#### 8. SMALL PILOT PROJECTS

#### 8.1 Purpose

In the Study, it is planed that the rural development plan which are formulated by the Study Team should be polished up by reviewing outcomes through implementation of pilot projects. In this context, 18 pilot projects were selected out of 59 approaches (project components) which were chosen by the criteria mentioned in Chapter 7. The detail plans for each pilot project was studied and formulated as shown in this chapter.

The Pilot Projects will be carried out for the following purposes:

- Monitoring and assessment of technical soundness of the Project through the implementation of the pilot projects
- Monitoring and assessment of organization for implementation and support system for the Projects and its management (operation and maintenance) through the implementation of the pilot projects
- Monitoring and assessment of improvement for the farmers' capability in solving problems and constraints through the implementation of the pilot project

Based on the results of monitoring and assessments above, problems and constraints on the implementation of the Projects and its management will be identified. Countermeasures for these identified problems and constraints will be proposed for finalization of the procedure of survey and formulation of project development.

#### 8.2 Selection Criteria and Selection of Pilot Projects

8.2.1 Selection Criteria

As mentioned in section 7.3, Development Plan, 59 project components were selected, consisting of 11 for Xeatzán Bajo, 14 for Panyebar, 16 for Pachum and 18 for Palestina. For selection of pilot projects, evaluation for these 58 project components was made on the basis of the following 5 evaluation factors.

- (1) Degree of farmers' desire and perception on implementation of pilot projects;
- (2) Economic efficiency (cost performance);
- (3) Possibility of materialization of pilot projects by other authorities;
- (4) Duration necessary for setting up organization(s); and

#### (5) Demonstration and ripple effects from the pilot projects

The evaluation of project components was made by giving weighted points to each evaluation factor and selection was made based on the total weighted point. The evaluation criteria and corresponding weighted points are shown in the following table.

<b>Evaluation factor</b>	Grade	Description	Point	Weighted
		_		point (*)
Degree of farmers'	1	No (there is no perception according	1	0.1
perception		to the participatory survey results)		
	2	Strong (less than 6ht rank of	2	0.2
		prioritized development approaches		
		in the participatory survey results)		
	3	Very strong (1st-5th ranks of	3	0.3
		prioritized development approaches		
		in the participatory survey results)		
Economic	1	Low economic viability	1	0.2
efficiency	2	Medium economic viability	2	0.4
	3	High economic viability	3	0.6
Possibility of	1	The project component is planned	1	0.3
materialization		and/or constructed at present by		
		other organization(s)		
	2	There is a plan that other	2	0.6
		organization will implement in near		
		future.		
	3	There is no plan that other	3	0.9
		organization will execute in near		
		future.		
Duration	1	Long time necessary for setting up	1	0.2
necessary for		organization		<u> </u>
setting up	2	Short to medium time necessary for	2	0.4
organization		setup organization	2	0.6
	3	At present there is an organization or	3	0.6
		implementation can be performed by		
	1	simple setup organization.	1	0.2
Demonstration	1	The ripple effects of the project to	1	0.2
and ripple effects	2	other areas can not be expected.	2	0.4
	2	The ripple effects of the project to	2	0.4
	2	other areas can be expected.	2	0.6
	5	the ripple effects of the project to	3	0.6
	1	other areas can be highly expected.		1

\* Weighted point is calculated multiplying point by weight %.

Item	Weight (%)
1. Degree of farmers' perception	10
2. Economic efficiency	20
3. Possibility of materialization	30
4. Duration necessary for setting up organization	20
5. Demonstration and ripple effects	20

In this study, the project component of which total weighted point is above 2.5 was selected as pilot project.

### 8.2.2 Selected Pilot Projects

Based on the selection criteria, all components of the rural development plans in the 4 model areas were evaluated. The results of the evaluation are shown below:

No	Project Components												
		Degree of farmer's perception		Economic efficiency		Possibility of materialization		Duration necessary for setting up	organization	Demonstration and ripple effects		Total weighted point	Evaluation and adoption
		Grade	Weighted point	Grade	Weighted point	grade	Weighted point	grade	Weighted point	Grade	Weighted point		
	Environmental and Conservation Plan												
a-3	Reforestation plan	1	0.1	2	0.4	3	0.9	2	0.4	2	0.4	2.2	
	Plan for increasing income generation												
b-1	Plan for making composts	1	0.1	1	0.2	2	0.6	2	0.4	3	0.6	1.9	
b-5	Mini-irrigation plan	3	0.3	2	0.4	3	0.9	3	0.6	2	0.4	2.6	0
b-9	Agro-processing development plan	3	0.3	2	0.4	3	0.9	1	0.2	1	0.2	2.0	
b-10	Plan of direct sale of vegetables	2	0.2	2	0.4	3	0.9	1	0.2	1	0.2	1.9	
b-12	Institutional plan for fostering nucleus farmers	1	0.1	3	0.6	3	0.9	2	0.4	2	0.4	2.4	
b-13	Plan of revolving fund for hand weaving thread	3	0.3	2	0.4	3	0.9	3	0.6	2	0.4	2.6	0
	Improvement plan for living												
a 1	environments	2	0.2	1	0.2	2	0.6	2	0.6	1	0.2	1.0	
C-1	village	3	0.5	1	0.2	2	0.0	3	0.0	1	0.2	1.9	
c-2	Rehabilitation plan of regional roads	3	0.3	1	0.2	2	0.6	3	0.6	1	0.2	1.9	
c-5	Water quality improvement plan for the existing drinking water supply	1	0.1	3	0.6	3	0.9	2	0.4	3	0.6	2.6	0
c-11	Plan for installation of minimal pharmacy unit (MPU)	1	0.1	2	0.4	3	0.9	3	0.6	2	0.4	2.4	

