6.23 Project Evaluation

6.23.1 Premises and Framework

This "Mongu Rural Development Project" is aimed at the following objectives;

1) Raising the agricultural productivity in the area,
2) Raising the living standards of small scale farmers.

Basically, all these two objectives are considered very important for the rural and agricultural development in Zambia, a very crucial task for this country at the moment where the national economy has been developed on downtrend since the worldwide economic recession in 1975, and in the recent direction of recovering the national economy, ASIP, the Agricultural Sector Investment Programme, has been drawn up by NCDP and MAFF for a proposed launching in 1995, aiming at an annual growth of 6% for this sector until the year of 2000.

From this background, the results of this project, if successful, will be contemplated by MAFF and relevant organizations of Zambian Government for further studies and applications to the rural and agricultural development in other subjected areas in Zambia and, if possible, to other countries in the southern part of Africa with similar conditions.

The Project, therefore, implies the specific characteristics of a model project of its kind at its basis. In general, a model project is evaluated on its extension-feasibility and largely future applications to other related aspects. The justification on economic aspects, if being carried out, should be largely based on these basic characteristics of a model project with these intangible benefits.

The evaluation-framework for this project, therefore, is carried out in order as follows :

1) General justification
2) Economic analysis of the Project
3) Farm budget analysis of typical small farms
4) Justification on other important aspects (Social and Environmental Impacts Technical and Financial Feasibility)
5) Overall Evaluation

Apart from the general justification, despite of its specific characteristics of a model project with multi-functions envisaged to be implemented under a technical cooperation, the Project itself is considered as a national project. The economic analysis of the project, therefore, is made at first order to justify its economic feasibility based on the national economic point of view. In this respect, a positive EIRR(Economic Internal Rate of Return) is ought to be obtained accordingly.

Also in this framework, as the Project aiming at increasing benefits for small scale farmers, the analysis on their farm budgets would be carried out first with corresponding crop budget analysis of projected crops and investments for corresponding farming systems with possible maximum benefits for them prior to the economic analysis of the national viewpoint. In fact, as the conventional procedure for a project with national purposes, the economic analysis will be carried out at first order as aforementioned.

From these premises, the Project are evaluated on its basic characteristics of a model and national project with multi-functions for generating farm-incomes and grading-up farmers' living standards with a reasonably positive EIRR at least, and conforming with other conditions, social and environmental impacts, and technical and financial feasibilities.

6.23.2 General Justification

(1) Site Appraisal

In the context of national development of Zambia at this moment, the development of available lands and water resources for economic purposes is considered indispensable; especially for Zambezi River and Western Province, but the development of these water and land resources have been in a state of under developed up to now due to being considered so remote and poor in natural resources.

Regarding Zambezi River, this river offers an important flood plain area in economic terms on its both bank-plains starting from Chavuma Fall in the north, stretching vertically southwards to Sioma Fall for a length of approximately 200 km with an average width of 40 km, forming an immense flood plain area of approximately 8,000 sq. km. or approximately 6 % of the whole land area of Western Province (130,000 sq km.).

It is reportedly that about 50 % of the Western Province population are living on this flood plain and related areas which the eastern rive is more densely populated due to its accessibility to the national highways M 9 (Mongu-Lusaka) and M 10 (Limulunga-Mongu-Senanga). Mongu district covering the Study Area is on the eastern rive (Western Province has a population of approximately 607,000 inhabitants which about 150,000 inhabitants are living in Mongu district, where the provincial capital of Western Province is located).

Main economic activities of inhabitants in the flood plain and related areas are farming mainly on the seepage soils of the flood plain-edge and partly on the flood plain lowlands , and fishery in Zambezi River as well as doing some related business activities. Farming as well as fishery, despite of considerable potentials, has been carried out in a traditional and small scale as up to now, offering remarkably low productions and, therefore, low incomes due to various basic constraints in ambiguous land demarcation, land tenureship, insufficient development of problem soils, poor infrastructures and techniques, and lack of facilities as well as knowledge.

Besides, farmers have been always faced with a fragile policy on rural and agricultural development up to now.

This would be observed by the low ratio of cultivated area versus holding area of each farm, even in the edge area, the most fertile part of the flood plain. The uncultivated areas of lowlands have been largely let under grass or marsh vegetation; meanwhile almost uplands are let under bushes.

