ANNEX IX

PROJECT EVALUATION

The Feasibility Study
on
Integrated Agricultural and Rural Development
in
Highland Area in the Republic of Indonesia

ANNEX IX PROJECT EVALUATION

Table of Contents

List of Tables

List of Figures

CHAPTER 1 ECONOMIC EVALUATION

1.1 Key Assumptions for the Economic Evaluation

In this sub-section, some key assumptions used in the economic evaluation of the project will be explained. These include standard conversion factor, transfer payments, construction conversion factor, economic life time of the project and discount factor.

(a) Standard Conversion Factor (SCF)

From the perspective of economic evaluation, it is important to distinguish traded goods and non-traded goods. Meanwhile, international trade are, in general, contained with tariff and other trade restrictions such as trade subsidization. As a consequence, the price relationship between trade goods and non-traded goods are distorted. For the evaluation of economic benefits and costs of the project, the effect of this distortion on prices of non-traded goods at world market level is needed to correct. To this end, a standard conversion factor (SCF) is applied to non-traded goods. The calculation formula for SCF is as follows:

$$SCF = \frac{(X + M)}{(X + Sx - Tx) + (M - Sm + Tm),}$$

where, X = total export; M = total import ; Sx = total export subsidy, Sm = total import subsidy; Tx = total export taxes and Tm = total import taxes.

The SCFs in the years of 1994/95-1998/99[1/] range 0.94 to 0.98. In this project, the SCF which is used is the average of the five-years figures, i.e. 0.96. The calculation is shown in Table IX-1.

The SCF figure is not applied to unskilled labor service. For this kind of input, the BAPPENAS' conversion standard of 0.8 is applied.

(b) Transfer payments

Transfer payments such as subsidy, contract tax, duty and interest may involve in a project. From the perspective of international economy, these transfer payments are not directly productive, since they are simply a domestic monetary movement. As a consequence, from the perspective of economic evaluation, the transfer payments are not considered as the project's costs.

[1/] Data are only available for up-to the fiscal year 1998/99. Data for the year 1999/2000 are not available yet, since the National Bureau Statistics (BPS) just starts collecting information for the fiscal year 1999/2000 when this study is undergoing.

(c) Component Conversion Factors for Economic Cost Estimation (CCF)

Individual financial element of any cost component of the project can be divided into labour and non-labour component. Further more, each component can be categorized into local content (L/C) and foreign content (F/C). In calculating economic cost of any individual cost component, the following formula of convertion factor is used:

(1) For L/C labour cost component, the BAPPENAS' Conversion Factor of 0.80 is applied,
(2) For L/C non-labour cost component, the Standard Conversion Factor of 0.96 is applied,
(3) For F/C labour or non-labour cost component, the Conversion Factor of 1.00 is applied.

(d) The Project's Economic Life Time

Economic life time of the project is assumed to be 30 years. During this period of time, some components of the major construction require replacements. For details of replacement components, schedules and costs see Annex V.

1.2 Economic Benefits

1.2.1 The Economic Evaluation Approach

In evaluating the economic benefits and costs of the project, this study employs a with-without project condition approach. In this context, the economic benefits are considered as incremental benefits, that is the difference between the benefits that will be generated under the implementation of the project and the benefits that will be obtained if the project is not implemented. For the general conceptual framework for the economic evaluation of the project see Figure IX-1.

1.2.2 Agricultural Benefits

(1) Input and Output Prices

(a) Financial Prices

For all inputs, actual farm gate prices obtained are used as the relevant financial prices in this study. Meanwhile, for all outputs, except rice, soybean and maize, financial farm gate prices are estimated by taking into account:

- Average price at main market destination (i.e. Jakarta and Bandung) and

- Proportion of products sold at these markets from the model areas,
- Cost of transportation to these markets from the model areas,
- Cost of product handling

Thus, for instance, farm gate price of cabbage in Mekarjaya is calculated as follows:

$$\text{Price of Mekarjaya 's cabbage} = \{(Pb \times Ab) + (Pj \times Aj)\} - \{Pb\,(Tb + Hb) + (Pj\,(Tj + Hj)\};$$

where,

Pb : Proportion of product sold to Bandung;

Pj : Proportion of products sold to Jakarta;

Ab: Average price of cabbage in Jakarta over the period of 1997-1999;

Aj : Average price of cabbage in Jakarta over the period of 1997-1999;

Tb and Tj : Transport costs respectively to Bandung and Jakarta;

Hb and Hj : Cost of handling to Bandung and to Jakarta, respectively.

Meanwhile, financial farm gate prices of rice, soybean and maize are assumed same as their actual farm gate prices while the study conducted.

The estimated financial farm gate prices of vegetable outputs, rice, maize, soybean and farm inputs are presented in Tables IX-2, IX-3, IX-4 and IX-5.

(b) Economic Prices

Economic farm gate prices of agricultural inputs and outputs are estimated as follows:

- Economic prices of chemical fertilizers and agro-chemicals are derived from the World Bank projection of c.i.f border prices. The method is the c.i.f prices plus handling and transportation costs to farm gate.
- Indonesia imports a large amount of rice, soybean, and maize annually from overseas. Economic prices of rice, soybean and maize are derived from the World Bank projection of c.i.f border price. The method is the c.i.f price plus handling and transportation costs to farm gate.
- Farm labour is considered as unskilled labour. Applying the BAPPENAS' conversion factor, economic price of farm labour would be 0.8 of its current financial wage rate.
- Different from manufactured fertilizers, compost (manured fertilizer) is not tradable internationally, but domestically. In this study, the

economic price of compost input is assumed equal to its current farm gate price.

- Indonesia is involved in both export and import of vegetables. But, their magnitudes are relatively very small. Economic prices of vegetables are then assumed to be the same as their estimated financial farm gate prices.

Economic farm gate prices of agricultural inputs and outputs are given in Tables IX-2, IX-3, IX-4 and IX-5.

(2) Anticipated Crop Production

(a) Proposed Land Use, Cropping Pattern and Intensity

Proposed land use, cropping pattern, annual sizes of cultivation by crop and cropping intensity in each model area under without and with project conditions have been estimated and discussed in Annex II.

(b) Expected Crop Yields

It is assumed that the average crop yields under without project condition will be the same as the present one in the model areas. Meanwhile, the use of irrigation system together with the accompanied production technology will improve the average crop yield significantly. Crop yields under without and with project conditions have been estimated and discussed in Annex II.

(c) Incremental Production

As both cropping intensities and yields have increased as the result of the improvement of the production technology, there will be significant incremental in crop productions in the model areas after the completion of the project. The extent of these incremental crop productions has been estimated and discussed in Annex II.

(3) Crop Budget and Incremental Net Income by Crop per Hectare Cultivation

Crop budgets under without and with project conditions have been estimated for the major crops[2]. In this estimation, the unit analysis is made for one hectare of farm operation. From this estimation, incremental profit that will be obtained from each major crop production after the implementation of the project is then calculated. The calculation's result is shown in the following table.

[2] See details of crop budget estimation in Tables IX-6, IX-7, IX-8 and IX-9

Incremental Net Income (Profit) by Crop per Hectare Cultivation in the Model Areas

Crops	Model Areas (Rp 1000)			
	Mekarjaya	Langensari	Gekbrong	Tanjungkarya
A. Vegetables				
1. Tomato	7,428	2,320	5,202	1,638
2. Chilli	9,875	5,260	4,662	4,804
3. Potato	8,897	7,480	8,992	3,372
4. Cabbage	1,672	760	2,537	912
5. Chinese cabbage	1,580	1,240	380	367
6. Bean vegetable	4,770	2,740	3,830	3,925
7. Red onion	3,328	3,730	3,435	3,410
8. Welsh onion	6,438	5,130	1,415	3,125
9. Carrot	4,039	1,760	2,454	694
10. Sweet corn	1,140	1,300	2,512	2,498
B. Food Crops				
1. Paddy	-5,530	0	0	790
2. Maize	-1,610	0	-2,530	-2,530
3. Sweet potato	-2,800	0	0	0
4. Soybean	0	0	0	0

(4) Economic Agricultural Benefits

(a) Total Benefits

In this context, the definition of agricultural benefits are defined as the incremental net income (profit) from agricultural production between under without and with project conditions. Based on this definition, total agricultural benefits has been estimated and the following table presents the calculation's summary[3].

Total Benefit

Crops	Model Areas (Rp million)				Total (Rp million)
	Mekarjaya	Langensari	Gekbrong	Tanjungkarya	
A. Vegetables	2,153	942	894	1,064	5,053
B. Parawija	-26	0	-17	0	-43
C. Rice	-221	0	0	-118	-339
Total	1,906	942	877	946	4,671

(b) Benefit Build-up

It is expected that the project's implementation will be started in 2001. The implementation will be completed in 5 years, so that the full operationalisation of the system will be by the year of 2007. Accordingly, the project benefit is expected to be built up gradually and the benefit-

[3]For details see Tables IX-10 to Table IX-13.

building-up schedule is assumed to be as follows:

Benefit Build-Up Schedule

Years of Targeted Achievement	Percentage of the Targeted Benefit Realized (%)
1St year (2003)	40
2nd year (2004)	60
3rd year (2005)	80
4th year (2006)	90
5th year (2007)	100

1.3 Economic Costs

1.3.1 Initial Investment Cost

Initial investment cost consists of four main components, namely (a) construction cost of rural facilities, (b) training and extension cost, (c) common cost for development, and (d) related cost. The financial initial investment cost has been estimated and its detail estimation is provided in Annex V. Estimation of economic initial investment cost is carried out by applying the rule of CCF which has been explained in Section 1.3 above to the financial initial investment component costs. The estimation result is given in the following table.

Estimated Economic Initial Investment Cost

Cost Components	Model Areas (Rp million)				
	Mekarjaya	Langensari	Gekbrong	Tanjungkarya	Total
1.Construction of rural facilities	2,767.0	1,490.2	1,783.4	1,750.5	7,791.1
2.Training and extension	430.4	319.1	222.6	312.6	1,284.7
3.Common cost development	1,666.3	1,164.4	1,003.8	1,545.9	5,380.4
4. Related cost	935.2	561.7	591.9	723.6	2,812.4
Total	5,799.0	3,535.4	3,601.8	4,332.5	17,268.7

The total of economic initial investment cost for the four selected model areas is estimated at Rp. 17,269 million. Annual disbursement of this economic initial investment cost is presented in Table IX-14.

1.3.2 Annual Operation and Maintenance Cost

Operational and maintenance cost consists of two main components, namely (a) operational cost and (b) maintenance cost. The financial operational and maintenance cost has been estimated and its detailed estimation is provided in Annex V. Estimation of economic operational and maintenance cost is carried out by applying the rule of CCF. The estimation result is given in the following table:

Annual Economic Operational and Maintenance Cost of the Model Areas

Model Areas	O&M Cost (Rp million)
1. Mekarjaya	109.2
2. Langensari	147.7
3. Gekbrong	76.5
4. Tanjungkarya	64.7
Total	398.1

1.3.3 Replacement Costs

Replacement cost consists of two kinds, namely (a) components to be replaced at every 10 years and (b) components to be replaced at every 15 years. The financial replacement cost has been estimated and its detailed estimation is provided in Annex V. Estimation of economic replacement cost is carried out by applying the rule of CCF. The estimation result is given in the following table:

Annual Disbursement Schedule of Economic Replacement Cost of the Model Areas

Replacement interval	Model Areas (Rp million)			
	Mekarjaya	Langensari	Gekbrong	Tanjungkarya
1. 10 years	177.0	44.9	95.3	76.1
2. 25 years	888.9	375.6	613.7	58.2

1.4 Economic Evaluation

1.4.1 Annual Cost-Benefit Flow

The flow of economic cost and benefit is constructed on the basis of the project implementation schedule. The flow is shown in Tables IX-15, IX-16, IX-17, IX-18 and IX-19 for Mekarjaya, Langensari, Gekbrong, Tanjungkarya and the four priority model areas, respectively.

1.4.2 Economic Internal Rate of Return (EIRR)

Based on the estimated economic benefit structure and the estimated economic cost structure explained above, EIRR for the model areas is estimated. Estimation results are presented in the following table.

Estimates of EIRR

Model Areas	EIRR (%)
1. Mekarjaya	23.3
2. Langensari	17.2
3. Gekbrong	17.2
4. Tanjungkarya	16.2
4 model areas	**19.1**

1.5 Sensitivity Analysis

In order to evaluate how sensitive is the above-mentioned estimates of EIRR to respond to the change of some components of cost and benefit structures of the project, the following scenarios of sensitivity analysis are carried out:

-Scenario 1 : Output prices decline 10 %,

-Scenario 2 : Output prices decline 20 %,

-Scenario 3 : Delays in the realization of benefit so that the benefit build-up process to become as follows (ceteris paribus):

Years of Targeted Achievement	Targeted Benefited Realized (%)	Years of Targeted Achievement	Targeted Benefit Realized (%)
1st (2003)	30	5th (2007)	70
2nd (2004)	40	6th (2008)	80
3rd (2005)	50	7th (2009)	90
4th (2006)	60	8th (2010)	100

Based on these scenarios, the sensitivity analysis has been carried out. The estimation results are presented in the following table.

Estimates of EIRR

Description of Sensitivity Analysis	Model Areas (%)				
	Mekarjaya	Langensari	Gekbrong	Tanjungkarya	4 model areas
a. Scenario 1	19.8	14.4	14.4	13.6	16.2
b. Scenario 2	16.1	12.3	11.4	10.8	13.1
c. Scenario 3	21.1	15.5	15.7	14.8	15.9

CHAPTER 2 FINANCIAL EVALUATION OF TYPICAL FARM BUDGET

2.1 Cash Flow Analysis

(1) Cash Flow Analysis

The capacity to pay the project investment cost is analysed by means of the cash flow. The analysis is made on the following conditions:

(a) The sources of the project fund are the loan and the government budget. The loan will be used for the construction cost and training expenses, and the government budget will be for the project administration cost.

(b) The training cost for task team and external expert cost which will be effective for other area development are excluded in this cash flow analysis.

(c) The loan condition is :

-Interest rate: 2.4%/annum

- Repayment: Grace period of 10years and repayment to be completed by 30 years

(d) Micro credit to farmers' cooperatives on the basis of Rp. 1 million per ha is assumed from the loan for initial operation fund of the cooperatives

The result of cash flow analysis is shown in Table X-24.