## (1) Xeatzán Bajo Model Area

# (2) Panyebar Model Area

No	Project Components									pple			ion
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		lers		ien				ary	Izat	anc		poi	ad
		arm		ffic		f	u	essi	gani	ion		ted	and
		of fa	u	ic e		tyc	atic	Jec	OLE	rat		igh	on a
		se c	ptic	imc		bili	aliz	1 UC	dn	onst		we	lati
		egre	srce	sone		ISSI	ent	atio	gung	- Smc	cts	otal	/alı
		Õ	pe	E		Pc	mat	Dui	sett	Ğ٤	ette	Tc	E
			t		t		t		t		t		
			oin		oin		oin		oin		oin		
			d p		d p		d p		d p		d p		
		e	hte	o	hte	e	hte	e	hte	e	hte		
		rad	'eig	rad	'eig	rad	'eig	rad	'eig	rad	'eig		
		G	M	Ð	M	Ð	M	Ð	Μ	Ð	Μ		
	Environmental and Conservation Plan												
a-2	Soil conservation plan for steep farm	2	0.2	2	0.4	2	0.6	2	0.4	3	0.6	2.2	
	lands												
a-3	Reforestation plan	2	0.2	2	0.4	2	0.6	2	0.4	3	0.6	2.2	
a-4	Agro-forestry development plan	2	0.2	2	0.4	2	0.6	2	0.4	3	0.6	2.2	
	Plan for increasing income generation												
b-1	Plan for making composts	1	0.1	1	0.2	2	0.6	3	0.6	3	0.6	2.1	
b-6	Layer-chicken raising plan for	3	0.3	2	0.4	3	0.9	I	0.2	2	0.4	2.2	
1.7	women's groups	2	0.2	2	0.4	2	0.0	2	0.4	2	0.6	26	0
b-/	Coffee production improvement plan	3	0.3	2	0.4	3	0.9	2	0.4	3	0.6	2.6	$\bigcirc$
b-8	Coffee processing plan	3	0.3	1	0.2	3	0.9	2	0.4	2	0.4	2.2	
b-12	Institutional plan for fostering nucleus	2	0.2	3	0.6	2	0.6	2	0.4	3	0.6	2.4	
	farmers												
	Improvement plan for living												
c-2	Rehabilitation plan of regional roads	3	03	1	0.2	1	03	3	0.6	1	0.2	16	
c-4	Rehabilitation plan for drinking water	3	0.3	1	0.2	3	0.9	3	0.6	3	0.6	2.6	$\cap$
•	system	-		_		-		-		-			0
c-5	Water quality improvement plan for	1	0.1	3	0.6	3	0.9	3	0.6	3	0.6	2.8	$\bigcirc$
	the existing drinking water supply												)
c-9	Plan medicine growing plan	1	0.1	2	0.4	2	0.6	2	0.4	3	0.6	2.1	
c-11	Plan for installation of minimal	2	0.2	2	0.4	3	0.9	1	0.2	2	0.4	2.1	
	pharmacy unit (MPU)												
c-14	Coffee processing plan for workload	1	0.1	2	0.4	3	0.9	3	0.6	3	0.6	2.6	$\bigcirc$
	reduction in mountainous area												

### (3) Pachum Model Area

No	Project Components												u
		Degree of farmer's	perception	Economic efficiency		Possibility of	naterialization	Duration necessary for	setting up organization	Demonstration and	ipple effects	Total weighted point	Evaluation and adoptio
		Grade	Weighted point	Grade	Weighted point	Grade	Weighted point	Grade	Weighted point	Grade	Weighted point		
	Environmental and Conservation Plan												
a-1	Restoration plan of the collapsed lands	2	0.2	1	0.2	3	0.9	1	0.2	3	0.6	2.1	
a-2	Soil conservation plan for steep farm lands	2	0.2	2	0.4	3	0.9	2	0.4	3	0.6	2.5	
a-3	Reforestation plan	2	0.2	3	0.6	3	0.9	3	0.6	3	0.6	2.9	0
a-4	Agro-forestry development plan	2	0.2	3	0.6	3	0.9	1	0.2	3	0.6	2.5	
	Plan for increasing income generation												
b-5	Mini-irrigation plan	3	0.3	2	0.4	3	0.9	1	0.2	2	0.4	2.2	
b-6	Layer-chicken raising plan for women's groups	3	0.3	2	0.4	3	0.9	2	0.4	3	0.6	2.6	0
b-12	Institutional plan for fostering nucleus farmers	2	0.2	2	0.4	3	0.9	2	0.4	2	0.4	2.3	
	Improvement plan for living environments												
c-1	Rehabilitation plan of roads in the village	3	0.3	1	0.2	2	0.6	3	0.6	1	0.2	1.9	
c-2	Rehabilitation plan of regional roads	3	0.3	1	0.2	2	0.6	3	0.6	1	0.2	1.9	
c-3	Plan of rural electricity	2	0.2	1	0.2	3	0.9	3	0.6	1	0.2	2.1	
c-5	Water quality improvement plan for the existing drinking water supply	1	0.1	3	0.6	3	0.9	2	0.4	3	0.6	2.6	0
c-6	Plan of extension use of improved cooking stoves and of sauna bath "Temascal"	2	0.2	3	0.6	3	0.9	3	0.6	3	0.6	2.9	0
c-7	Plan of provision toilette facilities	2	0.2	3	0.6	2	0.6	3	0.6	2	0.4	2.4	
c-8	Plan of night time health education	3	0.3	3	0.6	2	0.6	3	0.6	2	0.4	2.5	
c-10	Improvement plan of service quality given to comadronas	3	0.3	3	0.6	2	0.6	3	0.6	2	0.4	2.5	
c-11	Plan for installation of minimal pharmacy unit (MPU)	3	0.3	2	0.4	3	0.9	3	0.6	2	0.4	2.6	0