This Mongu rural development project which aims at the development of a part of the edge of this river, the most important part in agricultural and regional development of the flood plain as well as Western Province, would contribute as a modeling effort to the whole development context of Zambezi River and Western Province, if fruitful results could be obtained as expected.

At present, the vast flood plain area, however, is observed as almost an abandoned area due to the annual periodical inundation from January to April and occasional severe drought, the low lying and marshy configuration and the partly appearance of problem soils. This area is mainly used for grazing cattles and partly cropping despite of its great potentials for agricultural development in these lowlands of Western Province. Other 90 % of land area in Western Province are dry uplands appeared as almost savannas.

Though ASIP is weighting on the support of the private sector for slimming the public intervention with a rehabilitation framework of agricultural services only, it is considered as almost impossible for small farms as at present conditions to develop these areas of problem-soils by their own knowledge and bare hands. An intensive development programme and a proper supporting system, therefore, are considered very important to be implemented in the national development framework. This project is a model of its kind for installing basic production-facilities and institutional frameworks for local farmers in this context.

The Study Area is on the eastern edge of the river flood plain area, starting from Limulunga and ending at Namushakende, the place of Agricultural Verification Study done by JICA. With this project-location, results obtained from previous agricultural experiments would be smoothly applied due to similar natural and human conditions.

The F/S Area for piloting the project is on the southern part of the Study Area covering almost Yeta-ward, about 10-km south from Mongu town-ship, which has a diagonal form with the top of about 4 km covering the national highway M 10 meanwhile its southern diagonal side covering Sefula River to be developed as the main agricultural water resource for this project. This F/S Area shows an inclination from the hilly northeast towards its western side of flood plain lowlands and towards its south-west where Sefula River connecting to Zambezi River.

(2) Project Formulation

The project is formulated with following components :

1) To make a proper land use plan
2) To introduce the application of an integrated farming system and intensive cropping patterns
3) To construct an irrigation system for double-cropping rice
4) To pave by laterite the rural road network in the F/S Area (Yeta ward)
5) To construct facilities for training, agro-processing and marketing
6) To form professional groups of farmers. water-users, livestock-raisers, fishermen, agro-processors etc. for handling related activities and facilities
7) To assist female-headed households for grading up living conditions
8) To concern environmental conditions and the ecological system

These components of a project of this kind would be evaluated at the moment so sophisticated in the rural of Zambia and may be the first integrated agricultural development of this kind to be implemented in the flood plain area; especially for rice cropping agriculture which had been tested in Namushakende by JICA for some years ago.

In order to implement these project-components, the proposed proceedings are as follows :

1) To form corresponding professional groups
2) To install project-institutions and facilities
3) To instruct corresponding techniques for O.M. and management
4) To set up the marketing distribution system
5) To hand over all project-institutions and facilities to Zambian side

These proposed proceedings are considered in a proper order for implementation. The hard task would be the formation of professional groups for working together in a cooperative system.

In order to implement these components, the installation of related facilities and institutions for the project in the F/S Area is envisaged which outlines were shown in Table 6.18.1.

6.23.3 Economic Analysis of the Project

(1) Methodology

The economic analysis judges the project viability in terms of direct contribution to the national economy. In general, there are three methods for judging the project's viability for development: benefit-cost ratio (B/C ratio), net present value (NPV) and economic internal rate of return (EIRR). In this economic analysis, the EIRR is mainly applied, but other methods are considered too.

In principle, the economic benefits of the Project are envisaged as follows :

1) The value of incremental production of crops and livestock, less the incremental production costs and the value of crops vanished due to the construction of project-facilities. Due to the modeling characteristic of fisheries facilities, the economic justification of this part will not be taken into account.

2) The value-added to these products by means of storing, processing, delivering and marketing offered by the operation of project facilities, mainly agro-processing facilities, less costs related to users.

3) The project period set for economic analysis is 30 years starting from 1997 until 2026 in which the first year (1997) is for facilities installation and programs-preparation. Design-studies will be carried out in 1996, one year prior to the project-start. Project-benefits will be started from 1998 and fully obtained in 2000 (after 3 years). Benefits for fruit-trees, however, will be fully obtained in 2002 (after 5 years).

For the economic analysis, economic prices (market prices less taxes, bank-interests, subsidies etc.,) at 1994 price levels are to be applied. Price contingencies are not included in the economic cost nor the cost of land acquisition. Economic pricing of major items will be done, based on the price projections of the major commodities until 2000, expressed in December 1994 constant dollars with the official exchange rate to local currency of US$ 1.00 = K 670. The standard conversion factor in Zambian of 0.9 will be applied for the calculation of economic prices.