			Amortization Rate of Capital Cost by Beneficiaries					
			100%	40%	30%	20%	10%	0%
1	Annual Cost							
	(1) O&M Cost		Constant	Constant	Constant	Constant	Constant	Constant
	(2) Replacement Cost		Constant	Constant	Constant	Constant	Constant	Constant
	(3) Annual amortization (after 11 years)		Constant	Constant	Constant	Constant	Constant	Constant
2	Increase of living standard of beneficiary							
	In case of the constant increasing rate							
	(1) Annual increasing rate of living expenditure for initial 10 years		5.3%	5.7%	5.8%	5.8%	5.9%	6.0%
	(2) Increasing rate at 10th		1.59	1.65	1.66	1.67	1.67	1.68
	(3) Increasing rate at 11th		0%	0%	0%	0%	0%	0%
3	Annual cost per ha and percentage to net income							
	(1) Annual O&M and Replacement costs*1	(Rp.1000/ha)	1,920	1,920	1,920	1,920	1,920	1,920
	Percent to net income	(%)	7.3%	7.3%	7.3%	7.3%	7.3%	7.3%
	(2) Annual amortization (after 11th year)	(Rp.1000/ha)	2,490	1,000	750	500	250	0
	Percent to net income	(%)	9.4%	3.8%	2.8%	1.9%	0.9%	0.0%
	(3) Total	(Rp.1000/ha)	4,410	2,920	2,670	2,420	2,170	1,920
	Percent to net income	(%)	16.7%	11.1%	10.1%	9.2%	8.2%	7.3%

Note: based on constant price
*1 using average replacement cost

The result shows that all the loan is repaid within the repayment period with the anticipation of the living expenditure increase of 1.59 times (at the 10th year) from the present. In case that the O, M & Replacement cost is paid by the beneficiaries, the beneficiaries burden is Rp. 1,920 x 10 per ha or 7.3 % of net income. Since the amortization rate is related to the Government policy, the Government is required to determine amortisation rate in consideration of the model development on the basis of this result.

The financial cash flow analysis for 4 model areas was made, as shown in Tables IX-20, IX-21, IX-22, and IX-23 for Mekarjaya, Langensari, Gekbrong, and Tanjungkarya model areas, respectively

2. 2 Financial Evaluation of Typical Farm Household Economy

Financial evaluation is made on some typical farm budgets. Typical farm operation sizes in Mekarjaya, Langensari, Gekbrong and Tanjungkarya are, respectively, 0.12 ha, 0.16 ha, 0.37 ha and 0.25 ha. In Mekarjaya, with the implementation of the project, the net farm income typical farm will increase from Rp. 460,000 per annum (under without project condition) to Rp. 2,860,000 per annum (under with project condition), and therefore, net incremental income is Rp 2,400,000 . Meanwhile, in Langensari, by implementing the project, net farm income of typical farm will increase from Rp. 2,310,000 per annum (under without project condition) to Rp. 4,110,000 per annum (under with project condition), and hence, net incremental income is Rp 1,800, 000.

In Gekbrong, the net farm income of typical farm will increase from Rp.6,120,000 per annum (under without project condition) to Rp.11,460,000 per annum (under with project condition)., So, the net incremental income will be Rp 5,340,000. Whereas in Tanjungkarya, net farm income of typical farm will increase from Rp.3,320,000 per annum (under without project condition) to Rp.6,840,000 per annum (under with project condition), so that the net incremental income is Rp 3,520,000.

The above-mentioned income increases resulting from the project are quite significant given the current fact of serious economic problem faced by Indonesia.

Increasing of Net Annual Income by the Project

Description	Income of Typical Farm Size Operation in Model Areas (Rp 000)			
	Mekarjaya	Tanjungkarya	Gekbrong	Langensari
Typical Farm Holding Size	0.12 ha	0.25 ha	0.37 ha	0.16 ha
1. Without project condition	460	3,320	6,120	2,310
2. With project condition	2,860	6,840	11,460	4,110
3. Incremental net income per annum	2,400	3,520	5,340	1,800
4. Increase rate (%)	622	206	187	178

CHAPTER 3 SOCIOECONOMIC IMPACT

3.1 Increase of Farmers' Income

The improvement of irrigation system and production technology stabilize crop production, increase land productivity and cropping intensity. Meanwhile, the improvement of marketing system through improvement of marketing road, development of collection center, farmers' cooperatives and post-harvest technology will improve values of vegetables received by local farmers. All these will result in much improvement of the farmers' income and hence, living standards. It is estimated that the increase rates of net annual income of typical farm household are 6.2, 1.8, 1.9 and 2.1 times the without project condition, for Mekarjaya, Langensari, Gekbrong and Tanjungkarya, respectively. In addition, improvement of farmers' purchasing power will activate the cash flow into the markets and, hence promotes market activities and employment as well as income.

3.2 Increase of Employment Opportunities

Employment opportunities for unskilled laborers will be generated during the construction period. Meanwhile, the increase in the cropping intensity will improve employment opportunity for farmers and their family members. It is estimated that the increases of labour requirement are 51,000 man-days, 16,500 man-days, 27,300 man-days and 26,300 man-days, respectively, in Mekarjaya, Langensari, Gekbrong and Tanjungkarya. Furthermore, the substantial increase in total vegetable production will increase substantially demand for transportation services, handling labor, and farming inputs so that provided more jobs for industrial workers.

3.3 Promotion of Joint Works and Activation of Rural Organizations

Joint works are essential in farming business as the fact that some related activities such as maintenance of irrigation system and road and the marketing of products require farmers to work cooperatively. This cooperation will be facilitated by some institutions/organizations such as farmers cooperative and P3A (farmer water user association). Accordingly, it is planned to develop and activate various rural/agricultural institutions (i.e. P3A, farmer cooperative, rural water drinking association, and farmer group) in the selected model areas. In development and activation process of these institutions, NGOs (non-government organizations) will take part. The number of institutions is targeted to be

developed and activated, as well as the number of NGOs to be involved in the model areas are shown in the following table.

Number of Rural/Agricultural Institutions Developed and Activated and the Number of NGOs Involved in the Model Areas

Institutions/Organizations	Model Areas (Units)			
	Mekarjaya	Langensari	Gekbrong	Tanjung-karya
1.P3A	1	1	1	1
2.Farmer cooperative	1	1	1	1
3.Farmer group	8	6	3	5
4.Rural water drinking association	--	1	1	--
5.NGO	4	3	2	3

3.4 Market Road Serving for the Rural Areas

Improvement of rural market road contributes to the improvement of transportation of agricultural farm inputs and other daily consumption needs in the rural area as well as communication with other remote areas.

3.5 Expansion of Women's Role

To promote the active operation of farmers' organization, various guidance inclusive of household welfare will be provided to the farmers/ farmers' organization. Through those guidance and training, women's role will be improved and their activities will be expanded. Increase of the farmers' income will also contribute to the improvement of women's role and activities in not only farm family of the study area but also other family.

3.6 Expansion of Non-Farming Business Opportunity

With the increase of the farmers' income, the farmers' purchasing power would rise in the rural markets. Particularly, markets of farm inputs and equipment and tools will be more active and hence, expand business chance to local non-farmers indirectly.

3.7 Impacts from the National Perspective

The impacts of this upland intensified vegetable program on the national economy could be generated indirectly through multiplier effects. The impacts could include such matters as:

- Facilitation of the diversification of food consumption by Indonesian, from a diet which is reliant much on rice to be a more balanced food diet consisting

of more vegetable and other food staples.

- Succeding in the food diversification will relax the current high dependency on rice import.
- The acceleration of development of agribusiness activities in rural areas.
- The reduction of unemployment and poverty in rural areas.

CHAPTER 4 ENVIRONMENTAL IMPACTS

4.1 Sustainable Agriculture

With a view to utilizing and managing limited, but valuable water resources, proper farming and effective land use systems are required. The development procedure and system by the model development will facilitate efficient and sustainable use of land and water resources. This may be expected to produce sustainable benefit definitely.

4.2 Improvement of Living Environment

Under the present intensive agriculture in the model area, excess application of agro-chemical and fertilizers has occurred. Pollution of the drainage water and groundwater will be accelerated if condition continue without mitigation measure. The implementation of the project farming technology will contribute to mitigation measure. The implementation of the project farming technology will contribute to mitigation of the living environmental issue.

4.3 Increase of Farmers' Motivation for Good-farming Practice

This vegetable intensification program will improve farming practice with a sufficient measure for conservation. The measure is integrated in the production technology. In addition, the use of improved farming system includes the new production technology involved costly investment expenditure. The farmers could recoup this expensive investment in the form of productivity gain over a long period of farming activities. Recognising its importance in securing profitability of their investment on their upland farming business, the farmers would be strongly motivated to operate their farming properly from the view point of conservation. This motivation would be reinforced as the government would provide these farmers with secured formal legal rights on their plots of upland area.

4.4 Prevention of Further Degradation of Environmental Resources

The development of road network for upland provides another way for the improvement of land resources and environment in the upland areas. This development has the positive effect not only for income generating from farming but also from the opening of new economic opportunities for the upland residents.

This will relax the current population pressure on the upland agriculture and hence, prevents a further deterioration of land resources and environment. In short, the vegetable intensification project has a remarkable posistive effect on upland resources and environment.

CHAPTER 5 PROJECT EVALUATION

As previously explained, the project formulated herein is multi-dimension project. The project deals with various aspects of rural/agricultural development of highland areas such as production, marketing, institution/organizations, and rural water drinking. It also concerns with the conservation/improvement of environmental resources in upland areas which are already undergoing a degradaging process. Hence, the project will have a remarkable impact, not only on local and regional level, but also on national level. Shortly, the project's benefit will extent up to areas beyond its location.

The benefits are both direct and indirect as well as tangible and intangible. As it has been shown, in term of direct-tangible benefit and cost structure the project is quite beneficial from both financial and economical points of view. In addition, farming household's income will increase significantly as the project becomes fully operational. This will be accompanied with a substantial increase in labour requirement for farming activities at the local level, and hence, provides substantial extra employment opportunity for local labouring families.

The direct consequence of both the increase of farming income and employment opportunity will be the reduction of poverty and unemployment rates on the concerned communities. The condition of poverty and unemployment in these areas will become improved further as non-farming activities become expanded there in response to the increase of local people's purchasing power. All these improvements will be ultimately manifested in the improvement of living standard of local people. But, the improvement of living standard become enhanced when the rural water drinking system is also included in the project as in the Langensari and Gekbrong model areas.

For local people, there is more intangible direct benefit brought by the project. This includes such as promotion of joint work, activation of rural organization and expansion of women's role. The promotion of joint work is of vital important in farming business due to the fact that many related activities such as development and maintenance of irrigation system and marketing road require farmers' cooperation that will be facilitated by rural organizations such as P3A and cooperatives. In addition, the project will also have some positive effects on local environment such as promotion of sustainable agriculture, improvement of living environment and prevention of further degradation of environmental resources.

The project's effect on the reduction of unemployment and poverty will also be

extended to nearby localities, especially those areas which serve the farming input and daily consumption needs of people from the project's area, through the increase of trading activities of these commodities between the two sides. From the national perspective, the project is also beneficial since it will have the following effects: (a) facilitation of food consumption diversification which in turn helps relax the current dependency on rice import, (b) the acceleration of development of agribusiness in rural areas, and (c) the reduction of unemployment and poverty rates in rural areas.

From the preceding discussion, it can be concluded that the proposed intensive vegetable production plan in the selected prority model areas will be remarkably beneficial not only for local residents and the upland economy as a whole, but also for the concerned region's and the nation's economy as well as for the conservation of upland resources and environment. Given its remarkable benefit, it is really important for the government of Indonesia to spend sufficient effort to secure the implementation of this project in the selected priority model areas.

Tables

Table IX-1 Estimation of Standard Conversion Factor (SCF) for Indonesia*)

(Million US$)(FOB)

Items	Year				
	1994/1995	1995/1996	1996/1997	1997/1998	1998/1999
1. Total Export (X)	40,223	47,454	50,188	56,297	48,314
2. Total Import (M)	32,322	40,921	44,240	46,223	30,652
3. Import Duties (Tm)	3,900	3,029	2,579	2,990	5,945
4. Export Tax (Tx)	131	186	81	125	943
5. Standard Confersion Factor	0.98	0.96	0.97	0.97	0.96

*) Data on Import Subsidy (Sm) and Export Subsidy (Sx) are not available. It is then assumed that Sm and Sx are balanced.

Sources : (a) Economic Indicators, September 1999, Jakarta : BPS

(b) Statistical Year Book of Indonesia, 1998, Jakarta : BPS

Table IX-2 Financial and Economical Input and Output Prices of Agricultural Inputs and Outputs in Mekarjaya Model Area

Inputs & Outputs	Unit	Commodity													
		Tomato	Chili	Potato	Cabbage	Chinese cabbage	Bean vegetables	Red onion	Welsh onion	Carrot	Sweet corn	Paddy	Maize	Sweet potato	Soybean
I. Financial Input Price															
A. Seeds	**kg**	6,000,000	22,500,000	10,000	4,000,000	5,000,000	12,000	1,500	1,500	200,000	17,000	3,000	17,000	800	3,500
B. Fertilizer															
1. ZA	kg	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
2. Urea	kg	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
3. TSP	kg	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700
4. KCl	kg	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
5. Complex	kg	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
6. Compost	ton	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
C. Agrochemical															
1. Insecticide	lit	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000
2. Fungicide	kg	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000
3. Others		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
D. Labor	**m-d**	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800	5,800
E. Tools/Equipment	**Rp**	557	789	847	478	401	220	376	376	284	179	164	141	86	26
F. Indirect Cost	**Rp**	1,300	1,821	1,968	1,190	1,055	682	1,016	1,016	841	663	650	620	526	540
1. Water charge	Rp														
2. Tax/duty	Rp	25	25	25	25	25	25	25	25	25	25	25	25	25	25
3. Land fee	Rp	500	500	500	500	500	500	500	500	500	500	500	500	500	500
4. Interest	Rp	775	1,296	1,443	665	530	157	491	491	316	138	125	95	1	15
II. Economical Input Price															
A. Seeds	**kg**	6,000,000	22,500,000	10,000	4,000,000	5,000,000	12,000	1,500	1,500	200,000	17,000	3,000	17,000	800	3,500
B. Fertilizer															
1. ZA	kg	602	602	602	602	602	602	602	602	602	602	602	602	602	602
2. Urea	kg	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183
3. TSP	kg	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318
4. KCl	kg	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129
5. Complex	kg	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
6. Compost	ton	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
C. Agrochemical															
1. Insecticide	lit	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800
2. Fungicide	kg	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800
3. Others		9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
D. Labor	**m-d**	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560
E. Tools/Equipment	**Rp**	478	716	788	410	353	176	320	320	245	147	132	114	68	22
F. Indirect Cost	**Rp**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Water charge	Rp														
2. Tax/duty	Rp														
3. Land fee	Rp														
4. Interest	Rp														
III. Financial Output Prices	**Rp**	1,160	5,260	1,870	760	620	1,370	3,370	1,710	880	1,300	1,400	2,100	400	1,800
IV. Economic Output Prices	**Rp**	1,160	5,260	1,870	760	620	1,370	3,730	1,710	880	1,300	1,580	1,150	400	1,990

Table IX-3 Financial and Economical Input and Output Prices of Agricultural Inputs and Outputs in Langensari Model Area