### (4) Palestina Model Area

No	Project Components												u
	5 1			Y				or	uc	р		Ħ	ptic
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		of	lior	nic		lity	IZal	n ne	o d	stra	tec	/ei	tiol
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			ntec		ntec		ntec	•	ntec		ntec		
		ade	lgi	ade	lgi	ade	lgi	ade	lgi	ade	lgi		
		G	Wé	5	Wé	5	Wé	5	Wé	g	We		
	Environmental and Conservation Plan												
a-2	Soil conservation plan for steep farm	2	0.2	1	0.2	3	0.9	2	0.4	2	0.4	2.1	
	lands												
a-3	Reforestation plan	2	0.2	2	0.4	3	0.9	2	0.4	2	0.4	2.3	
a-5	Management plan of water quality	2	0.2	2	0.4	3	0.9	1	0.2	2	0.4	2.1	
a-6	Solid wastes treatment plan	1	0.1	1	0.2	3	0.9	1	0.2	2	0.4	1.8	
	Plan for increasing income generation												
b-1	Plan for making compost	1	0.1	2	0.2	2	0.6	1	0.2	2	0.4	1.5	
b-2	Plan of model farm on potato	3	0.3	3	0.6	3	0.9	2	0.4	3	0.6	2.8	$\bigcirc$
	production												
b-3	Potato storage plan	3	0.3	2	0.4	3	0.9	2	0.4	3	0.6	2.6	$\bigcirc$
b-4	Potato processing plan	3	0.3	1	0.2	3	0.9	1	0.2	2	0.4	2.0	
b-5	Mini-irrigation plan	3	0.3	2	0.4	3	0.9	2	0.4	3	0.6	2.6	$\bigcirc$
b-6	Layer-chicken raising plan for	1	0.1	2	0.4	3	0.9	2	0.4	2	0.4	2.2	
	women's groups												
b-12	Institutional plan for fostering nucleus	1	0.1	3	0.6	3	0.9	2	0.4	2	0.4	2.4	
	farmers												
	Improvement plan for living												
	environments	2	0.2	1	0.0	2	0.6	2	0.6	1	0.0	1.0	
c-1	Rehabilitation plan of roads in the	3	0.3	1	0.2	2	0.6	3	0.6	1	0.2	1.9	
a 1	village	2	0.2	1	0.2	2	0.6	2	0.6	2	0.4	2.0	
0.5	Plan of rural electricity	2 1	0.2	2	0.2	2	0.0	2	0.0	2	0.4	2.0	
0-5	the evicting drinking water supply	1	0.1	3	0.0	3	0.9	3	0.0	3	0.0	2.0	$\cup$
c-8	Dian of night time health advantion	2	0.2	2	0.4	3	0.9	2	0.4	3	0.6	2.5	
c-10	Improvement plan of service quality	2	0.2	2	0.4	3	0.9	2	0.4	3	0.0	2.5	
• 10	given to comadronas	-	0.2	-	0.7	5	0.7	-	т.ч	5	0.0	2.5	
c-12	Municipality community health	2	0.2	2	0.4	3	0.9	3	0.6	3	0.6	2.7	$\cap$
	activity plan					-							$\cup$
c-13	Plan for migrant people to the coastal	2	0.2	2	0.4	3	0.9	3	0.6	3	0.6	2.7	$\cap$
	areas												

As a result, 18 pilot projects were selected as shown below:

- (a) Xeatzán Bajo Model Area
  - Mini-irrigation plan

- Plan of revolving fund for hand weaving thread
- Water quality improvement plan for the existing drinking water supply
- (b) Panyebar Model Area
  - Coffee production improvement plan
  - Rehabilitation plan for drinking water system
  - Water quality improvement plan for the existing drinking water supply
  - Coffee processing plan for workload reduction in mountainous area
- (c) Pachum Model Area
  - Reforestation plan
  - Layer-chicken Raising Plan for Women's Group
  - Water quality improvement plan for the existing drinking water supply
  - Plan for extension use of improved cooking stoves and of sauna baths "Temascal"
  - Plan for installation of minimal pharmacy unit
- (d) Palestina Model Area
  - Plan for model farm on potato production
  - Potato storage plan
  - Mini-irrigation plan
  - Water quality improvement plan for the existing drinking water supply
  - Municipality community health activity plan
  - Plan for migrant people to the coastal areas

### 8.3 Plans of Pilot Projects

Each plan of 18 Pilot Projects is summarized in Project Design Matrix sheets and Project Profiles as shown below;

#### 8.4 Implementation of Pilot Projects

The proposed organization is shown below. The JICA Study Team will be responsible for overall management of implementation of Pilot Projects in corporation with MAGA. The formulated 18 Pilot Projects cover various fields of development and work components, including (i) environmental and conservation plan (ii) plans for increasing income generation and improvement plan for living conditions. With exception of the Pilot Projects in an agricultural field that MAGA will implement, participation of other organizations relevant to the implementation of Pilot Projects in other fields is essential. Therefore, it is proposed to establish a steering coordination committee of representatives from relevant organizations.

The committee headed by a representative of MAGA. The member of the committee will consist of representatives from SEGEPLAN, MSPAS, ICTA, FIS, INTECAP, JICA/JOCV office, governors of the four provinces (Chimaltenango, Sololá, Totonicapán and Quetzaltenango), four relevant municipalities (Patzun, Panyebar, Santa Maria Chiquimula, and Palestina de Altos) and JICA Study Team.

Provincial offices of the organizations that participate in a steering committee will make supervision of project implementation and monitoring for Pilot Projects. The results of supervision and monitoring will be submitted to the JICA Study Team.

With respect to farmers' organization for implementation of project, as mentioned in chapter 7, farmer's participation also becomes one of the most important factors in the case of implementation of Pilot Projects. The basic concept for farmers' participation composed of following three components.

- (1) Participation in project implementation
- (2) Farmers' sharing of construction cost
- (3) Operation and maintenance of project by farmers themselves

For each Pilot Project, development committee will be made for participation in construction work and O&M work after construction of Pilot Project. In set up of development committee, existing development committee, if any, will be used as much as possible.

With regard to cost sharing, it is planned that the government of Japan will provide a grant for main facilities, training costs and technical guidance. Farmer side bears provision of labor force and lands necessary for construction of facilities, cost for farm inputs, irrigation facility on farm level and O&M cost of Pilot Project. It is planned that cost necessary for farm inputs, irrigation facility on farm level, and medicines at first cultivation stage will be loaned to beneficiary farmers with no or very low interest rate. After construction of Pilot Project, each development committee will manage it.

Though implementation period of each Pilot Project is different, total period of implementation and monitoring of Pilot Projects will be 15 months. After 15 months, it is expected that monitoring work of each Pilot Project should be also continued



#### 9. CONCLUSIONS AND RECOMMENDATIONS

- It may be concluded that the peoples in the Central Highland Region of Guatemala seriously suffer from poverty from the view points of low income, poor quality of living environments and devastation of natural resources.
- It may be concluded that the methodology of the participatory survey approach introduced into this Study is very effective in extracting the problems, needs and potentials from the farmers' viewpoints and motivating community people, that are critical factors for the formulation of sustainable bottom-up rural development plans.
- It is recommended that 18 Pilot Projects selected in this Study should be implemented as soon as possible. Through the implementation of the Pilot Projects, countermeasures for problems and constraints should be identified and the methodology of surveys and formulation of project development in this Study should be improved.
- It is proposed that a steering coordination committee headed by MAGA should be established before commencement of the Pilot Projects for their smooth implementation and effective monitoring.
- It is recommended that the implementation of the projects on the sustainable rural development should be carried out for four provinces of Chimaltenango, Sololá, Totonicapán and Quetzaltenango based on the above improved methodology.