Due to the fluctuating economic conditions in Zambia, a sensitivity analysis will be applied with the anticipation of 3 following cases:

1) 10 % cost increase and benefit as scheduled
2) 10 % benefit decrease and cost as scheduled
3) 2 year delay of project-benefits

(2) Economic Benefits of the Project

Despite of the versatility of a model project, its economic benefits, however, are limited mainly in the F/S Area of 1900 ha with 4620 inhabitants (698 families) in which about 2750 inhabitants are belonged to 458 farming families (6 members per family) with presently 747 ha of farm lands.

Economic profits from aspects related to agriculture, livestock, storing, agro-processing, delivering and marketing between "without project" and "with project" are calculated accordingly.

From the aforementioned conditions, the annual economic benefits of the project are calculated as follows :

1. Incremental Value of Crops	:	Approx. MK 178.50
2. Net Benefit Value of Livestock	:	Approx. MK 1.05
3. Related Value Added Benefits	:	Approx. MK 87.80
		Total MK 267.35

At first, for a model project with multi-functions in rural and agricultural sector with an initial economic cost of approximately MK3,200(excluding consulting services), the Project offers an annual economic benefit of approximately MK267.35, approximately 8.35% of the initial cost, implying basically the viability of this project.

Besides, due to the construction of project-facilities and mainly roads, an economic value of vanished crops estimated at MK0.97 per year will be made up in annual crops benefits, starting from the first year of the Project.

(3) Economic Analysis

From the annual disbursement of project-costs and benefits, firstly the Economic Internal Rate of Return (EIRR) in basic case is obtained at 5.21%. This implies the economic viability of this project.

For the sensitivity analysis, the EIRRs in three cases are as follows :

1) Reduction of Project-Profit at 10% EIRR: 4.19%
2) Increase of Project-Cost at 10 % EIRR: 4.29%
3) Delay of Project-Benefit (2 years) EIRR: 3.91%

In the sensitivity analysis of these three cases, the EIRRs show a declination compared with the basic case, in which the lowest (3.91%) is for the risk case 3) of 2-year delay of project-benefits.

In these three cases of risks, however, the Project proves that the feasibility of the Project is sustainable for its implementation.

The economic indicators of the Project are as follows:

Table 6.23.1 The Sensitivity Analysis of three Cases

Alternative	NPV (K)	B/C	EIRR
1. Basic Case	985.041	1.26	5.21%
2. 10% Benefit-Reduction	512.357	1.14	4.19%
3. 10% Cost-Increase	610.862	1.15	4.29%
4. Delay (2 years) of Benefit	425.455	1.11	3.91%

(Discount rate at 3%)

The values of these EIRRs are relatively low but positive figures. This is a model project for piloting a demonstration-farm in Western Province for future expansion at least in the vast flood plain of Zambezi River now almost being abandoned. Besides, agriculture is the main industry in Zambia, especially at the moment, despite of its low productivity. The implementation of the Project will pay the effective utilization of available natural and human resources, and an important role in correcting the differentials in production and living standards between the agricultural sector and other sectors, and among regions or provinces in Zambia.

6.23.4 Farm Budget Analysis of Typical Small Farms

(1) General

The farm budget analysis (financial analysis) is the most important aspect to justify the viability of this project aiming at increasing farm incomes and living standards of small farms in the area. The typical small farms in the F/S Area will be identified with their corresponding farming and living economy in conditions of "without project" and "with project", and their solvency for repayment from the standpoint of farm economy.

(2) Typical Small Farms

The typical small farms are determined through the results of farm surveys in the F/S Area. In general, there are two kinds of typical small farms in the area.

From the land configuration of the edge part of the flood plain, there are farms on uplands, on the slope and on lowlands. Due to the cropping suitability of seepage soils and no flood, most farmers' housing areas are found on the slope. Only a few farmers' houses are found on uplands and lowlands. Despite of some small differences in areas of housing, upland field and paddy field, the small scale farms, in general, are basically similar in farming characteristics in which male-headed farms form a typical group.

Another typical group of farms is female-headed farms with more inferior conditions in farming and living conditions. Almost 40% of farms in the F/S Area are female-headed farms.

