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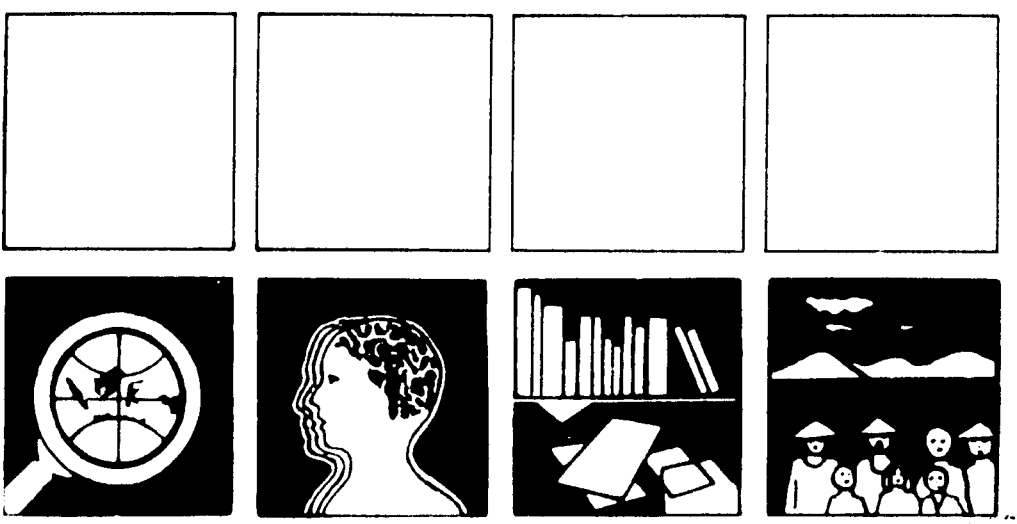

RESEARCH REPORT ON THE EVALUATION OF PKGB PROJECT

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P R E F A C E

A "project" could be defined as an organization of factor input, to produce output, with a purpose of solving the problem of society.

Based on the above definition, an evaluation of the PKGB projects could be done to reveal the facts which describe the magnitude of the inputs, outputs and how far they solve the problem of the society.

We could say that society is having a problem, when the recent factual condition favoured by the society. Take, for an example, the per capita income of a society is US.$. 100.00 per year, and the society feel the income is not sufficient, and should be increased to US.$. 200.00 per capita per year, the society could be said as having a problem of too low income per capita. Since most of the members of the society live from rice-paddy farming productivity; the low harvest is further caused by the supply of water due to bad irrigation condition.

A society may face multiple kind of problem, and not only economic problem described in the above example. The may face economic, socio-cultural and/or farming problem.

The short supply of water to the rice fields (which should be increased and more fluent) has brought the low productivity per hectare. The low harvest productivity per hectare (before the project is organized) is not favoured and of course a project should be organized to increase the harvest. The higher harvest per hectare of land is the purpose of the irrigation project. A project, therefore, should have definite quantifiable purpose or qualitative purpose at a specified time. This purpose should further have a definite goal, such as increasing the per capita income, and better social life.

The farm productivity could be increased if the supply and distribution of water is sufficient. The supply and distribution of water is sufficient when the physical condition of irrigation is qualitatively good. The better physical condition of the irrigation is the OUTPUT of the project, which could be denoted by its dimension, such as width, length and its depth.

To produce those OUTPUT, we definitely need input, which are usually in the farm of materials, tools, man power, time and other money cost. All of these inputs are so organized to produce output.

The above description is meant to clasify the logical framework of a project, as defined in the first paragraph, which has input, output, purpose and goal.

We can now apply the above logical framework to evaluate the level of success of a project, by analysing the data indicating the goal, purpose, output and input of a project. The goal of the evaluation is to improve the design of a project. A better designed project is project which produce more optimal output per unit of input, which achieve the purpose and goal more feasably.

US-AID is the designer and (one of) the financier of the PMGB project performed in various provinces in Indonesia. US-AID wish to evaluate the various sub projects performed in cooperation with the government of Indonesia between 1979-1982, to observe the degree of success of these projects. Six kinds of projects are taken as samples, namely (1) road project, (2) water dam reservoir, (3) terracing of rice field, (4) fish pond, (5) flood control, (6) irrigation project.

To do the evaluation, US-AID cooperates with the institute of development studies, as per contract No. 497-0285-C-00-3054-00, dated June 23rd, 1983.

The evaluation had been performed by the IDS according to the method of approach as mentioned in the proposal agreed by the US-AID. This report is going to present the method, purpose and the result of the research to collect relevant data to indicate the input, output, purpose and goal of those projects, using the approach written in the proposal and presented before the evaluation was performed.

1. The Purpose of The Evaluation

The evaluation program has two purposes, namely :

a. The first Phase purpose to collect data, which indicate the input, output, purpose and goal of each kind of project.

b. The second phase purpose is to analyze the above data to see the degree of success of each project in solving the problem of the society , as beneficiary of the project. This may further recommend an improved design of the project and the continuation of the project.

2. The Scope of Work

The evaluation program had been performed to the following kinds of projects, the following survey area and the following aspect of problem.

a. The kinds of project surveyed

The evaluation program had been performed on 6 kinds of project, namely (1) road project, (2) water reservoir project, (3) rice field terracing project, (4) fish pond project, (5) flood control and (6) irrigation project. The original proposal was agreed only to cover three kinds of project.

b. The geographical area of survey

The survey was done on 6 Provinces, 11 Regencies, 21 Districts , totalling 405 respondents, in the island of Java, Sumatera, Kaliman - tan, and Sulawesi. The data had been collected from various sources , such as government offices, laborers, group leaders, skilled workers, farmers, common village society members, village chiefs, district chiefs, government officers, non formal leaders, and PKGB project staffs.

As summary, the interviews and observation had been done to the following resources.

LIST OF RESPONDENTS

PROVINCES	REGENCIES	KINDS OF PROJECT	RESPONDENTS									
			Laboures	Farmers		Society leaders	Village Chief	District Chief	Regency Staff	Province Staff	Central Govt Staff	TOTAL
				Project Ben	Non Ben Project							
North Sumatera	Langkat	Road	6	3	2	2	2	1		2	2	57
		Road	6	3	2	2	2	1	5			
		Road	6	3	2	2	2	1				
South Kalimantan	Hulu S. Selatan	Flood Control	6	3	2	2	2	1	5			
	Hulu S. Utara	Road	6	3	2	2	2	1	5	2		65
	Banjar	Road	6	3	2	2	2	1	5			
Sulawesi	Goa	Road	6	3	2	2	2	1	5			
	Jane Ponto	Road	6	3	2	2	2	1	5			
	Jane Ponto	Road	6	3	2	2	2	1	-			
	Kodya.U.Pandang	Road	6	3	2	2	2	1	-	2		118
	Takalar	Road	6	3	2	2	2	1	5			
	Takalar	Road	6	3	2	2	2	1	5			
West Java	Karawang	Road	6	3	2	2	2	1				
	Karawang	Rice Terracing	6	3	2	2	2	1	5	2		55
		Fish pond	6	3	2	2	2	1				
Central Java	Semarang	Flood Control	6	3	2	2	2	1				
	Semarang	Flood Control	6	3	2	2	2	1	5	2		55
	Semarang	Dam	6	3	2	2	2	1				
East Java	Malang	Road	6	3	2	2	2	1				
	Malang	Irrigation II & III	6	3	2	2	2	1	5	2		55
		Irrigation II	6	3	2	2	2	1				
TOTAL	11 Regencies	21 Projects	126	63	42	42	42	21	55	12	2	405

Notes :

1. Total 405 respondents
2. The regency staffs interviewed are those from the Man-power Department., Public Works and other related staffs.
3. The provinces staff interviews are those of Manpower Dept. and Statistics.
4. Local people interviewed are farmers as beneficiaries of the projects and non beneficiaries.

c. Aspect of problem

The aspect of problem surveyed were socio-cultural, farming and economical aspect.

The socio-cultural aspect was considered to be surveyed, because the projects were hyphotesized to have impact (positive) on this aspect. For example, there may be positive impact of the project on the bases of participation. The society was traditionally retain the "collective work or Gotong Royong" value, when they perform public or common purpose project. The traditional value may got changed, by the "money value in performing the PKGB projects. Whether the value is changed or not and if there is how for the value has been changed was the object of this survey.

The farming aspect was surveyed because most people around the projects are farmers. The impacts of the projects, therefore, are mostly to the farming and to the farmer-families. Since most of the income are from the farming so the PKGB projects mostly affects the cost of farming as well as the benefits (revencies) from farm - bussiness. These costs and benefits of farming is proper to be surveyed.

The PKGB projects are aimed at increasing the income of the people and to open new jobs. The income and employment are the economic aspect of the projects, and thus to be surveyed.

3. Methods of Approach

Generally we used the logical framework to evaluate these PKGB projects, namely the GPOI - or goal, purpose, output and input.

In practice, we collected data which indicate such GPOI for each kind of project. The indicators of GPOI are further broken down to each aspect of problem, that is the economic, socio cultural and farming problem.

The first step to do it was to find their means of verification for each aspect. Then we collect their data. In summary these GPOI applied to these projects are briefed in the following scheme.

LOGICAL FRAMEWORK OF SOCIO-CULTURAL ASPECT

FRAMEWORK	OBJECTIVELY VERIABLE INDICATOR	MEANS OF VERIFICATION
Input		
Base of participation to the PKGB project	a. Participation based on economic motive	1. The money motive as base of participation (money remuneration per unit of time).
	b. Social participation.	1. The social value based of participation (solidarity) on the common purpose projects.
	c. Political participation	1. The degree of participation to make decision on the project their degree of support to the project.
The emergence of new social values related to economic life.	The existence of new attitudes toward life pattern of the society aspecially in economics.	The existence of more rational system in resource allocation.
Output		
Change of environment	Change of physical environment	The better condition of physical means of life.
	Change of socio-environment	The change in socio relationship and the emergence of new rade and organization, as a better system.
Purpose		
Social security created	Responsibility for social interests of community.	Reducing social conflicts brought about by resources domination, some solution to cope with conflicts.
Goal		
To intensity communityes lives in term of quality as well as quantity.	Development and increase of social facilities at community psychologically.	Development and increase of educational facilities, health services under the bases of community's perspectives ideally practically. Facilities increased means the quality and quantity of knowledge acquisition.

Logical Framework of Agricultural Aspects

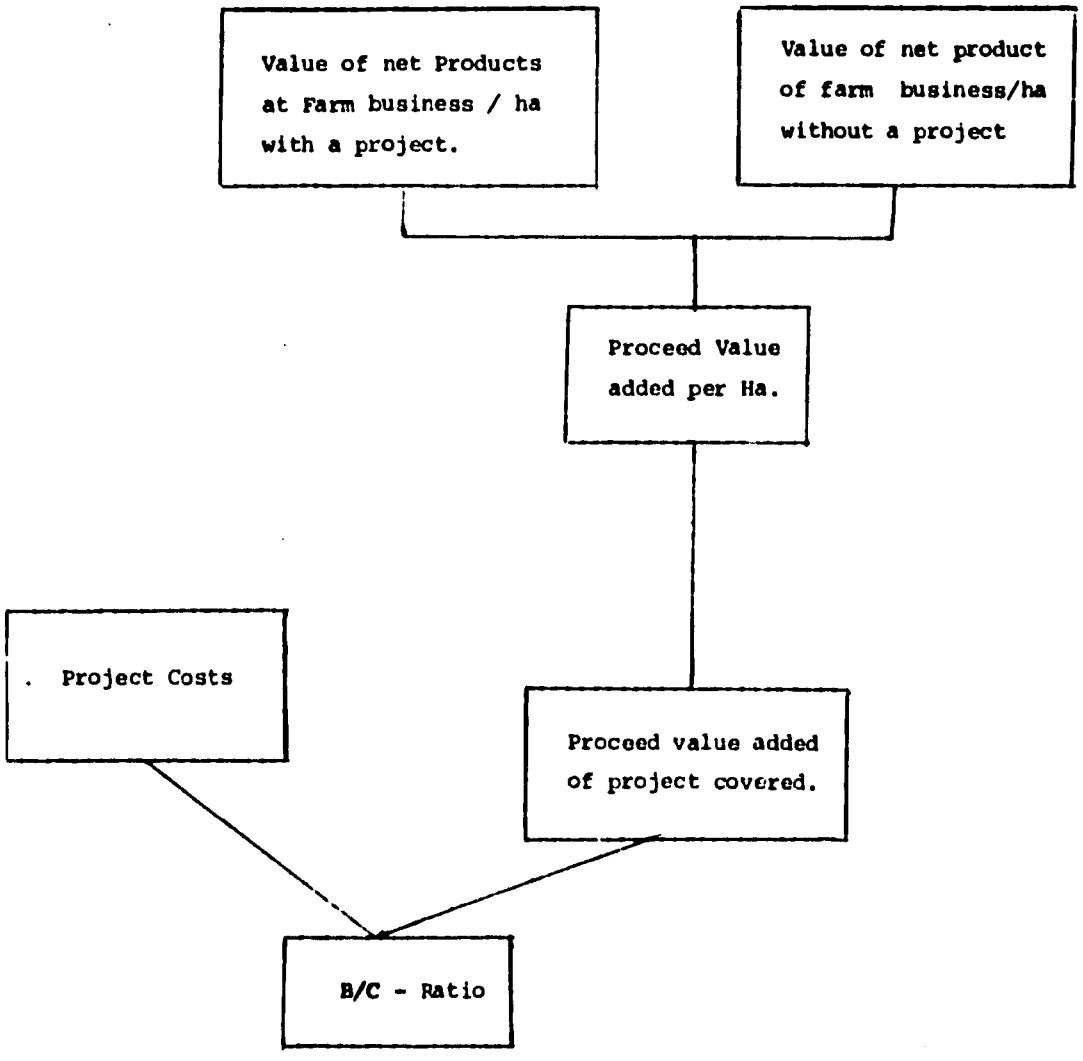
Framework	Objectively verifiable Indicators	Means of Verification
A. IRRIGATION :		
I. Goal :		
1. To promote community's prosperity farmers around the project.	Farm Business and Community's income developed and increased.	Production values promoted, perspectives increased. Increase of the standard of living before and after pro - jects.
II.PURPOSE :		
1. Rate production increased per Ha.	The increas of harvested products per Ha.	The precentage at product rate increase per Ha.
2. To intersity the effectiveness and efficiency.	The increase of value added of Farm business.	B / C Ratio.
III.OUTPUT :		
1. Farm business increased on the target areas per certain year/period.	A lot of Farmers are able to intensify enterprise.	The increase of breage, products per Ha.
2. The increase of sales formm bisiness products.	Proceed vikel added of Farm business products.	The increase of proceed value added of products.
3. Irrigation facilities.	The acreage watered, length.	The intensification of production utilization.

Framework	Objectively verifiable Indicators	Means of Verification
4. Production facilities.	The utilization of fertilizer, insecticide, etc.	The Intensification of production utilization.
IV. I N P U T S :		
1. Costs for irrigation construction, workforce, materials etc.	Cost value paid, Total Labours.	Material price, wages, salary facilities reduced, etc.
B. D R A I N A G E :		
B. D R A I N A G E :		
I. G o a l :		
Gord physical environment.	The change, of living environment.	Data on base areas reduced, well healthy areas increased, the total population within well healthy areas increased.
II. Purpose :		
1. To avoid flood.	Flood danger reduced.	Tlood frequencies, reduced. Acreage safed from flood danger.
2. Discases reduced.	Discas fallen into families.	Reducing suffered people from disess.
3. To avoid road destruction.	The length of good road, one sided road destruction.	Cost of road rehabilita tion reduced, the length of bad road reduced, etc.

Framework	Objectively verifiable Indicators	Means of Verification
III. Output :		
1. Changes of living environment.		Reducing destruction caused by matres flows uncontrolled.
2. Facilities of	Length of drainage, the cope of drainage affardability.	Strom waters reduced.
IV. I n p u t :		
Costs, materials, for	Value, Labours, etc.	Perce, wage, salary, kilogram, material, etc.
C. R O A D :		
I. G o a l :		
Social prosperity in creased.	People benefitted road project.	Coast of farm business Reduceds Production and its facilities increased community income increased.
		Total community members increased farm business before and after the project.
II. P u r p o s e :		
1. To facilitate farm business distribution and production facilities.	The quality of transportation improved.	Total transportation and Travel frequency added, Time spent to travel is little.
2. Total farmers benefiting road facilities.	Total farmers families benefitting road to transport farm business production facilities.	The frequency of transporting product and production facilities, the total people benefit road increased.

Framework	Objectively verifiable Indicators	Means of Verification
III. Output :		
1. Road facilities	The length of road constructed through PKGB.	Changes of road facilities and transportation vechiles increased.
2. Transportation facilities.	Transportation vechiles.	Changes of transportation vechiles and the increase of transportation.
3. Guidance on agriculture.	Visits of field workers CPPLS or Special Workers on agriculture.	Frequency of field workers' visits and Review of PPL and other special workers.
IV. I n p u t :		
Costs, materials people (workforce).		

FRAMEWORK ANALYSIS OF AGRICULTURAL ASPECT TO OBTAIN B/C - RATIO.



Logical frame work of Economic Aspects :

G o a l	OBI Verifiable Indicators	M e a n s	Questions
1. Income Increased	Multiplier Kx A10	Product Domestic Regional Bruto - Province and District.	District office 1971-1981 Respectively.
2. Employment opportunity.	% Reduced at the ages un employed.	New enterprise created and its extension, people growth (Reduction).	
3. Equality	Total population stentifies and classified under the bases of income.	Total population growth based high, middle, low income.	Secondary data

D r a i n a g e :

1. Diseare reduced	Comparison between suffered total population & total population growth.	Data of public Health care, population data.	
2. Maintenance costs reduced.	Costs for road rehabilitation.	Data from public health care, population data at Kecamatan.	
3. Flood	Area flooded on mile ficlas flooded.	Local data.	

Purpose	Objectively Verifiable Indicators	Means	Questions
1. Labor market/ work opportunity opened.	1. Total working people . 2. Total working hours. 3. Equipment used.	Data obtained from village/ sub district.	

Output	Objectively verifiable Indicators	M e a n s	Questions
1. R o a d	1. Road Length 2. Wiath 3. Road Construction 4. Total Transportation Vechiles.	Data obtained from village/sub district	
2. Irrigation	1. Length. 2. Depth / wiath 3. Water height 4. Rice field irrigated.	Data obtained from village/kecamatan.	
3. Drainage	1. Length 2. Depth / wiath 3. Total benefiting families. 4. Water height.	1. Data obtained from village/ sub district. 2. Meter measurement.	

I N P U T	Objectively Verifiable Indicators	M e a n s	Questions
M A N : 1. Total labours 2. Mandays	 Persons D a y s	 Local data	
MACHINES : 1. Hoc 2. Crowber 3. Pengki	 - -	 Local data - -	
MATERIAL : 1. Stone 2. Coral 3. Sand 4. Cement 5. Soil	 ..... M3 ..... M3 ..... M3 ..... Zack M3	 Local data	

P U R P O S E	Objectively verifiable Indicators	M e a n s	Questions
1. Employment opportunities created.	1. Total people employed. 2. Total working hours. 3. Facilities utilized.	Data from village/sub district.	

Systimatically, Evaluation Methods take as follows :

Project Evaluation Goal :

Evaluation	:	Aimes at improving the Project design.
Monitor	:	Aims at investizating project implementation under the bases of project planning, budget' planned, labour (workforce), schedule activities and problems.

Project : Organizing production aspects (man, money, materials, management, market, machine/tools) as inputs to produce outputs as a means to solve community's problems.

Social / community problem : It the facts does match the goal.

Such as :

Dynamic Conditions of community	Facts 1982	Goal 1985
Community's Income	US$ 500 / capita	US $ 600 / capita
Unemployment	5 % of High School graduates.	3 % out of High School graduates.

METHODS OF ANALYSIS

Means Ends Analysis IF input THEN output
IF output THEN purpose
IF purpose THEN Goal.

Then Goal	Economic goal Social goal Agricultural goal Cultural goal	GDRP, Employment Social welfare Better crop Better living value
Then Purpose	Higher harvest Better transport Cleaner physical Environment	Crop per Ha Lower transport time Less descase
Then Output	Irrigation Drainage R o a d (physical)	10 Km 5 Km 10 Km
If Input	M o n e y Manpower Materials	Rupiah, US$ Mandays Cement; stones.

P K G B

G P O I - LOG FRAME

G O A L	Economics Socio cultural Agriculture Social	Objective Indicators	Projects Road Irrigation Drainage
P U R P O S E	Economic Socio - cultural Agriculutre Social	Objective Indicators	Projects R o a d Irrigation Drainage.
O U T P U T	Economic Socio - cultural Social	Objective Indicators	Projects R o a d Irrigation Drainage
I N P U T	Economic Socio-cultural	Objective Indicators	R o a d Irrigation Drainage

Collecting data was conducted after the logical frame works has been justified. Data were collected through interviencing Respondents (405 Respondents) using questionaires.

Seem the Respondents strada location, questionaires were directed to Respondents groups :

KR - 1. a. Staff of the affice of man power Department.
b. Orficials of statistics office
c. Officials of Public works
d. Rural / Economic Development
e. Chief of sub district
f. Chief of village

KR - 2. a. Labours
b. Leader group
c. Skilled labors.

KR - 3. a. Benefiting farmers
b. Unbenefiting farmers.

KR - 4 Informal leaders.

Aspect : A.1. Economics
A.2. Agricultural
A.3. Socio-cultural.

Kinds of Projects :

P - 1. R o a d

P - 2. Irrigation

P - 3. D A M

P - 4. Fish pond canal

P - 5. Terracing fields.

P - 6. Flood control scheme.

Data obtained through interviews, statiscal data, Reports will be proceessed through manual tabulating. The result of tabulating was filed by L S P which cover :

- Tabulation at Road project data
- " " flood control scheme's data
- " " Irrigation's data
- " " Dam's data
- " " Terracing rice field's data
- " " Fish pond canal's data.

those tables will be served on the report.

4. Sequences of report presentation :

Based our the guide lines stated by US-AID, evaluation report will be served as follows :

a. Introduction :

- Logical frame works of project evaluation.
- G o a l
- Scopes.
- Methods
- Report writing design.

I. Road Contstruction Project :

Introduction :

A. Socio-cultural aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

B. Agricultural Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

C. Economical Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

II. Irrigation Project :

Introduction :

A. Socio-cultural aspects :

- Data presentation
- Analysis
- Conclusion /Recommendation.

B. Agricultural Aspect :

- Data presentation
- Analysis
- Conclusion / Recommendation

C. Economical Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

III. Flood Control Scheme Project :

Introduction :

A. Socio-cultural Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

B. Agriculutral Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

C. Economical Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

IV. Fish Pond Canal Project :

Introduction :

A. Socio-cultural Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

B. Agricultural Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

V. Terracing rice field Project :

Introduction :

A. Socio-cultural Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

B. Agricultural Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

C. Economical Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

VI. Dam Project :

Introduction :

A. Socio-cultural Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

B. Agricultural Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

C. Economical Aspects :

- Data presentation
- Analysis
- Conclusion / Recommendation.

I. ROAD PROJECT

There are 13 project locations used as samples to collect input and out put data of the purpose and goal of the carried out road project in the scope of the PKGB. Those mentioned indicators include the aspect of socio cultural, agricultural and economical.

The provinsion of this road project, is expected to be able to increase the social welfare of the society surrounding that project. One of the factors is supposed to be able to influence the taste of welfare of thë surround ing society, is whether or not the seetled value system that was already con formed with the surrounding condition could be disturbed. Therefore in the survey for the sake of this evaluation it will be revealed if there are that will shift the existing value system. The fact has been dicovered from the survey distribed the condition of the values of the cultural social will be reported in the following paragraph and followed by the analysis and conclusion with recommendation.

The road project is mostly in the suburb location, with its inhabitant work as peasants. Therefore it is believed that this road project has a meaningful influence to the condition of the peasants surrounding the project. This case will be reported after the cultural social aspect.

The road project is also expected to bring a positive influence toward the inhabitants economy. The economical effect that will be felt is supposed the opportunity of new (additional) job and the increase of income. The report of the results of ecnomical aspect evaluation will be discribed in the last part, after the cultural social and agricultural aspect.

A. SOCIO - CULTURAL ASPECT

One of the socio-cultural area that is believed to be influenced by the road project is the participation of the social members and the value base as the basic of the participation.

In the society that relatively has low income (in the long period and continuous), the participation of the social members in the contruction of a rigid implement for public necessary is generally based upon the value of mutual help. This cooperative value is perhaps growing from the indi-

vidual spiritual desire, which basically has the inclination to use it self in the society. Man as social human being has a desire to associate with another and wants to be apreciated as a good member, and afraid to be rejected by the society. The member of the society which is lacking of cash fund to build the rigid implement for mutual necessity, but has sparetime and power, will create cooperation system as a mechanisme of the desire manifestation to get the appreciation as a good mem ber.

On the other hand member of society that thought to be lack ing of time and power but has spare money (money as value holder), has the notion to create a work contracting system in the construction of a rigid implement for public necessity. The participation of the members of society is realized in the form of presentation (gift) of cash.

The activity of this road project evaluation is directed to see untill how far the basic deviation of the social participation in the con struction of the road as a rigid implement, wnether the participation is based upon inclination toget money commpensation or based upon the need to be the member or the cooperation or mutual help with solidarity.

The data that show quality value deviation will be reported in the beginning of this report of socio-cultural followed by analysis, conclusion and its recommendation.

1. F i n d i n g s :

Based upon the input data from the result of survey of socio-cul tural in 13 districts which carried out the rehabilitation of road with the PKGB system, the project is followed by the most of the social members where the project is carried out. The fact is stated in table 1 that shows 90% of the road project workers were from the vil lage where the activity of the construction of the road was done. Their participation in this project is principally based that the pro ject will directly increase their income, this means that the money compensation will cause the project workers participate in that activity. In table 3 shows that 40% of the respondents comments that their participation is because there is a compensation of money for their labour, and so as a matter of fact this PKGB project is not

regarded as a mutual aid and solidarity cooperation, although the activity itself looked like a mutual aid activity.

This activity is not regarded as based upon mutual aid, it based upon the fact that the income of PKGB workers that they generally got from the agricultural sector, (see table 4 and 5) is reckond not adequate for their subsistance. This case is reflected in table 8 that shows 55% of the respondents comments that their income is not adequate for their subsistance, while 45% of the respondents said that their income is forced to be able to fulfil their needs to live. This such condition caused that they always involved in debt to their neighbours or always ask for help from their local relatives, in their effort to fulfil their needs to live. An other effort beside owing or asking for help from their relatives is in fact none or difficult to be done, because of their education level, their education level is relatively low that their highest is passed the elementary school, (see table 6 and 7) so they are only able to do the works that was done since long time ago from generation to generation deligently. In table 5 shows that only 32% of the respondents have side works, and those are still in the sector of agricultural and breeding farm only.

As the result of their economic condition and their education as mentioned before, they will do job or opportunity that will add. their income, although with a relatively low wages, so that PKGB project will be their alternative soon in order to add their income, therefore the PKGB should be carried out again next year, they will participate in that project (see table 9). Their statement that they will participate in the same project next year, seemed to be supported by the whole who didn't participated in this recent activity, because those who didn't participate in this project are indirectly have enjoyed the benefits of that project especially the road project in their life. That is the more convenience transportation for their village business and the more developed of the village economy.

Because that road is so important especially for their life and their economic affair, therefore the members of the society surrounding that road will do the participation for the maintenance of it. This

is reflected in table 12 that showed 96% of the respondents admitted to participate in the maintenance of that road. But if it should be studi ed further, the maintenance of that road is not pure voluntarily done by the members of the society, but as an obligation that fixed by the officials of the district or suburb to their members, even in several districts (district of Magara Bombang and Biring Kanaya) the maintenance will running well with the "force" of suburb head. This is happend because no money or anything as a compensation for the labour to do maintenance of that road.

Although the activity of the rehabilitation of that road and its maintenance is not reflecting the activity that based upon the mutual aid and solidarity, the traditional that is involved with that mutual aid and solidarity, is still known and even still be done in the society social life (see table 13). But not all of the public activities can be categoried as mutual aid activities, only several kinds can be retainded as mutual aid activity although that kind of activity doesn't show as for public necessity. Beside that the activity that knows indeed by the whole members of the society has it's funds, is categoried as a non mutual aid activity too, although as a matter of fact it can be categoried as mutual aid activity, In table 14 shows that to build a house, a mosque, to make an irrigation and to construct a road is categoried as mutual aid activity. Something that is interesting in this mutual aid category is that the construction and the maintenance of a road is categoried as a mutual activity. This case becomes interest - ing because the road that is constructed by PKGB project is not categoried as a mutual aid activity, this is because beside the reason that Has been discussed above, see page 1 and 2 the people where the activity is done, they know that there is fund by the hand of the project administrator as a compensation for the road workers, so they think the activity of the road construction as a common economic activity.

Beside those activities mentioned above, the other activities that are categoried as mutual aid one are several kinds or ceremonies related with the "ritus de passage" or the other same sort of those activiti es. The ratainable of that mutual aid tradition is because the mutual aid concept of the society life, is still close related with the value

system they have, that is the value system that regulate all the behaviour in the social life of the society members, which is based upon the basic of communal principle

Since the road as the product of the PKGB project is in good function and considered that it has changed several conditions in their life environment too, the physical life environment as well as the social life environment of the society members involved. The alternation of physical life environment (see table 15) considered by the people involved as a good change, that is the change in physical life condition directly to the betterment of several physical life means as the more convenience communication with another districts, the more convenience of the transportation of the product from that district to another with the cheaper cost, etc. that shows the improvement compared with the time before that road exists and in good function.

The change of physical life environment is directly influencing the land value, especially the lands that lies beside that road, the value of the lands along s i d e of PKGB project road is increasing, the value of the land itself as well as its class. (see table 16) The increase of the land value is directly or indirectly influences several kinds of the other life area too, which is considered by the people as the improvement of the situation. The first life area which is considered to be altered is the people economic life (see table 17). Those are the increasing of several new economic life activities that are not merely depending on the agricultural life, those are the so called "ojeg" (transportation business with motor cycle), motor oil and fuel kiosks, repairing workshop, and the other business activities with small shops are apparently increasing.