### Pilot Projects for Sustainable Rural Development for Reduction of Poverty in the Central Highland Region of the Republic of Guatemala

Community: 4 Model Micr	ro-basin	Target Group: People in	n Model Micro-basin
Period: Sep. 2001 ~ I	Dec. 2002	Implt. Organization: MAGA,	JICA, Farmers' organization
			June 2001
Narrativo Summany	Verifiable Indicators	Means of Verification	
Narrative Summary	Vermable mulcators	Means of vernication	Important Assumptions
Overall Goal 1. Poverty condition in central highland region will be mitigated.	Poverty indicator of rural area will be improved up to the provincial average by 2015.	FIS Poverty Indicator and monitoring on Farmers.	There will be no drastic change in development policy of Guatemalan Government.
<ol> <li>Project Purpose</li> <li>Natural resources are properly managed and conserved.</li> <li>Rural income level is improved.</li> <li>Living condition in/around communities will be upgraded.</li> </ol>	<ol> <li>Coverage of forest will increase</li> <li>Rural income level will be upgraded to municipal average.</li> <li>Rate of household with tap water will be increased.</li> <li>Morbidity of community people will decrease.</li> </ol>	<ol> <li>Monitoring survey</li> <li>Statistics, Sample survey</li> <li>Statistics, Community record</li> <li>Statistics, Community record</li> <li>Statistics, Community record</li> <li>Record at health center</li> </ol>	<ol> <li>Similar type of projects will be implemented in other communities by utilizing monitoring results of the project.</li> </ol>
Output           Natural resource conservation           1 Reforestation is properly implemented.           Income level improvement           2 Potato productivity is improved.           3 Selling price of potato is improved.           4 Vegetables production by produced and sold also in dry season.           5 Eggs and old chickens are sold.           6 Coffee productivity is improved.           7 Profitability of Huipil production is improved.           Living condition upgrading           8 Drinking water is continuously supplied.           9 Drinking water quality will be improved.           10 Improved stove and sauna are diffused.           11&12 Basic medicines become easily available at reasonable price.           13 Health condition of migrants in coastal area is improved.           14 Workload of coffee	<ol> <li>Area planted</li> <li>Unit yield of potato</li> <li>Selling price of potato</li> <li>Amount of produced and sold during dry season</li> <li>Sold amount of egg and chicken</li> <li>Unit yield of coffee</li> <li>Net profit from Huipil production</li> <li>Times of water suspension</li> <li>Number of diarrhea patients</li> <li>Consumption amount of firewood</li> <li>X12 Monthly purchasing cost of medicine is reduced.</li> <li>Top 10 diseases of migrant workers are reduced by 15%.</li> <li>Time consumption for coffee</li> </ol>	<ol> <li>Record of forestation</li> <li>Sample survey</li> <li>Monitoring on sale price</li> <li>Sale record or interview survey</li> <li>Sale record or interview survey</li> <li>Sample survey</li> <li>Sample survey</li> <li>Monitoring record of water supply system</li> <li>Record at health center/post</li> <li>Sample survey</li> </ol>	<ol> <li>There is no abundant supply or sever reduction in demand for agricultural products.</li> <li>Present situation on labor demand will not drastically change</li> <li>People continuously stay in the central highland region.</li> </ol>
Activity         Activity         Natural resource conservation         1 Implementation of reforestation         Income level improvement         2 Installation of model farm         3 Installation of potato storage         4 Construction of mini-irrigation system         5 Raising layer-chicken and sale of eggs and old chicken         6 Coffee production improvement         7 Promotion of Huinil production	transportation is reduced.         Inputs       Natural resource conservation         1       Reforestation	Q 140,800 (PC)* Q 13,200 (PL) Q 655,800 (PL) Q 906,000 (XB)* Q 1,228,000 (PL)* Q 73,100 (PC) Q 128 100 (PB)	No natural disaster occurs     Pre-conditions
<ul> <li>Living condition upgrading</li> <li>Rehabilitation of water supply system</li> <li>Improvement of water quality</li> <li>Diffusion of improved stove and sauna facilities</li> <li>Installation of Minimal Pharmacy Unit</li> <li>Promotion and improvement of municipal health service</li> <li>Training of migrants to coastal area</li> <li>Workload reduction of coffee transportation</li> </ul>	<ul> <li>7 Promotion of Huipil production.</li> <li>Living condition upgrading</li> <li>8 Rehabilitation of water supply s</li> <li>9 Improvement of water quality</li> <li>10 Improved stove and sauna facili</li> <li>11 Minimal Pharmacy Unit installa</li> <li>12 Municipal health service improv</li> <li>13 Training of migrants to coastal a</li> <li>14 Workload reduction of coffee tra Total</li> </ul>	Q 261,900 (XB) ystemQ 609,200 (PB) Q 436,600 (4 areas) tiesQ 166,000 (PC) tionQ 51,400 (PC) vementQ 91,900 (PL) areaQ 394,000 (PL) ansportationQ 75,400 (PB)* Q 5,231,400	<ol> <li>There is no strong objection among community people against implementation of projects.</li> <li>Government will support the implementation of the projects</li> </ol>