The present situation of "without project" for these two typical farms are as follows:

Table 6.23.2 The Present Situation of two Typical Farms

	Male-headed Farm		Female-headed Farm		Remarks
Family Members	8.4		5.4		Persons
Labor Force	3.6		2.1		"
Housing Land	50		25		m^2
Farm Land	5.9		2.8		ha
Cultivated Land	1.6		1.2		"
(Fallow Land)	(4.3)		(1.6)		"
	Area	Production	Area	Production	
Rice	0.90	1200	0.70	1200	ha kg
Maize	0.70	860	0.40	770	"
Cass./Mill./Shorg.	0.20	700/700/580	0.20	1000/300/960	"
Vegetables	0.10	n.a.	0.10	n.a.	"
Fruit (Mango)	10 trees	1500	6 trees	1500	tree kg
Sale of Crop-Products	66,500		20,000		K/Year
Animal Products	24,500		2,000		"
Sales of Farm-Products	91,000		22,000		K/Year
Income of Other Business	363,000		335,500		"
Total of Cash Incomes	454,000		357,500		"
Total Expenditures	455,000		363,500		K/Year
Balance	-1,000		-6,000		K/Year

From the above, differences between these two typical small farms are as follows:

* Both types of farms showed a high ratio of fallow land. In comparison with female-headed farms, male-headed farms have larger farm-land as well as fallow land .

* Female-headed farms lack of labour-forces for farm production including raising livestock, resulting in a lower income from selling farm products. However, they are getting rather higher yields of crops per unit area.

* In comparison with female-headed farms, male-headed farms can make a higher farm income as well as incomes from other business.

* Both types of farms show an annual deficit, in average 1,000 K for male-headed farm and 6,000 K for female-headed farm, a higher deficit for female-headed farm.

* Farm-incomes for both types of farms can be remarkably improved if fallow lands to be reduced and integrated farming system could be intensively applied.

The situation of "with project" for these two typical farms, therefore, would be estimated as follows:

Table 6.23.3 The Situation of "With Project" for Two Typical Farms

	Male-headed Farm		Female-headed Farm		Remarks
Farm Land	5.9		2.8		ha.
Cultivated Land	2.0		1.6		"
Fallow Land	(3.9)		(1.2)		"
	Area	Production	Area	Production	
Rice	1.20	4,000	0.90	3,500	ha kg
Maize	0.70	1,200	0.40	800	"
Cass./Mill./Shorg.	0.20	750/750/600	0.20	1000/500/1000	"
Vegetables	0.20	2,000	0.20	2,000	"
Mango	10 trees	2,500	6 trees	2,000	tree kg
Orange/Guava	20 =	2,000	15 =	1,500	"
Sale of Crop-Products	550,000		360,000		K/Year
Animal Products	25,000		15,000		"
Sales of Farm-Products	575,000		375,000		K/Year
Off-farm Income	200,000		300,000		"
Total of Cash Incomes	775,000		675,000		"
Total Expenditures	650,000		550,000		K/Year
Balance	+125,000		+125,000		K/Year

With the implementation of "with project", following results could be obtained:

* An increase of crop production, especially for rice, fruits and vegetables can contribute a significant increase in the sale of farm products.

* A positive balance for both types of farms could be obtained (+K125,000 per farm per year) but, at the same time, a higher total expenditure is required for both types of farms accordingly, K195,000 additional for male-headed farm and K186,500 for female-headed farm.

* In case of "with project" the expenditure for purchasing staple foods will be reduced but with the improvement of living standards more luxury goods will be purchased. Besides, with a highly increased expenditure of essential farm inputs for new farming system, the cost for farm inputs of about K200,000 per farm per year should be prepared accordingly.

* In order to solve this problem an initial supporting system for at least the first three years should be elaborated in a supply system of agricultural inputs and/or an agricultural credit scheme for rural development in Mongu district.

6.23.5 Justification on Other Important Aspects

(1) Social Impacts

As aforementioned this project is a model application with multi-functions. Its economic viability through the economic analysis, therefore, showed a very modest figure; meanwhile, on the contrary, its social viability is considered very significant with various social impacts which can be summarized as follows:

- Alleviation of the rural poor and raising rural living standards.
- Expansion of agricultural land and absorbing more rural labor force.
- Creation of cooperative opportunities for local farmers and inhabitants.
- Formation of basic knowledge on farming techniques and living manners for local inhabitants through agricultural extension programs etc.
- Creation of accessibility to daily consuming goods for inhabitants.
- Promotion of working motivation to the local population.
- Enhancement of the development for other industries.
- Reducing the migration of family-members for outside jobs.
- Grading up living conditions and social status for women by WID programs.
- Forming better conditions for familial life and social stability.
- Regarding the aspect of basic human needs (BHN), improving in total the fundamental living conditions (foods, hygienic living conditions, healthcare, basic living knowledge etc.).