The alternation of the economic area mentioned above, influences the social life of its society members too. The first influence that effects the social life of the society members is that there is a deviation in determining the social status of someone. In the beginning the determination factors of social status for someone is based upon the seniority degree in the social life, that is generally marked by the parentage line from the pioneer as the founder of a certain suburb, or

the level of knowledge of several rules that is valid in that society, especially the rules relating with the religion. But if we see table 18 shows the determination of status is not merely based upon those mentioned cases above, but also based upon the ability to domina te a number of power sources which is valueble and limited. That is their possession upon materials (money, lands) and their position in the government. As the result of the deviation of the status determination like this, causes the alteration of social affairs that happen in society. Before there is a road project when the social economic life was not too altered and the social status was merely determined by its seniority, the source of conflict is generally began from the problems of children quarrel or the fight for inheritance, and the solution is with the brotherhood way among the people that have affair. But since the shift and alteration happened as the result of this road, the disagreement that sourced from lands problems, policy and lend and borrow are also formed the main sources, and the solution of them is not merely by the way of brotherhood consultation but it must be through the formal institutions. Such a fact is shown in table 19 that shows several sources of conflict happened in that society, also originated from land lawsuit, policy (that is the government domicile domination) and borrow and lend.

Another influence toward the social life in that society, and as matter of fact to be a positive effect is the more developing and the increase of several social means that can be made as the place of com - munication among follow men of the society members. This case is shown in table 20 shows that since the precense of that road in the district, several kinds of social activities developed the more convenience of communication with other people in the suburb or district, as well as out side the suburb or its district. Those new social activities are the increasing of sport activities as the matchinter suburbs or districts, arts activities that is not merely followed by the people from one su - burb but also by the people from another suburb, etc.

Another positive effects of those mentioned above, is the increasing desire of the society members to send their children to study as high as possible, as shown in table 21 that 65% of the respondents expressed their

desire that later their children could study as high as possible. The strong will to let their children study as high as possible is close related with their expectation that is their effort to raise their social status in the society economically as well as socially, with the interpretation of the increasing social status is directly or indirect ly will influence the domination toward a lot of the existing power source, which is limited and valueable in the society.

2. Analysis of Findings :

To see the result of the findings mentioned above, principally the social life of the society members where the PKGB is done, several kinds of value system deviations had been occured which are related with the values based upon the principal of mutual help, as well as another social values related with the social structure that are valid in that society. The deviation of the value system can happen because the PKGB as a road that fixed for the suburban society, is not regarded as a mutual help activity because there is a wages system that based activity, so that this activity is categories as a common economc activity, although in the existing concept in the social culture is stated that the construction of that road is categoried as a mutual help activity. Beside that the presence of that road worth its good function has stimulated the society members to increase their quality of life; that it to make an effort for the convenience of life it self, and make an effort to increase several life facilities in order that the convenience of life it self can be reached, included the effort to raise the quality and quantity of their knowledge, which is marked by the increasing of informations and sort of information that available on their life environment and science.

As the result of the deviations of value system mentioned above, several social life manifestations got deviations even got change. On the other hand the deviation looks like a negative effect; that is if the deviation causes the emerging activities that can disrupt the solidarity among the members of the society involved, for example the increasing of competitive activities to dominate in political position, or the increasing of competition or even the fight for power resources as land for example, as a matter of fact all of those trend to the

occuring of social conflict among the members of the society and all of that must solved the law institutions, not through the traditional institution any more that existed since a long time ago and has the sense of mutual help spirit.

But on the other hand this deviation looks like a positive effect too, that is when it causes the emerging of several activities as the integration among the members of the society it self, and also at ones like a social solidarity among the members, as for example the intensify of several meeting that based upon religious activities as well as common social activities, in the suburb environment or their own district outside their suburb or district environment.

Seen as a whole the PKGB road has a greater positive effect compared with its negative one, it can be seen in the tables the input data. This acknowledgement emerges after we had seen several facts showing that the deviation of value system as a result of that project, is apparently not abolishing all of the prinsipals of mutual help in the social life, that become the guidance of several activities involving all members of the society, including the activities that based upon the kinship and belive system. Even by such a positive effect caused by that road, almost any kind of social problem can be resolved; especially the problems that involve their economic life, that is the more wider opportunity for the new work that directly or indirectly will increase the income of the members of the society, still many kinds of life necessities can be futfil, the life necessities related with the fulfilment of economic necessities itself as well their social and cultural life.

3. Conclusion and Recommendation

In accordançe with the discussion mentioned above, can be conluded that the activities of PKGB road project in 13 districts as samples of this survey, has a large influence in their social life of the members of the society, especially the influence toward several causes of the occurance of deviation of value system that is valid in that society.

But although the influence is large enough it will not after the whole existing cultural value system, that it still to be the basis of a

guidance to the whole members of the society in doing their social activities, so that the fixed project will not "shake" the life of society members.

With such fact therefore the road project of the PKGB must be a correct step as an effort to increase the welfare of society members life, according to the idea of the project it self. But for the sake of the improvement of the project efficiency in the social life, therefore the after complishment activities of that project is necessary to be done. The intended activities are several instruction and information activities about several social life area of the members of the society, for example economical, political laws and their cultural social activities. In this instruction and information, the knowledge and planting of new cultural values especially relating with the usage of the road and several cultural value influence from out side is a reasonable consequencies for the presence of a road, it will be the main priority for these instruction and information, so that the members of society will get ready to recieve the new several elements that are easily come as a result of the conveniences of communication, without too much secrifying their cultural value system that looks like most conform with their life.

In relations with those effort mentioned above therefore the participation of the whole members of the society is needed, because without the participation those activities will not running well, and indirectly will decrease the gain value of the benefit of the PKGB road project. In order that the members of the society can take the participation, thus it is necessary to ask the participation of the members of the society in the designing of such PKGB projects. Including the planning of instruction & after the accomplishment of the project because with the participation of them in the designing of those project, the sense of belonging will grow toward the projects.

On the other hand their participation in the designing will cause them to know the new cultural value system soon they include in the PKGB project, so that they can prepare themself to make an adaptation with those mentioned new cultural values mentioned, without experiencing the "shocks" of their cultural value before hand.

B. Agricultural Aspect :

Road construction of rehabilitation sub project that covers 13 places was expacted to give impacts directly on the farmers. Socially as well as economically it had given more impacts on the farmers.

The awalysis is based on logical framework of input, output, purpose, goal as follows.

Was not destroyed by sea-water due to the construction of the fish-pond canal. Otherwise, the net benefits of the farmers will be reduced considerably. It is advisable, however, that some efforts should be made available, so that a bigger goal could be achieved without creating such a conflict mentioned above.

6. Road Construction or Rehabilitation Subproject :

a. The Inputs :

The inputs discussed in this section will cover costs incurred for the construction or rehabilitation of road in 13 project areas located in Kecamatans Secanggang, Tanjung Pura, Kalara, and Selesai of North Sumatera, in Kecamatan Rawamerta of west Java, in Kecamatan Pujon of East Java, in Kecamatan Awayan and Astambul of South Kalimantan, and in Kecamatans Tinggi Moncong, Manggara Bombong, Biring Kanaya, Polong Bangkeng Selatan, and Tamalatea of South Sulawesi. The total costs consist of wages or incentives, costs for purchasing materials and tools, and costs for survey design and survey.

As shown in Table 22, almose all of the labours has been paid accordingly, except for those in Awayan, which the actual payment has been about 15 percent more than the target, while those in Rawamerta have been paid less.

Table : 22. Wages paid to the laborers in road subproject :

Kecamatan	Target (Rp'000)	Actual (Rp'000)	% of Target
1. Secanggang	10,572.8	10,572.8	100.0
2. Tanjung Pura	12,507.4	12,507.4	100.0
3. Kalara	12,069.8	12,069.8	100.0
4. Selesai	10,572.8	10,572.8	100.0
5. Rawamerta	12,455.3	12,405.1	99.6
6. Pujon	9,084.5	9,084.5	100.0
7. Awangan	14,948.0	17,214.0	115.2
8. Astambul	11,148.6	11,148.6	100.0
9. Tinggi Moncong	9,098.2	9,098.2	100.0
10. Mangara Bombang	9,236.2	9,236.2	100.0
11. Biring Kanaya	11,973.0	11,973.0	100.0
12. Polong Bangkeng Selatan	9,656.5	9,656.5	100.0
13. Tamalatea	16,514.4	16,514.4	100.0
Mean :	11,526.0	11,691.0	101.4

The amount of money used for purchasing tools has been used almost as targetted - as shown in Table 23, except in Awangan, the costs allocated for purchasing tools have been used as targetted - while tha costs for purchasing materials have been used as targetted. The some situation happened also in the use of the money for survey design and survey although only six out of 13 project areas have an allocation for survey design, but it has been used as targetted.

7,b

Table : 23. Costs for purchasing tools in road subproject:

K e c a m a t a n	Target (Rp.'000)	Actual (Rp.'000)	% of Target
1. Secanggang	375.0	375.0	100.0
2. Tanjung Pura	375.0	375.0	100.0
3. K a l a r a	1,209.4	1,209.4	100.0
4. S e l e s a i	375.0	375.0	100.0
5. Rawamerta	1,000.0	1,000.0	100.0
6. P u j o n	546.5	546.5	100.0
7. Awayan	567.0	497.0	87.7
8. Astambul	500.5	500.5	100.0
9. Tinggi Moncong	434.0	434.0	100.0
10. Mangara Bombang	434.0	434.0	100.0
11. Biring Kanaya	961.0	961.0	100.0
12. Polong Bangkeng Selatan.	434.0	434.0	100.0
13. Tamalatea	850.0	850.0	100.0
M e a n :	620.1	614.7	99.1

The distribution of costs among the five items used in the road subproject are summarized in Table 24 - As shown in Table 29, the distribution pattern is more or less similar to the other subprojects.

Table : 24. Summary of costs in road subproject :

I t e m s	Rp.'000	%
Wages	151,982.6	73.8
Tools	7,991.4	3.9
Materials	43,940.5	21.3
Survey design	1,260.8	6
Survey	739.2	4
T o t a l :	205,914.5	100.0

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The biggest portion was used for wages or incentives for the laborers, and the others were distributed among tools and materials, and survey design and survey, where a bigger portion were allocated for the former group.

b. The Outputs :

The output of the road subproject as could be expected is the road itself. As shown in Table 25, about 95 percent of the roads have been rehabilitated by the PKGB project. It has been benefitted at least 100,000 people in the 13 Kecamatan in five provinces.

Table : 25. The length of the road rehabilitated by the PKGB project, in kilometre :

Kecamatan	Before PKGB	After PKGB
1. Secanggang	8.0	4.3
2. Tanjung Pura	4.2	4.7
3. Kalara	10.0	5.0
4. Selesai	5.1	5.1
5. Rawamerta	7.3	8.0
6. Pujon	6.0	4.0
7. Awayan	5.7	5.7
8. Astambul	4.5	7.0
9. Tinggi Moncong	5.0	5.0
10. Mangara Bombang	4.0	7.0
11. Biring Kanaya	5.0	5.0
12. Polong Bangkeng Selatan	7.0	7.0
13. Tamalatea	7.0	7.0
Total :	78.8	74.8

It was revealed by the respondents in the project area that, the condition of the roads - which was frequently damage before PKGB project -, have been improved. How these improvement could load the following sub-section.

c. The Purpose :

The purpose of this particular subproject is to improve transportation, not only of people, but also of goods, and agricultural product and production inputs, as well as the mean of transportation.

Table : 26. Average number of mean of transportation in the project area. Road Subproject :

Mean of Transport	Before PKGB	After PKGB
Bike	1978	812
Tricycle	275	-
Cow wagon	85	-
Motor bike	22	132
C a r	4	3
Small truck	70	16
Truck	11	32

As shown in Table 26, tricycle and cow wagon were no longer used by the people in the project area. The number of bike have been reduced more than one half of that before PKGB, and the number of car more or less remain the same. The number of motor bike, however, have been increased about six times more than that before PKGB, while the number of trucks have been almost triple.

There is no data available on the member of people who used the velicle for transporting their goods, however from the interview with the respondents, it was revealed that the construction or the rehabilitation of the road have improved the transportation of agricultural products, as well as uncreased the mobility of the people. Even though it was revealed that the road has improved transportation of agricultural product, the figures in Table 27 shows that, people still prefer to sell their agricultural product to the market within the village.

Table : 27. Agricultural market location :

Location of market	Number of frequency
Out of village	31
In the village	40
At home	25
Neighbors	6
No selle	4

To see whether the rehabilitation or the construction of road has increased the efficiency of the farming system in the project area, a crude B/C - ratio is used to verify this aspect. Unfortunately,,there is no data available on the benefits and costs of the farming system in the areas surveyed lither for with and without project, or before PKGB.
Since the data available was collected after PKGB, then we will consider the crude B/C - ratio derived from this data as indirectly determine the efficiency of the farming system in the project area.

Based on this consideration, a very tough computation has been made, and it is found that the crude B/C-ratio is 4.1. At the moment we could not draw a conclusion whether the road has increased the efficiency of the farming system in the project area.

d. The Goal :

Similar to the other subprojects of the PKGB project, the goal of this subproject is to increase the income of the far - mers in the project area.

As mentioned before, there is no data available for the without project farming system, or before the project. Hence, the data calculated in Table 43 is only shown about the benefit after the project. Based on the assumption that the road has improved the transportation of people and other goods, as re- vealed by the respondents, then we might assume that the net benefits shown in the table is somewhat higher than that of before or without project. Hence, we can probably.

Table : 28 The net benefits of farming system in the road subproject areas, in thousand rupiahs :

Kecamatan	Wages	Input	Other Costs	Total Costs	Total benefits	Net benefits
1. Secanggang...	151.8	25.2	65.6	242.6	1,100.1	857.5
2. Tanjung Pura.	615.0	63.0	157.4	835.4	7.7	-827.7
3. Kalara.....	-	14.8	6.2	21.0	347.5	326.5
4. Selesai.....	383.4	55.8	30.7	469.9	2,178.4	1,708.5
5. Rawamerta....	90.1	39.9	14.5	144.5	528.3	383.8
6. Pujon	210.0	239.5	40.0	489.5	3,226.0	2,736.5
7. Awayan	567.5	17.4	-	584.9	339.5	-245.4
8. Astambul	239.2	57.6	10.0	306.8	710.3	403.5
9. TinggiMoncong	20.0	25.2	7.5	52.7	1,074.0	1,021.3
10. MangaraBombang	-	23.8	6.5	30.3	2,846.2	2,815.9
11. Biring Kanaya	53.2	96.5	121.5	271.2	457.5	186.3
12. Polong B.Sel.	110.0	26.2	65.0	201.2	1,770.6	1,569.4
13. Tamalatea....	60.0	25.5	3.0	88.5	726.5	638.0
M e a n :				287.6	1,177.9	890.3

Say that the wroad subproject is indirectly improved the income of the farmers in the project areas.

C. ECONOMIC ASPECT

Seen from the economic angle, the input of road project are the value of fund of Work Stimulation Money (WSM), material, tools and overhead cost. From that input it will be an output as a better quality of road. Then, the road as an output will bring the fluency of transports, as the purpose of the road project. The fluency of transports will be seen from the shortening time of articles transported from the location of production to the location of marketing. The fluency of transports will open the new job area and increase the social income, as the goal of the project.

The survey that had been done for those 13 project samples is intended to collect data that show the conditions of input, output, purpose and the goal of the project. Those data will be served in the most forepart of this report. Analysis, conclusion and recommendation will follow continually.

1. Facts and Data

The road survey is covering 13 project those are in the districts of Awayan, Astambul, Secanggang, Rawamerta, Pujon, Tanjung Pura, Tinggi Moncong, Mangara Bombang, Biring Kanaya, Kelara, Polong Bangkeng Selatan, Selesai and Tamalatea.

From the result of that survey the obtained data are like follows:

a. Aim of Project

Following the respondents, those mentioned above projects have their aim like follows:

a.1. The fluency of suburb economy..... 40 %.
a.2. The fluency of transports or trafic ..... 38 %.
a.3. Works opportunity ..... 15 %.
a.4. To open isolated zones ..... 7 %.

The main aim of road project is to make the traffic more fluently. And therefore the suburb economy will be more rapidly develop and the addition workers opportunities will be opened. Beside that the results is the opening of isolated zones.

b. The Conceptors of Project Idea

Said by the respondents that road projects of those 13 districts, the idea was ignited by:

b.1. Lembaga Ketahanan Masyarakat Desa (LKMD) ..... 44 %.
Resistance Institution of Suburb Society .....
b.2. Bina Guna (Resources Fostering) ..... 26 %.
b.3. District chief ..... 15 %.
b.4. Suburb chief ..... 9 %.
b.5. Kanditjen (Kantor Direktorat Jenderal) Directorate General Office ..... 9 %.
b.6. Pemda (Pemerintah Daerah) Region Administration ..... 6 %.

The main conceptor of the road project idea is LKMD or RISS Resistance Institution of Suburb Society, society and district chief. While the decision maker that can decide whether or not the project can be carried out is following the respondents like these:

- District chief ..... 44 %.
- Bina Guna ..... 26 %.
- Bappeda ..... 15 %.
- Bangdes ..... 12 %.
- LKMD ..... 3 %.

From those data stated above can be concluded the decision of the execution of the project are district chief, Bina Guna and Bappeda.

c. Project Execution

From all of the respondents express the execution of that project is running well and no resistance and several respondents said that there is a little bit resistance. While from the respondents the data is also obtained as they say that the result of the project is exellent 18%, and good 82%.

d. Project Cost

The cost of project consists of several cost groups among others survey cost, survey design cost, work stimulation money (WSM), materials cost and tools cost.

d.1. Overhead Cost

Survey and survey design cost is called overhead costs. The amount of the overhead cost is shown in table 29.

Table 29.. Road overhead cost (in rupiah)

Road length	District	Survey cost	Survey design	Overhead cost
5.700 mtr.	Awayan	50.000	250.000	300.000
7.025 mtr.	Astambul	50.000	250.000	300.000
4.300 mtr.	Secanggang	50.000	250.000	300.000
3.000 mtr.	Rawamerta	50.000	150.000	200.000
5.000 mtr.	Kelara	50.000	-	-
4.700 mtr.	Tanjung Pura	50.000	-	-
6.000 mtr.	Tinggi Moncong	50.000	-	-
7.000 mtr.	Mangara Bombang	50.000	-	-
5.000 mtr.	Biring Kanaya	50.000	-	-
4.000 mtr.	Pujon	139.200	110.800	250.000
7.000 mtr.	Polong Bangkeng	150.000	-	-
5.100 mtr.	Selesai	50.000	250.000	300.000
7.000 mtr.	Tamalatea	50.000	-	-

In table 29 there are several blanks in survey design column. It means that there is no cost for survey design but the consultant got no data for it.

Seen table 29 it can be concluded that the cost of survey and survey design can be reckoned as fixed cost, where the average survey cost is Rp 50,000,- and for survey design Rp 250,000. The amount of survey and survey design cost in the realisation and the plan is the same.

d.2. Insentive Payment (IP)

The amount of IP/Man Days for every projects is shown in table 30.

Table 30. IP/MD for every project (in rupiah).

District	Worker	Chief of group	Skilled worker
Awayan	1,150	1,300	2,500
Astambul	750	900	1,500
Secanggang	700	850	1,400
Rawamerta	525	1,100	1,050
Pujon	525	625	1,050
Tanjung Pura	700	850	1,400
Tinggi Moncong	675	1,500	1,050
Mangara Bombang	500	750	1,050
Biring Kenaya	525	850	1,500
Kelara	750	900	1,050
Polong Bangkeng	750	675	1,050
Selesai	700	850	1,400
Tamalatea	1,000	1.100	1,050
Total:	9,250	12,300	17,050
Average	711	946	1,311
Sx	189	242	406
Tx	52	67	112

Source: 1. Consultant calculation.

2. $Tx = Sx : \sqrt{n}$

From table 30 it can be calculated that the amount of average IP/MD for the worker is Rp 177,- and the amount of Tx is Rp 52,- With the formula ULCL = X + Tx is therefore the maximum amount of IP/MD = Rp 711,- + (2 X Rp 52) = Rp 815,- and the minimum amount of IP/MD = Rp 711 - (2 :: Rp 52) = Rp 607,- So that the IP/MD for Indonesian worker varied Rp 607 u/t Rp 815.

By the same way and formulation it can be calculated the amount of IP/MD for the chief of group and it is varied from Rp. 812,-- up to Rp 1,080,- and for the skilled worker from Rp 1,087,- up to Rp 1,535.

Table 30 shows that IP/MD are too varied in the samples of project. The varieties are accordance to the cost level in eve ry project location, although the variety is not as big as IP/ MD NSCW.

d.3. Total of Insentive Payment

The amcunt of IP for every project is shown in table 31.

Table 31. Insentive payment for every project (in rupiah)

District	Total IP	Length of road	IP/metres
Awayan	17,214,000	5,700 metres	3,020
Astambul	11,148,600	7,025 metres	1,586
Secanggang	10,572,000	4,700 metres	2,458
Rawamerta	12,405,118	3,000 metres	4,135
Pujon	9,084,500	4,000 metres	2,271
Tanjung Pura	12,507,450	4,700 metres	2,661
Tinggi Moncong	9,098,250	6,000 metres	1,516
Mangara Bombang	9,236,250	7,000 metres	1,319
Biring Kanaya	11,973,000	5,000 metres	2,394
Kolara	12,069,825	5,000 metres	2,413
P. Bangkeng Selatan	9,659,475	7,000 metres	1,379
Selesai	10,572,800	5,100 metres	2,073
Tamalatea	16,514,375	7,000 metres	2,359
		Total =	29,584
		Average =	2,275
		Sx =	766
		Tx =	212

d.4. With the same calculation and formulation as in table 2 the needed amount of UPK (IP) for the maintenance of the road varied from Rp 1,851,- up to Rp 2,699,- while the average IP/metres is Rp 2,275,-.

Table 31 shows the variation of IP/metres is big enough, as the result of the variation of IP/MD that big enough too.

d.5. Materials Cost

The amount of materials cost used for the maintenance of the road is shown in table 32.

Table 32. Materials cost (in rupiah).

District	Materials Cost	Length of road	Materials Cost/metres
Awayan	6,985,000	5,700 meters	1,225
Astambul	1,900,000	7,025 metres	270
Secanggang	4,705,000	4,300 metres	1,094
Rawamerta	1,700,000	3,000 metres	566
Pujon	3,944,500	4,000 metres	986
Tanjung Pura	4,087,000	4,700 metres	869
Tinggi Moncong	2,125,000	6,000 metres	345
Mangara Bombong	2,125,000	7,000 metres	303
Biring Kenaya	3,900,000	5,000 metres	780
Kelara	31,600,000	5,000 metres	720
P. Bangkeng Selatan	2,125,000	7,000 metres	303
Selesai	4,705,000	5,1000 metres	922
Tamalatea	2,039,000	7,000	219
		Total =	8,611
		Average =	622
		Sx =	347
		Tx =	96

With the calculation and formulation as in table 30, from table 32 can be calculated the amount of average material cost = Rp 622/metres. The material cost per metres varied from Rp 430 up to Rp 814. The materials are gravels, cement, sand, wood, concrete iron bars, culverts, turfing, etc.

Those materials are obtainable in the environment of the project and several untill the town. Some of the respondents answered that the materials is given or directly send by Kanditjen.

d.6. Tools and Equipments Cost

The amount of equipments cost used for the maintenance of the road is shown in table 33.

Table 33. Equipments cost (in rupiah)

District	Equipment Costs	Length of Road	Equipment Cost/metres
Awayan	4,976,000	5,700 metres	872
Astambul	500,500	7,025 metres	71
Secanggang	375,000	4,300 metres	87
Rawamerta	1,000,000	3,000 metres	333
Pujon	546,000	4,000 metres	136
Tanjung Pura	375,000	4,700 metres	79
Tinggi Moncong	434,000	6,000 metres	72
Mangara Bombang	434,000	7,000 metres	62
Biring Kanaya	961,000	5,000 metres	192
Kelara	1,209,375	5,000 metres	241
P. Bangkeng Selatan	434,000	7,000 metres	62
Selesai	375,000	5,100 metres	73
Tamalatea	850,000	7,000 metres	121
		Total =	2,401
		Average =	184
		Sx =	222
		Tx =	61

With the same calculation and formula as in table 30, from table 33 can be calculated the average equipments cost per metres the road project = Rp 184,- while this equipment cost varied from Rp 62,-- up to Rp 306,-- . The variation is so big because happened an increasing equipments cost in the district of Awayan, Rawamerta, Biring Kanaya and Kelara.

If the equipments cost should be calculated without the districts mentioned above, it will be average Rp 84, while it varied from Rp 68,-- up to Rp 100,--.

This equipments cost is cheap enough indeed. The equipments used for the road maintenance are hoes, axes, hand sawa, spades baskets, grindstones, mattocks, crow-bars, shallow bam boo baskets, hammers, forks, stampers or manual soil compactors, etc. Most of the respondents said that those tools were obtained from Kanditjen (Kantor Direktorat Jenderal), so that in the running period of the project accomplishment, the project has no benefit for its surrounding region.

d.7. Total of Project Cost

In table 29 is shown that there are not survey design cost ini several districts. But because that cost is reckoned as fixed cost, so that survey design cost is estimated Rp 250,000,-- Therefore the amount of total road project cost shown as in table 34.

Table 34. Total of project cost (in rupiah).

District	Over head	UPK	Materials	Tools	Total cost
Awayan	300	17,214	6,985	4,976	29,475
Astambul	300	11,148	1,900	500	13,845
Secanggang	300	10,572	4,705	375	15,952
Rawamerta	200	12,405	1,700	1,000	15,305
Pujon	250	9,084	3,944	546	13,824
Tanjung Pura	300	12,507	4,087	375	17,269
Tinggi Moncong	300	9,098	2,125	434	11,957
Mangara Bombang	300	9,236	2,125	434	12,095
Biring Kanaya	300	11,973	3,900	961	17,134
Kelara	300	12,069	3,600	1,209	17,178
P. Bangkeng Slt	300	9,656	2,125	434	12,515
Selesai	300	10,572	4,705	375	15,952
Tamalatea	300	16,514	2,039	850	19,703
T o t a l:	3,750	152,048	42,940	12,469	212,207

In table 34 is shown that for those 13 project the needed amount is Rp 212,207,000,-- That funds is 100% from PKGB.

e. Total Man Work Days (MWD)

The data of MWD is not available from all project. The projects that have given the data are shown in table 35.

Table 35. Man Days (MD) (in rupiah)

District	Worker	Foremen	Skilled worker	Total
Awayan	13,600	6,800	300	20,700
Astambul	12,797	654	200	13,651
Secanggang	13,825	691	220	14,736
Rawamerta	21,333	1,067	462	22,862
Pujon	15,333	767	107	16,207
Tanjung Pura	13,991	700	92	14,783
Selesai	14,420	720	118	15,258

Table 36. MD per metres (in rupiah).

District	Total MD	Length of road	Total MD/metres
Awayan	20,700	5,700 metres	3,6
Astambul	13,651	7,025 metres	1,9
Secanggang	14,736	4,300 metres	3,4
Rawamerta	22,862	3,000 metres	7,6
Pujon	16,207	4,000 metres	4,0
Tanjung Pura	14,783	4,700 metres	3,1
Selesai	15,258	5,100 metres	3,0

Total	=	26,6
Average	=	3,8
Sx	=	1,79
Tx	=	0,67
Minimum	=	2,46
Maximum	=	5,14

f. Project Result

After the maintenance of those 13 district road has been done, the condition of the road is shown in table 37.

Table 37. Road condition after the project.

District	Road length	Road width	Condition	
			Often damage	Not often
Awayan	5,700 mtr.	6 mtr.		x
Astambul	7,025 mtr.	4 mtr.		x
Secanggang	4,300 mtr.	7 mtr.		x
Rawamerta	3,000 mtr.	3 mtr.	x	
Pujon	4,000 mtr.	6 mtr.		x
Tanjung Pura	4,700 mtr.	6 mtr.		x
Tinggi Moncong	6,000 mtr.	6 mtr.		x
Mangara Bombang	7,000 mtr.	7.mtr.		x
Biring Kanaya	5,000 mtr.	-		x
Kelara	5,000 mtr.	6 mtr.		x
P. Bangkeng Slt.	7,000 mtr.	-		x
Selesai	5,100 mtr.	4 tmr.		x
Tamalatea	7,000 mtr.	6 tmr.		x

From table 37 can be seen that the condition of road is not often damage. Only in Rawamerta district is said that the road is still often damage. The road width in Rawamerta is 3 metres. The road surface is covered with five centimeter thick stone. The thickness of that stone is too thin, it is supposed to be the cause of its often damage.

The width of those 13 project is mostly six metres. Only some os it has the with less then six metres these are in the district of Astambul, Rawamerta and Selesai. While the road with more then six metres wide is only in Mangara Bombang.

g. Maintenance

The way of maintenance is done as shown in talbe 38.

Table 38. The way of road maintenance.

District	Way of maintenance		
	Mutual aid	Region authority	Puclic work
Awayan	x		
Astambul	x		
Secanggang	x		
Rawamerta	x		
Pujon	x	x	x
Tinggi Moncong	x		
Mangara Bombang	x	x	
Biring Kanaya	x		
Kelara	x		
Polong Bangkeng Selatan	x		
Selesai	x		
Tamalatea	x	x	
Total:	13 (76%)	3 (18%)	1 (6%)

All of those 13 road are maintained by the way of mutual aid of its local society. Three among them the maintenance is done by the local region aouthority those are district of Pujon, Mangara Bombang, and Tanjung Pura. And there is one road maintain by Public Work that was in Tanjung Pura district. The frequency of road maintenan ce by the way of mutual aid is shown in table 39.

Table 39. Mutual aid maintenance frequency

District	Annual frequency				
	1 X	2 X	3 X	4 X	12 X
Amyan	-	-	-	x	-
Astambul	-	-	-	-	-
Secanggang	-	-	x	-	-
Rawamerta	-	-	-	-	-
Pujon	-	-	-	-	-
Tanjung Pura	-	-	-	-	-
Tinggi Moncong	-	x	-	-	-
Mangara Bombang	-	-	-	x	-
Biring Kanaya	-	-	-	-	-
Kelara	-	-	-	-	-
Polong Bangkeng Selatan	-	-	-	-	-
Selesai	-	-	-	-	x
Tamalate	-	-	-	x	-

Table 39 shows that none of the mutual aid maintenance that done only once a year. The minimum frequency is twice a year and there is a road with once a month maintenance that is in district Selesai.

h. Project Benefit :

One of the main aims of the road project is "the fluency of traffics". The of traffict is meassured by counting the passing vehicles. But the consultant has not had the instrument yet. Therefore the fluency of traffic is dected by counting the presence vehicle or those possessed by the society surrounding the region.