 transportation

 XB: Xeatzan Bajo, PB: Panyebar, PC: Pachum, PL: Palestina

#### Project Name: Mini-Irrigation Plan (b-5) Community: Xeatzan Bajo

Item		C	ontents		Remarks
1. Objectives	To incr	ease farmers income throug	gh: i) increase in cropp	ing intensity from	
	increase	e crops yield by about 1.5 ti	imes; iii) increase quali	ty of produce, and	
	therefor	re attain better farm gate	e prices and iv) organ	nization of users	
	associa	tion in terms of O&M of fac	cilities and marketing.		
2. Number of Beneficiaries	80 farm	ners (4.6 ha)			
3. Implementation	Irrigatio	on Committee of Xeatzan B	ajo		
4. Project Contents					
1) Project Outline	Present product yield u farmers harvest the far cultivat	ly most of the land in X tion under rainfed condition nder rainfed condition is produces at the same tim- ing in the rainy season. The mers' incomes by means ion with spring water, which	eatzan Bajo area is un n, at twice of cultivatio very unstable, and bea e, farm gate prices are his project aims to stab of introducing a smith h is located in the villas	sed for vegetable n in a year. Crops cause majority of depressed during ilize and increase all-scale irrigated ge.	
2) Facility / Activity	cultiva	Facilities/Activities	In is included in the vinit	ementator	
	<ol> <li>Pum</li> <li>Pipe</li> <li>Elev</li> <li>Elev</li> <li>Tech and</li> <li>Orga</li> </ol>	p station (1 pump, 1 house) line; Conduction pipeline: Distribution pipeline rated regulating tank : 75 m unical assistance: farming pi marketing anization of the irrigation co	Omega     Contractor       1km     Second Contractor       39km     ICTA / mar       ommittee     The study t	(1-3) keting company eam	
3) Organization for O&M	Irrigatio	on committee			
4) Construction	4.5 moi	nth			
5. Project Cost	1) Con	struction cost	Q 880,000		Cost born by
	2) Train 3) Tota	ning cost	Q 26,000		beneficiaries: Q 92,000
6. Monitoring & Evaluation	<u>ງ) 10ເລ</u> າ	1 0031			
Item		Frequency	Data collector	Aggregation	Decision Maker
1) No. of beneficiary's attendants to the construction work	Objectives       10 increase tames in company in uncrease in corporing intensity from 22.5 % under present condition up to 30 % with project conditions; i) increase carby yield by about 1.5 times; iii) increase quality of produce, and therefore attain better farm gate prices are any organization of users association in terms of O&M of facilities and marketing.         Number of Beneficiaries       80 farmers (4.6 ha)         Implementation       Irrigation Committee of Xeatzan Bajo         Organization of       Project Contents         11) Project Contents       Production under rainfed condition, at twice of cultivation in a year. Crops yield under rainfed condition, at twice of cultivation in a year. Crops yield under rainfed condition is very unstable, and because majority of farmers produces at he same time, farm gate prices are depresed during tharvesting in the rainy season. This project atim is to stabilize and increase the farmers' incomes by means of introducing a small-scale irrigated cultivation with spring water, which is located in the village.         2) Facility / Activity       Prepient conduction pipeline : 1km Distribution pipeline : 9km 3) Electrodireg tampet prices are depresed during the marketing company and marketing.         3) Organization of full arrigation committee       10 Construction cost		Study Team		
2) Progress of construction	n	Every half month	MAGA/Study Team	Study Team	Study Team
3) Total benefits		Before and after 1 <sup>st</sup> crop	MAGA/Study Team	Study Team	Study Team
4) Collection rate of the v charge	vater	Every month	Irri. Committee	MAGA/ Study Team	Study Team
7. Plan of Operation					
ltem	08	2001	02 03 04 05		00 10 11 12
1) Construction works	00				
2) Technical assistance					
3) Cultivation					
4) Monitoring					

## PDM #03: Mini-irrigation Plan (b-5) (Pilot Project)

Community: Xeatzan Bajo	г	Target Group: Farmers	
Period: Sep. 2001 ~ N	Nov. 2002	Implt. Organization: MAGA	& Water Users' Association
			Luna 2001
			June, 2001
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	<ol> <li>Poverty indicator of rural area will be improved up to the provincial average by 2015.</li> </ol>	1. FIS Poverty Indicator and monitoring on Farmers.	<ol> <li>There will be no drastic change in development policy of Guatemalan Government.</li> </ol>
<ul> <li>Project Purpose</li> <li>1. Income level of the beneficiaries will be improved.</li> </ul>	<ol> <li>Income level of the beneficiaries (income from vegetable production) will increase.</li> </ol>	1. Monitoring of farm income through interview survey.	1. Similar type of projects will be implemented in other neighboring communities with utilizing the monitoring results of this project.
Outputs			
<ol> <li>Irrigation system is used.</li> <li>Water users' association is in act.</li> <li>Water charge is properly collected.</li> <li>The facility is properly maintained by users.</li> <li>Farmers master skill of vegetable production.</li> <li>Increase of land use intensity from 2 harvests to 3 harvests per year.</li> <li>Increase of crop yield and quality.</li> </ol>	<ol> <li>Number of water users association and number of facility users</li> <li>Collection rate is more than 80%.</li> <li>Condition of operation and maintenance of the facility (Utilization of water charge and actual working days of the facility)</li> <li>Number of farmers that practice vegetable production.</li> </ol>	<ol> <li>Record of water users' association and water users</li> <li>Record of water charge collection (account book)</li> <li>Monitoring of the facility</li> <li>Monitoring of farmers</li> <li>Monitoring on agricultural production</li> </ol>	<ol> <li>Demand for vegetable will not be worsen.</li> <li>There is no extreme reduction in the price of vegetable</li> </ol>
<ul> <li>Activities</li> <li>1. Construction of irrigation system.</li> <li>2. Establishment of water users association and its strengthening</li> <li>3. Collection of water fee by water users' association.</li> <li>4. Operation and maintenance of system by water users themselves</li> </ul>	<ul> <li>Inputs</li> <li>1. Construction cost, training maintenance of irrigation sy</li> <li>2. Cost for technical assistance practices and organizational association (its establishme : Q 26,000</li> <li>3. Total Cost: Q 906,000</li> <li>4. Cost for provision of initial</li> </ul>	cost for operation and ystem and : Q 880,000 e of agricultural farm l assistance for water user's nt and strengthening) farm inputs of vegetable	<ol> <li>There is no abnormal weather such as drought, abnormal scale typhoon, etc.</li> <li>There is no abnormal outbreak of pests and/or diseases of vegetables.</li> </ol>
<ol> <li>Training on vegetable production</li> <li>Acquisition of farm inputs for vegetable production</li> <li>Arrangements for obtaining credit from Rural Bank or contract growers</li> <li>Arrangements for marketing of vegetables</li> </ol>	<ul> <li>4. Cost for provision of initial farm inputs of vere production (born by beneficiaries) : Q 92,000 produc</li></ul>		<ol> <li>Pre-conduons</li> <li>People have intention to participate in construction of irrigation system and are willing to pay necessary cost (water charge, etc.)</li> </ol>