Inputs & Outputs	Unit	Commodity													
		Tomato	Chili	Potato	Cabbage	Chinese cabbage	Bean vegetables	Red onion	Welsh onion	Carrot	Sweet corn	Paddy	Maize	Sweet potato	Soybean
I. Financial Input Price															
A. Seeds	**kg**	6,000,000	22,500,000	10,000	4,000,000	5,000,000	12,000	1,500	1,500	200,000	17,000	3,000	17,000	800	3,500
B. Fertilizer															
1. ZA	kg	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
2. Urea	kg	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
3. TSP	kg	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700
4. KCl	kg	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
5. Complex	kg	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
6. Compost	ton	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
C. Agrochemical															
1. Insecticide	lit	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000
2. Fungicide	kg	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000
3. Others		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
D. Labor	**m-d**	6,800	6,800	6,800	6,800	6,800	6,800	6,800	6,800	6,800	6,800	6,800	6,800	6,800	6,800
E. Tools/Equipment	**Rp**	632	858	902	543	444	288	426	426	329	209	182	158	101	29
F. Indirect Cost	**Rp**	1,389	1,905	2,027	1,268	1,091	773	1,070	1,070	887	683	650	620	526	540
1. Water charge	Rp														
2. Tax/duty	Rp	25	25	25	25	25	25	25	25	25	25	25	25	25	25
3. Land fee	Rp	500	500	500	500	500	500	500	500	500	500	500	500	500	500
4. Interest	Rp	864	1,380	1,502	743	566	248	545	545	362	158	125	95	1	15
II. Economical Input Price															
A. Seeds	**kg**	6,000,000	22,500,000	10,000	4,000,000	5,000,000	12,000	1,500	1,500	200,000	17,000	3,000	17,000	800	3,500
B. Fertilizer															
1. ZA	kg	602	602	602	602	602	602	602	602	602	602	602	602	602	602
2. Urea	kg	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183
3. TSP	kg	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318
4. KCl	kg	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129
5. Complex	kg	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
6. Compost	ton	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
C. Agrochemical															
1. Insecticide	lit	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800
2. Fungicide	kg	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800
3. Others		9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
D. Labor	**m-d**	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560
E. Tools/Equipment	**Rp**	511	747	810	439	367	210	340	340	262	154	132	114	68	22
F. Indirect Cost	**Rp**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Water charge	Rp														
2. Tax/duty	Rp														
3. Land fee	Rp														
4. Interest	Rp														
III. Financial Output Prices	**Rp**	1,160	5,260	1,870	760	620	1,370	3,730	1,710	880	1,300	1,400	2,100	400	1,800
IV. Economic Output Prices	**Rp**	1,160	5,260	1,870	760	620	1,370	3,730	1,710	880	1,300	1,580	1,150	400	1,990

Table IX-4 Financial and Economical Input and Output Prices of Agricultural Inputs and Outputs in Gekbrong Model Area

Inputs & Outputs	Unit	Commodity													
		Tomato	Chili	Potato	Cabbage	Chinese cabbage	Bean vegetables	Red onion	Welsh onion	Carrot	Sweet corn	Paddy	Maize	Sweet potato	Soybean
I. Financial Input Price															
A. Seeds	**kg**	6,000,000	22,500,000	10,000	4,000,000	5,000,000	12,000	1,500	1,500	200,000	17,000	3,000	17,000	800	3,500
B. Fertilizer															
1. ZA	kg	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
2. Urea	kg	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
3. TSP	kg	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700
4. KCl	kg	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
5. Complex	kg	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
6. Compost	ton	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
C. Agrochemical															
1. Insecticide	lit	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000
2. Fungicide	kg	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000
3. Others		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
D. Labor	**m-d**	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200
E. Tools/Equipment	**Rp**	547	781	831	471	377	233	362	362	269	158	135	115	62	21
F. Indirect Cost	**Rp**	1,394	1,910	2,032	1,273	1,096	778	1,075	1,075	892	688	655	625	531	545
1. Water charge	Rp														
2. Tax/duty	Rp	30	30	30	30	30	30	30	30	30	30	30	30	30	30
3. Land fee	Rp	500	500	500	500	500	500	500	500	500	500	500	500	500	500
4. Interest	Rp	864	1,380	1,502	743	566	248	545	545	362	158	125	95	1	15
II. Economical Input Price															
A. Seeds	**kg**	6,000,000	22,500,000	10,000	4,000,000	5,000,000	12,000	1,500	1,500	200,000	17,000	3,000	17,000	800	3,500
B. Fertilizer															
1. ZA	kg	602	602	602	602	602	602	602	602	602	602	602	602	602	602
2. Urea	kg	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183
3. TSP	kg	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318
4. KCl	kg	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129
5. Complex	kg	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
6. Compost	ton	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
C. Agrochemical															
1. Insecticide	lit	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800
2. Fungicide	kg	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800
3. Others		9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
D. Labor	**m-d**	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560
E. Tools/Equipment	**Rp**	482	718	793	415	355	197	326	326	253	150	132	114	68	22
F. Indirect Cost	**Rp**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Water charge	Rp														
2. Tax/duty	Rp														
3. Land fee	Rp														
4. Interest	Rp														
III. Financial Output Prices	**Rp**	1,160	5,260	1,870	760	620	1,370	3,730	1,710	880	1,300	1,400	2,100	400	1800
IV. Economic Output Prices	**Rp**	1,160	5,260	1,870	760	620	1,370	3,730	1,710	880	1,300	1,580	1,150	400	1,990

Table IX-5 Financial and Economical Input and Output Prices of Agricultural Inputs and Outputs in Tanjungkarya Model Area

Inputs & Outputs	Unit	Commodity													
		Tomato	Chili	Potato	Cabbage	Chinese cabbage	Bean vegetables	Red onion	Welsh onion	Carrot	Sweet corn	Paddy	Maize	Sweet potato	Soybean
I. Financial Input Price															
A. Seeds	**kg**	6,000,000	22,500,000	10,000	4,000,000	5,000,000	12,000	1,500	1,500	200,000	17,000	3,000	17,000	800	3,500
B. Fertilizer															
1. ZA	kg	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
2. Urea	kg	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
3. TSP	kg	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700
4. KCl	kg	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
5. Complex	kg	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
6. Compost	ton	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
C. Agrochemical															
1. Insecticide	lit	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000
2. Fungicide	kg	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000
3. Others		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
D. Labor	**m-d**	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200
E. Tools/Equipment	Rp	570	812	863	489	413	261	391	393	304	191	172	148	92	28
F. Indirect Cost	Rp														
1. Water charge	Rp	1,300	1,846	1,979	1,190	1,059	748	1,026	1,031	863	670	650	620	526	540
2. Tax/duty	Rp	25	25	25	25	25	25	25	25	25	25	25	25	25	25
3. Land fee	Rp	500	500	500	500	500	500	500	500	500	500	500	500	500	500
4. Interest	Rp	775	1,321	1,454	665	534	223	501	506	338	145	125	95	1	15
II. Economical Input Price															
A. Seeds	**kg**	6,000,000	22,500,000	10,000	4,000,000	5,000,000	12,000	1,500	1,500	200,000	17,000	3,000	17,000	800	3,500
B. Fertilizer															
1. ZA	kg	602	602	602	602	602	602	602	602	602	602	602	602	602	602
2. Urea	kg	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183
3. TSP	kg	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318	1,318
4. KCl	kg	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129
5. Complex	kg	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
6. Compost	ton	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
C. Agrochemical															
1. Insecticide	lit	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800
2. Fungicide	kg	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800	42,800
3. Others		9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
D. Labor	**m-d**	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560	4,560
E. Tools/Equipment	Rp	478	725	792	410	355	201	324	326	253	149	132	114	68	22
F. Indirect Cost	Rp	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Water charge	Rp														
2. Tax/duty	Rp														
3. Land fee	Rp														
4. Interest	Rp														
III. Financial Output Prices	**Rp**	1,160	5,260	1,870	760	620	1,370	3,730	1,710	880	1,300	1,400	2,100	400	1800
IV. Economic Output Prices	**Rp**	1,160	5,260	1,870	760	620	1,370	3,730	1,710	880	1,300	1,580	1,150	400	1,990

Table IX-6 Summary of Economic Crop Budgets under Without/With-Project Condition in Mekarjaya Model Area

Without-Project

Name of Crops	Gross income Rp.1000/ha	Direct production cost				Indirect cost Rp.1000/ha	Total of production cost Rp.1000/ha	Profit Rp.1000/ha
		Input Rp.1000/ha	Hired labor Rp.1000/ha	Tool/equipment Rp.1000/ha	Total Rp.1000/ha			
Tomato	12,760	6,604	1,918	478	8,999	0	8,999	3,761
Chili	21,040	11,622	1,755	716	14,092	0	14,092	6,948
Potato	22,440	13,255	1,630	788	15,673	0	15,673	6,767
Cabbage	13,680	5,655	1,651	410	7,715	0	7,715	5,965
Chinese cabbage	9,300	4,732	1,518	353	6,602	0	6,602	2,698
Bean vegetables	8,220	1,248	1,482	176	2,906	0	2,906	5,314
Red onion	22,380	4,175	1,452	320	5,947	0	5,947	16,433
Welsh onion	13,380	4,175	1,452	320	5,947	0	5,947	7,733
Carrot	8,800	2,794	1,363	245	4,402	0	4,402	4,398
Sweet corn	9,100	1,145	1,162	147	2,454	0	2,454	6,646
Paddy	5,530	985	1,073	132	2,189	0	2,189	3,341
Maize	1,610	773	978	114	1,865	0	1,865	-255
Sweet potato	2,800	8	874	68	950	0	950	1,850
Soybean	0	147	193	22	362	0	362	-362

With-Project

Name of Crops	Gross income Rp.1000/ha	Direct production cost				Indirect cost Rp.1000/ha	Total of production cost Rp.1000/ha	Profit Rp.1000/ha
		Input Rp.1000/ha	Hired labor Rp.1000/ha	Tool/equipment Rp.1000/ha	Total Rp.1000/ha			
Tomato	20,880	7,262	1,918	511	9,691	0	9,691	11,189
Chili	31,560	12,235	1,755	747	14,737	0	14,737	16,823
Potato	31,790	13,686	1,630	810	16,126	0	16,126	15,664
Cabbage	15,960	6,233	1,651	439	8,323	0	8,323	7,637
Chinese cabbage	11,160	4,998	1,518	367	6,882	0	6,882	4,278
Bean vegetables	13,700	1,924	1,482	210	3,616	0	3,616	10,084
Red onion	26,110	4,557	1,452	340	6,349	0	6,349	19,761
Welsh onion	20,520	4,557	1,452	340	6,349	0	6,349	14,171
Carrot	13,200	3,138	1,363	262	4,763	0	4,763	8,437
Sweet corn	10,400	1,297	1,162	154	2,614	0	2,614	7,786
Paddy	0	985	1,073	132	2,189	0	2,189	-2,189
Maize	0	773	978	114	1,865	0	1,865	-1,865
Sweet potato	0	8	874	68	950	0	950	-950
Soybean	0	147	193	22	362	0	362	-362

Table IX-7 Summary of Economic Crop Budgets under Without/With-Project Condition in Langensari Model Area

Without-Project

Name of Crops	Gross income Rp.1000/ha	Direct production cost				Indirect cost Rp.1000/ha	Total of production cost Rp.1000/ha	Profit Rp.1000/ha
		Input Rp.1000/ha	Hired labor Rp.1000/ha	Tool/equipment Rp.1000/ha	Total Rp.1000/ha			
Tomato	23,200	7,262	1,918	511	9,691	0	9,691	13,509
Chili	36,820	12,235	1,755	747	14,737	0	14,737	22,083
Potato	31,790	13,686	1,630	810	16,126	0	16,126	15,664
Cabbage	18,240	6,233	1,651	439	8,323	0	8,323	9,917
Chinese cabbage	11,160	4,998	1,518	367	6,882	0	6,882	4,278
Bean vegetables	10,960	1,924	1,482	210	3,616	0	3,616	7,344
Red onion	29,840	4,557	1,452	340	6,349	0	6,349	23,491
Welsh onion	20,520	4,557	1,452	340	6,349	0	6,349	14,171
Carrot	17,600	3,138	1,363	262	4,763	0	4,763	12,837
Sweet corn	11,700	1,297	1,162	154	2,614	0	2,614	9,086
Paddy	0	985	1,073	132	2,189	0	2,189	-2,189
Maize	0	773	978	114	1,865	0	1,865	-1,865
Sweet potato	0	8	874	68	950	0	950	-950
Soybean	0	147	193	22	362	0	362	-362

With-Project

Name of Crops	Gross income Rp.1000/ha	Direct production cost				Indirect cost Rp.1000/ha	Total of production cost Rp.1000/ha	Profit Rp.1000/ha
		Input Rp.1000/ha	Hired labor Rp.1000/ha	Tool/equipment Rp.1000/ha	Total Rp.1000/ha			
Tomato	25,520	7,262	1,918	511	9,691	0	9,691	15,829
Chili	42,080	12,235	1,755	747	14,737	0	14,737	27,343
Potato	39,270	13,686	1,630	810	16,126	0	16,126	23,144
Cabbage	19,000	6,233	1,651	439	8,323	0	8,323	10,677
Chinese cabbage	12,400	4,998	1,518	367	6,882	0	6,882	5,518
Bean vegetables	13,700	1,924	1,482	210	3,616	0	3,616	10,084
Red onion	33,570	4,557	1,452	340	6,349	0	6,349	27,221
Welsh onion	25,650	4,557	1,452	340	6,349	0	6,349	19,301
Carrot	19,360	3,138	1,363	262	4,763	0	4,763	14,597
Sweet corn	13,000	1,297	1,162	154	2,614	0	2,614	10,386
Paddy	0	985	1,073	132	2,189	0	2,189	-2,189
Maize	0	773	978	114	1,865	0	1,865	-1,865
Sweet potato	0	8	874	68	950	0	950	-950
Soybean	0	147	193	22	362	0	362	-362

Table IX-8 Summary of Economic Crop Budgets under Without/With-Project Condition in Gekbrong Model Area

Without-Project

Name of Crops	Gross income Rp.1000/ha	Direct production cost				Indirect cost Rp.1000/ha	Total of production cost Rp.1000/ha	Profit Rp.1000/ha
		Input Rp.1000/ha	Hired labor Rp.1000/ha	Tool/equipment Rp.1000/ha	Total Rp.1000/ha			
Tomato	17,400	6,693	1,918	482	9,093	0	9,093	8,307
Chili	42,080	11,666	1,755	718	14,139	0	14,139	27,941
Potato	22,440	13,345	1,630	793	15,768	0	15,768	6,672
Cabbage	15,200	5,754	1,651	415	7,820	0	7,820	7,380
Chinese cabbage	10,540	4,770	1,518	355	6,642	0	6,642	3,898
Bean vegetables	9,590	1,657	1,482	197	3,336	0	3,336	6,254
Red onion	26,110	4,276	1,452	326	6,054	0	6,054	20,056
Welsh onion	22,230	4,276	1,452	326	6,054	0	6,054	16,176
Carrot	16,720	2,961	1,363	253	4,577	0	4,577	12,143
Sweet corn	10,400	1,214	1,162	150	2,526	0	2,526	7,874
Paddy	0	985	1,073	132	2,189	0	2,189	-2,186
Maize	2,530	773	978	114	1,865	0	1,865	665
Sweet potato	0	8	874	68	950	0	950	-950
Soybean	0	147	193	22	362	0	362	-362