In some region the consultant got no secundair data about the total vehicles in that region. The total vehicles data is stated in table 40.

Table 40. Total vehicles after the project.

District	Bycicles	Motor-cycles	Cars	Bus
Awayan	16	3	1	-
Astambul	200	13	1	3
Secanggang	4,000	30	-	1
Rawamerta	208	550	19	2
Pujon	72	177	6	-
Biring Kanaya	300	-	-	-
Kolara	-	125	-	150
Selesai	890	23	-	2
Total:	5,686	921	27	158

While the increasing of vehicles before and after the project is shown in table 41.

Table 41. Total vehicles increas.

District	After NSCW	Before NSCW	Raise
Bicycles	5,686	2,316	3,370
Motor-cycles	921	90	847
Cars/Pick-Up	27	75	- 48
Bus	158	22	136

From table 13 can be seen that total of cycles raised to 145%, for motor-cycles 941%, bus 618%, but cars/pick-up down to 64%. The total decrease of cars/pick-up is perhaps because of the presence of buses and the people concider that it will be cheaper going by bys than cars or pick-up. Other characteristic of transport fluency is the changing way of transportation shown in table 42.

Table 42. Transportation means in use.

District	Before the project				After the project			
	Carrying pool	Human back	Bycicle	Barrow	By cicle	Barrow	Motor cicle	Mobile
Awayan	x	-	-	-	x	-	x	x
Astambul	x	x	-	-	-	-	-	x
Secanggang	x	-	x	-	x	-	x	x
Rawamerta	x	x	x	-	x	-	x	x
Pujon	x	x	x	x	x	-	x	x
Tanjung Pura	-	-	-	-	-	-	-	-
Tinggi Moncong	-	-	-	-	x	-	x	x
Mangara Bombang	x	-	x	x	-	-	-	x
Biring Kanaya	x	-	x	-	x	x	-	x
Kelara	-	-	-	-	-	-	-	-
Polong Bangkeng Slt	x	-	-	-	x	-	-	-
Selesai	x	x	x	x	-	-	x	x
Tamalatea	x	-	x	x	-	x	x	x

Before the project being done the way of carrying was by carrying pools, on human back, bycicle, and wheels barrows. After the project such way of carrying is not popular again, while the transportation means as motor cycles and mobile presence. Therefore the duration of transportation is shorter thus it means quicker than before. The differences of speed on the way with several kinds of transportation means is shown in table 43.

Table 43. The duration of cruising time per 10 km (in hours)

District	Bicicle		Motor cicle		Mobile	
	Before project	After project	Before project	After project	Before project	After project
Awayan	2,6	0,8	1,2	0,4	1,7	0,2
Astambul	2,5	0,6	1,2	0,3	2,5	0,5
Secanggang	3,4	0,5	1,2	0,2	1,7	0,5
Rawamerta	4,6	0,8	1,6	0,3	2,4	0,6
Pujon	1,2	0,6	0,6	0,2	1,2	0,5
Tanjung Pura	3,5	1,4	1,4	0,7	2,1	0,7
Tinggi Moncong	3,3	1,2	1,6	0,8	1,2	0,8
Mangara Bombang	4,2	1,4	2,8	0,7	2,8	1,0
Biring Kanaya	4,4	2,2	1,1	0,6	2,2	1,1
Kelara	4,0	1,0	2,0	0,5	3,0	0,6
P. Bangkeng Selatan	2,8	2,0	1,4	0,3	2,1	0,7
Selesai	2,5	0,9	1,9	0,4	1,9	0,5
Tamalatea	2,8	0,7	1,4	0,3	1,7	0,7
Total:	42,1	13,0	19,3	5,7	26,5	8,4
Average	3,2	1,0	1,5	0,4	2,0	0,6
Sx	0,9	0,5	0,1	0,05	0,2	0,06
Tx	0,3	0,1	0,1	0,05	0,2	0,06
Minimum	2,6	0,8	1,3	0,3	1,6	0,5
Maximum	3,8	1,2	1,7	0,5	2,4	0,7

From table 43 can be seen that with a bycicle the distance of 10 km the average cruising time is 3,2 hours. The shortest time is 2,6 hours and the longest is 3,8 hours. And after the project the average time for 10 km distance is 1,0 hour. The shortest time is o,8 hours and the longest is 1,2 hours, thus with the presence of the project the cycling time is shortened to 30% of the time before.

With a motor cycle the time taken for 10 km is average 1,5 hours before the project. The shortest time is 1,3 hours while the longest

is 1,7 hours. After the project it needs only o,4 hours average, the shortest is 0,3 hours the latest is 0,5 metres hors.

Thus the time taken by motor cycling after the project is shor tened to 27%. While with car for 10 km the average time is 2,0 hours before the project. The shortest time is 1,6 hours the longest is 2,4 hours. After the project the average time is 0,6 hours. The shortest time is o,5 hours and the longest is o,7 hours. Thus after the project the time taken with auto mobile is shortened to 30% of before.

i. Society Surrounding the Project

i.1. PKGB worker.

In the running period of the project the PKGB worker come from other neighbourhood same campong, other campong same suburb, and other suburb same district. It means that the project can give income for manpowers to the region of local district.

1.2. The income of PKGB workers before they work in PKGB the workers, foreman, skill workers, and society have their income as shown in table 44.

Table 44. PKGB worker and society income (in rupiah).

Income	Worker	Foreman	Skill worker	Society
N	30	26	22	26
Average	35,000	58,000	49,500	32,200
Sx	19,000	29,000	12,900	12,400
Tx	3,500	5,700	2,700	2,400
Minimum	28,800	46,600	44,100	27,400
Maximum	42,000	69,400	54,900	37,000

Table 44 shows that the average income of PKGB worker is Rp 35,000,-- The minimum is Rp 28,000,- the maximum is Rp 42,000 dayly income is Rp 1,680,-. This income is higher than average Insentive Payment/Man Days the amount of Rp 711 (table 30).

The average income of foreman is Rp 58,000. The minimum is Rp 46,000,-- while the maximum is Rp 69,400,-. It the average income is Rp 58,000,- therefore the foreman income in average Rp 2,320 a day. This income is higher than average IP/MD the amount of Rp 946,- (see table 2).

In table 16 can be seen to that the average income of the skilled worker is Rp 49,500,- Its minimum is Rp 44,100 while the maximum is Rp 54,900,- If the average income is Rp 49,500,- the dayly income is Rp 1,980,- This income is higher than IP/MD for the skilled worker Rp 946,- (table 30).

The average income of the society is Rp 32,200,-- or Rp 1,288,- dayly. The minimum income is Rp 27,400,- and the maximum Rp. 37,000,-

i.3. PKGB worker and society jobs.

The jobs of PKGB worker and society is shown is table 45.

Table 45. Jobs of PKGB worker & society.

	Labour peasant	Rubber plantation worker	dairy man	merchant	sundries	Job less
Worker	3	2	2	-	5	16
Foreman	2	2	2	-	6	14
Skilled.w.	1	-	1	-	2	18
Society	4	-	-	2	-	20
Total:	10	4	5	2	13	68
	10	4	5	2	13	68

From table 45 can be seen that the society jobs in the surrounding of the project are 10% peasant, 4% rubber plantation worker 5% dairyman, 2% mercant, sundries 13% and jobless 68%. In table 45 shows that 66% of the society are jobless, but in table 44 shows that all of the respondents have incomes. Therefore the meaning or jobless is supposed can be believed as half jobless or without any regular employment.

i.e. Montnly needs.

The monthly needs of workers, foreman and skilled worker is shown in table 46.

Table 46. Monthly needs (in rupiah)

Needs	Worker	Foreman	Skilled worker
N	28	25	19
Average	35,200	42,500	40,300
Sx	12,900	17,900	14,300
Tx	2,600	3,600	3,300
Minimum	30,000	35,300	33,400
Maximum	40,400	49,700	46,600

Table 46 whows that the monthly needs of the worker is average Rp 35,200 While their average income is Rp 35,000,- (table 44). It means that there is no change for the worker to save money. If their need is Rp 35,200,- it means that dayly need is Rp 1,200,- that is biger than IP/MD Rp 711 (table 30).

For the foreman their average monthly need is Rp 42,500,-- Their average income is Rp 58,000,-- It means that foreman has a change to save money. It the average monthly need is Rp 42,500,-- thus the average dayly need is Rp 1,400,- This figure is bigger than Rp 946,-- the average from IP/MD.

While skilled worker's average monthly need is Rp 40,000,-- And their average income is Rp 49,500,- Therefore skilled worker has change to save money If their need is Rp 40,000,-- monthly, it means that the average dayly need is Rp 1,300,-- This figure is almost the same with skilled worker's IP/MD Rp 1,311,- (table 30).

2. Analysis :

From the data presented above an analysis is made as follows :

a. Efficiency :

a.1. IP / MD.

The amount of average IP/MD for worker is Rp.711,--, Foreman Rp.945,-- and skilled worker Rp.1,311,-- area cheap enough because IP/MD is lower than their dayly average income. The comparision between IP/MD with dayly income is shown in table 47.

Table: 47. IP/MD and Dayly Income (in Rupiah) :

	Worker	Foreman	Skilledworker
IP / MD	711	946	1.311
Income	1.680	2.320	1.980

Source: 1. Table 30
2. Table 44.

IP/MD is not only lower than their dayly income, but also lower than their dayly need, except skilled worker as shown in table 20.

Table : 48. IP/MD and dayly need (in Rupiah) :

	Worker	Foreman	Skilledworker
IP / MD	711	946	1.311
Need	1.200	1.400	1.300

Source: 1. Table 30.
2. Table 46.

They will work with a low wages, because perhaps they realise that the maintenance of the road is for the necessity of the society at large, and they need enjoy it because they were originated from the project surrounding.

a.2. Total Incentive Payment :

IP/MD for worker, foreman and skilled worker is cheap enough therefore the total IP for every meter of road is low too it is Rp.2,275,-- average. (table 31). While the maximum total MD Rp.2,799,-- is still cheap enough too, because the road is not merely of soil but with a layer upon it.

a.3. Total Man Days :

The road maintenance needs the total MD of average 3,8 MD for every meter length of road. While the average width of the road is 6 meter. So that an average MD of 3,8 is for the maintenance of 6 square meter of the road. Thus for every square meter it needs 0,63 MD, it is a labor that can be said as efficient enough.

a.4. Materials :

The average value of the needed materials for every meter of road is Rp.622,--. The maximum material cost is Rp. 814,--. Those materials are in the form of gravels, cement, sand, etc., for the upper layer of the road. Therefore it is said cheap enough too.

a.5. Tools :

The average cost of tools used for every meter length of road is Rp.184,--. This is reasoable and fair too.

a.6. Total Cost :

The total cost of road maintenance in average for every meter is shown in table 49 as follow :

District	Length of road	Total Cost	Total Cost/m
Awayar	5,700 m	29,475,000	5,171
Astambul	7,025 m	13,848,000	1,971
Secanggang	4,300 m	15,952,000	3,709
Rawa Merta	3,000 m	15,305,000	5,101
Pujon	4,000 m	13,824,000	3,456
Tanjung Pura	4,700 m	17,269,000	3,674
Tinggi Moncong	6,000 m	11,957,000	1,992
M. Bombang	7,000 m	12,095,000	1,727
B.Kanaya	5,000 m	17,134,000	3,426
Kelara	5,000 m	17,178,000	3,435
P.Bangkeng	7,000 m	12,515,000	1,787
Selesai	5,100 m	15,952,000	3,127
Tamalatea	7,000 m	19,703,000	2,814
		Total =	41,390
		Average =	3,183
		Sx =	1,134
		Tx =	314
		Minimum =	2,555
		Maximum =	3,811

Source : 1. Table 31.
2. Table 34.
3. Consultant calculation.

The average total project cost is Rp.3,183,--/m , while this project cost is fairly cheap too.

b. Effectivities :

The aim of the project are :

The fluency of traffic
To accelerate suburban economy
Works opportunity
To open the isolated zone.

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b.1. Traffic Fluency.

The aim of project for the fluency of traffic has met its goal with the change of transportation way, that is from being carried by carrying pools or on human back, by bycicles and wheel barrow altered to be with motor cycles, trucks and pic ups. (table 42). And also their cruising speed has been increased. The comparison of the durations for several transportation before and after the project are by bycicles 30%, motor car 27% and mobile/pic up 30% . (table 43).

b.2. To accelerate the suburban economy:

- Place to obtain or purchasing materials.
  From the interview is known that society surrounding the project is obtaining or purchasing materials 65% from the suburb and 35% outside the suburb. It means that with the presence of the road materials come from the village to the suburb. Therefore grow in the village the places where materials can be bought for example shops or kiosks. Although the following materials from the village to the suburb will grow the economy outside the suburb, in the suburb itself will grow economy like the presence of shops and kiosks as mentioned above.

- The increase of rice production.
  From the interview is known that rice production raised from 1,532 ton to 2,235 ton it was an increase of 702 ton or 46%. From field survey it has got the data that the increase of agriculture product as rice, rubber etc. is because being opened the transportation fasilities. With an increase of rice production therefore there is growth in suburban economy.

- Increase of business varieties.
  Survey has only got six project zones that can show the increase of business. Shop business raise from 56 shops to 130. Thus the increase is 74 shops or 132%. Beside shops business, trade business is raising too from 62 trade business to 164 ones, thus an increase of 102 trade business or 164%. Beside that the bigger shop business is rasising too from 27 to 69, an increase of 42 bigger shop or 155%.

b.3. Works opportunity.

With the raise of rice production, shops business, bigger shops as well as trade business, the works opportunity is raising of it self. The increase of workers opportunity can receive manpower as shown in table 50.

Table 50. Increase of workers opportunity.

Business varieties	Total increase	Manpower	Total manpower
Agricultural	702 ton	2,63	1.847
Shops	74 ea	2	148
Tokos (bigger shops)	42 ea	2	84
Trades	102 trd.	1	102

The increase of business can receive the works opportunity ca. 2,181 manpower. While the whole population in the district of the whole project is 565,566 peoples. Thus the project can crea occupation field 0,38%.

b.4. To open an isolated zone.

The 70,525 metres or 70 km long project has its effects to its surrounding zone of 115,807 hectares of 30 villages.

c. Intensities

Those 13 project has the amount of total cost Rp 212,207,000,-- If a national multiplier is 2,85 therefore that investation mentioned above can raise the income the amount of 2,85 X Rp 212 million = Rp 604 million. In the survey conclusion got no data to check the increase of income of Rp 604 million mentioned above.

3. Conclusion and Suggestion

It has been discussed in the analysis that the improvement of roads in 13 districts has been done efficiently except in Rawamerta district where the road is often damaged.

Formerly the road width in Rawamerta is 2 meter widened to 3 meter with a hardening layer of 15 thick. That 3,000 m long road has been charged with an expense of Rp.15,305,000,- or Rp.5,101 per meter run. This budget is bigger than the maximum cost Rp.3,811,-- (table 49). With the cost that high the condition of the road must be good enough, but as a matter of fact the road is often damaged. With the damage thats often it means that the betterment of the road in Rawamerta is less good.

b. Effectivities :

From the analysis has been known that the road project causes 2,151 peoples as man-power in act. The presence of road betterment, therefore the communication from one region to another is opened. Thus the effectivities is increased with suburban economy acceleration that its products can be marketed to town.

The suburban economical activities will be more accelerated with the presence of consultations among others a consultation for agriculture and people handy crafts. With the presence of consultations; soil, manpower and time can be used efficiently in order to produce products that can be marketed to other region. With the increase of products the work opportunities is opened that has an multiplier effect.

c. Intensities :

It has been said above that consultations will raise effectivities. With this consultation will resulut a raising productivities. With the raise of productivities theincrease value of articles in the suburb will be raising too, this means to raise the suburban societies income. The consultant believes that without information or consultation: social income will be raising too but with leisurely procedure.

Table : 1. Appendix : I.

Origin of Respondents

PKGB Road Project (n = 102)

District	Original Place				Total
	Original from same local.	Other Village	Other Regency	Other Provincy	
1. Awayan	5	1	-	-	6
2. Aetambul	5	-	-	1	6
3. Secanggang	3	2	1	2	8
4. Tanjung Pura	6	2	-	1	8
5. Pujon	8	-	-	-	8
6. Rawa Merta	8	-	-	-	8
7. Tinggi Moncong	8	-	-	-	8
8. Manggara Bombang	9	-	-	-	9
9. Biring Kanaya	8	-	-	1	9
10. Selesai	8	-	-	1	9
11. Kelara	8	-	-	-	8
12. Polong Bangkeng	8	-	-	-	8
13. Tamalatea	8	-	-	-	8
T o t a l :	91	4	1	6	102

Table : 2. Reason of moving to the local where the PKGB Project is Provised (n = 11)

R e a s o n	Absolute	%
Seeking for job	5	-
Follow wife / husband	4	-
Follow parent	2	-
T o t a l :	11	-

Table : 3. Respondents reason for their participation in PKGB Road Projects (n = 102)

District	Reason of respondent				
	Compen-sation	Following mass	Obligation	Beneficial	no comment
1. Awayan	3	-	-	3	-
2. Astambul	3	-	-	3	-
3. Secanggang	4	-	-	-	4
4. Tanjung Pura	4	-	1	-	3
5. Pujon	1	2	1	1	3
6. Rawa Merta	1	-	2	3	2
7. Tinggi Moncong	5	-	-	1	2
8. Manggara Bombang	5	-	-	2	2
9. Biring Kanaya	3	-	1	2	3
10. Selesai	2	-	4	1	1
11. Kelara	5	-	-	2	1
12. Polong Bangkeng	-	5	-	3	-
13. Tamala Tea	4	2	-	2	-
T o t a l :	40	9	9	23	21

Table : 5. Side job of PKGB Road Project respondents :

District	Sorts of Side Job					Total
	Farm worker	Robber plant. worker	Dairyman	Sundries	N o n e	
1. Awayat	1	1	2	-	2	6
2. Astambul	-	1	-	-	5	6
3 Secanggang	1	-	-	-	7	8
4. Rawa Merta	-	-	-	-	8	8
5. P u j o n	2	-	1	-	3	8
6. Tanjung Pura	4	-	-	2	2	8
7. Tinggi Moncong	-	-	-	3	5	8
8. Manggara Bombang	1	-	-	2	6	9
9. Biring Kanaya	-	-	-	2	7	9
10. Selesai	-	-	1	-	7	8
11. Kelara	-	-	-	2	6	8
12. Polo Bangkeng	-	-	1	-	7	8
13. Tamalatea	1	-	-	4	3	8
T o t a l :	10	2	7	15	68	102

Notes: Workers with side job 12 pers (46%) with the following specification.

1) Farm worker 3
2) Rubber plant. worker 2
3) Dairyman 2
4) Sundries 5
12 (46%)
5) None 16 (54%)

Table : 6. Education of PKGB Road Project worker (n = 102) :

Education	Respondents				Total
	PKGB Worker	Foreman	Skilled Worker	Farmer Non PKGB	
1. Never	7	2	-	2	9
2. Element.Sch.Drp.Out	11	6	2	5	24
3. Element. Sch. fin.	14	10	-	8	32
4. Secnd.Sch.Drp.Out	1	1	-	2	4
5. Secnd.Sch.Fin.	1	1	-	-	2
6. High Sch.Drp.Out.	-	1	-	-	1
7. High Sch. Fin.	1	-	-	1	2
8. No comment.	4	4	10	8	26
Total :	39	25	12	26	102

Table : 7. PKGB Road Project Respondents Religious Education (n = 102)

Degree of rel. education	Respondents				Total
	PKGB WORKER	Foreman	Skilled Wkr.	Farmer non PKGB	
1. Never	6	2	3	3	14
2. Reciting AlQuran	20	17	6	9	52
3. Rel.Element.Sch.	2	6	3	1	12
4. Rel.Educ.Campus	2	1	1	2	6
5. Sundries	2	4	4	8	18
T o t a l :	32	30	17	23	102

Table : 8. Respondents opinion about income and their effort done to fill their deficiency (n = 102)

District	Respondents opinion				Effort being done to fill the defficiency				Note
	More sufficient	Sufficient	Not Sufficient	Very insufficient	Borrowing	ask for aid from relatives	Sell anything	Sundr.	
1. Awayan	-	4	2	-	4	2	-	-	n = 6
2. Astambul	-	4	2	-	4	-	2	-	n = 6
3. Secanggang	-	8	-	-	8	-	-	-	n = 8
4. Rawa Merta	-	2	5	1	4	2	-	2	n = 8
5. Pujon	-	8	-	-	2	4	-	2	n = 8
6. Tanjung Pura	-	4	3	1	8	-	-	-	n = 8
7. Tinggi Moncong	-	4	4	-	6	2	-	-	n = 8
8. Manggara Bombang	-	3	4	2	4	5	-	-	n = 9
9. Biring Kanaya	-	-	6	3	5	4	-	-	n = 9
10. Selesai	-	-	3	5	-	2	6	-	n = 8
11. Kelara	-	2	6	-	-	-	8	-	n = 8
12. Polong Bangkeng	-	2	5	1	2	6	-	-	n = 8
13. Tamalatea	-	5	3	-	3	5	-	-	n = 8
T o t a l :	-	46	42	13	50	32	16	4	102

Table : 9. Respondents intention for next year if there were PKGB again in the village / district (n = 102)

Respondent intention	Absolute	%
Participate again	95	94 %
Do not participate	7	6 %
T o t a l :	102	100 %

Table : 10. Respondents opinion about social support toward PKGB Project (n = 102) :

Respondent Opinion	Absolute	%
The society supports	102	100 %
The society doesn't	-	-
T o t a l :	102	100 %

Table : 11. Factors that inspire social support toward PKGB Project (n = 102)

Respondent opinion	Absolute	%
A feeling of duty	41	40 %
For the wages	9	9 %
Beneficially	52	51 %
T o t a l :	102	100 %

Table : 12. Respondents take/not take part for the maintenance of PKGB Road Project their resson

(n = 102)

Respondents Participation	Respondents reason						Total
	D u t y	get income	Forced by chief of village	Sundr.	Let be done by regular labour	Far from Project	
Take part for the maintenance	34	38	4	31	-	-	97
Do not take part	-	-	-	-	4	1	5
T o t a l :	34	38	4	31	4	1	102

Table : 13. Term / mutual aid tradition according to the assumption of respondent, after PKGB Road Project (n = 102)

Respondent opinion	Absolute	%
Still known	102	100 %
Not known	-	-
Total :	102	100 %

Table : 14. Sorts of mutual aid that still be done since PKGB Road Project

Sort of mutual aid	Absolute	%	Discription
To build house	88	100%	From 102 respondents.
To build mosque	82	81%	-"-
To build conduit	77	71%	-"-
To build/maintain road	80	80%	-"-

Table : 15. Respondents opinion about environment condition

(n = 102)

Environment condition	Respondents opinion		Total
	To be better	To be poor	
Altered	100	2	102
Constant	-	-	-
T o t a l :	100	2	102

Table : 16. Respondents opinion about the value of land after PKGB Road Project (n = 102) :

Land Value	Absolute	%
Increase	94	92 %
S a m e	-	-
I g n o r e	8	8 %
T o t a l :	102	100 %

Table : 17. Whether or not new economic activities and sort of new economy emerges after PKGB Road Project (n = 102)

Respondents opinion	Sorts of new economical activit				
	Motor cycle Transp.busns	New shop	Petrl.Kiosk	Workshop	Sundries
New activities emerge	52	53	34	38	8
N o n e	-	-	-	-	-

Discription : Each from n = 1 0 2
Because the reply is one more respondent.

Table : 18. Determination factor for some ones position in the social structure (n = 102) :

Determination factor	Absolute	%
M o n e y	14	14
Position in the government	29	28
H o n e s t y	22	22
Good manners	33	32
Sundries	4	4
T o t a l :	102	100 %

Table : 19. Respondents opinion about the cause/source of conflict

Source of Conflict	Absolute	%
Children	47	47 %
Inheritance	25	25 %
Policy	4	44 %
Land	19	18 %
Borrow and lend	6	6 %
Jealousy	1	1 %
T o t a l :	102	100 %

Table : 20. Respondents opinion about social change after PKGB

Sorts of changes	Absolute	%
Increase of al Quran recites	57	21 %
Presence of new arts	26	10 %
Sports activities	48	18 %
Women meeting	38	14 %
Presence of cooperation	41	15 %
Presence family Welfare Education	18	7 %
T o t a l :	274	100 %

Note: Total n = 102, but because there is one respondent replied more then once, the total is 274.

Table : 21. Desire for children education (n = 102)

Respondents opinion	Absolute	%
The highest education level	66	65 %
Religious school only	8	8 %
As long as can read and write	2	2 %
Up to the children	26	27 %
T o t a l :	102	100 %

II. IRRIGATION PROJECT

Observing the impact of this irrigation project as one of the PKGB project, we have taken two sub-projects as samples. One is sub irrigation project of subdistrict (Kecamatan) of Jabung and the other one is at the subdistrict of Ploso. Both are situated in the Regency (Kabupaten) Malang. They were taken at Random.

The subdistrict of Jabung is an area of 126,80 square kilometres wide with, in 1980 covered 49.924 population in which consist of 11,222 families. Mosth of the inhabitants of Jabung are farmers with rice as their main product. It is hoped that this irrigation project will effect to the surrounding farmers as seen in the map.

As for the subdistrict of Ploso, it is an area of 75,75 square kilometres wide, with, in 1980 population by 49,924 people. Most of them are farmers. This irrigation project are situated in the village of Tasik Madu + Kepuharjo and it is hoped that it will give its impact to the areas as seen in the map.

To evaluate this sub project we collected the data concerning INPUT, OUTPUT, PURPOSE and GOAL of each project.

As a presupposition, the sub project will have influence to the socio-economic as well as agriculture. As a matter of fact, this report will give its result from the basis of socio-cultural, socio-economic as agriculture with the succession as follows:

- The presentation of the data;
- Analysis;
- Conclusion.

The socio-cultural aspect will be first presented, and followed by agricultural aspect and then economic aspect.

A. SOCIO-CULTURAL ASPECT

It is supposed that a certain project will play its important role if it is closely related to the value practiced by the members of the society.

In the implementation of a project for public interest, for example, the members of the society will actively participate cooperatively. A member of a society, who does not take part in the social work done cooperatively, because he does not have this value in him, fears with the social law. Good members of society are those who practice the common norms of the society.

The observation on the impact of this sub irrigation project, implemented by PKGB, socio-culturally, will be viewed from the values generally achieved by the society.

The data will be presented first and the analysis will be carried, while the conclusion and recommendation will be at the end of this report.

1. Data Findings

According to the data collected from the research of socio-cultural aspect in both subdistricts of Ploso and Jabung, in which the implementation of the reconstruction of irrigation used the new system of new style of labors intensive (PKGB), this project were carried out by most of the members of the society where it is implemented.

The data is exhibited in table 1, which shows that 100% of the employed of PKGB project, including group leader, were the members of the society and then become the respondents of this research, come from same village of each subdistricts which became the objects of this research.

Their participation in PKGB project is mainly based on their opinion that project will directly increase their income. It means the money received made the employee of the project participate in the activities. Table 2 shows 57% of the respondents say that their participation on the project is due to the money received as their incentive. As a matter of fact the PKGB project is essentially not considered as a mutual help activities, although the activities themselves looked like mutual help activities implemented on the basis of utility togetherness as well as its utility for public interest.

The overlook of this activities as belonging to the mutual help basis, based on our opinion, is essentially conditioned by the income of PKGB's workers which are generally from agricultural sectors (see table 3) in which their income felt insufficient. It is reffloct ed in table 4 which shows that 79% of the respondents' income is insufficient to meet their basic needs. Moreover the 21% of other respondets' income in not enough to suffice their basic needs.

This condition brought them to debt to their neighbours, asked aids to their families who live in the same village (including asking for helps to their children), in order to promeetvide their needs (see table 5).

As the consequencies of their live condition mentioned above. They used to participate in each of the activities and opportunities. It gave heir income added although the income relatively very small one.

Accordingly the PKGB projects immediately became their alternative to get income added It forced them to take part in the same kind of activities whenever such project of PKGB are reimplemented in their village/subdistrict (see table 6). Their statement concerning the participation in the next year's project, any, seem to support it. The members of the society who didn't, by chance, take part in the previous year's project, wanted to. For, those who did not take part in the previous year's project directly or indirectly took the advantages of it; that is the better the irrigation system for their rice field, the more the mounting up their agriculture product (see table 7).

The irrigation system becomes so important for them that it, especially provide the earning of their lives. As a matter of fact most people of the two subdistricts take care the irrigation. It is shown in table 8 that 50% of the respondents take part in maintaining the irrigation constructed by PKGB project.

In holding the maintenance of the irrigation constructed by PKGB project, the members of the society were organized in distributing

water. The organization regulates the distribution of water as well as the maintenance of irrigation itself.

According to the interviewed respondents, all the members of water consumer organization took their part in water canal maintenance in hand. It is shown in table 9 which indicate 100% of the respondents say that all members of the water consumer organization took part in irrigation maintenance, a duty as a member of the organization.

The farm or the way of irrigation maintenance conducted by the organization can be classified into two kind of maintenance, namely first; conducted priodically by mutual help among the members of the organization to maintain all nets of the irrigation canals. second; conducted by the consumer responsible to the irrigation canal he uses only, the maintenance is conducted in every occasion and opportunity of the consumer concerned.

Besides the two forms or ways of maintenance, it is only in subdistrict of Jabung that the maintenance is regularly conducted by other than the water consumer, that inclussively by a special worker in charge of it who is paid for maintenance of the canal. The fund are donated from the members on water users organization, while the priodical maintenance are implemented by all the organization members.

Mutual help activities known and practiced by members of the society, other than water canal maintenance, are building houses, constructing water canals, agriculture enterprise, constructing village trackers and many others ritus de passage, as shown in table 11. The category of mutual help activities is that the construction of water canal (including irrigation) belongs to this mutual help category. It becomes interesting because the irrigation canal of PKGB project did not categorize into the mutual help. It is because (other than the reason mentioned previously, see p. 1 and p. 2) members of the society, where the activities "money", available provided for the workers of irrigation development to compensate their energy to the project by the holder of the project,

so that the activities were considered being the economic activities in which the lost and profit factors becomes the activities basis, and there seem to contain new system of values in it, which, in a certain process, consciously or unconsiously will be able, in the long run, to shift the old system of value (i.e: cultural value of mutual help system) field on the togetherness as well the uti lity basis for public interests.

The customs of mutual cooperation, however, we product, will be able to service, because the concept of mutual help in general is still closely related to the other systems of cultural values prac ticed in the society in which it regulated the behaviour of the society lives.