(2) Environmental Impacts

The I.E.A. studies on environmental impacts notified that there are no negative impacts caused by the implementation of this project at now as well as for future expansions using this as a model for agricultural development in large scale in the flood plain-edge of Zambezi River.

For the agricultural development of the flood plain itself, if being carried out in large scale in the future, concerns on environmental conservation of its wetlands should be applied properly.

(3) Technical Feasibility

Regarding the aspect of technical feasibility of this project. there are two main stages which consist of the first stage for installation of project-facilities and institutions with each corresponding institutional development, and the second stage for management and O.M. throughout the project-life.

For the first stage which will be subjected to the technical cooperation of relevant professional consulting services and studies, the technical feasibility is considered to be carried out without major difficulties.

For the second stage which will be carried out by the Zambian side for this project-operation and for expansion of this model to other places, the programme of technical transfer and the organization for project-management and O.M. will be carefully studied by the Zambian side for clearing up any relevant technical problems for finding proper solutions or corrections in order to obtain a smooth implementation.

(4) Financing Proceedings

Regarding the aspect of financing this model-project, due to the basic conditions of being carried out under a technical cooperation, this project would be subjected to a donor's financial assistance for its initial installation-costs.

For the finance of management and O.M. for this project, in principle, this portion should be made under local finance collected from corresponding users' groups and controlled by the project-management body. However, due to the incapability for these payments from small scale farmers at the starting period of the project, the management and related O.M. costs for the first three years are recommended to be covered in the national budget allocating to Provincial Agriculture Office, for conducting this project.

This part of budget would contribute to supporting local farmers also, in case of no proper production, in the first three years of the project.

(5) Other Related Aspects

With the implementation of this model project designed under a technical cooperation, the local basic problems of land tenureship, land demarcation, cooperative system, familial status, rural living conditions and related activities would be elaborated largely for proper improvements to be obtained accordingly.

Besides, as this project will be used as a demonstration-location in Western Province for exhibiting its multi-functions to visitors, a competent body for its management and O.M. will be concretely organized for successfully functioning the project.

Apart from aforementioned countable benefits in the F/S Area, effects and benefits of the Project, in fact, will be obtained also in the entourage-areas where local inhabitants will utilize facilities and programs carried out by the Project e.g. roads, training programs, fish-culture, livestock facilities-utilization, cropping-practices, land-use patterns etc. for generating their incomes. These indirect benefits, however, are not included in the aforementioned countable benefits.

6.23.6 Overall Evaluation

Despite of the basic characteristics of a model project for future rural and agricultural development in the vast flood plain of Zambezi River, aiming at raising incomes and living standards for small scale farmers in Western Province, the economic evaluation of the Project proves that the Project viable with its economic feasibility by the basic EIRR of 5.21%.

The sensitivity analysis of three cases of possible risks, reduction of project-benefits at 10%, increase of project-costs at 10% and delay of project-benefits for two years, proved also that the Project is economically feasible with corresponding EIRRs of 4.19%, 4.29% and 3.91%, respectively.

Besides, the farm budget analysis proved that local small scale farmers can generate their agricultural incomes by the intensive application of integrated agricultural development through mentioned typical farms for generating their cash incomes from selling farm products and balancing their family expenses in which the present portion for food expenditure was observed very high, almost 50%.

However, in order to introduce the new integrated farming system to local small-scale farmers for generating their farm incomes, the increased expenditure for essential farm inputs estimated at about K150,000 - 200,000 per farm per year should be elaborated in an agricultural credit scheme or a supporting system of farm inputs for this project implementation.

Finally, the evaluation on social and environmental impacts shows that there are no major negative impacts, except for some concerns about the prevention of traffic accidents, noises and hygienic conditions in the area as well as proper compensations to families affected by the construction of roads and facilities subjected to the Project. Regarding the future development of the flood plain in large scale, concerns on wetlands conservation, however, should be considered.