#### Project Name: Plan of Revolving Fund for Hand Weaving Thread (b-13) Community: Xeatzan Bajo

Item	Content	S	Remarks
1. Objectives	Majors of women in Xeatzan Bajo have p blouses called Huipils by hand weaving. They thread for Huipils by the higher price at re limited, which results in increasing of pro investment of purchasing threads as revolv cooperative to be instituted. They coopera wholesale stores and can reduce production addition, various educational training will be p capacity building.	roduced traditional Mayan women's have to purchase a small quantity of tailers because their capital is quite duction cost. In this project, initial ing funds is given to the women's tively purchase cheaper threads at cost of Huipils to increase profit. In performed for women to increase their	
2. Number of	200 women who are engaged in weaving Huipi	ls in Xeatzan Bajo.	
2 Implementation	Women's Huipils production cooperative for Y	eatzan Baio /IICA Study Team	
Organization	women's muppls production cooperative for X	catzan Bajo / Stery Study Team	
4. Project Contents			
1) Project Outline	<ol> <li>Establishment of production organization at</li> <li>Provision of capital for revolving fund</li> <li>Marketing survey conducted by NGO</li> <li>Training program conducted by NGO (orga accounting, general matters, gender, planning</li> <li>Monitoring</li> </ol>	nd control system of revolving fund nization, management and ng and evaluation)	
2) Facility / Activity	Facilities/Activities         1) Establishment of organization and revolving fund         2) Marketing survey         3) Training         4) Operation of organization (cooperating purchase of threads and selling them to the member of cooperative)	Implementator       g     1) NGO       2) NGO       3) NGO       4) Cooperative	
3) Organization for	1) Women's Huipils production cooperati	ve for Xeatzan Bajo	
4) Construction Period	<ol> <li>Establishment of cooperative: 1 month</li> <li>Marketing survey: 1 month</li> <li>Training: 4 months</li> </ol>		
5. Project Cost	<ol> <li>Initial capital for revolving fund: Q 86</li> <li>Equipment and materials for cooperati</li> <li>Project management including training of cooperative): Q 153,700</li> <li>Total project cost: Q 261,820</li> </ol>	620 ve office: Q 21,500 , marketing survey, establishment	
	nc		
ltern	Erequency Data or	Magnegation	Decision Maker

Item	Frequency	Data collector	Aggregation	Decision Maker
1) Amount of thread that are sold	Once a week	Cooperative	NGO	JICA Study Team
and stocked in cooperative				
2) Financial statement	Once a week	Cooperative	NGO	JICA Study Team
3) Reduction of production cost	Once a month	Cooperative	NGO	JICA Study Team

#### 7. Plan of Operation

			2001								20	02					
Item	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12
1) Selection of NGO																	
2) Institution of Cooperative																	
3) Marketing survey																	
4) Training																	
5) Investment of capital and						$\triangle$											
purchase of threads																	
6) Monitoring																	

## PDM #07: Plan of Revolving Fund for Hand Weaving Thread (b-13) (Pilot Project)

Community: Xeatzan Bajo		Target Group: Women in	n the Village
Period: Sep. 2001 ~ De	ec. 2002	Implt. Organization: JICA and	Women's association
			June, 2001
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	1. Poverty indicator of rural area will be improved up to the provincial average by 2015	1. FIS Poverty Indicator and monitoring on Farmers.	1. There will be no drastic change in development policy of Guatemalan
<ul> <li><i>Project Purpose</i></li> <li>1. Income of women in Xeatzan Bajo will be improved.</li> <li>2. Women's capacity will be enhanced to improve socioeconomic situation.</li> </ul>	<ol> <li>Participant's income increase by 10 per cent</li> </ol>	<ol> <li>Record of weekly and monthly meeting (monitoring on members)</li> <li>Record of the cooperative</li> </ol>	<ol> <li>Similar type of projects will be implemented in other neighboring communities with utilizing the monitoring results of this project.</li> </ol>
<ul> <li>Outputs <ol> <li>Women's cooperative is established and in active.</li> <li>Women buy thread at cheaper price from the cooperative.</li> <li>Members master organizational and administrative skills and operate cooperative by themselves.</li> <li>The cooperative continues joint purchase of thread</li> <li>Members can sell their products at better price.</li> <li>Members understanding on huipil business, alternative income generation activity is enhanced.</li> <li>Members master basic management skill such as writing and reading simple</li> </ol> </li> </ul>	<ul> <li>By Nov 2002</li> <li>1. The production cost decrease by 15 %.</li> <li>2. Amount of thread that are sold and stocked in cooperative.</li> <li>3. Balance of cash flow</li> </ul>	<ol> <li>Monitoring on thread price at retailer and wholesaler.</li> <li>Operation record of the cooperative for a accounting book and sale/ stock book</li> </ol>	<ol> <li>The price of thread and huipil do not change dramatically</li> <li>The demand for huipil will not be deteriorated from the present level.</li> </ol>
calculation. Activities 1. Establishment of women's cooperative 2. Provision of thread to the cooperative as the initial input 3. Sale of thread by the cooperative to the members. 4. Joint purchase of thread	<ul> <li><i>Inputs</i></li> <li>1. Purchase cost of thread</li> <li>2. Purchase cost for other initial</li> <li>3. Cost of training for members' and other management support</li> </ul>	Q 86,620 inputsQ 21,500 capacitation tQ 153,700 Total Cost: <u>Q 261,820</u>	<ol> <li>The consumption of thread in Xeatzan Bajo does not change drastically.</li> </ol>
<ul> <li>4. Joint purchase of thread through the cooperative</li> <li>5. Training of members <ul> <li>Basic training for management (simple calculation, literacy training)</li> <li>Huipil business (marketing, demand and perspective of huipil business)</li> <li>Organization management (accounting, etc.)</li> <li>Skill and information on alternative income generation activities.</li> </ul> </li> </ul>			Pre-conditions