So long as the irrigation project has been well functioned, members of the society concerned have experienced some development which occurred either in physical environment or in cultural ones. (71%), namely the changes of the condition of their physical environment tended to make all their physical aids such as irrigation system of rice field get better and more regulated; the firmer and wider the embarkment; the more orderly their lives environment market by the better housing, both quality and quantity of their houses and many others which essentially indicate the development of their lives environment compared with the time before the reconstruction as well as refunctioned the irrigation system. (see table 13).

The changes of this physical environment of life, directly of in directly influence the valuable land, especially the land space directly irrigated by the canal of PKGB product, in which the valuable land watered by the irrigation will be higher. In either the price or the status of its class (see table 14). The rising of land value as mentioned above influences some of the other aspects of their lives which is felt by the members of the society concerned as a better one.

The development of life that first felt is in economic sector of the member of the society (see table 15) the changes felt in this sector is that the economic life of the members of society get better,

marked by the mounting of agricultural product, due to the better cul tivated land and as consequences of their agriculture sector increased, in which when this research were conducted they consider the rice price happen to be well enough.

The development in economic sector mentioned above is considered having effected to the social life of the members of the society. The impact happended in the life of the member of the society is the shifting (so it is not entire changes) of decision of one's social status in a certain social order in accordance with its social structure. Decisive factor of one's social status in society based on their seniority in the social life, which usually marked by kinship line of a certain village founder (village anchestor) or according to whether or not their knowledge of regulation as well as values practiced in this society, sufficient, especially the regulation or values related with custom and religion.

Seeing the table 16, however, is shows that the decision of one's status in a social order is based upon this achievement considering the eliminated as well as valuable resources in which the realization of these are the ownership of wealth or positions achieved directly or in directly have great influence to the various sectors of social life itself. As the consequences of the shifting of decesive factor for social status mentioned above, it makes the social disputes occurs in the society growing more. Formerly, before the implementation of PKGB project where the irrigation did not function well, some common social dis putes appear from the problems of children, debt or jealously. And now after the implementation of PKGB project of which the irrigation has functioned well, as well the shifting of dicisive factors of social status, the source of social dispute rise from the problems of land space and politic (especially the competition to get a certain position existed in the society), see table 17.

Although the siftiment of decisive factor appear as mentioned, the social disputes still can be solved traditionally; that is by way of kinship or through the ulamas, so the social disputes happened will not be a disturbance to the harmony of the social life.

As the consequence at the shifting factor for social status, mentioned above. It arises social conflict, social conflict was caused by children's problems debt or jealousity. Now any social conflict that arises covers land ownership, political competition to get social status amidts people (see table 17)

Social comflict mentioned above is coped with through kinship or ulama's as stated on the table 18. Data state 100% respondent represent that no shifting caused sosial cultural value adhered to change.

Related to physical changes, data states that physical change has connection to social interest particularly peoples interests to send their children to school this means tnat self promotion to get social status or well as economic standard at living arose. People compact to dominate resources.

4. Analysis.

There has been various changes concerning cultural values adhered by people under the bases of mutual help. It is caused by people's perspectives toward the project. They consider it to be economic activities, in which they participate in the project to get salary.

Despite of the mentioned persepectives, the project was supposed to serve to increase form product which encouraged people to improve their standard of livings in a road sense. More over there has been changes in transfering information which covers environment and secientific discoveries.

As a consequance of value system changes, the solidarity among people is weakened in which there has been a competation among the people to get socio-political status or resources domination. But such competation might have been solved through fariendliness, togehtherness, concensus.

On the other hand value changes have brought about (generated) a poritive impact which intograted people to formulate activities. This causes social organizations to emerge in which they do activities under the bases of mutual help.

Instead of negative impacts, we see that the project has given positive impacts to social condition. Value changes arise as to the project implementation but it has not managet whole -social condition. Social conflicts might have been solved by kinship, frendliness togetherness. This is the fact that social problems can be well coped.

Economi ally as well as agriculturally this project has increased farm product which causes income of community to raise in which people are supposed to suffice their basic needs economically and socio-culturally.

3. Conclusion and Recommendation

Based on the previous discussion we way draw a conclusion that irrigation project implemented at two sub districts has given impacts to social intercourses. It is apparent that social conflicts have emerged as the project implemented, but it does not shake whole value system adhered by community. In other words PKGB project not shake the stafility of community lives.

As a matter of fact, the PKGB project implementation is coincident with social prosperity improved. To intensity project effectiveness needs following up programs. The activities covers guidance and consultation to solve problems, which deal with politics, law and socio-cultural aspect as well as economics. New values may be simultaneously introduced with its utilization. By so doing, people will be encouraged to accept new values without damaging cultural value systems adhered by community.

Pertaining with those efforts, people's participation is required To encourage people to participate in this project, people's involvement in planning a project is neceesary, since their involvement will arise self responbilities. On the other hand this enables people to adjust areas new cultural values without any rustless.

B. AGRICULTURAL ASPECT.

Irrigation project is expected to give good impacts to farmers and community as a whole. To see the project benefits, we will analize it through input, output, purpose and goal.

a. The Inputs

The inputs discussed in this section will cover costs incurred for the construction of the irrigation sub-project at Karangploso and Jabung. It consist of wages, purchases of materials, expenses for survey design and the survey itself. As shown in table 21, it was reported that the total wages incurred in the irrigation subproject was Rp. 31,374,825,- of which about 45 percent was used at Karangploso, and the rest at Jabung.

Table 21. Wages in Irrigation Subproject

Kecamatan	Length of Irrigation (m)	Target	Actual
Karangploso	4,000	14,182,275	14,182,275
Jabung	7,845	17,192,550	17,192,550
T o t a l		31,374,825	31,374,825

It is also shown, that the amount of wages paid to the laborers has been paid as targetted. The amount of money used for purchasing construction materials has also been used as targetted.

As shown in Table 22 about 47 percent of the total costs for materials used at Karangploso, while the other 53 percent used at Jabung.

Tabel : 22. Costs for purchasing materials in irigation subprojects.

Kecamatan	Target (Rp)	Actual (Rp)
Karangploso	5,923,000	5,923,000
Jabung	6,552,600	6,552,600
Total :	12,475,600	12,475,600

The other costs incurred in irrigation subproject are the costs for survey design and survey design and survey. As shown in Table 3, the total costs for these purposes is Rp.550.000,-- of which about 54 percent was used for survey.

Table : 23 Costs for survey and survey design in irrigation subprojects.

Kecamatan	Survey		Survey Design		Total	
	Target (Rp)	Actual (Rp)	Target (Rp)	Actual (Rp)	Target (Rp)	Actual (Rp)
Karangploso	139,200	139,200	110,800	110,800	250,00	250,000
Jabung	158,400	158,400	141,600	141,600	300,000	300,000
Total :	297,600	297,600	252,400	252,400	550,000	550,000

Tabel : 24 Summary of costs in irrigation subproject.

I t e m s	Karangploso	J a b u n g
W a g e s	69.7	71.5
Materials	29.1	27.2
Survey design	.5	.6
S u r v e y	.7	.7
T o t a l :	20,355,275	24 045,150

The distribution of costs among the four items used in irrigation subprojects are summariezed in Table 24 As shown in Table 24, the pattern of distribution is more or less the same between Karangploso and Jabung. About 70 percent utilized for wages, and the rest for materials, survey design, and survey.

b. The Outputs :

The outputs of irrigation subproject as expected is the irrigation system itself. As shown in Table 1 in the previous section, the length of irrigation is 4,000 metres and 7,845 metres respectively.

In Table 5, it is shown that almost all agricultural land in Karangploso and Jabung increase, with the rate ranging from two percent to around 65 percent. The only land which is dechring is that utilized for union, while those which utilized for sweetpotatos remain the same.

Table : 25. Agricultural land in Karangploso and Jabung, before and after PKGB.

I t e m s	Before PKGB (ha)	After PKGB (ha)	Growth rate (%)
Karangploso :			
1. Paddy	3,475	3,558	2.4
2. Corn	369	410	11.1
3. Onion	537	523	-2.6
Jabung :			
1. Paddy	249	254	2.0
2. Corn	238	274	15.1
3. Peanut	3	5	66.7
4. Cassava	26	30	15.4
5. Sweet potato	17	17	0

The data in Table 25 probably will not show us whether the increased of the land area was due to the irrigation project especially if we see the answer revealed by the respondents, who indicated that lack of water is not really a problem. However, from the information given by the respondents with regard to the areas harvested, we can see that irrigation project might have something to do with the agricultural development in the area.

As shown in Table 26 the area harvested of the farms with project has increased more than double than the area of the farms without project. It is also shown that the farms with project raised more agricultural commodities than that without project.

Table : 26 The average area harvested in Karangploso and Jabung (hectare)

I t e m	Average area harvested for other				Starchy roats
	Paddy	Corn	Other Sec. Crops	Vegetables	
Karangploso:					
Farms with project	2.42	-	-	-	-
Farms without Project	.75	-	-	-	-
Jabung :					
Farms with project	3.50	.67	.50	.13	-
Farms without project	.95	.50	-	-	.50

c. The Purpose :

In this section, we want to see whether the irrigation project will be able to increase the average yield per hectare, and whether it will be able to increase the efficiency of the farming system.

As shown in Table 27 the average yield per hectare of paddy of with project's farming increase from 14 ton/ha to 22.5 ton/ha, an increment of about 60 percent, while that without project has increased about 2 percent only. The increment at Jabung, is about 14 percent compare to around 7 percent of the without project farming.

Table : 27 The average yield per hectare of paddy in Karangploso and Jabung

I t e m s	Before PKGB (ton / ha)	After PKGB (ton/ha)	Growth rate (%)
Karangploso :			
Farms with project	14.0	22.5	60.7
Farms without project	14.8	15.0	1.7
Farms with project	15.7	17.8	13.8
Farms without project	6.1	6.5	6.6

The see whether the irrigation scheme could increase the efficiency, a crude B/C-ratio will be the crude B/C-ratio of farming with project is found at 4.9, while of that without project is 1.8. From figures, we can see that the irrigation scheme is able to increase the efficiency of the farming system in the project area.

Table : 28 Crude B/C-ratio in irrigation subproject :

Farming type	Mean benefits (Rp.'000)	Mean Costs (Rp.'000)	C r u d e B/L
With project farming	2,934.4	603.8	4.9
Without project	775.1	430.2	1.8

The Goal :

From the GPOI logical framework it is indicated that the goal of irrigation subproject is to increase the welfare of the farmers in the project area. The objectively verifiable indicator was the income of the farmers. As shown in Table 9, the net benefits of the farmer with project is more than seven times of the farmers without project.

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Table : 29 The net benefits of the farmers irrigation subproject

I t e m s	Benefits (Rp'000)	Costs (Rp'000)	Net benefits (Rp'000)
With project farming	2,934.4	603.8	2,330.6
Without project farming	755.1	430.2	344.9

The GDP per capita of the people in the project area is shown in Table 30. It is shown that except for Sidorejo, the income per capita of the people in the project area has increased. Especially in Kecamatan Karangploso, the income has increased considerably.

Using the means-end analysis by means of GPOI logical framework mentioned in the previous chapter, we can see that the

Table : 30 Gross Domestic Product Per Capita of the People in the project area

I t e m s	Bifore PKGB (Rp)	After PKGB (Rp)	%-increase
Karangploso :			
1 Kepuharjo	979.67	4,910.60	401.2
2 TAsikmadu	1,194.10	1,561.67	30.8
Jabung :			
1 Sidorejo	2,816.47	1,636.24	- 41.9
2 Sukapuro	3,123.88	3,224.72	3.2

investment planted in the irrigation subproject is worthwhile, and benefitted not only the people who work for the project, but also the farmers in the project area. Although lack of water is not really a problem for the farmers, - as can be seen from the B/C-ratio without the project which is more than one - , the irrigation scheme constructed in the project area has increased the area harvested, the production of agricultural products, and last but not least, the income of the people in the project area.

C. ECONOMIC ASPECT

Based on the observation conducted this project give impacts to create new implement, to promote social presperity.

New employment created dalt with project emplementation as directly and indirectly there has been new enterprises around the project areas. This has a connection withs increamental income.

The report covers data presentation, analysis under the basis at economic aspect which dealt with input, output, purpose, and goal.

1. Data Presentation

Survey on irrigation was conducted at Jabung and Karang Ploso subdistrict in Malang District. Results of survey present as follows:

Project Idea

To see people's participation is not only their involvement in project implementation but is their participation in revolving decision (planning). Data obtained state as follows: project was proposed by.

1) State office irrigation ..... 57 %.
2) Chief of sub district ..... 25 %.
3) Village meeting ..... 15 %.

And the decision makers was reported as follows:

1) Regional planning board (BAPPEDA) ..... 33 %.
2) Local government ..... 50 %.
3) Office of general Directorate Development Utilization ..... 17 %.

Based on data, we may assume that the project was condired by government to people (top down). People participation is economical ly formal and their self-responsibilities remains question able.

2. Project Implementation

It was expected that the project implementation was worable. Research result state as follows.

3. Project

The distribution of cost covers survey, survey design, incentives (UPK) materials and equipment costs. (see table 3).

Table 31. Actual budget at irrigation project (in rupiah.

	Karang Ploso	Jabung
- Survey	139,200	158,400
- Survey design	110,800	141,600
- Insentives (UPK)	14,182,275	17,992,550
- Materials	5,123,000	6,152,600
- Equipment	1,080,000	400,000
Total :	20,635,275	24,045,150
Length of irrigat-on	4,000 metres	7,845 metres
Costs/1,000	5,158,000	3,065,000
Planned costs	20,635,275	24,045,150

The actual costs for irrigation project amount Rp 20,635,275,-- for 4,000 metres. So 1,000 metres costs Rp 5,158,000. The total retual cost Rp 20,635,275.

The realisation of cost for irrigation canal in Jabung comes to Rp.24.045 150,-- which is in balance with the total cost as it is planned. The length of irrigation canal in Jabung is 7.845 meters. So the realization of the total cost per 1.000 meters length of canal is Rp. 3.065.000,-- or Rp. 3.065,-- per meter.

Irrigation canal in Jabung, compared with that of Karang Ploso, is longer, so is the total cost of it. But the cost per 1.000 meters length of canal in Jabung (Rp. 3.065.000,--) is less than that of per 1.000 meters length of canal in Karang Ploso (Rp. 5.158.000,--)

The data above shows that incentive money (UPK) is the largest element of costs. It reveals that the irrigation project implemented is really a semi-mutual help.

4. Workers.

a. Incentive (UPK).

The amount of insentive per day for one person (HOK) in which of planned and of its realization are shown on table 32.

Table 32. UPK/HOK (in rupiah)

	Karang Ploso		Jabung	
	Planned :	Real :	Planned	Real :
- Worker	525	525	525	600
- Group Leader	675	675	675	750
- Skillful worker	1.050	1.050	1.050	1.200

There is not any difference between the amount of incentive money which is planned and its realization for each of the group worker in Karang Ploso. There is, however, (in Jabung) and differences between the planning and its realization. Incentive cost (UPK/HOK) for worker is Rp.525,-while its realization is Rp. 600,- It means that there is an increase of 14%.

For a group leader the incentive (UPK) planned is Rp. 675,-- while its realisation comes to Rp. 750,- or the increase of 11%, according to the planning the incentive money for a skillful worker is Rp. 1.050,- while its realization is mounting to Rp. 1.200,-- or the increase of 14%.

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It is seems that the incentive (UPK) is too small, that is less than US $ 1,00, even only US $ 0,50 per day for one person. This amount of incen - tive (UPK) is not enough to of a family that consists of, at the average 4,9 persons.

The amount of incentive money for each of the projects as seen in the following table 33 :

Table 33 : The total of incentive money each project (in rupiah)

	Karang Ploso	J a b u n g
- Worker	12.728.775,--	15.612.000,--
- Group leader	823.500,--	975.750,--
- Skillful worker	630.000,--	604.800,--
- Total Realization	14.182.775,--	17.192.550,--
- Length of canal	4.000,--/meters	7.845,--/meters
- Total/1,000 meters	3.545.000,--	2.191.000,--
- Total Planned	14.182.275,--	17.192.550,--

It can be seen from the table above that the amount of incentive money in Jabung is Rp. 17.192.550,-- which means more than the total of incentive money in Karang Ploso, that is Rp. 14.182.275,-- It is indeed that irri-gation canal is longer than that of in Karang Ploso, namely 7.845 meters in comparison with 4.000 meters. If it is calculated from the total of incentive money per 1.000 meters length of cannal in Jabung the cost is less than that of Karang Ploso namely Rp. 2.191.000,--/1.000 meters, com pared with Rp. 3.543.000,--/1.000 meters. And it is necessary to predict that the employment of worker in Jabung is more efficiently compared with the employment of worker in Karang Ploso though the realization of incen tive money/HOK is higher. (see table 32).

b. Total HOK.

From table 33 (total UPK) and table 32 (UPK/HOK) it can be calculated the HOK Total as seen in table 34 that is by dividing the total of UPK by UPK/ HOK for each of group workers.

Table 34 : Realization of HOK Total (in rupiah).

	Karang Ploso	J a b u n g
- Worker	24.245,--	26.020,--
- Group leader	1.220,--	1.301,--
- Skillful worker	600,--	504,--
Total of HOK	26.065,--	27.825,--
- Length of canal	4.000,- meters	7.845,- meters
- HOK/1.000 meters	5.516,--	3.546,--

Sources : 1. Table 32
2. Table 33
3. Consultant's calculation

The total of HOK in irrigation canal in Jabung comes to 27.825 HOK, while in Karang Ploso the total of HOK is 26,065 HOK. Calculated for 1.000 length of canal, the mean og HOK per 1,000 meters in Jabung is less than that of in Karang Ploso, namely 3.546 HOK. 1.000 meters in comparison with 6.516 HOK/1.000 meters. The employment of worker in Jabung, indeed more efficiently than that of in Karang Ploso.

c. Residance of Employees.

The residence of the employees who implemented the irrigation canal project was mostly from the sorounding villages of the projects. Accordingly whenever the project was started, it recruited the employees from this in vironment of the project. In other word, this project was directly open the opportunity of Job. Its mean is 5.000 HOK/1.000 meters, or 5 HOK per meter.

5. Materials

The amount of cost materials used in the project is shown in the following table 35.

Table 35 : Costs for Materials (in rupiah).

	Karang Ploso	J a b u n g
- Cost for materials	5.123.000,--	6.152.000,--
- Length of canal	4.000,- meters	8.745,- meters
- Materials/1.000 meters	1.280.000,--	703.000,--
- Cost planning	5.123.000,--	6.152.000,--

Sources : 1. Table 31

2. Consultant's calculation

According to the sorce of surveyed, cost realization of material is exactly the same as planning budget. Like the UPK, the cost of materials in Jabung is more than that of in Karang Ploso. The materials cost per 1.000 meters longth of canal in Jabung (Rp. 703.000,-) is less than, in comparison with, the cost of materials per 1.000 meters length of canal of Karang Ploso (Rp. 1.280.000,--).

It is necessary to be predicted that the efficiency of material in Jabung is more than that of the efficiency of material in Karang Ploso.

The materials are available in Malang, as a matter of fact when the project is in operation, it has a positive impact in Malang, not in subdistrict of Karang Ploso or Jabung. And the materials are pebble, sand, cement, bamboo, etc.

6. Tools.

The cost of tools is shown in table 36.

Table 36 : Cost of Tools (in rupiah).

	Karang Ploso	J a b u n g
- Cost of tools	1.080.000,--	400.000,-
- Length of canal	4.000,- meters	8.000,- meters
- Cost of tools/1.000 meters	270.000,--	45.000,--
- Planning	1.080.000,-	400.000,--

Sources : 1. Table 31

2. Consultant's calculation.

The amount of the cost of tools in Jabung is less than the amount of the cost of tools in Karang Ploso althogh the canal in Jabung is longer (8.745, meters) than that of Karang Ploso (4.000 meters).

The tools are available in Malang, as a matter of fact, when the project was in operation, it had positive impact for Malang, not in subdistrict of Karang Ploso and Jabung. While the tools used among others are hoes, shovels, axes, baskets, nails, sickles, etc.

7. Profit and Fund of the Project.

After the reconstruction of irrigation canal was carried out in Karang Ploso as well as in Jabung the result is shown in table 37 below :

Table 37 : Condition of Canal after Semi-Cooperation Working (PKGB).

	Karang Ploso	J a b u n g
Leng of Canal :		
- Secondary		2.150 meters
- Tertiary		2.050 meters
- Quartiary	4.000 meters	4.645 meters
Upper top wide :		
- Secondary	-	5,0 meters
- Tertiary	2,5 meters	3,5 meters
- Quartiary	1,5 meters	2,4 meters
Lower bottom wide :		
- Secondary	-	3,0 meters
- Tertiary	2,0 meters	1,0 meters
- Quartiary	1,0 meters	0,8 meters
Water Debit :		
- Secondary	-	251 1/second
- Tertiary	56 1/sec.	160 1/sec.
- Quartiary	42 1/sec.	145 1/sec.
Dam Checking	1 dam check	1 dan check
Construction	soil finishing	stone walls

Fund for reconstruction of the irrigation canal were from the PKGB.

8. Maintenance.

The maintenance of Irrigation canal in Karang Ploso and Jabung has been carried out by mutual cooperation held twice a year. So the canal is rarely leak in it.

9. Purpose.

This project is a kind of reconstruction in nature. So that it did not intend to promote the effeciency before and after the reconstruction of it, the nature is to refunction the capacity of its efficiency. Without the reconstruction of the irrigation, it is supposed to be, the effeciency of the canal will decrease.

a. The utility of the project in Karang Ploso among others are :

1) From the survey is found out that this project can water the agriculture field the same as before the project carried out, namely 50 hectare owned by 102 head of families.

2) There are an increasing number of cultivating soil that is from twice a year becomes three times a year.

3) There are the growing enterprise among others :

Kind of enterprise	before PKGB	after PKGB
store	3	4
ojek (hired motor cycles)	-	48
Factory	3	3
handicraft	2	8
Meubelair	-	5
Battrey Charge	-	2

It is agreed that the increasing number of these unit of enterprises are not convinced as the direct impact of this PKGB project. More or less, however, there are indications the this increase of oppor tunity and their earning of life considered to be the spreading effect of the project.

4) To prevent from flooded during the rainy season.

b. The utility of project in Jabung among others are :

1) This project can water the rice field of 138 hectare, that usually lack of waterc in dry season. After the project functioned the lact of water has never been occured and as the result the rice field product

comes to 7 tons/hectare. Those rice field were owned by 236 head of families with harvesting crops twice a year.

2) There are the increase of harvest gain as follow :

	before PKGB	after PKGB	accumulation
- rice	11.961 tons	12.861 tons	900 tons
- corn	11.689 tons	12.500 tons	623 tons
- cassava	4.147 tons	4.200 tons	53 tons
- peanut	18 tons	20 tons	2 tons

Due to the increasing product after the implementation of the project it is reasonable to say that the project stimulate the increasing product.

10. Mounting Income.

From the statement above, act. 9, it seems that there is the utility of the project. The impact of this utility on the mounting of their income is due to the hindrance of their rice field from being floode in rainy season or being lack of water In dry season, as the result the harvest gain increased due to the multiplying of harvest frequency and rice field product per year/ per hectare.

If the national multiflier figure is applied, 2,85 the mounting income soro unding the project is supposed to be the same as in table 38.

Table 38 : Estimation of Mounting Income (in rupiah)

	Invesment	Mounting Income
- Karang Ploso	20.635.000	58.809.000
- Jabung	24.045.000	68.528.000
- Total		127.337 000

Sources : 1. Table 31
2. AY = K x A I
3. K = 2,85

A N A L Y S I S.

Those data lead us to analyze the efficiency of the project, the effectivity as well as the intensity of it. The efeciency will be measured through the comparison between the input and output. The effectivity will be observed from its indicator of purpose which is planned and its realization. While the intencity reflected by the amount of problem solved by the project, society in comparison with the problems faced by all the members of the society throughout the sub-district area.

1. Efficiency :

To observe the effeciency of the implementation of the project, there will be a comparison between the input and the output of the project. The input among others are : total cost, incentive money for workers materials and tools. While the output is a kind of length of the cannal reconstructed.

a. Total Cost.

The total cost of Karang Ploso project came to Rp.30.635.000 for 4.000 meters length of canal or Rp. 5.158.000/1.000 meters or 5.15b/meters length of canal.

While the total cost of Jabung project comes to Rp. 24.045.000,- for 7.845 meters length of canal or Rp. 3.065.000/1.000 meters or Rp. 3.065/meter length of canal.

If the two project are compared there will be found out that irrigation canal project in Jabung is more efficient that the project irrigation canal in Karang Ploso, as a matter of fact the canal which is in Jabung is wider dan deeper (see table 7).

b. Working incentive money (UPK)

Total UPK in Karang Ploso cames to Rp.14.182.000,- for 4.000 meters length of canal or Rp. 3.345/meters length of canal.

It can be seen that UPK in Jabung is more efficient in comparison with UPK in Karang Ploso, although the UPK/HOK in Jabung for each group of working is higher compared with the UPK/HOK of each of the same working group in Karang Ploso (see table 32). The total of UPK in Karang Ploso was Rp. 3.545/meters length of canal, higher than the total cost of project in Jabung Rp. 3.065/meters length of canal, from this fact

b). Mounting production.

The aims at mounting production is said to be successful enough with the increasing number of narvests and the mounting the pro - duction of rice field/nectare becames 7 tons/hectare in Jabung.

c). Opening job Opportunity.

The increasing number of narvest from twice a year to three times practically the project has impact of opening job opportunity. This impact is also seen in the growing of enterprise in the fields of, stores, ojek, factory, handicraft strorage battery charge, etc.

3. Intensity.

The project of Karang Ploso promotes the period of cultivation from twice a year to three times per year to the rice field of 50 hectare wide. With the assumption that the better the watering system, the project of rice field will promote to 7 tons per nectare. So the increasing amount of pro duction from 50 hectare of rice field per year is 50 x 7 tons = 350 tons.

The project in Jabung promotes agriculture production to 7 tons per hectare per narvest time in which there are 135 hectare wide of rice field. With the assumption of 3,8 ton per year (means of rice field product per hectare), the mounting of agriculture product is as it was seen in table 39.

Table 39 : The Mounting of Agriculture Product (in rupiah)

	Mounting product/year	Price/ton	Total Price (Rp)
- Karang Ploso	350 tons	100.000	35.000.000,-
- Jabung	883 tons	100.000	88.300.000,--
Total			123.300.000,--

If the multiflier is 2,85 the estimation of mounting income because of the investment is Rp. 127.337.000,- (table 8). While the calculation in table 9 the mounting of agriculture product is estimated to be Rp. 123. 300.000,- So the project of irrigation canal both in Karang Ploso and in Jabung has the multiflier of 2,85

it can be concluded that there is a real possibility the employees of Karang Ploso worked inefficiently.

Canal project of Karang Ploso demanded the total of HOK 26.516 HOK for the 4.000 meters length of canal or 6.629 HOK/meters length of canal.

While the total of HOK in Jabung were 27.825/7.845 meters or 3,546 HOK/ meters lengtn of canal.

It is found out that the recruitment of employee in Karang Ploso is multipled twice compared with that of in Jabung.

c. Materials.

The cost of materials in Karang Ploso was Rp. 5.123.000/4.000 meters length of canal or Rp. 1.280/meters. While the cost of materials in Ja bung was Rp. 703/meters length of canal althougn there are 52 check - dum used in Jabung. As a result, the cost of materials in Karang Plo- so is less efficient. (see table 35).

d. Tools.

The cost tools in Karang Ploso was Rp. 270/meters length of canal. While in Jabung was Rp. 45/meters length of canal. The cost of tools in Karang Ploso is also higher, in comparison witn, tnan that of in Jabung.

2. Effectivity.

The project aims at :

a. Promoting watering system.
b. Mounting production
c. Opening job opportunity.

a). Promoting watering system.

The aims at promoting watering system is said to be succesful be- cause the project is able to water rice field of 50 hectare wide and can be cultivated three times a year in Karang Ploso. Before the project the cultivation of the rice field only twice a year.

The project of Karang Ploso is also able to control flood so as to make the subdistrict prevent from being floaded. While the project in Jabung is able to water the rice field of 138 hectare wide well that it can produce 7 tons per hectare.

C. CONCLUSION AND RECOMENDATION.

1. Efficiency:

There has been observed in the analysis that the irrigation canal in Karang Ploso is not so efficient. If the project in Karang Ploso implemented as efficiently as in Jabung, there will be cost saving such as in table 40.

Table 40 : The saving of cost KArang Ploso Project (in rupiah).

	Cost/ind	Total Cost	Realization	Savings
- Survey	-	139.000	139.200	-
- Survey design	-	110.000	110.000	-
- UPK	2.191	8.764.000	14.182.000	5.418.000
- Materials	703	2.812.000	5.123.000	2.371.000
- Tools	45	180.000	1.080.000	900.000
T O T A L		12.006.000	20.635.000	8.629.000

It is estimated in table 10 that total cost of project in Karang Ploso if the activities had been implemented effeciently there would have been Rp. 8.629.000,-- of saving.

If table 1 is observed in which it is impossible to equalize the cost realized and the cost planned to be the same, the consultant estimated that implementation of the project tend to use up all the budget. This was something that strengthened the consultant's idea that the cost of the project can be saved approximately Rp. 8.629.000,- as mentioned above The effeciency can be achieved by accurate and deliberate planning, especially in calculating the project budget.

2. Effectivity

In the irrigation canal project in Karang Ploso there seem to be a ponitive impact in promoting production of 50 hectares of rice field owned by 102 head of families, while the irrigation canal project in Jabung in promoting production of 135 hectares of rice field owned by 230 head of

fa,ilies. As a matter of fact it can be estimated that each of head of family owner only o,5 hectare, the 0,5 hectare rice field do not need work - ing employee instead of the family of the owner itself.

If the rice field is cultivated to grow rice two or three times a year.The maintenance of irrigation canal will cause the canal containing the water all year.

As a result it makes the rice field be irrigated all time and culturated during the year.

If the rice field is always cultivated and grown with combined crops the owner needs 10 assistances to cultivate each hectare of the rice field.

Supposing the system works, there will be (124 + 50) x 10 = 1.850 person employed.

3. Intensity.

With the cultivation of rice field all time and growing combined crops,besides it opens job opportunity for around 1.850 person, the owner's income is also mounting so the estimated multiflier of 2,85 will rise without any investment.

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FF/sj.