With-Project

Name of Crops	Gross income Rp.1000/ha	Direct production cost				Indirect cost Rp.1000/ha	Total of production cost Rp.1000/ha	Profit Rp.1000/ha
		Input Rp.1000/ha	Hired labor Rp.1000/ha	Tool/equipment Rp.1000/ha	Total Rp.1000/ha			
Tomato	23,200	7,262	1,918	511	9,691	0	9,691	13,509
Chili	47,340	12,235	1,755	747	14,737	0	14,737	32,603
Potato	31,790	13,686	1,630	810	16,126	0	16,126	15,664
Cabbage	18,240	6,233	1,651	439	8,323	0	8,323	9,917
Chinese cabbage	11,160	4,998	1,518	367	6,882	0	6,882	4,278
Bean vegetables	13,700	1,924	1,482	210	3,616	0	3,616	10,084
Red onion	29,840	4,557	1,452	340	6,349	0	6,349	23,491
Welsh onion	23,940	4,557	1,452	340	6,349	0	6,349	17,591
Carrot	19,360	3,138	1,363	262	4,763	0	4,763	14,597
Sweet corn	13,000	1,297	1,162	154	2,614	0	2,614	10,386
Paddy	0	985	1,073	132	2,189	0	2,189	-2,189
Maize	0	773	978	114	1,865	0	1,865	-1,865
Sweet potato	0	8	874	68	950	0	950	-950
Soybean	0	147	193	22	362	0	362	-362

Table IX-9 Summary of Economic Crop Budgets under Without/With-Project Condition in Tanjungkarya Model Area

Without-Project

Name of Crops	Gross income Rp.1000/ha	Direct production cost				Indirect cost Rp.1000/ha	Total of production cost Rp.1000/ha	Profit Rp.1000/ha
		Input Rp.1000/ha	Hired labor Rp.1000/ha	Tool/equipment Rp.1000/ha	Total Rp.1000/ha			
Tomato	20,880	6,613	1,918	478	9,009	0	9,009	11,871
Chili	31,560	11,801	1,755	725	14,281	0	14,281	17,279
Potato	33,660	13,335	1,630	792	15,758	0	15,758	17,902
Cabbage	16,720	5,654	1,651	410	7,715	0	7,715	9,005
Chinese cabbage	10,540	4,757	1,518	355	6,629	0	6,629	3,911
Bean vegetables	9,590	1,747	1,482	201	3,431	0	3,431	6,159
Red onion	26,110	4,252	1,452	324	6,029	0	6,029	20,081
Welsh onion	20,520	4,276	1,452	326	6,054	0	6,054	14,466
Carrot	14,960	2,961	1,363	253	4,577	0	4,577	10,383
Sweet corn	9,100	1,201	1,162	149	2,512	0	2,512	6,588
Paddy	6,320	985	1,073	132	2,189	0	2,189	4,131
Maize	2,530	773	978	114	1,865	0	1,865	665
Sweet potato	0	8	874	68	950	0	950	-950
Soybean	0	147	193	22	362	0	362	-362

With-Project

Name of Crops	Gross income Rp.1000/ha	Direct production cost				Indirect cost Rp.1000/ha	Total of production cost Rp.1000/ha	Profit Rp.1000/ha
		Input Rp.1000/ha	Hired labor Rp.1000/ha	Tool/equipment Rp.1000/ha	Total Rp.1000/ha			
Tomato	23,200	7,262	1,918	511	9,691	0	9,691	13,509
Chili	36,820	12,235	1,755	747	14,737	0	14,737	22,083
Potato	37,400	13,686	1,630	810	16,126	0	16,126	21,274
Cabbage	18,240	6,233	1,651	439	8,323	0	8,323	9,917
Chinese cabbage	11,160	4,998	1,518	367	6,882	0	6,882	4,278
Bean vegetables	13,700	1,924	1,482	210	3,616	0	3,616	10,084
Red onion	29,840	4,557	1,452	340	6,349	0	6,349	23,491
Welsh onion	23,940	4,557	1,452	340	6,349	0	6,349	17,591
Carrot	15,840	3,138	1,363	262	4,763	0	4,763	11,077
Sweet corn	11,700	1,297	1,162	154	2,614	0	2,614	9,086
Paddy	7,110	985	1,073	132	2,189	0	2,189	4,921
Maize	0	773	978	114	1,865	0	1,865	-1,865
Sweet potato	0	8	874	68	950	0	950	-950
Soybean	0	147	193	22	362	0	362	-362

Table IX-10 Economic Production Value and Incremental Benefit under With/Without Conditions of Mekarjaya Model Area

Without-Project (Unit : Rp. Million)

	Production Value	Direct Production Cost				Indirect cost	Total cost	Profit
		Inputs	Hired labor	Tool/equipment	Total			
Vegetables								
Tomato	102.1	52.8	15.3	3.8	72.0	0.0	72.0	30.1
Chili	210.4	116.2	17.5	7.2	140.9	0.0	140.9	69.5
Potato	157.1	92.8	11.4	5.5	109.7	0.0	109.7	47.4
Cabbage	68.4	28.3	8.3	2.0	38.6	0.0	38.6	29.8
Chinese cabbage	27.9	14.2	4.6	1.1	19.8	0.0	19.8	8.1
Bean vegetables	90.4	13.7	16.3	1.9	32.0	0.0	32.0	58.5
Red onion	44.8	8.3	2.9	0.6	11.9	0.0	11.9	32.9
Welsh onion	27.4	8.3	2.9	0.6	11.9	0.0	11.9	15.5
Carrot	35.2	11.2	5.5	1.0	17.6	0.0	17.6	17.6
Sweet corn	18.2	2.3	2.3	0.3	4.9	0.0	4.9	13.3
Sub-total	781.8	348.2	87.0	24.1	459.3	0.0	459.3	322.5
Food crops								
Paddy	365.0	65.0	70.8	8.7	144.5	0.0	144.5	220.5
Maize	20.9	10.1	12.7	1.5	24.2	0.0	24.2	-3.3
Sweet potato	44.8	0.1	14.0	1.1	15.2	0.0	15.2	29.6
Soybean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	430.7	75.2	97.5	11.3	184.0	0.0	184.0	246.8
Total	1,212.50	423.4	184.5	35.4	643.2	0.0	643.2	569.3

With-project (Unit : Rp. Million)

	Production Value	Direct Production Cost				Indirec cost	Total cost	Profit
		Inputs	Hired labor	Tool/equipment	Total			
Vegetables								
Tomato	563.8	196.1	51.8	13.8	261.7	0.0	261.7	302.1
Chili	536.5	208.0	29.8	12.7	250.5	0.0	250.5	286.0
Potato	858.3	369.5	44.0	21.9	435.4	0.0	435.4	422.9
Cabbage	399.0	155.8	41.3	11.0	208.1	0.0	208.1	190.9
Chinese cabbage	167.4	75.0	22.8	5.5	103.2	0.0	103.2	64.2
Bean vegetables	506.9	71.2	54.8	7.8	133.8	0.0	133.8	373.1
Red onion	522.2	91.1	29.0	6.8	127.0	0.0	127.0	395.2
Welsh onion	266.8	59.2	18.9	4.4	82.5	0.0	82.5	184.2
Carrot	316.8	75.3	32.7	6.3	114.3	0.0	114.3	202.5
Sweet corn	72.8	9.1	8.1	1.1	18.3	0.0	18.3	54.5
Sub-total	4,210.5	1,310.3	333.3	91.2	1,734.8	0.0	1,734.8	2,475.7
Food crops								
Paddy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maize	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweet potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Soybean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	4,210.5	1,310.3	333.3	91.2	1,734.8	0.0	1,734.8	2,475.7

Incremental

	Production Value	Direct Production Cost				Indirec cost	Total cost	Incremental Benefit
		Inputs	Hired labor	Tool/equipment	Total			
Vegetables								
Tomato	461.7	143.3	36.4	10.0	189.7	0.0	189.7	272.0
Chili	326.1	91.8	12.3	5.5	109.6	0.0	109.6	216.5
Potato	701.3	276.7	32.6	16.3	325.7	0.0	325.7	375.6
Cabbage	330.6	127.6	33.0	8.9	169.5	0.0	169.5	161.1
Chinese cabbage	139.5	60.8	18.2	4.4	83.4	0.0	83.4	56.1
Bean vegetables	416.5	57.5	38.5	5.8	101.8	0.0	101.8	314.7
Red onion	477.4	82.8	26.1	6.2	115.1	0.0	115.1	362.4
Welsh onion	239.4	50.9	16.0	3.8	70.6	0.0	70.6	168.8
Carrot	281.6	64.1	27.3	5.3	96.7	0.0	96.7	184.9
Sweet corn	54.6	6.8	5.8	0.8	13.4	0.0	13.4	41.2
Sub-total	3,428.7	962.2	246.3	67.1	1,275.5	0.0	1,275.5	2,153.2
Food crops								
Paddy	-365.0	-65.0	-70.8	-8.7	-144.5	0.0	-144.5	-220.5
Maize	-20.9	-10.1	-12.7	-1.5	-24.2	0.0	-24.2	3.3
Sweet potato	-44.8	-0.1	-14.0	-1.1	-15.2	0.0	-15.2	-29.6
Soybean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	-430.7	-75.2	-97.5	-11.3	-184.0	0.0	-184.0	-246.8
Total	2,988.0	887.0	148.8	55.8	1,091.5	0	1,091.5	1,906.4

Table IX-11 Economic Production Value and Incremental Benefit under With/Without Conditions of Langensari Model Area

Without-Project (Unit : Rp. Million)

	Production Value	Direct Production Cost				Indirect cost	Total cost	Profit
		Inputs	Hired labor	Tool/equipment	Total			
Vegetables								
Tomato	603.2	188.8	49.9	13.3	252.0	0.0	252.0	351.2
Chili	883.7	293.6	42.1	17.9	353.7	0.0	353.7	530.0
Potato	476.9	205.3	24.5	12.1	241.9	0.0	241.9	235.0
Cabbage	620.2	211.9	56.1	14.9	283.0	0.0	283.0	337.2
Chinese cabbage	279.0	124.9	37.9	9.2	172.0	0.0	172.0	107.0
Bean vegetables	54.8	9.6	7.4	1.1	18.1	0.0	18.1	36.7
Red onion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Welsh onion	41.0	9.1	2.9	0.7	12.7	0.0	12.7	28.3
Carrot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweet corn	23.4	2.6	2.3	0.3	5.2	0.0	5.2	18.2
Sub-total	2,982.1	1,046.0	223.1	69.5	1,338.6	0.0	1,338.6	1,643.6
Food crops								
Paddy	0.0	65	70.8	8.7	144.5	0.0	144.5	-144.5
Maize	0.0	10.1	12.7	1.5	24.2	0.0	24.2	-24.2
Sweet potato	0.0	0.1	14.0	1.1	15.2	0.0	15.2	-15.2
Soybean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	0.0	75.2	97.5	11.3	184.0	0.0	184.0	-184.0
Total	2,982.1	1,046.0	320.7	80.7	1,522.5	0.0	1,522.5	1,459.6

With-project (Unit : Rp. Million)

	Production Value	Direct Production Cost				Indirec cost	Total cost	Profit
		Inputs	Hired labor	Tool/equipment	Total			
Vegetables								
Tomato	765.6	217.9	57.5	15.3	290.7	0.0	290.7	474.9
Chili	1,052.00	305.9	43.9	18.7	368.4	0.0	368.4	683.6
Potato	706.9	246.3	29.3	14.6	290.3	0.0	290.3	416.6
Cabbage	665.0	218.2	57.8	15.4	291.3	0.0	291.3	373.7
Chinese cabbage	310.0	124.9	37.9	9.2	172.0	0.0	172.0	138.0
Bean vegetables	274.0	38.5	29.6	4.2	72.3	0.0	72.3	201.7
Red onion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Welsh onion	102.6	18.2	5.8	1.4	25.4	0.0	25.4	77.2
Carrot	77.4	12.6	5.5	1.0	19.1	0.0	19.1	58.4
Sweet corn	52.0	5.2	4.6	0.6	10.5	0.0	10.05	41.5
Sub-total	4,005.5	1,187.7	272.0	80.3	1,540.0	0.0	1,540.0	2,465.5
Food crops								
Paddy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maize	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweet potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Soybean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	4,005.5	1,187.7	272.0	80.3	1,540.0	0.0	1,540.0	2,465.5

Incremental

	Production Value	Direct Production Cost				Indirec cost	Total cost	Incremental Benefit
		Inputs	Hired labor	Tool/equipment	Total			
Vegetables								
Tomato	162.4	29.0	7.7	2.0	38.8	0.0	38.8	123.6
Chili	168.3	12.2	1.8	0.7	14.7	0.0	14.7	153.6
Potato	230.0	41.1	4.9	2.4	48.4	0.0	48.4	181.6
Cabbage	44.8	6.2	1.7	0.4	8.3	0.0	8.3	36.5
Chinese cabbage	31.0	0.0	0.0	0.0	0.0	0.0	0.0	31.0
Bean vegetables	219.2	28.9	22.2	3.2	54.2	0.0	54.2	165.0
Red onion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Welsh onion	61.6	9.1	2.9	0.7	12.7	0.0	12.7	48.9
Carrot	77.4	12.6	5.5	1.0	19.1	0.0	19.1	58.4
Sweet corn	28.6	2.6	2.3	0.3	5.2	0.0	5.2	23.4
Sub-total	1,023.4	141.7	48.9	10.8	201.4	0.0	201.4	822.0
Food crops								
Paddy	0.0	-65	-70.8	-8.7	-144.5	0.0	-144.5	144.5
Maize	0.0	-10.1	-12.7	-1.5	-24.2	0.0	-24.2	24.2
Sweet potato	0.0	-0.1	-14	-1.1	-15.2	0.0	-15.2	15.2
Soybean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	0.0	-75.2	-97.5	-11.3	-184.0	0.0	-184.0	184.0
Total	1,023.4	66.5	-48.6	-0.4	17.5	0.0	17.5	1,005.9

Table IX-12 Economic Production Value and Incremental Benefit under With/Without Conditions of Gekbrong Model Area

Without-Project (Unit : Rp. Million)