#### Project Name: Water Quality Improvement Plan for the Existing Drinking Water Supply (c-5) Community: Xeatzan Bajo

1. Objectives       To improve health condition of the community residents through improvement of drinking water quality by installation of sterilizer.         2. Number of Beneficiaries       Users of present potable water supply system 240 households (approximately 1,248 persons)         3. Implementation       Development Committee of Xeatzan Bajo         0. Project Coutline       Development Committee of Xeatzan Bajo         1. Project Coutline       Sterilizer will be installed to the water tank and hypo chlorinate will be installed to the water tank and hypo chlorinate will be installed to the water tank and hypo chlorinate will be installed to the water tank and hypo chlorinate will be installed to the water tank and hypo chlorinate will be installed to the water tank and hypo chlorinate will be installed to the water tank and hypo chlorinate will be installed to the water tank and hypo chlorinate will be installed to the water tank and hypo chlorinate will be installed to the vater tank and hypo chlorinate will be installed to the water tank and hypo chlorinate will be installed to the supervision of the issuery issuer)         2) Facility / Activity       Facilites/Activities       Implementator         1) Hypo chlorinates Dispenser       1 unit       Contractor         3) Organization for OAM       Development Committee and Pump Committee       Presently, development committee in this protect.         4) Construction       1 week (Period necessary for installation of sterilizer)       Purchase of hypo-chlorinate will be conducted to Q 16,200         5. Project Cost       1. Hypo chlorinate signeser       Q 26		ltem	Contents												Remarks					
Improvement of drinking water quality by installation of sterilizer.         2. Number of Beneficiaries       Users of present potable water supply system 240 households (approximately 1,248 persons)         3. Implementation Organization       Development Committee of Xeatzan Bajo         4. Project Contents       Implementation Organization         1) Project Outline       Sterilizer will be installed to the water tank and hypo chlorinate will be injected into the potable water in order to eliminate bacteria.         2) Facility / Activity       Facilities/Activities       Implementator         2) Facility / Activity       Facilities/Activities       Implementator         3) Organization for OSM       Development Committee and Pump Committee       Presently, development Committee is in charge of water fee collection. This system will be induced so that people collection the system will be induced so that people collection. This system will be induced so that people collection the project.       Presently, development Committee is in charge of water fee collection. This system will be induced so that people collection the project.         3) Organization for OSM       Development Committee and Pump Committee       Q 9,220         4. Hypo chlorinate signenser.       Q 9,220         5. Project Cost       1. Hypo chlorinate signenser.       Q 9,220         5. Hypo chlorinate signenser.       Q 2,500         6. Monitoring & Evaluation       Frequency       Data collector       Aggregation <td>1.</td> <td>Objectives</td> <td colspan="11">To improve health condition of the community residents through</td> <td></td> <td></td> <td></td> <td>-</td>	1.	Objectives	To improve health condition of the community residents through														-			
2. Number of Beneficiaries       Users of present potable water supply system 240 households (approximately 1,248 persons)         3. Implementation Organization       Development Committee of Xeatzan Bajo         4. Project Contints       Implementation         1) Project Outline       Sterilizer will be installed to the water tank and hypo chlorinate will be injected into the potable water in order to eliminate bacteria. People education will be conducted so that people use improved water continuously and pay necessary expense for the operation of sterilizer.         2) Facility / Activity       Facilites/Activities       Implementator Development Committee         3) Organization for O&M       Development Committee and Pump Committee       Presently, development committee is in charge of water fee collection. This system will be utilized in this project.         4) Construction Period       I week (Period necessary for installation of sterilizer)       Presently, development committee sin charge of bother cost (Technical charge, etc.)			improvement of drinking water quality by installation of sterilizer.																	
2. Number of Beneficiaries       Users of present potable water supply system 240 households         3. Implementation Organization       Development Committee of Xeatxan Bajo         4. Project Contents       Implementation Contact will be installed to the water tank and hypo chlorinate will be installed to the water tank and hypo chlorinate will be installed to the operation of sterilizer.         2) Facility / Activity       Serilizer will be installed to the water tank and hypo chlorinate will be installed to the operation of sterilizer.         2) Facility / Activity       Facilities/Activities       Implementator         3) Organization for O&       Development Committee and Pump Committee       Presently, development Committee is in charge of water fee collection.         3) Organization for O&       Development Committee and Pump Committee       Presently, development of water fee collection.         4) Construction       I week (Period necessary for installation of sterilizer)       Presently, development committee is in charge of water fee collection.         4) Construction       I week (Period necessary for installation of sterilizer)       Purchase of hypochlorinate would be 3-4 lines/sear.         5. Project Cost       1. Hypo chlorinates dispenser.       Q 9,220         2. Hypo chlorinates dispenser.       Q 6,940         3. Other cost (Technical charge, etc.)       Q 6,940         4. Total Installation cost (1-3)       Q 16,200       Purchase of hypochlorinate would be reduced durin																				
2. Notice of proceed potent for water suppry system 240 nousenous         3. Implementation       Development Committee of Xeatzan Bajo         4. Project Contents       Implementation         1) Project Outline       Sterilizer will be installed to the water tank and hypo chlorinate will be injected into the potable water in order to eliminate bacteria.         2) Facility / Activity       Facilities/Activities         1) Project Outline       Sterilizer will be installed to the water tank and hypo chlorinate will be injected into the potable water inproved water continuously and pay necessary expense for the operation of sterilizer.         2) Facility / Activity       Facilities/Activities       Implementator         1) Hypo chlorinates Dispenser       1 unit       Contractor         2) Pople education       Development Committee       Presently, development committee is in charge of 08M         3) Organization for O&M       Development Committee and Pump Committee       Presently, development committee is no tharge of 08M         4) Construction       I week (Period necessary for installation of sterilizer)       Purchase of hypo-chlorinate would be 3-4 times/year, 02.020         5. Project Cost       1. Hypo chlorinates dispenser.       Q 2.00       Q 16.420       Decusion activity.         4. Total Installation Cost (1-3)       Q 16.420       S total cost on education activity.       Q 18.920       Purchase of hypo-chlorinate would be 7-4 times/year, 04.92.00	0	Number of	Llaara	Users of present potable water supply system 240 households																
3. Implementation       Development Committee of Xeatzan Bajo         4. Project Contents	Ζ.	Beneficiaries	(appro	(approximately 1,248 persons)																