Table : 1. Respondents' Background of New style of labor intensive of construction Project (PKGB).
(n = 14)

Respondents' Residence	Absolute	%
- Native neighbourhood	14	100
- From other neighbourhood	-	-
- From other Rukun Warga (RW)	-	-
- From other Village	-	-
- Others	-	-
T o t a l	14	100

Table : 2. Respondents' Reason on Participation in The New Style of labor intensive (PKGB) Project.
(n = 14)

Respondent's Reasons	Absolute	%
Incentives	8	57
Village Chief's force	1	7
Duty	-	-
Benificial	2	14
Others	3	21
T O T A L	14	100

Table : 3. Respondents' fixed and income added (n = 14)

A kind of income got as	Fixed Income		Added Income	
	Absolute	%	Absolute	%
brick layer	1	7	1	7
farmer including peasant	10	71	3	21
administrator	3	21	-	-
coolie	-	-	2	14
jobless	-	-	8	57
T O T A L	14	100	14	100

Table : 4. Respondents' opinion of Income. (n = 14)

Respondents' opinion	Absolute	%
Insufficient	11	79
Sufficient	3	21
Minimum	-	-
Below the minimum	-	-
T O T A L	14	100

Table : 5. Respondents Effort to Suffice Needs (n = 14)

Respondents' Effort	Absolute	%
Debt to Neighbour	11	79
Aids from family	1	7
Temporer Working	1	7
Aids from son/daughter	1	7
T O T A L	14	100

Table : 6. Respondents' planning in Reimplemented of PKGB Project (n = 14)

Respondent's Planning	Absolute	%
Re-Active	11	79
Resign	1	7
Others	2	14
T O T A L	14	100

Table : 7. Respondents' Opinion of the Social Supports to PKGB Project (n = 14)

Respondents' Opinion	Absolute	%
Supported	11	79
Unsupported	-	-
Not Knowing	3	21
T O T A L	14	100

Table : 8. Participating in Maintaining of PKGB Project Building (n = 14).

Participation in Maintaining	Absolute	%
Yes	7	50
No	4	29
Others	3	21
T O T A L	14	100

Table : 9. Participation and Duty of Water users Organization in Maintaining Irrigation. (n = 14)

Participation and Duty	Absolute	%
Yes	14	100
No	-	-
Others	-	-
T O T A L	14	100

Table : 10. Irrigation Canal Maintaining Known by Respondents (n = 14)

Maintaining Way	Absolute	%
Priodical Mutual help	7	50
Maintained	4	29
Maintained by Officer in change and Mutual help	3	21
T O T A L	14	100

Table : 11. The Kinds of Mutual help Practiced by Respondents (n = 14)*

Kinds of Mutual Cooperation	Absolute	%	Clarification
Building House	8	19	)* n's answer more is than one answer
Construction of water canals	12	28	
Agriculture enterprise	12	28	
Construction village trackers	12	28	
T O T A L	44	100	

Table : 12. The Changes of Physical Condition after PKGB Project (n = 14)

Changing Condition	Condition of Physical Environment			Total
	Better	Bad	The same as before	
Changed	10	-	-	10
Unchanged	-	-	-	4
T O T A L	10	-	-	14

Table : 13. Better Changing Condition based on Respondents :

Respondents' Reason	Absolute	%
Production increased	3	12
Income increased	8	32
The Better the Environment	3	12
More Houses	3	12
The Wider the dum	1	4
Well ordered Irrigation	4	16
T O T A L	22	100

Table : 14. Respondents Opinion Concerning Land Value Sice PKG_ Project Imp'emented. (n = 14)

Respondents' Opinion	Absolute	%
Rising	12	86
The same as before	1	7
Not Knowing	1	7
T O T A L	14	100

Table : 15. Respondents' Opinion Concerning Economic Life After the Implementation PKGB Project.

Respondents Opinion	Respondents' Reason				Total
	Production increased	Income increased	Stability of Price Rice	The same as before	
Rising	8	3	-	-	11
Unrising	-	-	-	3	3
Not knowing	-	-	-	-	-
T O T A L	8	3	-	3	14

Table : 16. Decisive Factor of Position after PKGB Project According to Respondents.

Decisive Factor	Absolute	%
Decisive factor	4	29
Position/Occupation	10	71
T O T A L	14	100

Table 17. Source of Dispute and the Solution after PKGB Project

Sources of Dispute	Absolute	%
Children	2	14
Inharitance	8	57
Politic	1	1
Land	1	1
Jalousy	1	1
Others	1	1
T O T A L	14	100

Table : 18. The Solution of Dispute after PKGB Project Based on Respondents (n = 14)

Coped by:	Absolute	%
Kinship	8	57
Ulama's aids	3	21
Village Administrator	3	21
T O T A L	14	100

Table : 19. The Changes of Social Condition based on Respondents (n = 14)

Respondents Opinion	Absolut	%
Changed	-	-
Unchanged	14	100
T O T A L	14	100

Table : 20. Respondents opinion concerning the Attention to send their children to School after PKGB Project.

Respondents Opinion	Absolute	%
Increasing	9	65
Nott Increasing	2	14
Just the Same	3	21
T O T A L	14	100

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III. FLOOD CONTROL PROJECT

Three sub project samples were taken to represent output, input porpose and goals of this flood control project. By change these areas are, Kali Terong located in the Semarang regency, Kali Galeh located in the Semarang regency also, and Kali Daha in the Kandangan regency. The samples were chosen at random.

The Kali Terong project is located in the Ambarawa district in the Semarang regency. From the attached charts it is seen that these projects take place relatively near city areas. The population of the Ambarawa district according to the census taken in 1980 is 71,342 and the district area covers a total of 142 km^2. In the rainy season which is relatively heavy, usually a part of the area is covered with stagnant water. This stagnant area usually covers 1.21 km^2 or 2860 people.

The project in Kali Galeh is in the Ambarawa district in the regency of Semarang. This district is also in the vicinity of a city with a population of 71,342 people. (1980). It is hoped the project will include the surrounding area as seen on the chart. According to available statistics about 6.5 km^2 of this area is hit by floods.

This will present the results of the research from the social and cultural aspects, the agricultural aspect and the economic aspect. From each aspect will be forwarded the data that has been collected, the analysis and then the conclusion.

A. THE SOCIAL CULTURAL ASPECT

At the beginning it was assumed that the PKGB Project would change the social and cultural values that are upheld by the local population. But from the research results of the local residents around the PKGB there were basically no signs of any changes. The data which reflects no change will be presented in the first part of this report. The analysati on from this data will be presented in the following part and the final part will be the conclusions and recommendation.

1. The Survey Data Results

Based on recorded data from the social and cultural aspect in the

three district samples, to build a flood preven tion chanel using the PKGB plan the above mentioned project is affiliad ed by a large portion of the local village where the project is carri- ed out. This fact is visible in table 1 which shows that 110% of the respondats that were interviewed all came from the same area where the project was carried out. Their support in this project was principa - ly based on the idea that the above mentioned project would improve their income. They joir the project because they received a balance of payment for their participation. (see table 2) According to our assum- tion the activities of this flood prevention project was not meant to use mutual help, but to be an economic venture, even though the above mentioned project shows a mutual help participation.

Factually the workers of the flood prevention project was made up of farmers and fishermen (see table 3 & 4) who found it difficult to make ends meet economically. This can be seen in table 5 that shows 93% of the respondants did not earn enough to live by, while 7% earned just enough, In conditions like these they after owed money to their neighbours or always asked help from their close re- latives in the village to enable them to get enough money (see table 6).

The result of their economic condition makes them take any charge that comes along to improve their income, even though the amount they receive is quite small. The flood prevention project soon became an al- ternative for them to improve their income, because of this, if the flood prevention project is carried out again next year they will work together with this project (see table 7). If the project workers ga- in benefit from this project so do the other members of the district that do not join the project. Their area becomes flood free and the state of health improves. (See table 8).

Even though this flood prevention project is not seen as a mutual help participation is still has something to do with mutual help which is often carried out in the social life of the district. (see table 9). Not all the participation was known as mutual help even though this is the way it was done, for their work they recieved "donations" which did

not come under the category of mutual help. The types of mutual help done by the people includes building religius facilities water gutters and village roads. The unusual thing from all of this is the fact that building the water gutters including the chanel for the flood prevention project was put under the category of mutual help, where as the project never categorized this as a mutual help, the reason for this is that the workers knew they would receive money for doing this work.

Apart from all the afore mentioned mutual help another category of mutual help activity included various ceremonies in connnection with the social environment. This fixed customs goes on because of the concept of mutual help of the local people, which is strongly connected with the values they keep. This is the cultural system that values all things in their social life, that involves mutual help and togetherness.

Since the flood prevention project was functioning well it was felt that the conditions changed in their environment physically and socially. This change in their physical life (see table 11) was felt by all the people to be a good thing. The new aspects led to an area free floods, a healthy environment and so on, it all showed the social environmental conditions were better than before the project was carried out.

The changes were immediatly seen in the condition of the land-by getting better the class and the value of the land (see table 12). Raising the standard of land directly or indirectly also changed the level of life which was thought to be a good thing. The first level of change to be felt by the people was the economic one (see table 13). This was seen by better results of harvest because of the land being flood free-many of the people could repair and improve their homes, more farming areas and for the area of the edge of the sea where the boat owners could use the flood prevention chanel therefore reducing transport costs enabling them to save their money. (see table 14).

The eonomic change was felt by the people in their social life too. This felt influence included an instrumental social growth which

in turn helped communication to grow amongst the people, for example, women meetings were intensified, they had money for their weekly lottery (arisan), because of the improved harvest, or the rise in the amount of fish being caught. Intensified religious activities, intensified activities of the mothers union that is organized by the wives of the workers of the flood prevention project, and many more activities that point to an improved social life between the people (see table 15) all made possible with the extra money they now had.

Seeing all the improved activity as above, all coincide with the positive affect, of the flood prevention project, it did not affect the solidarity feeling of the people, it was like a good friend for them, all the integrated social affairs of the people can be held on to. These facts can be seen in table 16 which shows that 93% of the respondents know well, and get along with all the other residents of the district, because of this closeness problems can be dealt with in a family way, even though the problems are very variable for example from children problems up to a land dispute. As well as resolving these problems easily this friendship feeling is shown in the way in which they will help each other even going as far as giving their lives for one another. This is shown in table 18 which shows 100% of the respondents will get rid of thieves or shout for help if their nighbours need help. In a situation like this they feel safe living in their village even though the flood prevention project has interfered in their village life.

The feeling of solidaritory has not been disturbed or has not changed the social structure for the people especially in their social classes. This case can be seen in table 20, that shows 100% of the respondants say that the social respect of the people for one another and for the higher class is the same as it was before the project.

Another positive influence felt by the people is the ability for them to be able to let their children finish their high school and even to be able to let their children to get an even better education, all due to the rise in wages and the standard of living.

2. Analysis of the Meeting Results

Looking at the results of the meeting basically the project for the flood prevention using the PKGB did not bring about any cultural change to the local residents. They still held the same cultural values that they had always had, this came about because the making of the flood pre vention chanel did not contain any new cultural values that could take the place of the old ones.

The only change that came about due to the direct influence of the flood prevention project is the physical improvement in their living conditions which means that the project gave a positive effect to the area where the project was carried out. The local people now have a bet ter economic life making it easier for them to earn more money. The growth of this new economic life is the logical consequence from their better physical life. Other positif influences that can be seen in the local surrounding include the determination of the people to send their children to school to the highest level posible. Looking at these facts it can be seen that the PKGB project has helped to solve some of the pro blems faced by the local people, the problems that they raced for a brighter future.

3. Conclusions and Recommendations

With all the above findings it can be concluded that the existence of the PKGB flood prevention project was very meaningful for the local people where the project was carried out; especially in the fact that it improved their physical and economic life therefore helping them to a better and brighter, future. Even though these changes are very meaning ful they did not in any away affect the cultural values of the local people or affect the way they lived (socially) this project did not "rock" the local people.

With these kinds of facts this project was seen to be a way of raising the prosperous life of the people, in accordance with the aims of the project itself. For the project to be even more productive a follow up activity is needed. This involves the maintenance of the project, including intensive understanding of the usage and maintenance of the chanel for flood prevention.

To make the's activity workable, the participation of all the local people is required. To raise the participation level the local people must be allowed to join the planning of the project that will be carried out in their area. This is an important point because with their full participation in planning the project they will feel a real part of the project and there will not use any force to get the people work on the project, and no need to get people from outside their area to come in and do the work. In the planning frocess it must be remembered the social stratification of the society and they should not be left behind.

B. AGRICULTURAL ASPECT

Flood control project was aimed at creasing and improving farmers' income. Their standard of livings improved as farm products or net benefit increased.

Under the bases of evaluation farm, the's report will be served under the Cropical Framework, namely INPUT, OUTPUT, PURPUSE & GOAL.

1. The Inputs :

In this section we will deal with the wage paid to the laborers who work for the flood control scheme at Kali Terong and Kali Galeh of Kecamatan Ambarawa and at Kecamatan Daha Utara. The costs for purchasing materials for the construction of the flood control scheme, and the costs for the survey design and survey are considered as the inputs of the subproject.

As shown in Table 22, the total wages paid to the laborers of the flood control scheme was about Rp.40 million, of which about 90 percent used for unskilled labor, and about four percent for the skilled labor, and the remaining portion for the group leader.

Survey Design :

The distribution of the costs for flood control scheme subproject is summarized at Table 24. It is shown that, about 97 percent of the total costs was used for wages, about 100 percent for materials, and the rest for survey design and survey respectively, of the total cost of about Rp.50 million, about 38 percent used at Kaliterong, and about 23 percent and 40 percent at Kaligaleh and Daha Utama respectively.

Table: 24. Summary of total costs for flood control scheme subproject

I t e m s	Kaliterong (%)	Kaligaleh (%)	Daha Utama (%)	Total
W a g e s	95.5	100.0	96.2	
Materials	4.5	-	2.2	
Survey design	-	-	1.3	
Survey	-	-	.3	
Total (Rp) :	18,745,750	11,306,850	19,600,600	49,653,200
(%) :	37.75	22.77	39.47	100.0

2. The Outputs :

The outputs of the flood control scheme in term of the flood control instalation have not changed, since the work involved in the subproject was a rehabilitation works. It has been recorded from the survey that about 1,680 metres and about 150 metres of the instalation at Ambarawa and Daha Utara respectively has been rehabilitated.

The flood control scheme subproject has not changed the area harvested in the project area. As shown in Table 25, the area harvested remain the same between before and after PKGB.

Table : 25. The average area harvested in Ambarawa and Daha Utara:

I t e m s	Before PKGB (Ha)	After PKGB (Ha)
Ambarawa Kaliterong:		
with/project farming	.40	40
without/project farming	na.	na.
Kaligaleh :		
with/project farming	na.	na.
without/project farming	1.73	1.73
Daha Utara :		
with/project farming	47	47
without/project farming	88	88

3. The Purpose :

In this section, as well as in the same section of the irrigation scheme, we want to see also whether the flood control scheme will be able to increase the average yield per hectare and agricultural production, and whether it will be able to increase the efficiency of the farming system in the project area.

As shown in Table 26 the average yield per hectare of paddy of with project's farming system in Ambarawa increased from about 2.3 ton/ha to 5.2 ton/ha, an increment of about 130 percent, while that of without project one has increased about 11 percent only. The situation in Daha Utara was the other way round. The with project farms has decreased instead of increased. It has been revealed that the flood control instalation has destroyed by flash flood right after the completion of the subproject. In addition, during the flash flood there were many wild Carabao which incidently occupied the instalation. These in turn was suspected reducing the yield of paddy, and as the result the increment of paddy production in the with project's farms was not significantly different with that of without project's farms (see Table 27).

Table : 26. The average yield per hectare of paddy Flood Control scheme subproject.

I t e m s	Before PKGB (ton / ha)	After PKGB (ton / ha)	Growth rate (%)
Ambarawa :			
with/project farms	2.265	5.250	131.8
without/project farms	10.450	11.575	10.8
Daha Utara :			
with/project farms	1.833	1.800	-1.8
without/project farms	1.750	1.750	0

Table : 27. The production of paddy Flood Control scheme subproject.

I t e m s	Before PKGB (ton)	After PKGB (ton)	Growth rate (%)
Ambarawa :			
with/project farms	2.165	6.000	177.1
without/project farms	2.370	6.000	153.2
Daha Utara :			
with/project farms	2.033	3.652	79.6
without/project farms	1.750	3.500	100.0

4 . The Goal :

Although the production of paddy was not significantly improved, the net benefits of the with project farming system has increased considerably.

As shown in Table 28, the net benefits of the with project farming system is about seven times bigger than that of the without project one. Aside from that, it was revealed that.

Table : 28 . The net benefits of the farmers Flood Control scheme.

I t e m s	Benefits (Rp'000)	Costs (Rp'000)	Net benefits (Rp'000)
with/project farms	385.3	265.7	119.6
without/project farms	426.3	409.2	17.1

the subproject has increased employment not only for the farmers but also for the trade people, and in general it has improved the economy of the project area.

5. Analysis

To see whether the flood control scheme could increase the efficiency of the farming system in the project area, a crude B/C-ratio is used to verify this aspect as shown in Table 29, the crude B/C-ratio of the with project farming system is somewhat a little higher than that of the without project one, which means that the flood con trol scheme is not significantly improved the production of paddy.

Table : 29 . The crude B/C-ratio in the flood control scheme subproject.

I t e m s	Mean benefits (Rp'000)	Mean costs (Rp'000)	Crude B/C
with/project farms	385.3	265.7	1.45
without/project farms	426.3	409.2	1.04

Through the above-mentioned GPOI logical framework, we can see that the money invested by PKGB project in the flood control scheme subproject is worthwhile to be continued and developed, and benefitted not only the people who work for the project, bu also the farmers in the project area, especially with a little more care of the inexpected intruder as occurred in Daha Utara.

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Table : 22. Total wages paid to laborers for flood control scheme subproject :

Location	Unskilled labor (%)	Skilled labor, (%)	Group leader (%)	Total (Rp'000)
Kali Terong	88.9	6.0	5.1	17,909.2
Kali Galeh	89.3	4.9	5.7	11,306.8
Daha Utara	94.5	-	5.8	18,864.0
T o t a l :	90.9	3.6	5.5	48,080.0

The total labor involved in the subproject was 788 persons, of which about 90 percent as unskilled labors, and about four and six percent as skilled labors and group leaders respectively.

The costs for purchasing materials amounted to about Rp. 1.3 million, of which about 65 percent used at Kaliterong, and the other 35 percent at Daha Utama. The costs for survey design and survey was incurred for the subproject at Daha Utama only, of which about 80 percent used for.

Table 23. Costs for purchasing materials in flood control scheme subproject

K e c a m a t a n	Target (Rp)	Actual (Rp)
Kaliterong	836,500	836,500
Laligaleh	-	-
Daha Utara	435,800	436,800

3. THE ECONOMIC Aspect

Looking from the economic angle, the flood control project is hoped to create a work field and to raise the income of the local people. In this part we'll see whether these hopes could be reached.

1. The Survey Results Data

The flood control chanel project covers three areas, Kali Terong in the regency of Semarang, the Kali Galeh project also in the regency of Semarang and the Kali Daha in the regency of Kandangan. The data collected from the above mentioned projects are the following results:

a. Project Aims

The flood control chanel aims to raise and improve the flow of water, to raise prosperity and to control flood. With the improvement of the chanel for flood prevention the flow of water in the river was improved, so the river water could be use for the rice fields. Being able to water their rice fields from the river the farmers could sow the fields easier, therefore enabling them to improve their income. Besides this with the new flood control chanel the flooding was controled guarding against the loss of rice field due to flooding.

b. Project Concept

From the survey it is known that the planner of the project is the people (86%) and the officials of the village/distric/regency is (14%). This point proves that the people involved themselves in p l a n n i n g of the flood prevention chanel project. While the certainty of whether the project could be carried out or not came out as 57% of the local government(Pemda), 28% of the village chiefs and 15% of the regents.

c. The Carrying out of the Project

The carrying out of the project was just averagely done as seen in the survey results which stated that the above mentioned project had 57% no problems and slight problems totaled 43%. The -

project of the flood prevention chanel,5/% respondents said that the result was satisfactory and well done.

d. Project Costs

The costs of the flood prevention chanel project are made up from cost survey groups. The insentive to work money (IWM) the cost of goods and tools as seen in the following table:

Table 30. Total project costs (in rupiah)

	(+) Kali Terong	(+) Kali Galeh	Kali Daha Utara
Survey costs	50,000	50,000	50,000
Design survey costs	362,000	362,000	250,000
I.W.M.	27,624,250	11,306,850	25,404,000
Tool costs	840,000	874,000	436,000
Goods costs	6,737,500	-	-
Total costs	35,613.750	12.592,850	26,140,000
Chanel length	8,000 mtr	4,000 mtr	7,000 mtr
Costs per 1,000 mtr	4,451,000	3,148,000	3,734,000

Generally the total realisation costs for each project or group are always the same as the allowed budged. But in Daha Utara (North Daha) there was a 135% extra costs from the planned project costs, this was unavoiable due to the raise in the payment for the insenti ve to work. The actual cost totalled 102% more than was planned. The insentive to work scheme should have only been 750 rupiah per worker which in realisation came to 1,100 rupiah.

From the tabel above it can be seen that the total of the flood prevention chanel per 1,000 metres was highest in the Kali Terong a- rea. Comming to a total of 4,451,000 rupiah whereas the smallest costs occured in the Kali Galeh area equaling 3,148,000 rupiah.

e. Work Force

1) Insentive to work scheme.

Overal costs of the insentive to work scheme are seen in the following table.

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Table 31. Insentive scheme costs (in rupiah)

	Kali Terong		Kali Galeh		North Kali Daha	
	Planned	fact	Planned	fact	Planned	fact
Workers	600	600	600	600	750	1,000
Formen	750	750	750	750	900	1,100
Skilled labourers	1,200	1,200	1,200	1,200	-	-

The costs of the insentive scheme and the actual costs on the whole went according to plan, except in the North Kali Dana, it was planned to pay them 750 rp. Whereas they were actually given 1,000 rp. causing a rise of 33%. For the foremen it was Planned to give them 900 rup. whereas in fact it came to 1,100 rp. a rise of 22%. The project in North Kali Dana didn't use skilled labour.

The total costs of the insentive scheme can be seen in table 32 below:

Table 32. Total insentive payment for each project (in rupiah)

Kaling Terong	15,924,000	905,250	1,080,000	27,624,250
Kali Galeh	10,101,000	949,350	556,500	11,306,850
North Daha	24,360,000	1,044,000	-	25,404,000
Total :	36,053,000	2,598,600	1,636,500	40,288,100

From the above table we can see that for each 1,000 metres of the flood prevention chanel the insentive amounted to about 2,665,000 rp., the highest costs occured in the North Kali Dana area a total of 3,480,000 rp./per 1,000 metres, the lowest costs where at the Kali Terong area totalling 1,990,500 rp./metres.

The total costs of the foremen in this project came to around 141,000 rp. each, the highest costs where at the North Kali Daha area which came to 140,000 per 1,000 metres; while the lowest costs were at the Kali Terong project only 113,000 rp. per

1,000 metres. The insentive costs for the skilled costs were at the Kali Galeh area totalling 139,000 rp. per 1,000 metres. The lowest costs were North Kali Daha area which did not have any skilled labourers. From the above data it can be seen that the total approximate insentive payment was 3,302,000 rp. per 1,000 metres.

The highest insentive work payments were at Kali Daha that is 3,629,000 rp. per 1,000 metres, whereas the lowest total was at Kali Galeh only 2,826,000 rp. per 1,000 metres. At the North Kali Daha the costs were much higher because the wages in that area are higher.

The above data was taken from the cost data (the highest cost data) that was put forward by the head of the project.

2) Origin of the work force.

Table 33. Origin of work force.

Origin of work force	People	%
1. Differant neighbourhood, same district ..	43	25
2. Different distric same village	124	43
3. Different area samecounty	77	27
4. Different county same regency	26	9
5. Different regency same province	16	5
T o t a l:	286	100

The origin of the work force for the chanel of the flood prevention project in Kali Terong, Kali Galeh and in North Daha for the most part come from different districts, but still from the same village (43%) and from different villages but the same county (27%). All this means that when the project was in progres it used the work power from one province even though the overall percent used out of the province was only 6%. During the project the leader of each group of workers brought along with him 20 workers or there abouts while the skilled workers only, worked where they were really needed; thats why in the North Daha district no skilled workers were there because none were needed.

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3) Goods.

The flood prevention project did not need to use alot of goods as the largest part of the project only involved deepening and widening the river.

The project which used goods was in the Kali Terong and cost a total of 6,737 rp. Among other things the following goods were used. Rocks - 495 m^3 caples 4m/m - 7,500 kg. and bamboo rods 300 pieces. The above mentioned goods were obtained from a fellow worker in the area. With that the total of 6,737,000 rp. for the goods made a good addition to the local people because the goods were bought in their district.

4) Tools.

The costs of the goods are as seen in table 34.

Table 34. Tools costs (in rupiah).

	Absolute		Per 1,000 m	
	Planned	Actual	Planned	Actual
- Kali Terong	840,000	840,000	105,000	105,000
- Kali Galeh	874,000	874,000	218,000	218,000
- Nort Kali Dana	436,000	436,000	62,000	62,000

The overall cost of the tools, the planned cost and the actual cost was the same.

The average payment of the required tools was 128,000 rp. per 1,000 metres along the flood prevention chanel. The highest cost was 218,000 per 1,000 metres and the lowest cost was 62,000 rp. per 1,000 metres that was in the North Kali Dana district. Most of the tools including shovels, spades, baskets, bamboo, rope, hooks and so on were all bought in the area. The project therefore providing anotner positive tning for the local people.

5) Project results and funds.

After improvement the flood prevention area measurements in Kali Terong, Kali Galeh and the North Dana area as shown in table 35.

Table 35. Physical measurement of the chanel.

Length	Kali Terong	Kali Galeh	Kali Daha
Length	8,000 mtr.	4,000 mtr.	7,000 mtr.
Top width	3,5 mtr.	10 mtr.	4 mtr.
Bottom width	3 mtr.	8 mtr.	3 mtr.
Depth	1 mtr.	2.6 mtr.	-

100% of the funds for this project came from the PKGB.

The maintenance of these three projects is carried out in a mutual help fasnion.

6) Project benefits.

The project benefits in the Kali Terong area include:

a) Floods are avoided in the rice fields covering an area of 62 hec tares.

b) An increase in the rice yield up from 360 tons a year to 425 tons a year. An increase of 65 tons or a 18% increasement

c) The smootn flow of the river so the area becomes flood free.

The project benefits in the Kali Galen area include:

a) A guard against floods in the area cutting road repairs to a mi nimum.

b) Road repairs per year have dropped to 3 times a year from 5 ti- mes a year before. The cost of these savings totals 3,5million per year.

c) Sowing times have increased from once a year to twice a year.

The project benefits in the North Kali Daha area includes:

a) Floods area avoided in the rice fields covering an area of 750 hectares.

b) The river use as a control of stagnaht water.

c) The river becomes a border line between the crop yielding lands and the used for the buffaloes.

7) Increased income.

From the explanation in section 10 it clearly shows the project benefits. The increased income will come from thefact that the areas mentioned will be free of floods and the rice crop will be saved.

This matter brings about an improvement in farming, for example in Kali Galeh an icrease of 65 tons a year. With this the project has brougnt about an increase in income for the people around the area of the project. The mutiple figure from this increase cannot be counted from this survey. Using an approximate mutiple figure on the national level the increase will be 2.85 ; the increase in the area around the project can be guessed as seen in the following table.

Table 36. Approximate income increase (in rupian).

	Investment	Income increase
Kali Terong	35,613,000	101,497,000
Kali Galeh	12,592,000	35,887,000
North Kali Daha	26,140,000	74,499,000
T o t a l :	74,345,000	211,883,000

Souce: 1. Table 30.

2. $\Delta Y = KX\Delta I$

2. Analysis

From the above mentioned and presentated data the following analysis was made:

a. Efficiency

1) Total cost.

After counting one by one the survey results the total amount needed for the flood prevention chanel can be found, as in the table 30. This table will be compared with the planned total amount as seen in table 37.

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Table 37. The realisation, planned and devaluation total (in rp.)

	Realization	Plan	Devaluation
- Kali Terong	35,613,000	35,613,000	0 (%)
- Kali Galeh	12,592,850	12,592,000	0 (%)
- North Kali Daha	26,160,000	20,300,000	5,840,000 (28%)

Source : 1. Table 30.
2. DURP.

From the table we can see something peculiar where the debit is as large as 5,840,000 rp. Whereas the project was paid by the PKGB 100%. The budget for the project was 20,300,000 rp.

The question is where did such a large debit appear from the sum being 5,840,000 rp.

Many of the data differs for the North Kali Daha project, the data was collected in a survey and the results is an table 38.

Table 38. Total amount for the North Kali Daha.

	Survey	C.T.	Dir. Gen Office	Sub dep.
Survey costs	50,000	50,000	50,000	50,000
Design survey	250,000	250,000	250,000	250,000
Physical amount	25,840,000	15,963,000	17,000,000	16,400,000

Source: 1. Table 30.
2. C.T.
3. Office of the General Directorate (Kanditjen).
4. District Office.

From table 38 the total cost for the completion of the project differs from office to office. With this the lowest amount is from the head project office (C.T.) their figure is 16,263,000 rp. Meanwhile the other offices tried to finish the budget amount totalling 20,300,000 (table 37).

If all this is right then the amount to pay for each 1,000 metres is 2,323,000 rp.

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Looking at this the consultants decided that the approximate amount needed for each chanel are as follows:

Table 39. Approximate chanel payment and economising (in 000 rupiah).

	Survey amount	Economising
- Kali Terong	35,613	18,584	17,029
- Kali Galeh	12,592	9,292	3,300
- North Daha	26,140	16,261	9,879

Source: 1. Table 30.
2. Amount needed for each 1,000 metres; 2,323,000 rp.
3. Consultants evaluation.

2) Work Force

From table 31 and 32 the insentive amount that was used for the reparation of the flood prevention chanel are seen in the following table.

Table 40. Total insentive payment (in rupiah).

	Workers	Foremen	Skilled labour
Kali Terong	12,540	1,207	900
Kali Galeh	16,835	865	463
North Kali Dana	24,360	1,044	-
Total :	28,647	18,163	25,404

Source: 1. Table 31.
2. Table 32.
3. Consultants evaluation.

From table 40 it can be assumed that Kali Terong needs 3.6 rp. sentive payment for every metres of chanel, Kali Galeh 4.5 rp. in sentive payment per metres and the North Kali Dana needs 3.6 rp. for each chanel metres. Kali Galeh needs the larges insentive amount that is 4.5 rp.