	Production Value	Direct Production Cost				Indirect cost	Total cost	Profit
		Inputs	Hired labor	Tool/equipment	Total			
Vegetables								
Tomato	452.4	174.0	49.9	12.5	236.4	0.0	236.4	216.0
Chili	757.4	210.0	31.6	12.9	254.5	0.0	254.5	502.9
Potato	89.8	53.4	6.5	3.2	63.1	0.0	63.1	26.7
Cabbage	45.6	17.3	5.0	1.2	23.5	0.0	23.5	22.1
Chinese cabbage	52.7	23.8	7.6	1.8	33.2	0.0	33.2	19.5
Bean vegetables	19.2	3.3	3.0	0.4	6.7	0.0	6.7	12.5
Red onion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Welsh onion	44.5	8.6	2.9	0.7	12.1	0.0	12.1	32.4
Carrot	66.9	11.8	5.5	1.0	18.3	0.0	18.3	48.6
Sweet corn	31.2	3.6	3.5	0.5	7.6	0.0	7.6	23.6
Sub-total	1,559.6	505.9	115.3	34.2	655.3	0.0	655.3	904.3
Food crops								
Paddy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maize	63.3	19.3	24.5	2.8	46.6	0.0	46.6	16.6
Sweet potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Soybean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	63.3	19.3	24.5	2.8	46.6	0.0	46.6	16.6
Total	1,622.9	525.2	139.8	37.0	702.0	0.0	702.0	920.9

With-project (Unit : Rp. Million)

	Production Value	Direct Production Cost				Indirec cost	Total cost	Profit
		Inputs	Hired labor	Tool/equipment	Total			
Vegetables								
Tomato	742.4	232.4	61.4	16.3	310.1	0.0	310.1	432.3
Chili	615.4	159.1	22.8	9.7	191.6	0.0	191.6	432.8
Potato	317.9	136.9	16.3	8.1	161.3	0.0	161.3	156.6
Cabbage	456.0	155.8	41.3	11.0	208.1	0.0	208.1	247.9
Chinese cabbage	223.2	100.0	30.4	7.3	137.6	0.0	137.6	85.6
Bean vegetables	150.7	21.2	16.3	2.3	39.8	0.0	39.8	110.9
Red onion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Welsh onion	95.8	18.2	5.8	1.4	25.4	0.0	25.4	70.4
Carrot	290.4	47.1	20.5	3.9	71.4	0.0	71.4	219.0
Sweet corn	65.0	6.5	5.8	0.8	13.1	0.0	13.1	51.9
Sub-total	2,956.8	877.0	220.5	60.8	1,158.3	0.0	1,158.3	1,798.4
Food crops								
Paddy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maize	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweet potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Soybean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2,956.8	877.0	220.5	60.8	1,158.3	0.0	1,158.3	1,798.4

Incremental

	Production Value	Direct Production Cost				Indirec cost	Total cost	Incremental Benefit
		Inputs	Hired labor	Tool/equipment	Total			
Vegetables								
Tomato	290.0	58.4	11.5	3.8	73.7	0.0	73.7	216.3
Chili	-142.0	-50.9	-8.8	-3.2	-62.9	0.0	-62.9	-79.1
Potato	228.1	83.5	9.8	4.9	98.2	0.0	98.2	130.0
Cabbage	410.4	138.6	36.3	9.7	184.6	0.0	184.6	225.8
Chinese cabbage	170.5	76.1	22.8	5.6	104.4	0.0	104.4	66.1
Bean vegetables	131.5	17.8	13.3	1.9	33.1	0.0	33.1	98.4
Red onion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Welsh onion	51.3	9.7	2.9	0.7	13.3	0.0	13.3	38.0
Carrot	223.5	35.2	15.0	2.9	53.1	0.0	53.1	170.4
Sweet corn	33.8	2.8	2.3	0.3	5.5	0.0	5.5	28.3
Sub-total	1,397.2	371.2	105.2	26.6	503.0	0.0	503.0	894.2
Food crops								
Paddy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maize	-63.3	-19.3	-24.5	-2.8	-46.6	0.0	-46.6	-16.6
Sweet potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Soybean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	-63.3	-19.3	-24.5	-2.8	-46.6	0.0	-46.6	-16.6
Total	1,333.9	351.9	80.7	23.8	456.4	0.0	456.4	877.5

Table IX-13 Economic Production Value and Incremental Benefit under With/Without Conditions of Tanjungkarya Model Area

Without-Project (Unit : Rp. Million)

	Production Value	Direct Production Cost				Indirect cost	Total cost	Profit
		Inputs	Hired labor	Tool/equipment	Total			
Vegetables								
Tomato	355.0	112.4	32.6	8.1	153.2	0.0	153.2	201.8
Chili	252.5	94.4	14.0	5.8	114.2	0.0	114.2	138.2
Potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cabbage	401.3	135.7	39.6	9.8	185.2	0.0	185.2	216.1
Chinese cabbage	52.7	23.8	7.6	1.8	33.1	0.0	33.1	19.6
Bean vegetables	134.3	24.5	20.7	2.8	48.0	0.0	48.0	86.2
Red onion	52.2	8.5	2.9	0.6	12.1	0.0	12.1	40.2
Welsh onion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carrot	29.9	5.9	2.7	0.5	9.2	0.0	9.2	20.8
Sweet corn	45.50	6.0	5.8	0.7	12.6	0.0	12.6	32.9
Sub-total	1,323.3	411.2	126.0	30.3	567.5	0.0	567.5	775.8
Food crops								
Paddy	587.8	91.6	99.8	12.3	203.6	0.0	203.6	384.1
Maize	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweet potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Soybean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	587.8	91.6	99.8	12.3	203.6	0.0	203.6	384.1
Total	1,911.1	502.8	225.8	42.5	771.1	0.0	771.1	1,140.0

With-project (Unit : Rp. Million)

	Production Value	Direct Production Cost				Indirec cost	Total cost	Profit
		Inputs	Hired labor	Tool/equipment	Total			
Vegetables								
Tomato	812.0	254.2	67.1	17.9	339.2	0.0	339.2	472.8
Chili	552.3	183.5	26.3	11.2	221.0	0.0	221.0	331.3
Potato	112.2	41.1	4.9	2.4	48.4	0.0	48.4	63.8
Cabbage	638.4	218.2	57.8	15.4	291.3	0.0	291.3	347.1
Chinese cabbage	167.4	75.0	22.8	5.5	103.2	0.0	103.2	64.2
Bean vegetables	411.0	57.7	44.5	6.3	108.5	0.0	108.5	302.5
Red onion	149.2	22.8	7.3	1.7	31.7	0.0	31.7	117.5
Welsh onion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carrot	95.0	18.8	8.2	1.6	28.6	0.0	28.6	66.5
Sweet corn	70.2	7.8	7.0	0.9	15.7	0.0	15.7	54.5
Sub-total	3,007.7	879.0	245.8	62.9	1,187.6	0.0	1,187.6	1,820.1
Food crops								
Paddy	383.9	53.2	57.9	7.1	118.2	0.0	118.2	265.7
Maize	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweet potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Soybean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	383.9	53.2	57.9	7.1	118.2	0.0	118.2	265.7
Total	3,391.7	932.2	303.7	70.0	1,305.8	0.0	1,305.8	2,085.8

Incremental

	Production Value	Direct Production Cost				Indirec cost	Total cost	Incremental Benefit
		Inputs	Hired labor	Tool/equipment	Total			
Vegetables								
Tomato	457.0	141.8	34.5	9.7	186.0	0.0	186.0	271.0
Chili	299.8	89.1	12.3	5.4	106.8	0.0	106.8	193.0
Potato	112.2	41.1	4.9	2.4	48.4	0.0	48.4	63.8
Cabbage	237.1	82.5	18.2	5.5	106.1	0.0	106.1	131.0
Chinese cabbage	114.7	51.2	15.2	3.7	70.1	0.0	70.1	44.6
Bean vegetables	276.7	33.3	23.7	3.5	60.4	0.0	60.4	216.3
Red onion	97.0	14.3	4.4	1.0	19.7	0.0	19.7	77.3
Welsh onion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carrot	65.1	12.9	5.5	1.1	19.4	0.0	19.4	45.7
Sweet corn	24.7	1.8	1.2	0.2	3.1	0.0	3.1	21.6
Sub-total	1,684.4	467.8	119.7	32.6	620.1	0.0	620.1	1,064.3
Food crops								
Paddy	-203.8	-38.4	-41.8	-5.1	-85.4	0.0	-85.4	-118.4
Maize	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweet potato	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Soybean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	-203.8	-38.4	-41.8	-5.1	-85.4	0.0	-85.4	-118.4
Total	1,480.6	429.4	77.9	27.5	534.7	0.0	534.7	945.9

Table IX-14 Annual Disbursement Schedule of Economic Initial Investment Cost of the Model Areas

(Unit: Rp million)

No	Year	Model Areas															
		Mekarjaya				Langensari				Gekbrong				Tanjungkarya			
		CF	TE	CD	RC	CF	TE	CD	RC	CF	TE	CD	RC	CF	TE	CD	RC
1	2001	276.7	129.1	488.9	203.6	149.0	95.7	341.6	114.7	178.3	66.8	294.5	131.2	175.0	93.8	453.5	145.6
2	2002	2,490.3	172.2	694.1	271.4	1,341.2	127.6	485	152.9	1,605.1	89.0	418.1	174.9	1575.4	125.0	643.9	194.2
3	2003	0.0	215.2	483.4	203.6	0.0	95.7	337.8	114.7	0.0	66.8	291.2	131.2	0.0	93.8	448.4	145.6
Total		2,767.0	516.5	1,666.4	678.6	1,490.2	319.0	1,164.4	382.3	1,783.4	222.6	1,003.8	437.3	1750.4	312.6	1,545.8	485.4

Remarks : CF : Construction of Rural Facilities
TE : Training and Extention
CD : Common Cost of Development
RC : Related Cost

Table IX-15 Economic Cost and Benefit Flow of Mekarjaya Model Area

(Unit: Rp. million)

Year		Cost								Benefit			Balance	Accumulated Balance
		Initial Investment					Operation & Maintenance	Replacement	Total	Crop	Others	Total		
		*1 Constrt'n of rural facilities	*2 Training & extension	*3 Common cost for dev.	*4 Related cost	Subtotal								
1	2001	277	129	489	281	1,175			1,175			0	-1,175	-1,175
2	2002	2,490	172	694	374	3,731	11		3,742			0	-3,742	-4,917
3	2003		129	483	281	893	109		1,002	763		763	-240	-5,157
4	2004					0	109		109	1,144		1,144	1,035	-4,122
5	2005					0	109		109	1,525		1,525	1,416	-2,706
6	2006					0	109		109	1,716		1,716	1,607	-1,099
7	2007					0	109		109	1,906		1,906	1,797	698
8	2008					0	109		109	1,906		1,906	1,797	2,495
9	2009					0	109		109	1,906		1,906	1,797	4,292
10	2010					0	109		109	1,906		1,906	1,797	6,090
11	2011					0	109		109	1,906		1,906	1,797	7,887
12	2012					0	109	177	286	1,906		1,906	1,620	9,507
13	2013					0	109		109	1,906		1,906	1,797	11,304
14	2014					0	109		109	1,906		1,906	1,797	13,102
15	2015					0	109		109	1,906		1,906	1,797	14,899
16	2016					0	109		109	1,906		1,906	1,797	16,696
17	2017					0	109	889	998	1,906		1,906	908	17,604
18	2018					0	109		109	1,906		1,906	1,797	19,402
19	2019					0	109		109	1,906		1,906	1,797	21,199
20	2020					0	109		109	1,906		1,906	1,797	22,996
21	2021					0	109		109	1,906		1,906	1,797	24,793
22	2022					0	109	177	286	1,906		1,906	1,620	26,414
23	2023					0	109		109	1,906		1,906	1,797	28,211
24	2024					0	109		109	1,906		1,906	1,797	30,008
25	2025					0	109		109	1,906		1,906	1,797	31,805
26	2026					0	109		109	1,906		1,906	1,797	33,603
27	2027					0	109		109	1,906		1,906	1,797	35,400
28	2028					0	109		109	1,906		1,906	1,797	37,197
29	2029					0	109		109	1,906		1,906	1,797	38,994
30	2030					0	109		109	1,906		1,906	1,797	40,792
Total		2,767	430	1,666	935	5,799	3,068	1,243	10,110	50,902	0	50,902	40,792	
						5,799			10,110			**EIRR =**	**23.3%**	

Note

*1: Construction of irrigation facility, marketing road and collection centers

*2: Training of village coordinator and farmers/farmers groups including NGO

*3 External expert, ATF, machine and equipment and training of task team

*4 Administration cost, land acquisition and pre-arrangement

Sensibility Analysis	
Output Prices Decline: 10%	19.8%
Output Prices Decline: 20%	16.1%
Delay in benefit realization: 3years	21.1%

Table IX-16 Economic Cost and Benefit Flow of Langensari Model Area

(Unit: Rp. million)

Year		Cost								Benefit			Balance	Accumulated Balance
		Initial Investment					Operation & Maintenance	Replacement	Total	Crop	Others	Total		
		*1 Constrt'n of rural facilities	*2 Training & extension	*3 Common cost for dev.	*4 Related cost	Subtotal								
1	2001	149	96	342	168	755			755			0	-755	-755
2	2002	1,341	128	485	225	2,179	15		2,193			0	-2,193	-2,948
3	2003		96	338	168	602	148		750	377		377	-373	-3,321
4	2004					0	148		148	565		565	417	-2,904
5	2005					0	148		148	753		753	606	-2,298
6	2006					0	148		148	847		847	700	-1,599
7	2007					0	148		148	942		942	794	-805
8	2008					0	148		148	942		942	794	-11
9	2009					0	148		148	942		942	794	783
10	2010					0	148		148	942		942	794	1,577
11	2011					0	148		148	942		942	794	2,371
12	2012					0	148	45	193	942		942	749	3,120
13	2013					0	148		148	942		942	794	3,914
14	2014					0	148		148	942		942	794	4,708
15	2015					0	148		148	942		942	794	5,501
16	2016					0	148		148	942		942	794	6,295
17	2017					0	148	376	523	942		942	418	6,714
18	2018					0	148		148	942		942	794	7,507
19	2019					0	148		148	942		942	794	8,301
20	2020					0	148		148	942		942	794	9,095
21	2021					0	148		148	942		942	794	9,889
22	2022					0	148	45	193	942		942	749	10,638
23	2023					0	148		148	942		942	794	11,432
24	2024					0	148		148	942		942	794	12,226
25	2025					0	148		148	942		942	794	13,020
26	2026					0	148		148	942		942	794	13,814
27	2027					0	148		148	942		942	794	14,608
28	2028					0	148		148	942		942	794	15,401
29	2029					0	148		148	942		942	794	16,195
30	2030					0	148		148	942		942	794	16,989
Total		1,490.2	319.1	1,164.4	561.7	3,535.4	4,150	465	8,151	25,140	0	25,140	16,989	
						3,535			8,151			**EIRR =**	**17.2%**	

Note

*1: Construction of irrigation facility, marketing road and collection center

*2: Training of village coordinator and farmers/farmers groups including NGO cost

*3 External expert, ATF, machine and equipment and training of task team

*4 Administration cost, land acquisition and pre-arrangement

Sensibility Analysis	
Output Prices Decline: 10%	14.4%
Output Prices Decline: 20%	12.3%
Delay in benefit realization: 3years	15.5%

