic instabilities that may arise after the termination of the project. If the project make progress with intention to extend equitable contribution on economic stabilities of neighboring communities, local involvement in plantation work which coincides with the overall rural development program must be introduced in the project design. When local people participate in all stages from planting to sharing profit of tree growing, not a few problems the project encountered, such as intentional fire, will be overcome.

The project has so many management staffs

and technical experts in areas of nursery work, plantation operation, etc., and they engage in their own job at least. However, in order to introduce local involvement into the project design there is definite need that the project attains and keeps close contact with local people, and to reflect their necessities and wishes to the project management. This calls for those management staffs and technical experts to be more people-oriented in pursuing their assigned work. This leads to note that the program of retraining those staffs and experts to become relevant extension agents who can communicate with poor people is also an important requisite for more successful development of the project.

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