The consultants decided that the insentive payment should be about 300 per metres of the chanel. Whereas the payment of 600 rp. to 1,000 rp. per day was held as fair enough.

3) Tools.

The amount paid out for each metres length of the chanel in Kali Terong was 105 rp., in Kali Galeh 218 rp., and in the North Kali Daha in came to 62 rp. Even though the amount paid out for tools in the Kali Galeh area was the most at 218rp. for each metres lengnt this is still though to be cheap enough.

b. Effectiveness

The aims of repairing the flood prevention chanel are; 1. To smoothen the flow of the water 43%, 2. to improve prosperity 43%, and to control flooding.

1) Smoothening the flow of water.

The smoothening of the flow of water results were considered good. This point is proved by the results of the interviews carried out with the local population and the officials.

2) Improving Prosparity :

The aims of the project to improve the prosperity in the area is proved by :

a) The flood free rice fields in Kali Terong which cover an area of 62 hectares. This results in the raising of harvest by 65 tons a year.

b) The now flood free rice fields in Kali Daha North which cover an area of 750 hectares.

c) The sowing times being improved from once to twice a year.

3) Flood control.

The aims of the project to control flooding in fact were successful and this resulted in the need to repair the roads fell from 5 times a year to 3 times a year in Kali Galeh. Also in Kali Terong the floods were less and the roads became smooth.

c. Intensification

From the results of the analysis above it can be said that the hopes of the project to control flooding, smoothen the water flow and improve the income of the local people were successful. And the results of the survey shows an improvement of the harvest in the Kali Terong area as much as 65 tons a year. And in North Kali Daha fields covering 750 hectares were flood free. If each hectares produces 3.8 ton every harvest (national approximate data) then this means an overall improvement of unhulled rice of 2.850 tons.

So the two areas will have additional farming results of 65 tons + 2.850 tons = 2.915 tons.

If the price of the unhulled rice is 100,00 rp. per tons then the resulting income will total 291,000,000 rupian.

This balance is in line with the estimated improved income of 211,000,000 rupiah as in table 36. So the mutiple figure of 2,85 is seen as fitting.

3. Conclusions and recommendation

a. Efficiency

From the outcome of the analysis above it is assumed that the insentive fee per metres lenght of the chanel should be between 3.6 and 4.4 per metres lenght of the chanel.

May be the insentive fee needs to be lessened to 3 per metres length of the chanel, by cutting back the workers in each group from 20 people to only 15 people so that the control will be more effective.

Apart from all this the head of each group must be given a target so that time wasting will not be so big.

b. Effectiveness

From the outcome of the analysis is can be seen that all the aims of the project were reached. The benefit from the chanel will be enjoyed longer by the local peop. .f the chanel is well looked after. With good maintenance the users of the land will think about

other things that can be beneficial to them from the chanel. Even though there are no investments noticable from the mutiple 2.85 that is the improvement in their income they will still get an additional 211,000,000 rupiah every year.

In another meaning the maintenance of the chanel would be less than 74,000,000 rupiah they will still get an improved 211,000,000 rupiah. The multiple will be greater than 2.85.

c. Intensity

With the positive and useful affects of the chanel the usage of the land will give an overal increase in the income of the farmers that use the land. With this overall improvement every level of the land will give maximum benefits, the usage of the land will increase ; giving an increase in income too. An increase in the income of the agricultural business will also increase the income in other levels such as trade, transport.

A P P E N D I X :

Table 1: The origins of respondents PKGB chanel project Flood prevention (n = 23)

Respondent origins	Absolute	%	Explanation
From local neighbourhood	23	100	includes the workers who were not PKGB members
From outside the neighbourhood	-	-	
From outside the village	-	-	
Others	-	-	
T o t a l :	23	100	

Table 2: The reasons for joining the project of the PKGB (n = PKGB workers 18).

Respondents reasons	Absolute	%
For compensation	15	100
Forced by the village chief	-	-
A necessity	3	-
For the benefits	-	-
Others	-	-
T o t a l:	15	100

Table 3: Respondents fixed income in the PKGB project (n = 23).

Respondents fixed yield as	Absolute	%	Explanation
Farmers	18	100	all of them are
Fishermen	-	-	PKGB members
Private farmers	-	-	
Small shop	5	-	
Others	-	-	
T o t a l:	23	100	

Table 4: Unfixed yield in the PKGB projec.

Respondents unfixed yield	Absolute	%	Explanation
Farmers	1	-	Group leader vil-
Animal farmers	3	-	lage people PKGB
Fishermen	2	-	workers
Without unfixed yield	18	100	
T o t a l:	24	100	

The results are more than n because some answered more than one question.

Table 5: Respondents comments on their income (n = PKGB workers = 18)

Respondents comments	Absolute	%
Not enough	14	100
Enough	2	-
Unsatisfactory	-	-
Very unsatisfactory	-	-
T o t a l:	18	100

Table 6: Respondents methods to improve their situation (n = 18).

Respondents methods	Absolute	%
Borrowing from neighbours	14	100
Ask help from fellow workers	2	-
Others	-	-
T o t a l:	18	100

Table 7: Respondents plans if there is another PKGB project (n = 18).

Respondents plans	Absolute	%
Join in again	18	100
Not join again	-	-
Others	-	-
T o t a l:	18	100

Table 8: People doubts or no doubts about the PKGB project according to the PKGB workers (n = 23).

Respondents comments		Respondents reasons		
	Benefits	Compensation	Obligatory	Other
Having doubts	23	-	-	-
Having no doubts	-	-	-	-
Don't know's	-	-	-	-
T o t a l:	23 (100%)	-	-	-

Table 9: Respondents comments on the tradional mutual help (n = 23).

Respondents comments	Absolute	%
Still in use	23	100
Not in use	-	-
Don't know's	-	-
T o t a l:	23	100

Table 10: The types of mutual help known to the respondants.

Type of mutual help	Absolute	%	Explanation
Building a house	23	100	From n = 23
Making a village road	23	100	"
Making water chanel	23	100	"
Carrying out social activities	23	100	"
Farming business	1	100	"

Table 11: Respondents comments on the physical soroundings changes and their reasons (n = 23).

Respondants comments	Respondants reasons			
	Suroundings improved	Bad change	same	Total
Noticable change	17	-	-	17
No change	-	-	6	6

Table 12: Respondants comments on the state of the land after the PKGB project (n = 23).

Respondants comments	Absolute	%
An improvement	13	100
Same as before	3	-
Don't know's	7	-
T o t a l:	23	100

Table 13: Respondants comments on their economic life after the PKGB project (n = 18) (only necw workers).

Respondatns comments	Absolute	%
Improvement	16	100
The same	2	-
Don't know's	-	-
T o t a l :	18	100

Table 14: Respondants comments on the improvement of their economic condition (n = 16).

Respondants comments	Absolute	%
Better harvest	5	100
Ability to improve their home	4	-
Improved boat activity	4	-
Improved farming	2	-
T o t a l:	16	100

Table 15: Respondants comments on the social changes (n = 18 PKGB workers).

Respondants comments		Respondants reasons			
	Women's meetings	Religious teachings	Social activities	Others	Total
Definate changes	8	3	7	-	18
No changes	-	-	-	-	-
Don't know's	-	-	-	-	-
T o t a l:	8	3	7	-	18

Table 16: Total of the neighbours that the respondants know well (n = 23).

Know neighbours	Absolute	%
Know all of them	20	100
Know most of them	2	-
Know some of them	1	-
Others	-	-
T o t a l:	23	100

Table 17: The source of legal actions and the way the PKGB workers solve these problems.

Source of dispute	Solving method		
	Family help	Religious help	Other
Children	3	-	-
Will	12	-	-
Land problems	3	-	1
Loans	8	2	-
Jealousy	10	-	-
Others	3	-	-

Table 18. The response of the respondents if their neighbours were attacked (n = 23)

Respondants response	Absolute	%
Help to disperse attackers	18	100
Shout for help	5	-
Ignore	-	-
Others	-	-
T o t a l:	23	100

Table 19: Respondants comments about the security of their village after the PKGB project (n = 23).

Respondants coments	Absolute	%
Safer	1	100
The same security	22	-
Not safe now	-	-
Others	-	-
T o t a l:	23	100

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Table 20: Respondents comments on the social structure and the deciding factor (n = 23).

Respondents comments	Deciding factor			
	Money	Class	Seniority	Other
No change	2	3	18	-
Change	-	-	-	-
Other	-	-	-	-
T o t a l:	2	3	18	-

Table 21: Respor nts hopes for their childrens education.

Respondents hopes	Absolute	%
The highest education level	17	100
Only religious schooling	-	-
As long as they can read adn write	-	-
Up to the child	4	-
No family as yet	2	-
T o t a l:	23	100

IV. FISH POND CANAL SUB PROJECT

Evaluation report of fish pond canal sub project will be similiarly reported as the other. The sequence of the reports is as follows social aspect followed by agricultural and economic aspects.

The stress of social analysis will be put on the impacts to value system adhered by people that live around the sub project. It was supposed that value system adhered by people was motivation of people participation in the project.

Agriculturally the analysis will be focused to the project's impacts on farm product increased which was benefitted by community. Income increased and employment utility are used to see the economic impacts of the fish pond canal sub project.

A. SOCIO-CULTURAL ASPECTS

1. Data Findings

Data of survey state that people at Rawamerta sub district, Karawang, West Java, participated in the fish pond canal sub project of new style of labours intensive. The table 1 states people live in that sub district come from various places. The reason that people remove is following husbands or wives. This means they remove as to marriage motives.

Well running transportation has great impact to land value particularly in the areas which was located close to fish pond canal sub project (see table 7). This condition has given impacts to physical environment and people's standard of living in which it is characterized by vendors established, trycycle transportation, oil and benzin newstand and repair shop (see table 8).

It was reported that physical changes did not give impacts to cultural and social value systems adhered by people. Table 3 states 57% respondents represent people's conducts match on value system adhered. Social stratification, before and after project implementation, remains unchanged. The indicators used to assess an individual is resource ownership which covers wealth, position or knowledge (see table 9).

Pertaining with resource domination, the social conflits which often arise deal with inheritance, debt. In addition, the source of social conflicts is caused by the children (see table 10). It is indeed a subject of former which used to arise within a community. This conflict was farmerly coped by friendliness under the bases of togetherness which was based on the cultural system adhered by community. As stated on the table 12, 86% respondents state they know or acquitance with all neighbours.

The reasons to participate in the project is various, as stated on the table 2. In general their participation was inspired by obedience to lurah's (village leader's) orders. This was felt as enforcement.

Essentially such an impression emerged as they did not own fish ponds. So they did not see any significance for themselves. Table 3 states labours including group leader have no steady jobs as fish pond owner. They work farmers holding lands or farm labour employed and vendors. So it is not unusual for them to have responsibility.

Moreover they did not see it as a mutual help which delt with collective interests. Though it was a subject to mutual help. By means this projects was not only benefitted by a few people but was it benefitted by public (people) (see table 4 telling the veriety of mutual help). Thus, it was seen as the economical project.

Despite of the mentioned impacts, the project implementation had brought about physical changes in the areas of sub project. (see table 5).The reason is dry lands could have been effectively utilized which directly gave impacts to fish pond operation (processing). Good processing may yield many more products. Considering the statement above, some respondents state that fish pond canal sub project has given impacts directly to facilitate the road transportation which links isolated villages (see table 6). 14% say they know some informal leaders.

Such a relationship has given a good effect to community security as stated on the table 13. Based on table 13, 86% respondents

they are willing to help neighbours to throw away thieves, 14% respondents will shout. Pertaining with village safety, respondents comment that the village remains safe prior to and post project implementation.

2. Analysis

Data obtained state that fish pond canal sub project of PKGB project did not bring about any changes which culturally influenced the values adhered by community. Since the project did not covers a new value system, some changes arise - technical system of resource utilization which cause fish products improved.

Culturally, fish pond sub project did not bring about impacts to community, but it had given a good impact to physical condition that caused economic standard of living to raise. It means that this sub project was supposed to cope with social problems.

3. Conclusion and Recommendation

Based on the discussion above, we way draw a conclusion that fish pond canal sub project of PKGB project has improved physical as well as economic condition of the village. The impacts might not have caused socio-cultural values adhered by people to change. There is no cultural deviation within the project areas and the village as a whole.

This is the fact that new Style of Intensive Labour Project might be a means to increase social prosperity as stated on the project mission. The following up program, maintenance, is worthwhile. Some guidance on fish pond canal utilization and maintenance, is required which is particularly related to social lives.

This may the done as people participate in the sub project, maintenance. Such a participation is required to plan the projects which will be implemented within an area. This will encourage people to be self belonging and responsible as to avoid being inforced. It should be born in mind that several aspects should be considered to stimulate people to participate.

B. AGRICULTURAL ASPECTS

It was expected that farmers especially fishery farmers might have benefitted. Fish pand canal project. It was expected to raise farm product particularly fish which would help farmers raise their income.

Based oour data gathered will be served to clarify the imports of fish pount canal to farmers income.

Under the bases of evaluation patterm, the survey re - sults is reported in the sequences of INPUT, OUTPUT, PURPOSE & GOAL.

a. The Inputs :

The wages or incentives that was paid to the laborers of the fishpond canal subproject which is considered as are of the inputs of the project, has been distributed between group leaders and unskilled labor. Hence, the distribution pattern more or less the same as the one of the rice-field terracing subporject.

As shown in table 17, the total wages amounted to about Rp. 13,8 million, of which about 94 percent allocated for unskilled labor, while the remaining amount paid to the group leaders.

Table 17. Total wages paid to laborers of fish-pond canal subproject.

Laborers	Wage (Rp. 000)	%
Group leaders	816.9	5.9
Unskilled labors	13,028 9	94.1
T o t a l	13.845.8	100.0

The distribution pattern of the cost for purchasing materials is a little bit difference than that in the previous section. In addition to tools and materials, fingerlings have been included in the items. As shown in table 18, the total amount was about Rp. 3 million, of which bout 65 percent was allocated to fingerlings, about 27 percent for tools, and the rest for materials.

Table 18. Costs for purchasing materials and fingerlings in fish-pond canals subproject.

I t e m s	Rp.'000,-	%
Tools	825.0	26.7
Materials	260.0	8.5
Fingerlings	2,000.0	64.8
T o t a l	3,085.0	100.0

The cost for survey design and survey was about Rp. 600 thousands, which is only about three ercent of the total costs allocated for the subproject. The biggest portion of the costs, like the other subproject, was used for wages or incentives also.

As shown in table 19, almost 80 percent of the total costs was allocated for wages, while the other percent was distributed for materials and survey design cum survey.

Table 19. Summary of costs in fish-pond canal subproject

I t e m s	Rp.'000,-	%
Wages	13,845.8	79.0
Materials	3,085.0	17.6
Survey design	600.0	3.4
T o t a l	17,530.8	100.0

b. The Outputs

The outputs of the fish-pond canal subproject can be seen as the canal itself. The length of the canal which has been constructed or rehabilited is about 6,300 metres, about five percent longer than targetted. It was recorded from our survey, that the width of the canal is about three meters, while the depth is about 3.15 metres, and the drainage canal is about 100 metres.

As the usult of this works, the area of fish pond has increased from 60 hectare to 80 hectare, an increment of about 30 percent. In addition, it has also increased the intensity of the fish-pond raising. It was revealed, that after the project the intensity has been increased twice.

c. The Purpose

As indicated in the previous sub-sections, the fish-pond area has been increased due to the construction or rehabilitation of the fish-pond canal. Hence, we can see that the PKGB project particularly in this subproject, was able to achieve its purpose, i.e. to increase the area of the fish-pond in the project area. However, it was revealed from our survey that the canal, which has quite beneficial impact on the fish-pond operators, on the contrary have some kind of negative impact on the other farmers.

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It was reported that because of the canal, there were many rice-field destroyed by sea-water. This situation, in turn create such kind of social conflict or "cold war" between rice formers and the fish-pond operators.

Even though some sort of quasi-social conflict exist, formers who owned both rice field and fish pond are yet benefitted from the project. From three respondents who has been interviewed, it was revealed that the average net benefit obtained by the formers was amounted to about Rp. 864 thousands, of which about 90 percent derived from rice field, and the rest from fish-pond and because of the relatively low cost of operation, the efficiency of the forming cum fish-pond system in the project area, which is estimated as the crude B/C-ratio, is quite high, i.e. about 3.4. Unfortunately, the data from those without project forms were not available, so that we could not see whether the figure is better than that of the without project.

d. The Goal

The goal of this subproject is similar to the other subproject of PKGB project, i.e. to increase the income of the formers, or in general, to increase the income of the people in the project area.

As indicated in the previous sub-sections, the net benefit of the sample formers mostly derived from rice-field assuming that the rice-field.

ECONOMIC ASPECT

1. Data Presentation

Survey on fish pond canal sub project of PKGB project was conducted at Jaya Negara, Rawamerta, Karawang district.

Survey results state as follows:

a. The Project Objectives

The project objective is to utilize dry fish ponds as stated by 20% respondents, to increase fishery productand to facilitate irriga tion in which each was stated by 20% respondents. It is assumed that the major objective is dry-land utilization which can not be reached out by water flows, and facilitating watering system to raise fishery products.

b. The Project Missions

The fish pond canal project was initiated by the chief of the village. Concerning the project implementation, 25% respondents sta te chief of sub district appealed the project, 25% explains the project appealed by chief of district, 25% say the project proposed by LKMD (Village Community Reservation Agency), and 25% represent the project suggested by technician.

c. Project Implementation

100% respondents state that the implementation project was running well (as stated by chiefs of village & sub district). 100% respondents that cover chiefs of village & sub districts and head of office of general directorate of development and utilization state no difficulties, to implement the project. The project results is suited to the expectation.

d. Project Costs

Costs distribution covers incentives (UPK), costs for materials and tools, survey and survey design as stated on the table 20.

Table 20. Total project costs (costs in rupiah)

	Planned	Actual	Deviation
Incentives (UPK)	13,845,825	13,845,825	0%
Materials	260,000	260,000	0%
Tools	825,000	825,000	0%
Seeds	2,000,000	2,000,000	0%
Survey design	600,000	600,000	0%
Total costs:	17,830,825	17,530,825	0%
Lenght	6,000 mtr.	6,300 mtr.	5%
Total costs/km	2,922,000	2,783,000	95%

Based on the table above , the distribution of cost for each item is as equivalent. The length of fish pond canal planned is 6,000 metres, meanwhile the realization is 6,300 metres. This has caused costs for 1000 metres to go down viz. based on the cost planned Rp 2,922,000/1,000 metres, actual cost Rp 2,783,000/6,000 metres. It means that the actual costs was reduced (95%).

e. Labours (workforce)

e.1. Incentives/wages (UPK).

Total incentives (UPK) paid is as follows:

Table 21. Total incentives & total incentives/1,000 metres (within rupiah).

	Absolute		per 1,000 metres	
	Planned	Actual	Planned	Actual
Incentives	13,845,825	13,845,825	2,307,000	2,197,000

Notes: - Length of fish pond canal targetted 6,000 metres.
- The actual length of fish pond canal 6,000 metres.

Table 21 states that total incentives was paid as the target, meanwhile total incentive/1,000 metres was reduced (95%).

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e.2. Incentives for labour group.

Workforce that parcicipate in the fish pond canal project deals with labors and head group. The cost distribution is stated on the table 22.

Table 22. Distribution cost for labors and head group (within rupiah).

	Labors	Head group	Total
Planned costs	13,209,500	636,325	13,845,825
Actual cost	13,009,500	636,325	13,845,825
%	100 %	100 %	100 %
Planned cost/ 1,000 metres.	2,168,000	139,000	2,307,000
Actual cost/ 1,000 metres	2,065,000	133,000	2,198,000
%	95 %	95 %	95 %

Target and actual cost for labors incentives and head group's paid as targetted.

The ratio of planned and actual incentives distributions for labours and head group is shifted - 95%. It was caused by the project implementation - target = 6,000 metres, actual = 6,300 metres.

e.3. Incentives per manday.

The incentive distribution paid for labors and head group is stated on the table 23.

Table 23. Incentives/manday per labors (within rupiah).

	Planned	Actual	%
Labor	525	525	100
Head group	675	675	100

The incentive distribution paid for labours and head group as the target. Based on the interviews conducted by a surveyor, the incentive/manday is Rp 1,050, as they work more than five hours. The incentive for head group/manday is Rp 800. It is assumed that there is matching between planned and actual cost.

e.4. Labor's residence.

The labors that participated in the fish pond canal project are from the project areas - village viz. Jaya Negara that 300 labors together 15 head group got involved. Each head group was responsible for 20 labors.

f. Materials

Costs for materials are stated on the table 24.

Table 24. Materials costs (within rupiah).

	Absolute/actual		per 1,000 metres		
	Planned	Actual	Planned	Actual	%
Materials	200,000	260,000	43,000	41,000	95

Total materials costs paid was as targetted, the actual cost for 1,000 metres was paid 95% out of the target cost. As it was caused by the extension of fish pond canal, 6,300 metres.

g. Equipment

Total costs for the equipment is represented on the table 25.

Table 25. Cost for purchasing equipment.

	Absolute		per 1,000 metres	
	Planned	Actual	Planned	Actual
Equipment	825,000	825,000	137,000	131,000

Table 25 state that actual cost for purchasing equipment is as the target. Compared to cost per 1,000 metres, data state cost for purchasing equipment per 1,000 metres is below the target Rp 131,000 (95%). This equipment was purchasing Sukabumi, for about 200 kilometres.

h. Costs for purchasing seeds

The total costs for purchasing seeds is shown on the table 26.

Table 26. Total costs for purchasing equipment.

	Absolut		per 1,000 metres	
	Planned	Actual	Planned	Actual
Seed	2,000,000	2,000,000	333,000	317,000

The total cost for purchasing seeds was Rp 2,000,000 and the seeds was purchased from the project areas.

i. Project output and fund

Fish pond canal project covers:

- length = 6,300 metres.
- width = 2 - 5 metres.
- depth = 1,5 metres.
- volume = 20,000 m^3

This project was financed by PKGB (100%).

j. Maintenance

This fish pond canal is self-help maintenance.

k. Project benefits

Based on data, this project gave a good impact to extend fish pond areas. It was estimated that the areas of fish pond was extended - 60 hectares to be 80 hectares as stated by the chief of office general Directorate Development and Utilization. This extension reached out 33%. Meanwhile the chief of sub district stated that, the area of fish pond was 70 hectares. Now it is 110 hectares that means the extension has covered 40 hectares equiva-

lent to 57%. The project has also given a good impact to insert fish. After the PKGB project people insert fish twice a year.

The following table states fish harvested times before and after the project.

Table 27. Fish harvesting per year.

	Before PKGB	After PKGB	Fish pond
Fish pond area	60 hectares	80 hectares	20 hectares
Fish harvested	1 x year	2 x/year	1 x/year
Total produced/ha	16 tons	42 tons	26 tons
Total value (in million)	112	294	184

Notes: 1. 7,000 seeds are cultivated in 1,5 hectare.
2. 1,5 hectares yields 400 kilograms
3. price sale is Rp 7,000/kilograms.

l. Rice field

Based on the survey this project did give a good impact to fishery product. It is assumed that acreage & harvested product remain unchanged. Since fish ponds are located close to the see. So it is understandable.

m. Increamental Income

This project did not give an impact on the increamental income of villages, since the project is located by beach which means that people living at Jaya Negara are not fishery farmers.

Estimating national multiplier, 2,05, the increamental income is shown as follows:

Formula : $\Delta Y = k \times \Delta I$

$k = 2,85$

ΔI = Rp 17,510,000.

Increamental income = 2,85 X Rp 17,530,000

= Rp 49,900,000.

The differential income Rp. 99,960, is regular, compared to prices before and after PKGB is Rp. 182 million (see table 8).

2. Analysis

Data presentation above was analyzed under the bases of :

a. Efficiency.

a.1. Total cost.

Total costs to rehabilitate fish pond canal is Rp. 17,530,000,-/1,300 metres, or Rp. 2,783,000,-/1,000 metres. The length of fish canal equivalent Rp. 2,783/metre, it does not likely cost too much.

The distribution of cost covers survey design, incentives (HPK), material, equipment and seeds costs.

a.2. Incentives

Total incentive is Rp. 13,845,000 or Rp. 2,197/incentive per metre. Total Manday is 24,780 mandays (HOK) (labors), 1,239 mondays/HOK for head group. It means that costs/manday is Rp. 523,-.

a.3. Materials

Total materials costs is Rp. 260,000 or Rp. 41/m of canal length. The costs is lower but feasible, because fish - pond rehabilitation does not require more materials.

a.4. Equipment

Total of equipment costs is Rp. 825,000 or Rp. 130/m canal length. This cost is feasible.

a.5. Seeds

Total seed cost is Rp. 2,000,000 or Rp. 20/one seed. Total seeds required is 100,000. 7,000 seeds are required to insert for 1,5 ha. So there are 21 hectares inserted, the area of fish ponds is 60 hectares or 36% out of the total fish - ponds.

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b. Effectiveness

The goal of this project is to utilize land (40%) dry fish - pond areas (40%) and to facilitate watering/irrigation (20%).

b.1. Land utilization

The target was achieved as the fish ponds extended (as the over target). The areas of fish pond before PKGB project 60 hec - tares, after PKGB project is 80 hectares.

b.2. Dry fish pond utilization

The target was achieved to the times harvest. before PKGB project time harvest is once year, after PKGB is twice/ year.

b.3. Watering facilitated

The flow of water is running as the observation was con ducted.

c. Intensity

Seeing the target project , 6000 metres of fish pond canal, the project realization is over target (6,300 metres). So the uti lization of land, dry fish ponds and irrigation were realized. It cause the income of fish pond sector to raise vize the increa- mental income is Rp. 189 milliom. The ratio of former income and the current income is Rp. 212 milliom : Rp. 294 millions (see ta- ble 8), equivalent to multiplier 2.85. This multiflier is feasible.

3. Conclusion and recommendation :

a. Efficiency

Based on the previous discussion we may draw a conclusion that total mandays (HOK) is less feasible, 4.13 manday/m of canal length. Total manday might have been lowered by reducing the total labor 20 labors to be 15 labors per a head group.
By a thorough control, a good result is expected.

b. Effectiveness

This projects is benefitted by the majority of people, parti

cularly fishery farmers, on one hand. On the hand it did not give an effect to increase farm products. So there sould be an effort to raise the project effectiveness under the bases of public interests.

c. Intensity

Seeing the effectiveness, it was expected that increamental investment will be raised.

APPENDIX

Fish pond canal project

Table : 1. Origins of Respondents of fish pond canal project (n = 7)

Origin	Absolut	%
Own village	4	57
Different village	-	-
Outside sub district	2	24
Outside district	1	14
Total :	/	100

Table : 2. Reasons to participate in PKGB project

Reasons	Absolut	%
Compensation	-	-
Forced labour	1	14
Obligation	3	43
Beneficial	1	14
Rashly	1	14
Being in weeds	1	14
Total :	7	100

Table : 3.

Respondents' Economic life PKGB project

Respondent	Fixed Job			Side job		
	Farmer	Trailer	Labour	Farmer	Trailer	Labour
Community members	2	-	-	1	1	-
Head group	1	-	-	-	1	-
PKGB Labour	1	-	1	-	-	2
Farmer without PKGB project	1	-	-	-	1	-
T o t a l :	5	-	1	1	3	2

Table : 4.

Kinds of mutual help equinted Respondents

Mutual help	Absolut	%	Explanation
House establishment	1	7	Total derived from n = 7.
Irrigation construction	5	36	
Farm business	-	-	
Village road construction	6	43	
Mosque establishment	1	7	
Blank	1	7	

Table : 5. Physical changes after PKGB Project (N = 7) :

Respondent	Physical condition			
	Better	B a d	Blank	Total
Changes	5	-	-	5
Nochanges	-	1	-	1
B l a n k	-	-	1	1
T o t a l :	5	1	1	7

Table : 6. Couses make physical condition better :

O p i n i o n	Absolut	%
Benefit	1	14
Better canal	1	14
Fish pond operated	1	14
Road constructed	1	14
Blank	3	43
T o t a l :	7	100

Table : 7. Respondents' Opinion land value after PKGB implementation (n = 7) :

Respondents' Opinion	Absolut	%
Improved	6	86
Remain unchanged	-	-
Blank	1	14
T o t a l :	7	100

Table : 8. Respondents' opinion on people's conduct under the bases of religious and Habit (n = 7) :

Respondents	Absolut	%
Fitting	4	57
Unfitting	2	29
Not fitting	-	-
Blank	1	14
T o t a l :	7	100

Table : 9. Respondents' perception or Desicive Factors that stratify person :

Devisive factors	Absolut	%	Explanation
M o n e y	3	33,33	More than
Occupation	1	11,11	one Response
Conduct	2	22,22	n = 7.
Knowledge	1	11,22	
B l a n k .	2	22,22	
	9	100	

Table : 10. Respondents' perception on conflict Source :

Source conflict	Absolut	%	Explanation
Children's problems	1	10	More than
Inheritance	2	20	one response.
L a n d	1	10	
D e b t	2	20	
B l a n k	4	40	
T o t a l :	10	100	

Table : 11. Respondents' perception on Problem solving

(n = 7)

Respondents	Absolut	%
Friendship	3	43
Ulama	-	-
Courts	-	-
Blank	4	57
Total :	7	100

Table : 12. Total Nighbors acquinted

(n = 7)

Neighbors acquinted	Absolut	%
Help to drive away	6	86
Shout to ask help	1	14
Silent	-	-
Total :	7	100

Table : 13. Respondents' perception on village safety after PKGB project (n=7) :

Respondents' perception	Absolut	%
Safer	2	29
Same	4	57
Unsafer	-	-
Blank	1	14
Total :	7	100

Table : 14. Village Safety before PKGB Project implementation (n = 6) :

Village safety	Absolut	%
S a f e s	-	-
Re ains safe	5	83
UNsafes	-	-
B l a n k	1	17
	6	100

Table : 15. Respondents' perception on Economic life after PKGB implementation (n = 6):

	Reasons				Total
	Stall-added	New employment created	Oils	Blank	
Increased	2	1	1	1	5
Decreased	-	-	-	-	-
Blank	-	-	-	1	1

V. RICE TERRACING PROJECT

This rice terracing project was organised with the aims of giving positive elements in the social, economic and agricultural aspects to the local residents around the project site.

In an effort to see the degree of influence of this project to the above mentioned aspects, data was collected from the cultural and social, economic and agricultural effects on the local residents around the project site. The logistic results will be shown in the following pharagraphs.