Table IX-17 Economic Cost and Benefit Flow of Gekbrong Model Area

(Unit: Rp. million)

Year		Cost								Benefit			Balance	Accumulated Balance
		Initial Investment					Operation & Maintenance	Replacement	Total	Crop	Others	Total		
		*1 Constrt'n of rural facilities	*2 Training & extension	*3 Common cost for dev.	*4 Related cost	Subtotal								
1	2001	178	67	295	178	717			717			0	-717	-717
2	2002	1,605	89	418	237	2,349	8		2,357			0	-2,357	-3,074
3	2003		67	291	178	536	77		612	351		351	-261	-3,335
4	2004					0	77		77	527		527	450	-2,885
5	2005					0	77		77	702		702	626	-2,259
6	2006					0	77		77	790		790	713	-1,546
7	2007					0	77		77	878		878	801	-745
8	2008					0	77		77	878		878	801	56
9	2009					0	77		77	878		878	801	857
10	2010					0	77		77	878		878	801	1,658
11	2011					0	77		77	878		878	801	2,459
12	2012					0	77	95	172	878		878	706	3,165
13	2013					0	77		77	878		878	801	3,966
14	2014					0	77		77	878		878	801	4,767
15	2015					0	77		77	878		878	801	5,568
16	2016					0	77		77	878		878	801	6,369
17	2017					0	77	614	690	878		878	187	6,556
18	2018					0	77		77	878		878	801	7,357
19	2019					0	77		77	878		878	801	8,158
20	2020					0	77		77	878		878	801	8,959
21	2021					0	77		77	878		878	801	9,760
22	2022					0	77	95	172	878		878	706	10,466
23	2023					0	77		77	878		878	801	11,267
24	2024					0	77		77	878		878	801	12,068
25	2025					0	77		77	878		878	801	12,869
26	2026					0	77		77	878		878	801	13,670
27	2027					0	77		77	878		878	801	14,471
28	2028					0	77		77	878		878	801	15,272
29	2029					0	77		77	878		878	801	16,073
30	2030					0	77		77	878		878	801	16,875
Total		1,783	223	1,004	592	3,602	2,150	804	6,556	23,431	0	23,431	16,875	
						3,602			6,556			**EIRR =**	**17.2%**	

Note

*1: Construction of irrigation facility, marketing road and collection center

*2: Training of village coordinator and farmers/farmers groups including NGO cost

*3 External expert, ATF, machine and equipment and training of task team

*4 Administration cost, land acquisition and pre-arrangement

Sensibility Analysis	
Output Prices Decline: 10%	14.4%
Output Prices Decline: 20%	11.4%
Delay in benefit realization: 3years	15.7%

Table IX-18 Economic Cost and Benefit Flow of Tanjungkarya Model Area

(Unit: Rp. million)

Year		Cost								Benefit			Balance	Accumulated Balance
		Initial Investment					Operation & Maintenance	Replacement	Total	Crop	Others	Total		
		*1 Constrt'n of rural facilities	*2 Training & extension	*3 Common cost for dev.	*4 Related cost	Subtotal								
1	2001	175	94	454	217	939			939			0	-939	-939
2	2002	1,575	125	644	289	2,634	6		2,640			0	-2,640	-3,580
3	2003		94	448	217	759	65		824	378		378	-446	-4,025
4	2004					0	65		65	568		568	503	-3,522
5	2005					0	65		65	757		757	692	-2,830
6	2006					0	65		65	851		851	787	-2,044
7	2007					0	65		65	946		946	881	-1,163
8	2008					0	65		65	946		946	881	-281
9	2009					0	65		65	946		946	881	600
10	2010					0	65		65	946		946	881	1,481
11	2011					0	65		65	946		946	881	2,362
12	2012					0	65	76	141	946		946	805	3,168
13	2013					0	65		65	946		946	881	4,049
14	2014					0	65		65	946		946	881	4,930
15	2015					0	65		65	946		946	881	5,811
16	2016					0	65		65	946		946	881	6,692
17	2017					0	65	58	123	946		946	823	7,515
18	2018					0	65		65	946		946	881	8,397
19	2019					0	65		65	946		946	881	9,278
20	2020					0	65		65	946		946	881	10,159
21	2021					0	65		65	946		946	881	11,040
22	2022					0	65	76	141	946		946	805	11,846
23	2023					0	65		65	946		946	881	12,727
24	2024					0	65		65	946		946	881	13,608
25	2025					0	65		65	946		946	881	14,489
26	2026					0	65		65	946		946	881	15,370
27	2027					0	65		65	946		946	881	16,252
28	2028					0	65		65	946		946	881	17,133
29	2029					0	65		65	946		946	881	18,014
30	2030					0	65		65	946		946	881	18,895
Total		1,750	313	1,546	724	4,333	1,817	210	6,360	25,255	0	25,255	18,895	
						4,333			6,360			**EIRR =**	**16.2%**	

Note

*1: Construction of irrigation facility, marketing road and collection center

*2: Training of village coordinator and farmers/farmers groups including NGO cost

*3 External expert, ATF, machine and equipment and training of task team

*4 Administration cost, land acquisition and pre-arrangement

Sensibility Analysis

Output Prices Decline: 10%	13.6%
Output Prices Decline: 20%	10.8%
Delay in benefit realization: 3years	14.8%

Table IX-19 Economic Cost and Benefit Flow of Four (4) Priority Model Areas

(Unit: Rp. million)

Year		Cost								Benefit			Balance	Accumulated Balance
		Initial Investment					Operation & Maintenance	Replacement	Total	Crop	Others	Total		
		*1 Constrt'n of rural facilities	*2 Training & extension	*3 Common cost for dev.	*4 Related cost	Subtotal								
1	2001	779	385	1,579	844	3,587			3,587			0	-3,587	-3,587
2	2002	7,012	514	2,241	1,125	10,892	40		10,932			0	-10,932	-14,519
3	2003		385	1,561	844	2,790	398		3,188	1,869		1,869	-1,319	-15,838
4	2004					0	398		398	2,803		2,803	2,405	-13,433
5	2005					0	398		398	3,737		3,737	3,339	-10,094
6	2006					0	398		398	4,204		4,204	3,806	-6,288
7	2007					0	398		398	4,672		4,672	4,273	-2,015
8	2008					0	398		398	4,672		4,672	4,273	2,259
9	2009					0	398		398	4,672		4,672	4,273	6,532
10	2010					0	398		398	4,672		4,672	4,273	10,806
11	2011					0	398		398	4,672		4,672	4,273	15,079
12	2012					0	398	393	791	4,672		4,672	3,880	18,959
13	2013					0	398		398	4,672		4,672	4,273	23,233
14	2014					0	398		398	4,672		4,672	4,273	27,506
15	2015					0	398		398	4,672		4,672	4,273	31,780
16	2016					0	398		398	4,672		4,672	4,273	36,053
17	2017					0	398	1,936	2,334	4,672		4,672	2,337	38,390
18	2018					0	398		398	4,672		4,672	4,273	42,664
19	2019					0	398		398	4,672		4,672	4,273	46,937
20	2020					0	398		398	4,672		4,672	4,273	51,211
21	2021					0	398		398	4,672		4,672	4,273	55,484
22	2022					0	398	393	791	4,672		4,672	3,880	59,365
23	2023					0	398		398	4,672		4,672	4,273	63,638
24	2024					0	398		398	4,672		4,672	4,273	67,911
25	2025					0	398		398	4,672		4,672	4,273	72,185
26	2026					0	398		398	4,672		4,672	4,273	76,458
27	2027					0	398		398	4,672		4,672	4,273	80,732
28	2028					0	398		398	4,672		4,672	4,273	85,005
29	2029					0	398		398	4,672		4,672	4,273	89,279
30	2030					0	398		398	4,672		4,672	4,273	93,552
Total		7,791	1,285	5,380	2,812	17,269	11,188	2,723	31,180	124,732	0	124,732	93,552	
						17,269			31,180			**EIRR =**	**19.1%**	

Note
*1: Construction of irrigation facility, marketing road and collection center
*2: Training of village coordinator and farmers/farmers groups including NGO cost
*3 External expert, ATF, machine and equipment and training of task team
*4 Administration cost, land acquisition and pre-arrangement

Sensibility Analysis	
Output Prices Decline: 10%	16.2%
Output Prices Decline: 20%	13.1%
Delay in benefit realization: 3years	17.3%

Table IX-20 Financial Cash Flow Statement of Mekarjaya Model Area

(Unit: Rp. million)

		IN FLOW								OUT FLOW											Repayment of loan		
		Loan from Foreign Country			Subsidy by government for loan repayment	Repayment of micro-credit	Benefit by crops	*1 Other income of farmers	Total	Initial Investment			O&M cost	Replacement cost	Disbursement of micro-credit	Loan repayment by farmers	Farmers' living expenses	Total	Balance	Accumulation			
		Construction & Training	Initial fund of micro-	Subtotal						*1 Constrt'n rural facilities	*2 Training & extension	Subtotal									Capital	Interest	Total
Year			1.0		80%	10.5%		0.0%								20%	5%					2.4%	
1	2001	441		441	0		319	800	1,561	312	129	441					1,800	2,241	-681	-681			
2	2002	2,979	83	3,062	8		319	800	4,190	2,807	172	2,979	12		83	2	1,800	4,876	-686	-1,366		11	11
3	2003	129		129	67	92	982	800	2,071		129	129	115		92	17	1,890	2,243	-172	-1,538		84	84
4	2004			0	70	101	1,314	800	2,285			0	115		101	17	1,985	2,218	67	-1,472		87	87
5	2005			0	70	112	1,645	800	2,627			0	115		112	17	2,084	2,328	299	-1,173		87	87
6	2006			0	70	124	1,811	800	2,805			0	115		124	17	2,188	2,444	360	-812		87	87
7	2007			0	70	137	1,977	800	2,983			0	115		137	17.4	2,297	2,567	417	-396		87	87
8	2008			0	70	151	1,977	800	2,998			0	115		151	17	2,412	2,696	302	-94		87	87
9	2009			0	70	167	1,977	800	3,014			0	115		167	17	2,533	2,832	181	87		87	87
10	2010			0	70	184	1,977	800	3,031			0	115		184	17	2,659	2,976	55	142		87	87
11	2011			0	185	204	1,977	800	3,165			0	115		204	46	2,659	3,025	141	283	144	87	231
12	2012			0	185	225	1,977	800	3,187			0	115	154	225	46	2,659	3,200	-13	270	147	84	231
13	2013			0	185	249	1,977	800	3,210			0	115		249	46	2,659	3,070	141	411	151	80	231
14	2014			0	185	275	1,977	800	3,237			0	115		275	46	2,659	3,096	141	551	154	77	231
15	2015			0	185	304	1,977	800	3,265			0	115		304	46	2,659	3,125	141	692	158	73	231
16	2016			0	185	336	1,977	800	3,297			0	115		336	46	2,659	3,157	141	833	162	69	231
17	2017			0	185	371	1,977	800	3,333			0	115	925	371	46	2,659	4,117	-784	49	166	65	231
18	2018			0	185	410	1,977	800	3,372			0	115		410	46	2,659	3,231	141	190	170	61	231
19	2019			0	185	453	1,977	800	3,415			0	115		453	46	2,659	3,274	141	330	174	57	231
20	2020			0	185	501	1,977	800	3,462			0	115		501	46	2,659	3,321	141	471	178	53	231
21	2021			0	185	553	1,977	800	3,515			0	115		553	46	2,659	3,374	141	612	182	49	231
22	2022			0	185	611	1,977	800	3,573			0	115	154	611	46	2,659	3,586	-13	599	186	44	231
23	2023			0	185	676	1,977	800	3,637			0	115		676	46	2,659	3,496	141	740	191	40	231
24	2024			0	185	747	1,977	800	3,708			0	115		747	46	2,659	3,567	141	881	196	35	231
25	2025			0	185	825	1,977	800	3,786			0	115		825	46	2,659	3,646	141	1,021	200	31	231
26	2026			0	185	912	1,977	800	3,873			0	115		912	46	2,659	3,732	141	1,162	205	26	231
27	2027			0	185	1,007	1,977	800	3,969			0	115		1,007	46	2,659	3,828	141	1,303	210	21	231
28	2028			0	185	1,113	1,977	800	4,075			0	115		1,113	46	2,659	3,934	141	1,444	215	16	231
29	2029			0	185	1,230	1,977	800	4,191			0	115		1,230	46	2,659	4,051	141	1,585	220	11	231
30	2030			0	185	1,359	1,977	800	4,321			0	115		1,359	46	2,659	4,180	141	1,726	225	5	231
Total		3,549	83	3,632	4,257	13,428	53,837	24,000	99,154	3,119	430	3,549	3,234	1,233	13,511	1,064	74,836	97,429	1,726		3,632	1,689	5,321

Note *1: Construction of irrigation facility, marketing road and collection center

*2: Training of village coordinator and farmers/farmers groups including NGO cost

Irrigable area	83	ha
Beneficiaries	400	family
Living expenses	4,500	Rp./family
Cash income excepting annual crops	2,000	Rp./family
Profit of present condition	319.5	Rp. Million
Profit of target year	1,976.9	Rp. Million
Build up of benefit (year after facility construction)		
1st year (2003)	40%	
2nd year (2004)	60%	
3rd year (2005)	80%	
4th year (2006)	90%	
5th year (2007)	100%	

FIRR = 19.1%

Condition Cost: Whole costs of 1999/2000 financial price excluding price contingency

Benefit: Financial incremental benefit (profit of with project - profit without project)

		Amortalization rate of capital cost by beneficiaries					
		100%	40%	30%	20%	10%	0%
1	Annual cost						
(1)	O & M cost	Constant	Constant	Constant	Constant	Constant	Constant
(2)	Replacement cost	Constant	Constant	Constant	Constant	Constant	Constant
(3)	Annual amortalization (after ii year)	Constant	Constant	Constant	Constant	Constant	Constant
2	Increase of Living standard of beneficiaries						
(1)	Average loving expenses in 2010 (Rp.1000/fam	2,799	2,799	2,799	2,799	2,799	2,799
(2)	Average loving expenses in 2001 (Rp.1001/fam	6,436	6,698	6,742	6,785	6,829	6,872
(3)	Increaseing rate of living expenditure for intial	9.70%	10.18%	10.26%	10.34%	10.42%	10.50%
(4)	increaase rate at 10th year	2.30	2.39	2.41	2.42	2.44	2.46
(5)	Increase rate from 11 th	0%	0%	0%	0%	0%	0%
3	Annual cost per ha and % to net income						
(1)	O&M and replacement cost *1 (Rp1000/ha)	1,882	1,882	1,882	1,882	1,882.0	1,882.0
	O&M and replacement cost *1 (Rp1000/family	391	391	391	391	390.5	390.5
	Ratio to net crop income (%)	7.9%	7.9%	7.9%	7.9%	7.9%	7.9%
(2)	Annual amortization (Rp1000/ha)	2,781	1,112	834	556	278	0
	Annual amortization (Rp1000/family)	577	231	173	115	58	0
	Ratio to net crop income (%)	11.7%	4.7%	3.5%	2.3%	1.2%	0.0%
(3)	Total (Rp. 1000/ha)	4,663	2,994	2,716	2,438	2,160	1,882
	Total (Rp. 1000/family)	968	621	564	506	448	391
	Ratio to net crop income (%)	19.6%	12.6%	11.4%	10.2%	9.1%	7.9%