From the above, in conclusion, the implementation of this Project will induce much more positive impacts, not only tangible benefits but also intangible effects to every aspect, and will largely contribute to the future development of the vast flood plain of Zambezi River as well as the sustainable development of agriculture in Zambia from now on.

7. CONCLUSION AND RECOMMENDATION

7 CONCLUSION AND RECOMMENDATION

7.1 Conclusion

(1) This Mongu Rural Development Plan is formulated based on ASIP (Agricultural Sector Investment Program) for aiming at raising living conditions and agricultural production of small scale farmers through the effective utilization of regional resources and improvement-works of rural infrastructures. On this basis, the plan is carefully elaborated in order to allocate relevant project-benefits to local small-scale farmers. Proper techniques to be applied to local farmers and the administrative functions and PAO, W.P. of MAFF as well as the traditional social system of the Lozi are reflected on this development plan.

(2) The F/S Area with 1,900 ha was selected out of the Study Area covering 12,000 ha where the M/P was drawn up, and the Feasibility Study was carried out. The results of the project-works in the F/S Area will be utilized as a model in the areas not only in Zambia but also in neibouring countries with similar conditions.

(3) Regarding the economic analysis of the F/S Area, the related economic indices seem to be a little lower than other agricultural development projects such as irrigation projects.

This project, however, will be able to expect following social effects besides the increase of agricultural production.

1) Improvement of living standards of small scale farmers through the integrated rural development framework.

2) Improvement of women's rural life and the crucial malnutrition of their infants.

3) Acquisition of the basic conveniences through the implementation of various social facilities.

7.2 Recommendation

(1) Zambian Government has recently notified the agricultural development as one of the most important sectors in the national economic recovery program. Taking the notification into consideration, the following are recommended :

1) To form a sustainable agricultural production system for self-efficiency of food grains in the whole country.

2) To establish a farming system utilizing domestic resources intensively .

3) To generate farm-incomes and job-opportunities based on the free market economy.

4) To enhance agro-industries and related businesses in the rural area.

From the macro-economic viewpoint, this Mongu Rural Development Plan also recommends to implement proposed facilities in order to obtain direct project benefits and socio-economic effects quickly.

(2) Since this development plan is formulated as an integrated project with incorporated multi-functions, the implementation of a sole component of the project-works will not reveal significant corresponding project-benefits as expected.

Besides, even if the implementation of project facilities is completed, the project-benefits will not be smoothly obtained when the programs of management and O.M. are not simultaneously applied. In Zambia, as techniques and technicians relevant to proposed programs are considered very insufficient, the technical cooperation from donor-countries and international technical cooperation agencies, is essential for the project-implementation. Regarding the matter of transferring various techniques to the Zambian side, the establishment of a systematic organization is recommended because the fields of technical cooperation are versatile according to the various development components and the final targets of the transferred technologies are farmers.

7.3 Project - Issues

(1) A proper supply system of agricultural inputs(seeds, fertilizers, pesticides, sprayers etc.) is considered to be established. As one of the countermeasures, the utilization of the facilities of the JICA Verification Farm at Namushakende will be useful for the purpose of stocking and distributing those materials.

(2) For effective extension-services, the elaboration on strengthening transportation-means and improving mobility-capabilities are essential. Besides, the training of local farmers is considered as an important issue regarding the matter of technical transfer, the information network, the rural cooperative system, the grouping of women etc. The training of teachers of these affairs is also necessary.

(3) In order to let function project works smoothly on the aspects of distributing equal benefits to socially inferior people, the socially equal relation between men and women has to be introduced, and the training of corresponding social workers therefore should be promoted actively.

(4) For the purpose of promoting the purchase of agricultural materials by small scale farmers without mortgage, a proper loan system for them should be elaborated accordingly.

(5) The research organizations in the Provincial Agricultural Office in Western Province are not carrying out experiments for vegetables at now. In order to diffuse these crops in the area, the experiments on this field should be considered for implementation.

(6) Re-distribution of the fallow lands to small farms from large land holding owners should be considered as an important issue to be elaborated in order to accelerate more intensive land use, especially on fallow lands with high potentials for production or for double-cropping.

(7) In order to avoid land-conflicts, the regulation on land tenureship and a registration-system should be considered for an early establishment.

(8) It is necessary to form a land-title system for each household's land so that an agricultural credit scheme could be implemented accordingly.

(9) The works for definite land demarcation should be considered for an early execution for the regional development in large scale in the future based on the mobilization of land ownership.