The data collected from this project sample was taken at Random. And by chance the chosen sample was the rice terracing project in the Desa Marga Kaya, Desa Kota Mekar and the Desa Marga Mulya in the district of Teluk Jambe.

The population of the Teluk Jambe district in 1980 was about 81,834. The area covers 2,298.60 Ha.

The first report that will be presented is the social aspect, after that the reported project effects on the agricultural aspect and finally the economi effects.

A. CULTURAL AND SOCIAL ASPECT

The rice terracing project basically did not affect the values which are held by the local people around the project site.
The above statement was taken from the collected results of the cultural and social data. Data that proves this fact will be dealth with in the early part of this report, followed up by the analysis, conclusions and recommendations of the social aspect.

1. MEETING RESULTS

Based on incoming detailed data reports of the cultural and social aspects, a new style working system for the rice terraces project was carried out by the local residents.

Table 1 shows that 100% of the respondents came from the same village. And if this is seen to differ the source of the difference is only in the local class harmony of the people. The reasons given by the local people for joining in the rice terrace project are many, as can be seen in table 2, but generally their participation stemmed from the fact that they were requested to do so by the village chief, a sort of obligatory thing from the local people to their chief, this sometimes was felt to be a forceful move, and the people themselves were forced to work.

The appearance of the above mentioned feelings in fact stems from the fact that they didn't feel that they owned the rice fields upon which they worked until the important job which they were doing wasn't felt to be an important thing for them personally. From table 3 it can be seen that the workers of this PKGB work that materialized the making of the rice terraces were made up of farmers including the foreman of their group, if this is in percentage it totals 67% of the workers were farmers, so the workers of the rice terrace project were not the owners of the land, therefore it' was natural for them not to feel a part of this project.

As well as the facts stated above, the slow carrying out of this agricultural activity was not seen to be an activity that had something to do with the cultural mutual help values, where the main idea is benefits and togetherness. From table 4 we can see that things based on the mutual help values are house making, making water canals, making village roads and other good social activities based on religious and relative connections, including other sudden things that crop up that must be solved by all the local people. With this the building of the rice terraces too were not categorized as a mutual help activity. The joining of the project for them was not formed with the longing to help their own fellow residents as in the case of mutual help. It seemed like a burden for them and didn't seem to be useful for them.

Even so the result of their work was seen to be a thing which had a positive effect on them, meaning with them working on the rice terraces project they could feel the affects of the improved physical life in their village (see table 5). Their reasons for saying that the life in the village had physically improved came from the fact that they were given an example on how-to till the land well, that will result in better harvests and not cause landslides. (see table 6). Another reason of the improvement of the physical life of their village stemmed from the arrival of transport between villages that came about; since then, their village could improve their agriculture.

The result of the improvement of the physical surroundings from their village directly improved the value of the land. (see table 7). In their village, particularly, land that had become rice terraces as well as the village physical life affects and the rise in land values the PKGB rice terrace project also had an affect on the villages peoples economic life. The effects felt by them included the improvement of their economic life, and the improvement in their conditions, that are shown by more and more road stalls and small eating places, the beginnings of a transport business called "ojeg" (motor cycle transportation) and the most important ting is being more chances to work in the agricultural sector because of the intensive planting of rice in the rice fields. (see table 16).

The changes that came about as mentioned above did not affect the social value system or the social life of the local people. This fact can be seen in table 8 where 100% of the respondents said there was no change in their traditional customs. The facts from table 8 are strengthened with facts stated by the respondents in table 9. In this table 67% of the people said that their day to day activities were still in accordance with the values as put down by religion and traditonal customs. And so with the village class

structure there were no significant changes. As was the case before the rice terrace project was carried out, the status and class of the people in the village depended on whether that person was rich or poor. The richness or poorness of a person is the indicator that is used in the area depending on the amount of money a person has and the amount of possessions he owns. (see table 10).

Because the possessions used to determine the position of a persons social class is money many social disputes are caused by this social power struggle, social power in this sense meaning not only the amount of possessions but the influence they have on the surroundings, that directly or indirectly can become a source of "income" for the person who has this influence.

Because of this local level will and political power disputes (village and district levels) in table 11 it can be seen to be the main source of social disputes in the local surroundings.

To solve these local disputes the local people still use their own traditional methods, using the family way that comes from their togetherness (see table 12). This family way to solve any problems is made possible because of the strong ties in the social relationships between the people which is reflected in table 13, shows that 84% respondents stated they knew well the local people & 16% of the respondents never answered the question

So good and friendly is the social relationship in the village that the safety of the village is carried out by the villages themselves. This point can be seen in table 14 where 67% of the respondents said that they would help to get rid of robbers if their neighbours were bothered by them. The result of the above mentioned conditions is that the whole population of the village feels secure, and this is reflected in table 15 which shows that the security felt by the local people before and after the completion of the project is the same.

2. Analysis of the meeting results

Looking at the results of the above mentioned meeting it can be seen that the PKGB project for the making of rice terraces did not in any way change the cultural values of the local people. The same values were still held by the people and the ability to keep hold of these values came about because in the making of the rice terraces no new cultural values were introduced. If there was any newness brought abcut by the project it had something to do with technical methods to till the land in a better way, these methods did not contain any new cultural values.

Even though it did not change any of the cultural values in the local surroundings, the rice terracing project brought about a better physical life for the people. This means that the PKGB project brought with it a positive affect in the area where it was carried out. Other positive elements of the project included the improvement in the villages economical life, which is a direct consequence from the improved physical life style, and this means that the project has solved one of the problems of the local people and that is the bringing about of a better economical life style for the local people.

3. Conslusions and recommendations

In accordance with the above mentioned facts it can be assumed that the rice terrace project looks as though it brought something meaningful in the area that it was carried out, especially in the improvement of the villages physical life and economic life. Even though these changes were very important for the local people the project never changed the cultural values which the basic way of life for the people in their social activities, until it can be said that the project in no way "rocked" the life of the local people.

With these kinds of facts the PKGB project can be seen as something that improved the prosperity of the local people, in accordance with the aims of the project itself. So that this project could be even more successful, there was a follow up of the project needed

Including the need to maintain and look after the rice terraces. Including in this intensive study is the maintenance and benefits of the rice teracing project.

So that the above mentioned conditions could be upheld the participation of all the local people is needed. To improve the act of participation of the local people to join the project then they must have a say in the planning of the project that will be carried out within their area. This is important because as they join in the planning of the project they will feel that the project is something that belong to them personaly, so they will not feel pressured into working on the project by people from outside of their surroundings.

B. AGRICULTURAL ASPECT

Terracing field project which organize input to product output aims at in creasing farm product. It is expected that farm product increased will raise farmers; income.

The Inputs of teracing field project cover workfares (labor), equipment/tool, mat-rials and time which take farm of cost value to yield in incentives (UPK), material and tool purchased.

The output of this project is represented to be terraced.

Total rice products of with and without project will reveal product harvested.

Net benefit of farm product will be a means of increamental income assested.

The Details of this report reveals as follows input, output, purpose, and goal.

1. The Inputs :

Like in the previous section, in this section we will again deal with the wage paid to the laborers involved in rice-field terracing subproject in Karawang. The other items i.e. the costs for purchasing materials for the construction of the rice field terrace, and the costs for survey design and survey are also considered as the inputs of the subproject.

As shown in Table 20 the total wages paid to the laborers of the subproject was about Rp.15.8 million, of which about 94 percent used for unskilled labor, and the rest for the group leaders.

Tabel: 20. Total wages paid to laborers for rice-field terracing subproject.

Laborer	Wage	
	(Rp'000)	(%)
Group leader	929.2	59
Unskilled labor	14,868.0	94.1
Total :	15,797.2	100.0

The costs for purchasing materials amounted to about Rp.4.8 million, and are used as targetted about 82 percent of the costs used for materials, the remaining amount used for tools.

Table : 21. Costs for purchasing materials in ricefield terracing subproject.

I t e m s	Target (Rp'000)	Actual (Rp'000)	(%)
T o o l s	850	850	17.7
Materials	3,950	3,950	82.3
T o t a l :	4,800	4,800	100.0

The costs for survey design and survey, as can be seen in Table 21, was used also as targetted, and amounted to Rp 300 thousands, of which about 83 percent used for survey design, and the other 17 percent used for survey.

Table : 22. Costs for survey design and survey in rice-field terracing subproject

I t e m s	Target (Rp'000)	Actual (Rp'000)	(%)
Survey design	250	250	83.3
Survey	50	50	16.7
T o t a l :	300	300	100.0

The distribution of the total costs for rice-field terracing subproject is summarized at Table 23.

The figures in the table reveal that, about 76 percent of the total costs was used for wages, and about 23 percent was used for purchasing materials. The other one percent, then used for survey design and survey.

Table : 23. Summary of costs in rice-field terracing subproject

I t e m s	Rp.'000	(%)
W a g e s	15,797.2	75.59
Materials	4,800.0	22.97
Survey design	250.0	1.20
Survey	50.0	.24
T o t a l :	20,897.2	100.00

2. The Outputs :

The outputs of the rice-field terracing subproject can be seen in term of the extent of the rice-field which has been terraced, and the average area harvested compared to the farms without project.

It was revealed during the survey done by our emmerators that, by terracing the rice field, the area has increased from 20 hectares through 30 hectares, an increment of 50 percent. The construction of rock bed and outlet facilities in this rice-field terracing works has improved the condition of the rice-field.
In addition to that, it has also conserve the soil of the rice field from erosion.

As shown in Table 23, the average area harvested of the with project's farms has been about tripled of the without project farms.

Table : 24. The average area harvested in rice-field terracing subproject

Farmers	Paddy (ha)	Green pea (ha)
with/project farms	2.83	-
without/project farms	50	-50

5. The Purpose :

It has been demonstrated in the previous sections that the output of the subproject in term of rice-field hectarage and average area harvested had increased due to the rice-field terracing subproject. However, the subproject did not increased the yield per hectare of paddy but the green pea. As shown in Table 24, the yield of paddy of the with project farms is smaller than that of without project parms, while that of green pea of the with project farms is a little higher than that of the without project one.

Table : 25. The average yield per hectare of paddy and green pea - Rice field terracing subproject.

Farmers	Paddy (ton/ha)	Green pea (ton/ha).
with/project famrs	4.7	5.0
without/project farms	'4	'3

Even though the yield per hectare of paddy of the with project farms is a little smaller than that of the without project, the production is still higher. From Table 23, and Table 24 we can see that the production of paddy of the former farms has been about five times bigger than the later one; i.e. about 13 tons compare to about 2.5 tons.

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This in turn increase the net benefit of the with project farms as shown in the following section.

The impact of the rice-field terracing works on agriculture in the project area could be seen from the crude B/C- atio of the farming system in the area. As shown in Table 26, the crude B/C-ratio of the with project farms is much higher than that of the without project. This figure indicates that although the purpose of PKGB in this particular subproject in term of increasing yield per hectare was not achieved, the other purpose in term of increasing efficiency has been achieved considerably.

Table : 26. The crude B/C-ratio in the rice-field terracing subproject

Farmers	Benefits (Rp'000)	Costs (Rp'000)	Crude B/c ratio
with/project farms	1,883.3	297.5	6.3
withougt/project farms	70.5	193.0	'4

4. The Goal :

It is indicated in the GPOI logical framework for the rice-field terracing subproject that, the goal of the PKGB is to increase the income of the farmers in the project area. To see whether the PKGB project has increased the income, the net benefit of the with project farms has been calculated, and compared to that without project one.

As shown in Table 26, the net benefits obtained by the with project farmers is tremendously bigger than that of the without project farmers.

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Table :27. The net benefits of the farmers in the rice-field terracing subproject

Farmers	Benefits (Rp'000)	Costs (Rp'000)	Net benefits (Rp'000)
with/project farms	1,883.3	297.5	1,585.8
without/project farms	70.5	193.0	- 125.5

We can see from the discussion in this section that, although the subproject did not achieve one of its purpose, i.e. to increase the yield per hectare, the other purpose, however, has been achieved. And hence, through considerable increment of the area harvested, the production could be increased, which in turn increased the net benefit of the farmers in the project area.

3. The Economic Aspect.

1 Data presentation :

The rice terracing project covered three areas covered the Marga Mulya, project in the Teluk Jambe district in the regency of Karawang for this survey only.

From the survey results the following data was collected:

a. Project Purpose :

The rice terracing project in the Marga Mulya distric aimed to:

1) Erosion Prevention 20%
2) Land utilization 20%
3) Work force assembling 20%
4) Production improvement 20%
5) Raising the people's income ..... 20%.

The above mentioned aims can be said to be one and the same. The land which before the project was eroding and now erosion has been prevented so all the land can now be put to use.

With the usage of this land the assembling of a work force is brought about enabling them to raise production results, all adding up to an increase in the local economy of the people.

b. Project Plan :

The rice terracing project was sparked off by:

1) The peoples figure ..... 50%.
2) The district officials ..... 50%.

Whereas the desicion to carry out the project came from the General Director of Binaguna.

c. Carrying out of the project :

From the results of the survey the project was seen to have been carried out smoothly with no setbacks. This point was put forth by the head of the Teluk Jambe sub-district.

d. Project costs :

The project costs of the rice terracing project in the Marga Mulya district was made up of five kinds of payments which were; the survey costs, the design survey costs, insentive work (I'') payment, goods costs and tool costs. Whereas the planned and actual costs are seen in table 28.

From the following table it can be seen that the planned and actual costs were the same, that goes for all groups of payments.

Tabel : 28. Total Project Costs (in rupiah) :

	Planned (rp)	Actual (rp)
S u r v e y	50,000	50,000
Design survey	250,000	250,000
IT	15,797,250	15,797,000
Goods	3,950,000	3,950,000
Tools	850,000	850,000
T o t a l	20,897,250	20,897,250
Total project area	20 hectares	20 hectares
Total payment per hectare	1,044,000	1,044,000

e. Work Force :

1) Incentive work payment (IT) :

The amount of IT payment is seen in table 29.

Table 29. Incentive work payments (in rupiah) :

	Planned		Actual	
	Total	Per hect.	Actual	per hect.
Workers	14,868,000	743,000	14,868,000	743,000
Group leader	929,250	46,000	929,250	46,000
Skilled labour	-	-	-	-
Total :	15,797,250	789,000	15,797,250	789,000

From table 29 it can be seen that the total IT whether for IT or the work groups comes out as the same planned and actual payments.

2) IT per working day (WD) :

The amount of IT per WD is seen in table 30.

Table : 30. IT per WD (in rupiah)

	Planned	Actual
Workers	600	600
Group leader	750	750
Skilled labour	-	-

From the report the factual amount of IT/WD payment is 600 rp. for the workers and the IT/WD for the group leaders is 750 rp. and the skilled labour IT/WD payment is 1,200 rp.

Here it is seen that the skilled labour was not planned for, but in the report is the payment of 1,200 rp. for skilled labour. From the survey results the workers received 900 rp. IT/WD because they worked overtime and received the registered overtime payment of 900 rp.

3) WD Total :

From tables 29 and 30 can be found the total payment for the working days with the total payment of the workers wages per day as seen in table 31.

Table : 31. Total working days payment.

	Total Payment	WD Payment	WD Total
Workers	14,868,000 rp	600 rp	24,780 rp
Group leader	929,250 rp	750 rp	1,239 rp
Skilled labour	-	1,200 rp	-
T o t a l :			26,019 rp

Information source :

1. Table 28.
2. Table 30.
3. Consultants calculations.

The project needed 26,019rp. total WD payment on an are of 20 hectares. So the total WD payment per hectare was 1,300 rp.

4) Origins of work force :

a. Goods :

The amount needed to pay for required goods is seen in table 32.

Table: 32. Total goods payment (in rupiah)

	Planned		Actual	
	Total rp.	per hect.	Total rp.	per hect
G o o d s	3,950,000	197,000	3,970,000	197,000

Information source :

1. Table 28.
2. 20 hectares.
3. Consultants calculations.

The amount of payment needed for the goods was the same both in the planning and actual payments. The amount of payment for goods per hectare is 197,00rp. The actual goods included bamboo' fertilizer, rice, peanuts, peas, fruit, corn, crushed rocks and other things.

All the necessary goods were available in Karawang.

b. Tools :

The payment for the tools can be seen in the following table 33.

Table: 33. Payment of Tools (in Rupian) :

	Planned		Actual	
	Total	per hect.	Total	per hect.
T o o l s	850,000	42,000	850,000	42,000

Information source : 1. Table 28.
2. 20 hectare project area
3. Consultants estimates.

The planned and actual costs of the project tools were the same.

The cost of goods per hectare is 42,000 rp. Those tools included forks, spades, short knives and others. The above mentioned tools were obtained in Sukabumi and some also obtained in Krawang, the tools were all Indonesian made.

h. Project results and fund :

The total area covered by the project was 20 hectares, and after completion of the project the rice growing area become 30 hectares or a rise of 50%.

The state of the land before the project could only be used to grow grass and cassava.

After sowing corn and soya beans the results were not satisfactory. Even though the project took place in the dry season the rice dried up because the rice fields were located on the edge of a hill and formed a rain recepticle chanel.

The plants that were successfull were the Lamtorogung plants but these were only located at the edge of the rice fields and were used as an erosion prevention.

The rice terracing project was paid for 100% by the PKGB.
Next year in the sowing season peas will be tried.

i. Maintenance :

The maintenance of the rice terraces after the project was left entirely up to the land owner. At the time of this survey the land was in a good condition, meaning no erosion, the area was dry with it being the dry season.

j. Project benefits :

The benefits of the rice terrace project were not yet seen at the time of the survey. Firstly the land was used to plant corn but the crop failed, secondly the land was used to plant soy beans but this also failed.

During the next sowing season peas will be tried. With this the benefits of the project as well as erosion prevention are still being looked for.

k. Improved income :

From the analysis it can be seen that there is no proof of income improvement because the people have already tried with corn and soya beans but failed. Therefore the national multiplier of 2.85 is not seen in the results of the rice terracing project.

2. Analysis :

From the presented data above we can make an analysis as seen below:

a. Efficiency :

1) Total costs.

If we look at table 28, the planned and actual payments are the same. A thing that is not possible.
With this the consultants agreed that the project executive tried to finish all the budget that was available for the project, or there were plans that were not carried out because the budget was already finished.
Because the consultants did not receive uncarried out plans data then the first point seems the most possible reason for this happening. Even so the cost of the rice terrace project per hectare was 1,044,000rp. and the cost of each meter of project was 104rp. a cost which is estimated to be quite low.

2) Work force :

The work force costs per WD where the workers/WD was 600rp. and the group leader/WD was 750rp. was thought to be low enough. From the report can be seen that the skilled labourers got 1,200rp and in the plans there was thought to be no need to use this skilled labour.

From table 31 can be seen that 26 019 WD were needed or 1,300 WD per hectare or 0,13 WD per square meter. An efficient work force.

3) G o o d s :

The costs of the goods reached 3,950,000rp. or 197,000rp.per hectare or 19,70rp. per square meter. (table 32).
This total was also assumed to be low enough.

4) T o o l s :

Also thought to be satisfactory was the costs of the tools per hectare which came to 42,000rp or 4.20rp. per square meter.

b. Effectiveness :

The aims of the project were to prevent erosion, utilization of the land, assembling a work force, improving production and raising the people's incomes.

1) Erosion prevention :

The aims of the project were seem to be satisifactory enough. This point is proved by the survey results that no erosion of the land was visible.

This point is sharpened by the restoration of the land which was carried out by the owner.

2) Land utilization :

The aims of the project to utilize the land can also be said to be satisfactory, where the area of the land at the beginning was 20 hectares and after the project this became 30 hectares; a rice of 50%.

3) Assembling of a work force :

The aims of the project to enable the assembling a work force, until this time are not visible. This is because the benefits of the land cannot be felt yet, because the farmers have not yet found an ideal plant to grow in the land.

4) Improved production and increased incomes :

With the inability in the use of the land for farming the improved production and increased incomes have not yet come about.

c. Intencity :

From the results of the analysis above it is proved that the rice terracing project cannot yet bring about an increase in income. With this the multiple national figure of 2.85 will not come about in this project, the benefits from this project are in the land used for farming. So the increased income only lasted as long as the project was being carried out.

J. Conclusions and recommendations :

a. Efficiency :

From all the above points it is analysed that the carrying out of the project is already efficient enough, even though there is a peculiarity in the fact that the planning and actual amounts were 100% the same.

b. Effectiveness :

While this rice terracing project was efficient it was not effective. It will only be seen as effective if the rice terraces can produce something.

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The wet rice fields in Krawang are dependant on rain. Therefore sowing can only take place in the rainy season. Because of this the consultants decided that the sown crop must be a sturdy one that wouldn't die even in the dry season. Crops such as rambutan, blimbing and jambu for example.

The choice of the sturdy crop must be with the help of the government, who can find the most ideal crop to plant in accordance with the kind of land that they have in Krawang. The crop Lamtorogung lives thrives on the edge of these wet rice fields, as well as helping to prevent erosion. The Lamtorogung plant can also be used for animal fodder.

So what is wrong with planting a large part of these rice fields with Lamtorogung and the owners change from being farmers to become animal farmers.

As well as the Lamtorogung being planted the consultants also decided that the dependent rice fields could also be used to plant grass (Pennisetum Purpureum or elephant grass to be animal fodder. This kind of grass can be stored, so in the rainy season the grass grown which grows very well can be cut and stored for food for the animals during the dry season. (It is called silage or hay). With this system the animal farmers will have enough grass to last for the whole year.

c. Intensity :

It has already been stated that the only aim of the project was the prevention of erosion. Whereas the other aims of the project including the utilization of the land, the assembling of a work force and the improvement in production and an increse in income cannot as yet be carried out. These aims will be realized as soon as the land can be used for something.

In paragraph 2 the consultants decided that the rice terracing project was not unconditionaly meant for the crop farming. But the wet rice terracing was also ideal for livestock and the fodder which they need. Such as lamtorogung and elephant grass. For the elephant grass one hectare could produce 50 tons of grass per year.

This grass also can stand the hot dry season for up to 4 months. For example if this grass was used for feeding the goats in one hectare of land 50 goats could be raised because 1 goat needs about 3 kilos of grass a day. So if the overall area of the land is 30 hectares then 30 x 50 = 1,500 goats can be raised.

Example : The price of one goat is 50,000rp. and the price of the young goat is 10,000rp, then on a area of 30 hectares will result in an increase of (rp. 50,000-rp.10,000) x 1,000
60,000,000 rp.

The added value of 60,000,000rp, if compared with the total cost of the reparation of the rice fields which is 20,897,000 rp comes to 2.87.

This point means that if the wet rice terracing fields are used for planting fodder for animals then the resulting figure will be as big as the figure from the national multiplier: 2.85.

A P P E N D I X : V.

Table : 1. Origins of the project respondants:
Rice terracing PKGB (n=6)

Origin	Absolute	%
Own village	6	100
Different village	-	-
Others	-	-
T o t a l :	6	100

Table : 2.
Reasons for joining the PKGB project
(n = 6)

Reasons	Absolute	%
Compensation	-	-
Forced labour	1	17%
"Obligations"	3	50%
Beneficial	1	17%
Others	1	17%
T o t a l :	6	100%

Table : 3. Respondents economic life.

NSCW Project (n=6)

Respondent	Fixed job			Side job		
	Prt. farmer	Farm hand	Blank	Prt. farmer	Farm hand	Blank
NSCW Worker	-	2	2	-	-	-
Group leader	-	2	-	-	-	-
T o t a l	-	4	2	-	-	-

Table : 4. Conclusions and kinds of mutual help according to the respondants (n=6)

Respondants comments	Kind of mutual help				
	house bilding	canal building	farming affairs	road building	Blank
Still know	3	3	-	5	-
Not known	-	-	-	-	-
Dont know	-	-	-	-	-
T o t a l :	3	3	-	5	-

Table : 5. Respondants thoughts on the physical changes in the surroundings (n=6) :

Respondent thoughts on the change	Physical life changes			TOTAL
	Better	Worse	Blank	
Total changes	3	1	1	5
No change	-	-	1	1
T o t a l :	3	1	2	6

Table : 6. Thoughts of the respondants on the things that make their life better (from 3 questions):

Respondents thoughts	Absolute	%
1. The example on how to raise production and prevent erosion.	1	33%
2. The appearance of village transport	1	33%
3. Blank	1	33%
T o t a l :	3	100%

Table : 7. Respondents thought on the value of the land after the PKGB project

Respondants thoughts	absolute	%
Better	4	67%
The same	-	-
Blank	2	33%
T o t a l :	6	100%

Table : 8. Respondents thoughts of the changes of their traditional lifestyle :

Respondent thoughts	absolute	%
Changed	6	100%
No change	-	-
Blank	-	-
T o t a l :	6	100

Tabel : 9. Respondents thoughts on the behaviour of the people according to their religion and traditions before and after the project

(n = 6)

Respondents thoughts	Absolute	%
Fitting	4	67%
Un fitting	-	-
Not fitting	2	33%
T o t a l :	6	100%

Table : 10. Respondents thought on the methods used to fix the class of a person in the village :

Respondents thoughts	absolute	%
Money	2	33%
Position	1	17%
Honesty	1	17%
Respect	1	17%
Blank	1	17%
T o t a l :	6	100%

Table : 11. Respondents thought on the causes of disputes

Respondents thoughts	Absolute	%
Because of children	1	17%
Will disputes	1	17%
Political problems	2	33%
Blank	2	33%
T o t a l :	6	100%

Table : 12. Respondents thought on solving these disputes

Respondents thoughts	Absolute	%
Family way	5	83%
In court	-	-
Blank	1	17%
T o t a l :	6	100%

Table: 13. Number of neighbours known to the respondents

Known neighbours	Absolute	%
All known	5	83%
Most known	-	-
Ex act amount	-	-
Blank	1	17%
T o t a l :	6	100%

Table : 14. Actions of respondents if neighbours are attacked

Respondents actions	Absolute	%
Help to get rid	4	67%
Shout for help	1	17%
Blank	1	17%
T o t a l :	6	100%

Table : 15. The state of the security in the village before and after the PKGB project (n=6) according to the respondents.

Village security	Absolute	%
Safer	-	-
The same	5	85%
More unsafe	-	-
Blank	1	15%
Total :	6	100%

Table : 16. Respondents thoughts on the economic state before and after the rice terracing PKGB project (n = 6)

Economic state	Respondents reasons				Total
	Addi-tional stalls	More work	"Ojeg"	Blank	
Increased	2	1	1	1	5
No Increase	-	-	-	-	-
Blank	-	-	-	1	1
T o t a l :	2	1	1	2	6

Table : 17. Solving disputes after the the PKGB [1] project according to the respondents (n=14).

Solved by	Absolute	%
Family	8	57,14%
Help of a religius man	3	21,43%
Village administrator	3	21,43%
T o t a l :	14	

Table : 18. Changes in the social conditions according the respondents (n=14) :

Respondents thoughts	Absolute	%
There is a change	-	-
No. change	14	100%
T o t a l :	14	100%

Table : 19. Respondents thoughts on the level to which they acan educate their children after the PKGB Project :

Respondents thoughts	Absolute	%
Increased	9	65%
No increase	2	14%
The same	3	21%
T o t a l :	14	100%

VI. DAM REHABILITATION PROJECT

Sample that was chosen at random and taken as a basic evaluation, is by chance the dam sub project in Semarang regency, Tengaran district, Senjoyo village. The exact location of this sub project is shown in the map attached.

Tengaran district itself has its population 34,055 persons and covering a region of Km2. Water receiving capacity of that dam is roximately 7.500 m3, and it should be able to water the ricefield surrounding the project as large as ± 27,5 hectares. The general aim of this project is main ly to improve the social economy life of the farming inhabitant.

From the result of survey, more or less can be seen the positive effect through the socio-cultural, agricultural and economic aspects.

Socio-cultural aspect will be delivered in advance with the description of survey result data, followed by its analysis and ended with the conclusion and recomendation.

Agricultural aspect will be served after the aspect of socio-cultural. Data of input, output, purpose and goal of the project will be served in this report.

Economic aspect will be served last, commenced with the data then analy sis and conclusion.

As a fact this dam has brought a positive effect to agriculture. But it is a great pity, the result of this rehabilitation is enjoyed only for 1 year. Because in the next rainy season, heavy rain has brought mud into the dam and the dam became sallow again. It seemed that the dam water source was stopped, till the out flowing water decreased, the capasity of watering the ricefield lessen again.

A. SOCIO-CULTURAL ASPECT

The instrument of socio-cultural review used to evaluate toward the dam sub-project done within the scope of PKGB is to look for the degree of social participation and the basic value that propelled the participation. Beside that, it will be seen whether there's changes of values after the dam project.

Through this instrument of review it can be seen whether the social participation in this project is stimulated by 'money' value or based upon the mutual help spirit to accomplish the work for public necessity. Further it can be seen whether money value will substitute the whole other value that has been followed since along time by the members of society.

In the beginning survey results data will be reported, then analysis, conclusion and recomendation.

1. Findings

Based upon input data from the study of socio-cultural aspect, the project of dam rehabilitation construction with PKGB system was participated by the most social members where the project is. This fact is shown in table 1 that 100% of the interviewed respondents were from the village where the project is. Their participation is generally based upon the reason that the project will raise their income, that is because there will be money compensation that caused the workers of that project will participate in that activity. This fact shows that the activity of PKGB to build a dam, assumed by the whole society where the project is as an activity that brings money, not as an activity that based upon the spirit of mutual help and solidarity for public necessity, however this project looked like a mutual help activity. (see table 2).

Perhaps this activity is not assumed as mutual help because the deficiency of their subsistance, untill if there were any activity or opportunity that trend for jobs to earn money for their extra income, they will do it soon although the wages is relatively small, and assumed as such new job, that its category is far different from mutual help activity although at the beginning is known as if it based upon mutual help and solidarity. The respondents in general are agriculture worker with average wages Rp. 30,000,- a month, without any extra income, that as a fact can't be earned because of their low education, till it is difficult for them to get job other than their ability, the work they persevere deligently (table 3 & 4).

With their income as mentioned above, they thought it does not fulfil their daily needs, especially in the lean years as the job in agricultural activities can not be done (table 5). To fulfil this deficiency, the effort live in the same village. With that case therefore the PKGB project in their village is felt beneficially, especially in the lean year to add the income of agriculture worker. It is proved that the workers of the project is still willing to participate in such project activities (see table 6), if for instance there were such project again in their village.

The benefits of PKGB project is also felt by the farmers that do not work in the project (non PKGB farmer), especially those who can directly enjoy the water from that dam. This case is reflected in table 7, where 100% of non PKGB farmer said that they benefit since the project is done in their village, therefore they commen- that they will always keep the dam in good function with their maintenance (see table 8).