Figures area shown in constant prices

Replacement cost is shown in average per year

Table IX-21 Financial Cash Flow Statement of Langensari Model Area

(Unit: Rp. million)

		IN FLOW								OUT FLOW											Repayment of loan		
		Loan from Foreign Country			subcidy by government for loan repayment	Repayment of micro-credit	Benefit by crops	Other income of farmers	Total	Initial Investment			O&M cost	Replacement cost	Disbursement of micro-credit	Loan repayment by beneficiaires	Farmers' living expenditure	Total	Balance	Accumulation			
		Construction & Training	Initial fund of micro-credit	Subtotal						*1 Constrt'n of rural facilities	*2 Training & extension	Subtotal									Capital	Interest	Subtotal
Year			1.0		80%	10.5%		0.0%								20%	3.0%					2.4%	
1	2001	265		265	0		1,113	1,040	2,418	170	96	265				0	2,262	2,527	-109	-109			
2	2002	1,654	58	1,712	5		1,113	1,040	3,870	1,526	128	1,654	16		58	1	2,262	3,991	-122	-231		6	6
3	2003	96		96	38	64	1,458	1,040	2,696		96	96	159		64	9	2,330	2,658	38	-193		47	47
4	2004			0	40	71	1,631	1,040	2,781			0	159		71	10	2,400	2,639	142	-52		50	50
5	2005			0	40	78	1,803	1,040	2,961			0	159		78	10	2,472	2,719	243	191		50	50
6	2006			0	40	86	1,890	1,040	3,056			0	159		86	10	2,546	2,801	255	446		50	50
7	2007			0	40	96	1,976	1,040	3,151			0	159		96	10	2,622	2,887	265	711		50	50
8	2008			0	40	106	1,976	1,040	3,162			0	159		106	10	2,701	2,975	186	897		50	50
9	2009			0	40	117	1,976	1,040	3,173			0	159		117	10	2,782	3,067	105	1,002		50	50
10	2010			0	40	129	1,976	1,040	3,185			0	159		129	10	2,865	3,163	22	1,024		50	50
11	2011			0	105	142	1,976	1,040	3,264			0	159		142	26	2,865	3,193	71	1,094	82	50	132
12	2012			0	105	157	1,976	1,040	3,279			0	159	28	157	26	2,865	3,236	43	1,138	84	48	132
13	2013			0	105	174	1,976	1,040	3,295			0	159		174	26	2,865	3,225	71	1,208	86	46	132
14	2014			0	105	192	1,976	1,040	3,314			0	159		192	26	2,865	3,243	71	1,279	88	44	132
15	2015			0	105	212	1,976	1,040	3,334			0	159		212	26	2,865	3,263	71	1,350	90	42	132
16	2016			0	105	235	1,976	1,040	3,356			0	159		235	26	2,865	3,285	71	1,421	92	39	132
17	2017			0	105	259	1,976	1,040	3,381			0	159	384	259	26	2,865	3,694	-313	1,108	95	37	132
18	2018			0	105	287	1,976	1,040	3,408			0	159		287	26	2,865	3,337	71	1,179	97	35	132
19	2019			0	105	317	1,976	1,040	3,438			0	159		317	26	2,865	3,367	71	1,249	99	33	132
20	2020			0	105	350	1,976	1,040	3,471			0	159		350	26	2,865	3,401	71	1,320	101	30	132
21	2021			0	105	387	1,976	1,040	3,508			0	159		387	26	2,865	3,437	71	1,391	104	28	132
22	2022			0	105	427	1,976	1,040	3,549			0	159	28	427	26	2,865	3,506	43	1,434	106	25	132
23	2023			0	105	472	1,976	1,040	3,594			0	159		472	26	2,865	3,523	71	1,505	109	23	132
24	2024			0	105	522	1,976	1,040	3,643			0	159		522	26	2,865	3,572	71	1,576	112	20	132
25	2025			0	105	576	1,976	1,040	3,698			0	159		576	26	2,865	3,627	71	1,647	114	17	132
26	2026			0	105	637	1,976	1,040	3,758			0	159		637	26	2,865	3,688	71	1,717	117	15	132
27	2027			0	105	704	1,976	1,040	3,825			0	159		704	26	2,865	3,755	71	1,788	120	12	132
28	2028			0	105	778	1,976	1,040	3,899			0	159		778	26	2,865	3,828	71	1,859	123	9	132
29	2029			0	105	859	1,976	1,040	3,981			0	159		859	26	2,865	3,910	71	1,930	126	6	132
30	2030			0	105	950	1,976	1,040	4,071			0	159		950	26	2,865	4,000	71	2,001	129	3	132
Total		2,015	58	2,073	2,429	9,384	56,434	31,200	101,520	1,696	319	2,015	4,465	439	9,442	607	82,551	99,519	2,001		2,073	964	3,037

Note *1: Construction of irrigation facility, marketing road and collection center

*2: Training of village coordinator and farmers/farmers groups including NGO cost

Irrigable area	58	ha
Beneficiaries	260	family
Living expenses	8,700	Rp./family
Cash income excepting annual crops	4,000	Rp./family
Profit of present condition	1,113	Rp. Million
Profit of target year	1,976	Rp. Million
Build up of benefit (year after facility construction)		
1st year (2003)	40%	
2nd year (2004)	60%	
3rd year (2005)	80%	
4th year (2006)	90%	
5th year (2007)	100%	

FIRR = 14.4%

Condition Cost: Whole costs of 1999/2000 financial price excluding price contingency

Benefit: Financial incremental benefit (profit of with project - profit without project)

		Amortization rate of capital cost by beneficiaries					
		100%	40%	30%	20%	10%	0%
1	Annual cost						
(1)	O & M cost	Constant	Constant	Constant	Constant	Constant	Constant
(2)	Replacement cost	Constant	Constant	Constant	Constant	Constant	Constant
(3)	Annual amortization (after ii year)	Constant	Constant	Constant	Constant	Constant	Constant
2	Increase of living standard of beneficiaries						
(1)	Average living expenses in 2001 (Rp.1000/fami	8,279	8,279	8,279	8,279	8,279	8,279
(2)	Average living expenses in 2010 (Rp.1000/fami	10,798	11,028	11,066	11,104.13	11,142	11,181
(3)	Increasing rate of living expenditure for initial 1	3.00%	3.24%	3.28%	3.32%	3.36%	3.40%
(4)	Increase rate at 10th year	1.30	1.33	1.34	1.34	1.35	1.35
(5)	Increase rate from 11th	0%	0%	0%	0%	0%	0%
3	Annual cost per ha and % to net income						
(1)	O&M and replacement cost *1 (Rp1000/ha)	2,992	2,992	2,992	2,992	2,992	2,992
	O&M and replacement cost *1 (Rp1001/family)	667	667	667	667	667	667
	Ratio to net crop income (%)	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%
(2)	Annual amortization (Rp1000/ha)	2,271	909	681	454	227	0
	Annual amortization (Rp1000/family)	507	203	152	101	51	0
	Ratio to net crop income (%)	6.7%	2.7%	2.0%	1.3%	0.7%	0.0%
(3)	Total (Rp. 1000/family)	5,263	3,901	3,674	3,446	3,219	2,992
	Total (Rp. 1001/ha)	1,174	870	819	769	718	667
	Ratio to net crop income (%)	15.4%	11.4%	10.8%	10.1%	9.4%	8.8%

Figures area shown in constant prices

Replacement cost is shown in average per year

Table IX-22 Financial Cash Flow Statement of Gekbrong Model Area

(Unit: Rp. million)

		IN FLOW								OUT FLOW												
		Loan from Foreign Country			Subsidy by government for loan repayment	Repayment of micro-credit	Benefit by crops	Other income of farmers	Total	Initial Investment			O&M cost	Replacement cost	Disbursement of micro-credit	Loan repayment by beneficiaries	Farmers' living expenditure	Total	Balance	Accumulation	Repayment of loan		
		Construction & Training	Initial fund of micro-	Subtotal						*1 Constrt'n of rural facilities	*2 Training & extension	Subtotal									Capital	Interest	Subtotal
Year			1.0		80%	10.5%		0.0%								20%	6.0%					2.4%	
1	2001	271		271	0		828	120	1,218	204	67	271				0	1,020	1,291	-72	-72			
2	2002	1,924	50	1,974	5		828	120	2,926	1,835	89	1,924	8		50	1	1,020	3,003	-77	-149		6	6
3	2003	67		67	43	55	1,116	120	1,401		67	67	82		55	11	1,081	1,296	105	-44		54	54
4	2004			0	44	61	1,260	120	1,486			0	82		61	11	1,146	1,301	185	141		55	55
5	2005			0	44	67	1,404	120	1,636			0	82		67	11	1,215	1,376	261	401		55	55
6	2006			0	44	75	1,477	120	1,715			0	82		75	11	1,288	1,456	260	661		55	55
7	2007			0	44	82	1,549	120	1,795			0	82		82	11	1,365	1,541	255	916		55	55
8	2008			0	44	91	1,549	120	1,804			0	82		91	11	1,447	1,631	173	1,088		55	55
9	2009			0	44	101	1,549	120	1,814			0	82		101	11	1,534	1,728	86	1,174		55	55
10	2010			0	44	111	1,549	120	1,824			0	82		111	11	1,626	1,830	-6	1,168		55	55
11	2011			0	117	123	1,549	120	1,909			0	82		123	29	1,626	1,860	49	1,217	91	55	147
12	2012			0	117	136	1,549	120	1,922			0	82	81	136	29	1,626	1,954	-32	1,185	94	53	147
13	2013			0	117	150	1,549	120	1,936			0	82		150	29	1,626	1,887	49	1,233	96	51	147
14	2014			0	117	166	1,549	120	1,952			0	82		166	29	1,626	1,903	49	1,282	98	49	147
15	2015			0	117	183	1,549	120	1,969			0	82		183	29	1,626	1,920	49	1,331	100	46	147
16	2016			0	117	202	1,549	120	1,988			0	82		202	29	1,626	1,940	49	1,379	103	44	147
17	2017			0	117	224	1,549	120	2,010			0	82	639	224	29	1,626	2,600	-591	789	105	41	147
18	2018			0	117	247	1,549	120	2,033			0	82		247	29	1,626	1,984	49	837	108	39	147
19	2019			0	117	273	1,549	120	2,059			0	82		273	29	1,626	2,010	49	886	110	36	147
20	2020			0	117	302	1,549	120	2,088			0	82		302	29	1,626	2,039	49	935	113	34	147
21	2021			0	117	333	1,549	120	2,119			0	82		333	29	1,626	2,071	49	984	116	31	147
22	2022			0	117	368	1,549	120	2,154			0	82	81	368	29	1,626	2,187	-32	951	119	28	147
23	2023			0	117	407	1,549	120	2,193			0	82		407	29	1,626	2,144	49	1,000	121	25	147
24	2024			0	117	450	1,549	120	2,236			0	82		450	29	1,626	2,187	49	1,049	124	22	147
25	2025			0	117	497	1,549	120	2,283			0	82		497	29	1,626	2,234	49	1,097	127	19	147
26	2026			0	117	549	1,549	120	2,335			0	82		549	29	1,626	2,287	49	1,146	130	16	147
27	2027			0	117	607	1,549	120	2,393			0	82		607	29	1,626	2,344	49	1,195	134	13	147
28	2028			0	117	670	1,549	120	2,457			0	82		670	29	1,626	2,408	49	1,244	137	10	147
29	2029			0	117	741	1,549	120	2,527			0	82		741	29	1,626	2,478	49	1,292	140	7	147
30	2030			0	117	819	1,549	120	2,605			0	82		819	29	1,626	2,556	49	1,341	143	3	147
Total		2,261	50	2,311	2,709	8,089	44,079	3,600	60,788	2,038	223	2,261	2,313	801	8,139	677	45,256	59,447	1,341		2,311	1,075	3,386

Note *1: Construction of irrigation facility, marketing road and collection center

*2: Training of village coordinator and farmers/farmers groups including NGO cost

Irrigable area	50	ha
Beneficiaries	120	family
Living expenses	8,500	Rp./family
Cash income excepting annual crops	1,000	Rp./family
Profit of present condition	828	Rp. Million
Profit of target year	1,549	Rp. Million
Build up of benefit (year after facility construction)		
1st year (2003)	40%	
2nd year (2004)	60%	
3rd year (2005)	80%	
4th year (2006)	90%	
5th year (2007)	100%	

FIRR = 12.7%

Condition Cost: Whole costs of 1999/2000 financial price excluding price contingency

Benefit: Financial incremental benefit (profit of with project - profit without project)

		Amortization rate of capital cost by beneficiaries					
		100%	40%	30%	20%	10%	0%
1	Annual cost						
(1)	O & M cost	Constant	Constant	Constant	Constant	Constant	Constant
(2)	Replacement cost	Constant	Constant	Constant	Constant	Constant	Constant
(3)	Annual amortization (after ii year)	Constant	Constant	Constant	Constant	Constant	Constant
2	Increase of living standard of beneficiaries						
(1)	Average living expenses in 2001 (Rp.1000/family	7,896	7,896	7,896	7,896	7,896	7,896
(2)	Average living expenses in 2010 (Rp.1000/family	12,757	13,312	13,404	13,497	13,589	13,682
(3)	Increasing rate of living expenditure for initial 10	5.47%	5.62%	6.06%	6.14%	6.22%	6.30%
(4)	Increase rate at 10th year	1.62	1.69	1.70	1.71	1.72	1.73
(5)	Increase rate from 11th	0%	0%	0%	0%	0%	0%
3	Annual cost per ha and % to net income						
(1)	O&M and replacement cost *1 (Rp1000/ha)	2,180	2,180	2,180	2,180	2,180	2,180
	O&M and replacement cost *1 (Rp1001/family)	908	908	908	908	908	908
	Ratio to net crop income (%)	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
(2)	Annual amortization (Rp1000/ha)	2,937	1,175	881	587	294	0
	Annual amortization (Rp1000/family)	1,224	490	367	245	122	0
	Ratio to net crop income (%)	9.5%	3.8%	2.8%	1.9%	0.9%	0.0%
(3)	Total (Rp. 1000/family)	5,117	3,355	3,061	2,768	2,474	2,180
	Total (Rp. 1001/ha)	2,132	1,398	1,276	1,153	1,031	908
	Ratio to net crop income (%)	16.5%	10.8%	9.9%	8.9%	8.0%	7.0%

Figures area shown in constant prices

Replacement cost is shown in average per year

Table IX-23 Financial Cash Flow Statement of Tanjyungkarya Model Area

(Unit: Rp. million)

		IN FLOW							OUT FLOW													
		Loan from Foreign Country			Subsidy by government for loan repayment	Repayment of micro-credit	Benefit by annual crops	Other income of farmers	Total	Initial investment			O&M cost	Replacement cost	Disbursement of micro-credit	Loan repayment by farmers	Farmers' living expenditure	Total	Balance	Accumulation	Repayment of loan		
		Construction & Training	Initial fund of micro-credit	Subtotal						*1 Constrt'n of rural facilities	*2 Training & extension	Subtotal									Capital	Interest	Subtotal
Year			1.0		80%	10.5%		0.0%								20%	4.0%					2.4%	
1	2001	304		304	0		770	1,064	2,138	211	94	304				0	1,904	2,208	-70	-70			
2	2002	2,020	77	2,097	6		770	1,064	3,937	1,895	125	2,020	7		77	1	1,904	4,010	-73	-143		7	7
3	2003	94		94	46	85	1,096	1,064	2,385		94	94	72		85	12	1,980	2,242	143	-0		58	58
4	2004			0	48	94	1,259	1,064	2,465			0	72		94	12	2,059	2,237	228	228		60	60
5	2005			0	48	104	1,422	1,064	2,638			0	72		104	12	2,142	2,329	309	537		60	60
6	2006			0	48	115	1,504	1,064	2,731			0	72		115	12	2,227	2,426	305	842		60	60
7	2007			0	48	127	1,586	1,064	2,824			0	72		127	12	2,317	2,527	297	1,139		60	60
8	2008			0	48	140	1,586	1,064	2,838			0	72		140	12	2,409	2,633	205	1,344		60	60
9	2009			0	48	155	1,586	1,064	2,852			0	72		155	12	2,506	2,744	108	1,453		60	60
10	2010			0	48	171	1,586	1,064	2,869			0	72		171	12	2,606	2,860	8	1,461		60	60
11	2011			0	127	189	1,586	1,064	2,966			0	72		189	32	2,606	2,898	67	1,528	99	60	159
12	2012			0	127	209	1,586	1,064	2,985			0	72	53	209	32	2,606	2,971	14	1,542	101	58	159
13	2013			0	127	231	1,586	1,064	3,007			0	72		231	32	2,606	2,940	67	1,610	103	55	159
14	2014			0	127	255	1,586	1,064	3,032			0	72		255	32	2,606	2,964	67	1,677	106	53	159
15	2015			0	127	282	1,586	1,064	3,058			0	72		282	32	2,606	2,991	67	1,744	108	50	159
16	2016			0	127	312	1,586	1,064	3,088			0	72		312	32	2,606	3,021	67	1,812	111	47	159
17	2017			0	127	344	1,586	1,064	3,121			0	72	54	344	32	2,606	3,107	13	1,825	114	45	159
18	2018			0	127	380	1,586	1,064	3,157			0	72		380	32	2,606	3,090	67	1,892	116	42	159
19	2019			0	127	420	1,586	1,064	3,197			0	72		420	32	2,606	3,129	67	1,960	119	39	159
20	2020			0	127	465	1,586	1,064	3,241			0	72		465	32	2,606	3,174	67	2,027	122	36	159
21	2021			0	127	513	1,586	1,064	3,290			0	72		513	32	2,606	3,222	67	2,094	125	33	159
22	2022			0	127	567	1,586	1,064	3,344			0	72	53	567	32	2,606	3,329	14	2,109	128	30	159
23	2023			0	127	627	1,586	1,064	3,403			0	72		627	32	2,606	3,336	67	2,176	131	27	159
24	2024			0	127	693	1,586	1,064	3,469			0	72		693	32	2,606	3,402	67	2,243	134	24	159
25	2025			0	127	765	1,586	1,064	3,542			0	72		765	32	2,606	3,474	67	2,311	138	21	159
26	2026			0	127	846	1,586	1,064	3,622			0	72		846	32	2,606	3,555	67	2,378	141	18	159
27	2027			0	127	934	1,586	1,064	3,711			0	72		934	32	2,606	3,643	67	2,445	144	14	159
28	2028			0	127	1,033	1,586	1,064	3,809			0	72		1,033	32	2,606	3,742	67	2,513	148	11	159
29	2029			0	127	1,141	1,586	1,064	3,917			0	72		1,141	32	2,606	3,850	67	2,580	151	7	159
30	2030			0	127	1,261	1,586	1,064	4,037			0	72		1,261	32	2,606	3,970	67	2,648	155	4	159
Total		2,418	77	2,495	2,924	12,458	44,875	31,920	94,673	2,106	313	2,418	2,012	160	12,535	731	74,169	92,025	2,648		2,495	1,160	3,655

Note *1: Construction of irrigation facility, marketing road and collection center

*2: Training of village coordinator and farmers/farmers groups including NGO cost

Irrigable area	77	ha
Beneficiaries	280	family
Living expenses	6,800	Rp./family
Cash income excepting annual crops	3,800	Rp./family
Profit of present condition	770	Rp. Million
Profit of target year	1,586	Rp. Million
Build up of benefit (year after facility construction)		
1st year (2003)	40%	
2nd year (2004)	60%	
3rd year (2005)	80%	
4th year (2006)	90%	
5th year (2007)	100%	

FIRR = 12.5%

Condition Cost: Whole costs of 1999/2000 financial price excluding price contingency

Benefit: Financial incremental benefit (profit of with project - profit without project)

		Amortization rate of capital cost by beneficiaries					
		100%	40%	30%	20%	10%	0%
1	Annual cost						
(1)	O & M cost	Constant	Constant	Constant	Constant	Constant	Constant
(2)	Replacement cost	Constant	Constant	Constant	Constant	Constant	Constant
(3)	Annual amortization (after ii year)	Constant	Constant	Constant	Constant	Constant	Constant
2	Increase of living standard of beneficiaries						
(1)	Average living expenses in 2001 (Rp.1000/family)	6,549	6,549	6,549	6,549	6,549	6,549
(2)	Average living expenses in 2010 (Rp.1000/family)	8,993	9,250	9,293	9,335	9,378	9,421
(3)	Increasing rate of living expenditure for initial 10 yr	3.59%	3.91%	3.97%	4.01%	4.08%	4.12%
(4)	Increase rate at 10th year	1.37	1.41	1.42	1.43	1.43	1.44
(5)	Increase rate from 11th	0%	0%	0%	0%	0%	0%
3	Annual cost per ha and % to net income						
(1)	O&M and replacement cost *1 (Rp1000/ha)	999	999	999	999	999	999
	O&M and replacement cost *1 (Rp1001/family)	275	275	275	275	275	275
	Ratio to net crop income (%)	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%
(2)	Annual amortization (Rp1000/ha)	2,059	824	618	412	206	0
	Annual amortization (Rp1000/family)	566	227	170	113	57	0
	Ratio to net crop income (%)	10.0%	4.0%	3.0%	2.0%	1.0%	0.0%
(3)	Total (Rp. 1000/family)	3,058	1,823	1,617	1,411	1,205	999
	Total (Rp. 1000/ha)	841	501	445	388	331	275
	Ratio to net crop income (%)	14.9%	8.9%	7.9%	6.9%	5.8%	4.9%

Figures area shown in constant prices

Replacement cost is shown in average per year

Table IX-24 Financial Cash Flow of 4 Model Areas

(Unit: Rp. million)

Year		IN FLOW: Loan from Foreign Country – Construction & Training	Loan from Foreign Country – Initial fund of micro-credit	Loan from Foreign Country – Subtotal	Subsidy by government for loan repayment	Repayment of micro-credit	Benefit by annual crops	* 5 Other income of farmers	Total	OUT FLOW: Initial Investment – *1 Const. of rural facilities	Initial Investment – *2 Training & extension	Initial Investment – Subtotal	O&M cost	Re-placement cost	Disbursement of micro-credit	Loan repayment by farmers	Farmers' living expeses	Total	Balance	Accumu-lation	Repayment of loan – Capital	Repayment of loan – Interest	Repayment of loan – Subtotal
			1.0		**80%**	10.5%		0.0%								**20%**	**5.0%**					2.4%	
1	2001	1,281		1,281	0		3,029	2,650	6,961	896	385	1,281				0	6,360	7,641	-681	-681			
2	2002	8,577	268	8,845	25		3,029	2,650	14,549	8,064	514	8,577	43		268	6	6,360	15,254	-705	-1,386		31	31
3	2003	385		385	194	296	4,653	2,650	8,179		385	385	428		296	49	6,678	7,836	342	-1,043		243	243
4	2004			0	202	327	5,464	2,650	8,643			0	428		327	50	7,012	7,817	826	-217		252	252
5	2005			0	202	362	6,276	2,650	9,489			0	428		362	50	7,362	8,202	1,287	1,069		252	252
6	2006			0	202	400	6,681	2,650	9,933			0	428		400	50	7,731	8,609	1,324	2,393		252	252
7	2007			0	202	442	7,087	2,650	10,381			0	428		442	50	8,117	9,037	1,344	3,737		252	252
8	2008			0	202	488	7,087	2,650	10,427			0	428		488	50	8,523	9,489	938	4,675		252	252
9	2009			0	202	539	7,087	2,650	10,478			0	428		539	50	8,949	9,967	512	5,186		252	252
10	2010			0	202	596	7,087	2,650	10,535			0	428		596	50	9,397	10,471	64	5,250		252	252
11	2011			0	534	658	7,087	2,650	10,930			0	428		658	134	9,397	10,616	313	5,564	416	252	668
12	2012			0	534	727	7,087	2,650	10,999			0	428	316	727	134	9,397	11,001	-2	5,561	426	242	668
13	2013			0	534	804	7,087	2,650	11,075			0	428		804	134	9,397	10,762	313	5,875	436	232	668
14	2014			0	534	888	7,087	2,650	11,160			0	428		888	134	9,397	10,846	313	6,188	446	222	668
15	2015			0	534	981	7,087	2,650	11,253			0	428		981	134	9,397	10,940	313	6,502	457	211	668
16	2016			0	534	1,084	7,087	2,650	11,356			0	428		1,084	134	9,397	11,043	313	6,815	468	200	668
17	2017			0	534	1,198	7,087	2,650	11,470			0	428	2,003	1,198	134	9,397	13,159	-1,689	5,126	479	189	668
18	2018			0	534	1,324	7,087	2,650	11,596			0	428		1,324	134	9,397	11,282	313	5,440	491	177	668
19	2019			0	534	1,463	7,087	2,650	11,735			0	428		1,463	134	9,397	11,421	313	5,753	503	165	668
20	2020			0	534	1,617	7,087	2,650	11,888			0	428		1,617	134	9,397	11,575	313	6,067	515	153	668
21	2021			0	534	1,787	7,087	2,650	12,058			0	428		1,787	134	9,397	11,745	313	6,380	527	141	668
22	2022			0	534	1,974	7,087	2,650	12,246			0	428	316	1,974	134	9,397	12,248	-2	6,378	540	128	668
23	2023			0	534	2,181	7,087	2,650	12,453			0	428		2,181	134	9,397	12,140	313	6,691	553	115	668
24	2024			0	534	2,410	7,087	2,650	12,682			0	428		2,410	134	9,397	12,369	313	7,005	566	102	668
25	2025			0	534	2,664	7,087	2,650	12,935			0	428		2,664	134	9,397	12,622	313	7,318	579	89	668
26	2026			0	534	2,943	7,087	2,650	13,215			0	428		2,943	134	9,397	12,901	313	7,632	593	75	668
27	2027			0	534	3,252	7,087	2,650	13,524			0	428		3,252	134	9,397	13,210	313	7,945	608	60	668
28	2028			0	534	3,594	7,087	2,650	13,865			0	428		3,594	134	9,397	13,552	313	8,259	622	46	668
29	2029			0	534	3,971	7,087	2,650	14,243			0	428		3,971	134	9,397	13,929	313	8,572	637	31	668
30	2030			0	534	4,388	7,087	2,650	14,660			0	428		4,388	134	9,397	14,346	313	8,886	652	16	668
Total		10,244	268	10,512	12,320	43,359	199,225	79,500	344,916	8,960	1,285	10,244	12,024	2,634	43,627	3,080	264,421	336,031	8,886		10,512	4,887	15,399

Note *1: Construction of irrigation facility, marketing road and collection center

*2: Training of village coordinator and farmers/farmers groups including NGO cost

Irrigable area	268	ha
Beneficiaries	1,060	family
Living expenses	6,000	Rp./family
Cash income excepting annual crops	2,500	Rp./family
Profit of present condition	3,029	Rp. Million
Profit of target year	7,087	Rp. Million
Build up of benefit (year after facility construction)		
1st year (2003)	40%	
2nd year (2004)	60%	
3rd year (2005)	80%	
4th year (2006)	90%	
5th year (2007)	100%	

FIRR = 15.2%

Condition Cost: Whole costs of 1999/2000 financial price excluding price contingency

Benefit: Financial incremental benefit (profit of with project - profit without project)

		Amortization rate of capital cost by beneficiaries 100%	40%	30%	20%	10%	0%
1	Annual cost						
(1)	O & M cost	Constant	Constant	Constant	Constant	Constant	Constant
(2)	Replacement cost	Constant	Constant	Constant	Constant	Constant	Constant
(3)	Annual amortization (after ii year)	Constant	Constant	Constant	Constant	Constant	Constant
2	Increase of living standard of beneficiaries						
(1)	Average living expenses in 2001 (Rp.1000/family	5,358	5,358	5,358	5,358	5,358	5,358
(2)	Average living expenses in 2010 (Rp.1000/family	8,544	8,830	8,878	8,925	8,973	9,020
(3)	Increasing rate of living expenditure for initial 10	5.32%	5.71%	5.77%	5.83%	5.90%	5.96%
(4)	Increase rate at 10th year	1.59	1.65	1.66	1.67	1.67	1.68
(5)	Increase rate from 11th	0%	0%	0%	0%	0%	0%
3	Annual cost per ha and % to net income						
(1)	O&M and replacement cost *1 (Rp1000/ha)	1,924	1,924	1,924	1,924	1,924	1,924
	O&M and replacement cost *1 (Rp1001/family)	487	487	487	487	487	487
	Ratio to net crop income (%)	7.3%	7.3%	7.3%	7.3%	7.3%	7.3%
(2)	Annual amortization (Rp1000/ha)	2,492	997	748	498	249	0
	Annual amortization (Rp1000/family)	630	252	189	126	63	0
	Ratio to net crop income (%)	9.4%	3.8%	2.8%	1.9%	0.9%	0.0%
(3)	Total (Rp. 1000/family)	4,417	2,921	2,672	2,423	2,174	1,924
	Total (Rp. 1001/ha)	1,117	739	676	613	550	487
	Ratio to net crop income (%)	16.7%	11.0%	10.1%	9.2%	8.2%	7.3%

Figures area shown in constant prices

Replacement cost is shown in average per year

Figures

Figure IX-1: General Conceptual Framework for the Economic Evaluation of the Project