Although PKGB activity is entering the village, and assumed as a common economic activity, the tradition of mutual help is still known by the whole society members (table 9). Sorts of mutual help they still know are those which is related with house building, sluice making, and village road constructing. Beside those activities, those which are catagoried as mutual help as related with "ritus de passage" or ritual activities and its sorts (see table 10). Those mutual help tradition is still retained because mutual aid idea itself is still close related with the value system that regulate the whole society behaviour based upon cooperation principle.

The presence of dam construction by PKGB project is also felt by the members of society as influenced and changed the life environment of the village physically, that is the improvement of its physical life environment, market by the raise of water source and more ricefield supplied with water or irrigation quarter mainly an artificial lake being a dam, indirectly or directly will increase the income of the village people, this is possible because the change of village physical environment as the presence of a lake/dam being used for recreation as mention ol above (see table 11).

but although an improvement of physical life environment is felt, it is felt too the change trends to a bad development, it is because a poor maintenance of the dam and its poor quality of construction, it be gin not in function, again as technical irrigation for agricultural, in this case is direct of indirectly will lesser or even eliminate the side income of the peasants or agriculture workers; that in case the irrigation is in good function, the farmers activities will still runn - ing well too, and it means a sufficient side income for the agriculture workers of the village. (see table 12).

The change it that physical life environment especially since the project is apparently doesn't influence the behaviour of village people. Table 13 shows that before as well as after the PKGB project is done in that village, the behaviour that based upon religious believe and their regional and cultural traditional is still considered con - formable. It is so too with social structure that consists of social stages there isn't any change. This fact is shown in table 14 that the determinant factor of some one is their society social life, is determined by whether good or not ones 'social life behaviour, not based upon ones wealth or position that meant ones function.

Although welath doesn't mean the standard that determines whether low or high ones in their social states system, but the source of conflict, before as well as after the project is tinted by the fiht for the limited power source where as the wealth to be a section of the po wer source. (the other is water). This case is reflected in table 15 shows that heritage and fight for water is the main source of conflict in social life, and all of those still be able to be solved by the way of brotherhood. It means that the spirit of solidarity or togetherness is still reained in the society, according to the principal of mutual help value system they have. PKGB in concultantr assumption is not influencing the problem of security in the village where the projects is, with the meaning that before or after the project is accom - plished in that village, the security in that village doesn't experien ce any change, 100% of the respondents comment that security is still good their before or after the project is done (see table 16). This can

happen because mutual help is still retained in the society social life as has been discussed above, and all to of this is appeared in table 17 which shows that 100% of the respondents comment that they will help their neighbour if it were crime upon them. The mood of solidarity that inspire the spirit of mutual help in that society is possible because still they know each other in their village (see table 18). Those facts above are positive effects from PKGB in the society social life mentioned.

Another positive effect that felt by the people of that society is the increase of social economy life in that village. This is reflected in table 19 that 100% of project workers and the farmers as well comment that there is an increase of their village economic life after the dam project construction is enerring their village. In their opinion the opportunities for the village people; that is to open food shops and public bycicles sheds, it is because the dam is becoming a recreation quater on hollidays by the surrounding people even from outside of the district. (see table 20). Because of a very vital meaning of the dam in the village social life, therefore the village people hope - particularly toward the government in order to have a good maintenance of the dam, beside that they expect the guidance and consultation from the government side in the development of their economic life. (see table 21).

Those expectations area indeed reasonable, because those areas close related with their economical life, rooted from their aspiration of their future better life. This fact is shown from their replies when 83,33% of the respondents comment that they will send their children to school as high as possible then it is to be expected that their position in the society economic as well as social will be raised, it means directly or indirectly will influence their management toward their limited and meaningful power source the have.

2. Analysis of Findings

In regard with those findings above, is basically in the people social life where the PKGB project is, the value system related with the peoples participation values in their public activities that based upon

mutual help has been deviated. That deviation is possible because the PKGB project was not assumed as an activity that involved the necessity of all society, therefore it must be a compensation in the from of money or material for their participation in thet activity. This is because the benefit of the project can't be felf directly by those who were involved, only a certain part of the society can enjoy that dam, those whose farmland can get irrigation; or those who have funds or power capital that can be used at the surrounding of the dam as a recreation quarter.

But although there was a deviation in the value system as mentioned above, it is apparently not eliminated the whole principles and mutual help basic in the social life, it means that the principles of mutual is still retained, the people of society always respect and pious to it. Those principle that still kept by them are the activities basics and principles that involved directly the necessities of the society whole together, included in it several principles and basics that rooted themselves the kindship system belief system, as for example ritual routine of life ("ritus de passage"), ritual ceremony, house construction formality etc.

The retained of those princples shows that the PKGB project applied in the village has its good effect, with an assumption that the project is not severely influencing or changing social living environment physically nor socially that so prompt and shocking them. This will cause several cultural value system that centered on religon and tradition, as well as social structure that centered on their social stages system has not experienced any change at all since that project is "penetrating" their village.

The further effect of this fact is that several social conflict caused by struggling for a position in social life is not happened, it means that social stability can be retained without changing nor adding the existing cultural value system.

The absence of new social conflict and the well being of social condition and stability shows that social order as the core social integrity is still good created. The created social order is marked by the

remarable social responsibility and solidarity of people toward various problems they face, and their participation in facing various chal lenges and impulse or incentives that some from within or outside, it caused that various coming on problems (included social conflict) can be solved easily by the way of brotherhood and inspired by the spirit of mutual help. With such social condition therefore various kinds of crimes particularly that is done by some people from that village can be prevented by the village society people itself.

The futher result such social condition is that all of the people where the project, is,will be able to raise the quality of their life; that is the more convenient of life itself, as well as in its quality; that is the more life facilities they posses. One among main characters or this effort is the development and increase of the social life means; that is the development and increase of learning desire and education means, economical life means, health means, etc. that in reality can be felt by all people. Including the raise on knowled ge quality and quantity, that is the increase of information and kinds of information about good environment and science for every envolved society.

3. Conclusion and Recommendation

According to the discussion above, it can concluded that PKGB pro ject activity done in the form of betterment/construction of a dam has a large enough influence toward the society where the project is appli ed, particularly its effect toward the economical life of the society surrounding the project. But although its effects is large, it will never change the existing cultural value system as the basic and guidance of the whole society in doing their various social activities, so that the applied project doesn't "shake" the social life mentioned.

With such a fact the project is apparently a correct step an effort to raise the social welfare, according to aspiration that coherent in that project itself. But in order the project should be more success, it is necessary to provide with a further new activity. The activity meant is a periodical maintenance of the dam. Included in that periodical maintenance of the dam maintenance consultation, introduction and

planting of new cultural values about the meaning of: the importance of the maintenance and guading of the dam that is not controversial with the existing cultural value.

In order that such achievement can be kept retained, therefore the participation of all society members is needed. In that participation is included inviting people to participate in planning projects that will be done in their region.

AGRICULTURAL ASPECT

This project is supposed to give a benefit to target group (particularly farmers). This is expected to intensity farming rice products which cause farmers' income to raise.

Data collected wile be reported interm of its impacts to farmers' income. Survey results will be r-sponded under the squences of input, output, porpose and goal.

1. The Inputs

Unlike in the rice-field terracing sub project, the wages paid to laborers of reservoir su project was distributed among group leaders, skilled labors, and unskilled labors. The costs for purchasing materi ls, and the costs for survey was used in the same manner as in the previous section.

The total wages that was paid to the laborers of the reservoir sub project amounted to about Rp 13 million, of which about 84 percent was used for the unskilled labor. As shown in table 27, the other 10 percent and tive percent is used for skilled labors and group leaders respectively. This means that the distribution pattern is more or less the same as the one of the rice-field terracing sub project, except that the 90 proporting is distributed between the skilled labor and the un - skilled one.

Table : 27. Total wages paid to laborers of reservoir subproject.

Laborers	Wage	
	(Rp'000)	(%)
Group leaders	707.2	5.3
Skilled Labors	1,380.0	10.3
Unskilled labors	11,316.0	84.4
Total :	13,403.2	100.0

The distribution pattern of the cost for purchasing materials also the same as the previous subproject. As shown in Table 28, about 85 percent of about Rp.6 million was used for materials, and the other 15 percent used for tools.

Table : 28. Cost for purchasing materials in reservoir subproject.

Items	Rp'000	%
Tools	890.0	14.9
Materials	5,090.5	85.1
Total :	5,980.5	100.0

The cost for survey design and survey, as shown in Table 29, was used as targetted. The total costs for this particular inputs was about Rp.412 thousands, of which about 88 percent used for survey design, and the other 12 percent for survey.

It seems that the distribution pattern of the total costs for reservoir subproject of the PKGB project is similar to the other subproject.

Table : 29. Summary of costs in reservoir subproject

I t e m s	Rp'000	%
W a g e s	13,403.2	67.7
Materials	5,980.5	30.2
Survey design	362.0	1.8
Survey	50.0	.3
T o t a l :	19,795.7	100.0

As shown in Table 29, the biggest portion of the costs was directed to the wages. Then come materials at the second place, and followed by survey design and survey respectively.

2. The Outputs :

The outputs of the reservoir subproject can be seen in term of physical appearance of the reservoir, and the average area harvested compared to the farms without project. As shown in Table 30, the depth of the reservoir was unknown before the project, while after that, it was krown that the depth is about 7.50 metres. The check dam, which was formerly about 1,5 metres, after the project became tripled than that. The ground of the reservoir which was mud before, has been changed to recles and sands after the project.

The average area harvested of paddy has increased. As shown in Table 30, the area of the with project farms is almost two times larger than that of the without project farms. The with project farms on the other hand; unlike the without project farms which grow paddy and corn grew paddy only.

Table : 30. The average area harvested in reservoir subproject

I t e m s	Paddy (ha)	Corn (ha)
with/project farms	1.15	-
without/project farms	.40	.25

3 . The Purpose :

It has been indicated in the previous section, that the output of the subproject in term of physical appearance of the construction has been improved, while the average area harvested has been doubled than that of the without project However, this particular subproject did not significantly improved the yield per hectare of paddy in the project area. As shown in Table 31, the yield of paddy is somewhat smaller than that of the without project farms.

Table : 31. The average yield per hectare of paddy and corn. Reservoir Subproject

I t e m s	Paddy (ton/ha)	Corn (ton / ha)
with/project farms	5.3	-
without/project farms	6.0	3.0

Similar situation happened in this case. As in the rice-field terracing subproject, even though the yield per hectare of paddy of

the with project farms is a little smaller than that of the without project, or at best remain the same, the production of the former is still higher. We can see from Table 30, and Table 31, that the production of paddy of the with project farms is more than two times bigger than that of the without project; i.e. about six tons compare to about 2.4 tons. This in turn increase the net benefit of the with project farms as shown in the following section.

The subproject, however, did not change the efficiency of the farming system in the project area.

The crude B/C-ratio which is used to verify this aspect shows us that the subproject did not improved the efficiency of the farming system. As shown in Table 32, the crude B/C-ratio of the with project farms is some what the same as that of the without project one.

Table : 32. The crude B/C-ratio of the farming system in the reservoir subproject

I t e m s	Benefits (Rp'000)	Costs (Rp'000)	Crude B/C ratio
with/project farms	766.4	198.0	3.9
without/project farms	384.0	91.2	4 2

The Goal :

Similar to the other subproject of the PKGB project, the goal of this subproject is to increase the income of the farmers in the project area. To verify this aspect, the net benefit of the with project farms have been calculated, and compared to that of without project one.

It is shown in tabel 33, that the net benefits of the with project farm has been more or less doubled than that of the without project farms.

Table 33. The net benefit of the farmers in the reservoir sub project

	Benefits (Rp'000)	Costs (Rp'000)	Net benefits (Rp'000)
With/project farms	766.4	198.0	568.4
Without/project farms	384.0	91.2	292.8

We can see from the discussion in this section that although the sub project did not achieve one of its purpose, i.e. to increase the yelds per hectare, and it did not changed the efficiency of the farming system in the project area either, it has, however, increased the production of paddy, by means of increased area harvested. This, in turn increased the net benefit of the farmers in the project area.

The goal of the sub project, hence, could be achieved, not through increasing the yield per hectare, nor through increasing the efficiency of farming system, but merely through increasing the area harvested.

C. ECONOMIC ASPECT

The dam of Tengaran project is apparantly opened diretly the opportunity to work. But the unemployments data in the district still showed sta ble figures without any changes. However the social income seemed to raise.

With a little specificated, the data ot economic aspect survey result will be seved in the following paragraph After data will be followed by analysis then conclusion and recommendation.

1. Survey Result Data

Dam survey sample is done in the regency of Semarang, Tengaran District, Senjoyo Village. From survey result has been gotten data as follows:

a. Project Aim

After respondents point of view, dam project in Tengaran District has its aims:

- For irrigation..... 60 %
- To restore the dam function..... 50 %.

The main function of a dam is as water receiver to be distributed to the farmers. The dam has water source and it ever became shallow because of mud. That mud were dredged then the dam will be be deeper its water source will bring out water again and will be able to water farm lands or rice fields. Beside as an irrigation mean, it can be used for fish culivation and as a water reservance in dry season.

b. Project Idea Conceptor

After the respondents the dam project is schemed by:

1). Society 66,7 %
2). District aouthority 22,2 %
3). Village instance 11,1 %.

While the schemer of the performance of the dam is the second degree region administration that is the regent or lest say government. This data is more or less show the great participation ot the people.

c. The Performance of Project

From the survey result has gottan comment that the dam performance will be running well, because 83% of the respondents comment that there is no resistance for the project and a little bit resistance of 77%. About the result of the project the comment is satis fying 59%. But the function running of the project seemed to be less perfect, because only 33% of the respondents comment that the project is running well, while 77% comment less good.

d. Cost of Project

The budget of Tengaran District Dam consist of some devision those are, survey cost, survey design cost, insentive payment (IP), materials and tools cost as shown in table 30.

Table 30. Dam project total cost (in rupiah).

	Realization	Estimate
Survey	50.000	50.000
Survey design	362.000	362.000
I.P.	13.403.250	13.403 000
Materials cost	5.090.500	5.090.500
Tools cost	590.000	590.000
Total:	19.795.750	19.795.750
Dam areal	10.000 m^2	10.000 m^2
Total cost/m^2	1.975	1.975

From table 30 it can be seen that total cost of the realization is the same with total estimated cost, and its every devision total cost as well.

Rehabilitation cost that say Rp 1,975,- for every square metres can believed as very cheap. The cost is cheap because the wages of mandays is low. Perhaps the project work was assumed as social task or mutual self and solidarity.

e. Man Power

1) Insentives Payment (IP).

The total amount of IP and its specification is shown ia table 31.

Table 31. Insentives payment (in rupiah).

	Realization	Estimate
Workers	11.316.000	11.316.000
Foreman	707.250	707.250
Skilled workers	1.880.000	1.880.000
Total:	13.403.250	13.403.250
Dam area	10.000 m^2	10.000 m^2
Total IP/m^2	1.340	1.340

From table 31 can be seen that the amount of total IP between realization and estimate is the same althoug every works group. It is also seen that 67% of total cost for every square metres is the IP, that is Rp 1,370,- from Rp 1,975 for every square metres.

2) Insentives Payment (IP) per Man Days (MD).

The amonut of IP and MD is shown in table 32.

Table 32. IP/MD (in rupiah)

	Realization	Estimate
Worker	Rp 600	Rp 600
Foreman	Rp 750	Rp 750
Skilled worker	Rp 1.200	Rp 1.200

The amount of IP per MD in realization and estamate still the group of workers is the same. Workers wages is very cheap indeed Rp 600/MD, in this case if it is not believed as mutual help work, therefore the IP is necessery to be increased.

3) Total MD.

From table 31 and 32 it can be calculated the amont of total MD that is by the way of deviding table 31 by table 32 every group of workers. The amount of MD for every group of workers is shown in table 33.

Table 33. Total MD.

	Total IP	IP/MD	Total MD
Workers	Rp 11.316.000	Rp 600	Rp 18.860
Foreman	Rp 707.250	Rp 750	Rp 943
Skilled workers	Rp 1.380.000	Rp 1.200	Rp 1.150
Total :			Rp 20.953

Source: 1. Table 31.
2. Table 32.
3. Consultant calculation.

The dam project needs total MD 20.953 for its area 10.000 M^2. It means that the project has oppened the works opportunity directly of 2,1 MD every square metres.

4) The origion of manpower.

The manpower that accomplish the rehabilitation work of the dam were origionated from Sejay Village 50% and from other village but same district Tengaran 50%. It means that this project has opened the work opportunity for the region of Tengaran District.

f. Materials

The amount of cost to purchase materials is shown in table 34

Table 34. Materials cost (in rupiah.

	Realization (actual)	Estimate
Materials cost	5.090.000	5.090.000
Dam area	10.000 M^2	10.000 M^2
Materials cost/M^2	509	509

The amount of budged to purchase materials is relatively very cheap, that is Rp 509,-/M^2. While the materials are among others stone, sand, cement, bamboo, wooden planks or shelves, nails etc. Those materials are available in the local region. Therefore during the construction of the project there is on effect of local regional effectiveness that is the purchase of regional product materials.

g. Tools

Cost of tools purchase is shown in table 35.

Table 35. Tools purchase (in rupiah).

	Actual	Estimate
Tools cost	Rp 890.000	Rp 890.000
Dam area	10.000 M^2	10.000 M^2
Tools cost/M^2	Rp 89	Rp 89

Source: 1. Table 30.

2. Consultant calculation.

Cost of tools purchase every square metres is Rp 89,-. While the actual and estimate cost is the same. The tools are among others hoes or shovels, spades, pails, hooks or pickaxes, etc. While those mentioned are available in Toko Aduma Abadi and Toko Pancasila in local neighbourhood and all of those are local made.

h. Project result and project funds

The area of dam that was rehabilitated is 1 hectare. The betterment of that dam are mud removal, banks or slope and dam betterments. While the results of that dam betterment is shown in table 36.

Table 36. Physical measures of the dam.

Description	Measurements
Water depth	750 cm
Banks height	4,8 m
Foundation length	100 m
Foundation width	30 cm
Locks (sluice gates)	2 ea
Overflow outlet height	3.- m
Overflow outlet width	40 cm
Dividers	2 ea

Thus the dam is able to store water 7,500 square metres and is able to water ficefields 27,5 hectares. The funds to restore or rehabilitate the dam is 100% from PKGB.

i. Maintenance

After the accomplishment of dam rehabilitation in Tengaran District, the maintenance of that dam was never been done again because the maintenance cost is suppossed to high.

j. Project benefit

When the rehabilitation of the dam was just accompished, it can water the ricefield as large as 27.5 hectares. Before the dam beterment those ricefields are arid after the dam rehabilitation they are watered.

But that was nt long (one year only) because on the rainy season the bank was broken and the rain water that brings mud was flowing into the dam and the dam is filled with mud again and became as its original as before.

2. Analysis

From the data presented above an analysis is made like follow:

a. Efficiency

1) Total Cost.

It can be seen in table 30 that the realization of cost or the actual cost doesn't deviate from the estimated one. This is rare happened in Indonesia. It is to be expected that the realization of a project tend to use the budget provided or there are parts of project that were not accomplished because the budget is no more. In the survey there was an information that the bank is broken in the rainy season. The construction of the bank is perhaps doesn't meet the correct condition, technical and constructional was not improved because the provided budget is already finished. And the bank betterment can't be done because there is no other alternatives source of funds.

The rehabilitation cost of the dam has consumed cost with the amount of Rp. 19,795,000,- or Rp. 1,975, every square meter. While the depth of the dam is 0,75 meter. Objects to be done in that

project are the removal of mud in the dam and to make the bank. As a comparisian it can be noted, data from within Public Works Department that the budget for a hole excavation is Rp. 2,000,- for every cubic meter. Therefore the rehabilitation cost of the dam Rp. 1,975,- is believed very cheap.

2) Man Power.

Insentives payment for worker/man days is Rp. 600,- I.P/M d of foreman is Rp. 750,- and for skilled worker is Rp. 1,200,- If the I.P. is believed as wage than the working power value is realy cheap.

In table 33 can be seen that this project needs 20,953 MD to finish one hectare of dam, or 2 MD for every square meter. Data from Public Works Department says that for the accomplishment of more then one meter excavation is needed 1,5 MD. Should it be compared with that, the MD to accomplish the dam is relatively very small because it includes other works beside excavation.

3) Materials.

The total of materials purchase is Rp. 5,090.000,- Most of those materials needed for the bank construction with 100 meter length and 4,8 meter height.

The consultant assumend that Rp 5,000,000,- for materials purchase was too small for such a dam conclusion.

4) Tools

The total purchase of tools has reached Rp 890,000,- or Rp 89,-/ m^2. It is believed to be cheap enough.

Effectiveness

The aims of the dam project is for irrigation and restoring the dam function as before. Because that dams bank is broken in the rainy season and the dam is going back as its origional before, thus it means that the aim of the project is not achieved.

c. Intensities

Because the dam is not in function as the aim at the start, thus the dam will not increase the income per capita. If in the survey there was found the increase of lands value, thus the increase of shops etc. was not caused by the benefit of the dam. Therefore the project has only the effect of raising income during the running the period of the project.

3. Conclusion and Recommendation

a. Efficiency

In the analysis if found that the budget to restore the dam is less sufficient. Also the amount of MD applied is too small.

The conclusion assumed that there two costs that big enough i.e. (a) cost of mud removal, (b) cost of foundation construction.

1) Cost of mud removal

It was estimated that the has been removed mud is ca. 5,000 M^3. Public Work Development says that for mud removal is needed 1 MD/M^3. While the cos of transportation is formulated as follow.

Formula : K = 2A/2/5 x (L + 75)

Where = K = Transporting cost/M^3

A = Wage/MD

L = Transporting distance in metres.

From the data is found that:

A = Rp 600,-

L = 250 M average

Therefore the cost of transporting/M^3 is:

= Rp 2 X Rp 600/275 X (250 + 75)

= Rp 1,413,-

Thus the mud removal cost should be:

= 1.5 X Rp 600 X 5,000 + Rp 1,418 X 5,000

= Rp 11,590,000.

2) Cost of foundation construction

Data on the foundation is 100 m length and 4,8 m in heigh. After the Public Departmen the foundation measurements are:

- length..... 100 m
- heignt ..... 4,8 m
- upper width ..... 30 cm
- bottom width ..... 200 cm (2 M).

Thus the volume of the foundation is:

100 X 4,8 X (0,3 + 2,000) : 2 M^3 = 552 M^3.

Data of foundation masonry for every M^3 are:

- stone ..... 1.2 M^3
- cement ..... 3.25 bags
- sand ..... 0.5 M^3
- wage ..... 5.1 MD.

Thus the cost of foundation will reach:

- stone 552 X 1.2 X Rp 3,750,-	= Rp	2,454,000,-
- cement 552 X 3.25 X Rp 3,000,-	= Rp	5,382,000,-
- sand 525 X 0.5 X Rp 4,500,-	= Rp	1,242,000,-
- power 525 X 5.1 X Rp 600,-	= Rp	1,689,000,-
Total:	= Rp	10,797,000,-

The two bigger costs are mud removal and foundation construction that reached Rp 11,590,000 + Rp 10,797,000,- = Rp 22,889,000,---- without any leakages of cost in the realization.

Therefore the consultant assumed that the rehabilitation costs of the dam will reach Rp 25 - 30 million.

This dam project, beside is having to be budgeted as big is it mentioned above it also has to be strictly controlled and a natured design particularly in foundation design.

Thus it is less true that this project is done by PKGB system of performance. This project should be more apt if it is contracted by an experienced contractor.

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b. Effectivities

Tengaran dam project will be able to store water ca 7,500 M^3, thus the dam will be able to water the ricefields 27.5 hectares. If those 27.5 hectares could be watered properly, then there will be three time crops annually, beside the wild vegetation cultivation.

Every hectare of ricefield needs 10 people working power, thus this project will ricieved 27.5 X 10 = 275 working people in the ricefield.

c. Intencities

If the dam could be able to water the ricefield 27.5 hecteres, the ricefield could be reaped its crops three times each year.While every harvest is 7 tons rice grain from every hectare, thus the rice field will produc rice-grain being worth 27.5 X 3 X 7 X Rp 100,000,- = 57,750,000,- annually.

While the rehabilitation cost of the dam is estimated to Rp 30,- million. Thus the project multiplier is ca. 1925. With the presence of additional plants as microp and the other usage of the dam for example for fish cultivating, therefore multiplier of 2.85 (national multiplier) will be achieved.

Table 1: Origions of respondents dam project workers (n = 6)

Origions	Absolute	%
Residents of the district	6	100
New comers	-	-
Total :	6	100

Table 2: Respondents reason for joining the PKGB project (n = 6)

Reasons	Absolute	%
Compensation	3	50
Benefits	3	50
Total :	6	100

Table 3: Income of PKGB workers and farmers; Non PKGB.

Respondents	Fixed income as	Unfixed income as	Approximate income per month
	Hands	farmers	
Workers	6 (100%)	-	Rp 30,000,--
Non PKGB farmers	-	2 (100%)	Rp 31,250,--

Table 4: Education levels of respondents of the PKGB project and farmers (n = 8).

Respondents	Type education and subjects taken						
	General education				Religious education		Subject
	Never went to school	Never finished JS	Finisned JS	High school	Never	Intensive Muslim learning	
Workers	1	3	2	-	5	1	-
Non PKGB farmers	-	-	2	-	-	2	-
Total:	1	3	4	-	5	3	-

Table 5: Respondents feelings about the income and means of carrying out the ways of farmers and PKGB workers.

Respondents	Respondents feelings		Means of carrying out	
	Enough	Not enough	Borrowing	Help from field
PKGB workers	2	4	5	1
PKGB farmers	2	-	2	-
Total:	4	4	7	1

Table 6: Respondents plans to join the same project next year.

Respondents	Absolute	%
Join	5	83,3
Not to join	1	16,6
Total:	6	100

Table 7: People support of the PKGB project according to Non PKGB farmers and PKGB workers (n = 8).

Respondents	To have		Not have	
	Absolute	%	Absolute	%
PKGB workers	6	75	-	-
Non PKGB farmers	2	25	-	-
Total:	8	100	-	-

Table 8: The support of the PKGB workers and non PKGB farmers in the maintenance of the project and their reasons (n = 8).

Respondents	Respondents feelings		Reason	
	Help to maintain	Not help to maintain	Oblig	Benefits
PKGB workers	6	-	4	2
Non PKGB workers	1	1	-	1
Total:	7	1	4	3

Table 9: Feelings of respondents of PKGB workers and non PKGB farmers on traditional mutual help (n = 8).

Respondents	Respondents feelings	
	Still kept up	Not kept up
PKGB workers	6	-
Non PKGB farmers	2	-
Total :	8	-

Table 10: Types of mutual help known to the workers and the non PKGB farmers (n = 8).

Type of mutual help	Workers feelings	Non PKGB farmers
House building	6	2
Water canal building	1	-
Making village roads	6	2
Total :	13	4

Explanation: n = 6 workers.
n = 2 farmers.

Table 11: Respondents feelings on the physical changes (n = 8).

Respondents	Surrounding changes		Surrounding conditions	
	Has	Non have	Better	Worse
PKGB workers	6	-	6	6
Non PKGB farmers	2	-	2	2
Total :	8	-	8	8

Explanation: n = 6 workers
n = 2 farmers.

Table 12: Respondents feelings on the surrounding conditions that has already change

(n = 8).

Respondents	Better Surroundings			Worse Conditons		
	Water source is bigger	Place for rice	Many rice field waterd	Just like before	Not functional	Explanation
PKGB workers	4	3	4	2	4	n = 6
Non PKGB farmers	-	-	2	2	-	n = 2
Total :	4	3	6	4	4	-

Table 13: Respondents feelings on the views of the local people before and after project from the religious and traditonal point of view (n = 8).

Respondents	Before the Project		After the Project		Explanation
	Ideal	Not ideal	Ideal	Not ideal	
PKGB workers	6	-	6	-	n = 6
Non PKGB farmers	2	-	2	-	n = 2
Total :	8	-	8	-	-

Table 14: Respondents feelings on the methods tofix the position on person in the district

(n = 8)

Respondents	Factor Used to fix Position			Explanation
	Money	Function	Behavoir	
PKGB workers	-	-	6	-
Non PKGB farmers	-	-	2	-
Total :	-	-	8	-

Table 15: Respondents on the problems and solution to the problems before and after the project

(n = 8)

Respondents	Before the Project					After the Project				
	Will source	Jealously	Water disputes	Family solution	Court	Will source	Jealously	Water disputes	Family solution	Court
PKGB workers	6	2	4	6	-	6	2	4	6	-
Non PKGB farmers	2	-	-	2	-	2	-		2	-
Total :	8	2	4	8	-	8	2	4	8	-

Table 16: Responden feelings on the security of the village before and after PKGB (n = 8).

Respondents	Before PKGB		After PKGB		Explanation
	Safe	Not PKGB	Safe	Not PKGB	
PKGB workers	6	-	2	-	n = 6
Non PKGB farmers	2	-	2	-	n = 2
Total :	8	-	4	-	

Table 17: Respondents reactions if their neighbours were attacked, or their village (n = 8).

Respondents	Respondents reaction			Explanation
	Get rid of attackers	Shout for help	Ignore	
PKGB workers	6	-	-	n = 6
Non PKGB farmers	2	-	-	n = 2
Total :	8	-	-	

Table 18: Number of neighbours known to the respondents in their village (n = 8).

Respondents	Amount of neoghbours			Explanation
	All of them	Some of them	Only by them	
PKGB workers	6	-	-	n = 6
Non PKGB farmers	2	-	-	n = 2
Total :	8	-	-	

(n = 8).

Respondents	State of economy		Reason for saying the economy had improved			No improvement
	arise	no arise	Road stalls	Bike pool	Recreation	
PKGB workers	6	-	6	4	-	-
Non PKGB farmers	2	-	2	4	2	-
Total:	8	-	8	8	2	-

Table 20: Hopes of the respondents about the PKGB (n = 8).

Respondents	Respondents hopes		
	Gaverment help needed	Dam maintenance	Peoples life attention
PKGB workers	4	1	1
Non PKGB farmers	2	-	-
Total :	6	1	1

Table 21: Respondents aims in educating their children (n = 8).

Respondents	Respondents aims			Explanation
	Highest possible education	Childs chioce	Don't know	
PKGB workers	5	-	1	n = 6
Non PKGB farmers	1	-	1	n = 2
Total :	6	-	2	