3. Implementation       Development Committee of Xeatzan Bajo         4. Project Contents       Sterilizer will be installed to the water tank and hypo chlorinate will be injected into the potable water in order to eliminate bacteria. People education will be conducted so that people use improved water continuously and pay necessary expenses for the operation of sterilizer.         2) Facility / Activity       Facilities/Activities       Implementator         2) Facility / Activity       Facilities/Activities       Implementator         3) Organization for O&       Development Committee and Pump Committee       Presently, development committee is in charge of water for collection         4) Construction       1 week (Period necessary for installation of sterilizer)       Presently, development committee is in charge of hypo-chlorinates dispenser.       0 9 220         5. Project Cost       1. Hypo chlorinates dispenser.       0 9 220       Purchase of hypo-chlorinates dispenser.         4. Total Installation Cost (1-3)       0 16 420       0 260       1 hypo-chlorinates dispenser.         5. Project Cost       1. Hypo chlorinates dispenser.       0 9 220       Purchase of hypo-chlorinate cost.         5. Oral Cost       1. Hypo chlorinates dispenser.       0 16 420       0 4 5 20         6. Monitoring & Evaluation       5. Total Cost.       0 2 2500       nainy season.         7. Total Cost       1. Hypo chlorinate would be committee       FIS <td>_</td> <td>Les la contente de la</td> <td></td> <td colspan="12"></td> <td></td> <td></td> <td></td> <td></td>	_	Les la contente de la																		
4. Project Contents       1) Project Outline       Sterilizer will be installed to the water tank and hypo chlorinate will be injected into the potable water in order to eliminate bacteria. People education will be conducted so that people use improved water continuously and pay necessary expense for the operation of sterilizer.         2) Facility / Activity       Facilities/Activities       Implementator         2) Facility / Activity       Facilities/Activities       Implementator         3) Organization for O&M       Development Committee       Presently, development committee is in charge of water fee collection. This system will be utilized in this project.         4) Construction Period       I week (Period necessary for installation of sterilizer)       Presently, development committee dispenser         5. Project Cost       1. Hypo chlorinate purchase cost 0. Other cost (Technical charge, etc.)       Q 9,220 0. Purchase of hypo-chlorinate would be 3-4 times/year, d. Total Installation Cost (1-3)       Q 16,420 0. D 4,620         6. Monitoring & Evaluation       Frequency       Data collector       Aggregation       Decision Maker         1) Users of improved water sterilizer       Every 3 months       Dev. Committee       FIS       Study Team         3) Number of diarrhea patient 4) Simple water quality test       Every 3 months       Dev. Committee       FIS       Study Team         7. Plan of Operation       2007       11       12 <td>3.</td> <td>Implementation Organization</td> <td>Devel</td> <td>opmen</td> <td>t Com</td> <td>mitte</td> <td>e of X</td> <td>eatzar</td> <td>і Вајо</td> <td></td>	3.	Implementation Organization	Devel	opmen	t Com	mitte	e of X	eatzar	і Вајо											
1) Project Outline       Sterilizer will be installed to the water tank and hypo chlorinate will be injected into the potable water in order to eliminate bacteria.         2) Facility / Activity       Facilities/Activities       Implementator         2) Facility / Activity       Facilities/Activities       Implementator         3) Organization for O&M       Development Committee and Pump Committee       Presently, development committee is udy team)         3) Organization for O&M       Development Committee and Pump Committee       Presently, development committee is in charge of water fee collection. This system will be utilized in this project.         4) Construction       1 week (Period necessary for installation of sterilizer)       Presently, development committee is in charge of water fee collection. This system will be utilized in this project.         5. Project Cost       1. Hypo chlorinates dispenser	4.	Project Contents																		
Project classifier       Presently, development committee and Pump Committee         2) Facility / Activity       Facilities/Activities       Implementator         2) Facility / Activity       Facilities/Activities       Implementator         3) Organization for O&M       Development Committee       Presently, development committee transmitter (under the supervision of the study team)         3) Organization for O&M       Development Committee and Pump Committee       Presently, development committee is in charge of Water fee collection. This system will be utilized in this project.         4) Construction       1 week (Period necessary for installation of sterilizer)       Presently, development committee is no charge of Water fee collection. This system will be utilized in this project.         5. Project Cost       1. Hypo chlorinate dispenser		1) Project Outline	Sterili	izer wi	ll be	install	ed to	the w	vater t	ank a	nd hy	vpo ch	lorina	te wi	ll be					
Propie cutation will be conducted so that propie use implored water continuously and pay necessary expense for the operation of sterilizer.         2) Facility / Activity       Facilities/Activities       Implementator         1) Hypo chlorinates Dispenser 1 unit       Contractor       Development Committee funder the supervision of the study team)         3) Organization for O&M       Development Committee and Pump Committee       Presently, development committee is in charge of water fee collection. This system will be tuilized in this project.         4) Construction       1 week (Period necessary for installation of sterilizer)       Purchase of hypo-chlorinate signeser			inject	ed into	the po	table	water	in orc	ler to e	elimin	ate ba	acteria	impro	und u	ator					
2) Facility / Activity       Facilities/Activities       Implementator         2) Facility / Activity       1 Hypo chlorinates Dispenser       1 unit       Contractor         3) Organization for O&M       Development Committee and Pump Committee       Presently, development committee is in charge of water fee collection.         4) Construction Period       1 week (Period necessary for installation of sterilizer)       Presently, development committee is in charge of water fee collection.         5. Project Cost       1. Hypo chlorinate sdispenser			contir	e euue nuously	and p	ay ne	cessai	ry exp	ense fo	or the	opera	tion of	f steril	lizer.	valei					
2) Facility / Activity       Facilities/Activities       Implementator         1) Hypo chlorinates Dispenser       1 unit       Contractor       Development Committee (under the supervision of the study team)         3) Organization for O&M       Development Committee and Pump Committee       Presently, development committee in charge of water fee collection. This system will be utilized in this project.         4) Construction Period       1 week (Period necessary for installation of sterilizer)       Purchase of hypo-chlorinate dispenser																				
Image: Normal Structure       Image: Normal Structure       Image: Normal Structure       Image: Normal Structure       Presently, development Committee (under the supervision of the study team)         3) Organization for O&M       Development Committee and Pump Committee (under the supervision of the study team)       Presently, development committee is in charge of water fee collection. This system will be utilized in this project.         4) Construction Period       I week (Period necessary for installation of sterilizer)       Purchase of hypo-chlorinate supervision of the study team. Q 9,220         5. Project Cost       1. Hypo chlorinate gispenser		2) Facility / Activity		F	acilit	ies/A	ctivitie	es		I		Imple	menta	ator						
2) People education       Development Committee (uder the supervision of the study team)       Presently, development committee is in charge of water fee collection. This system will be utilized in this project.         3) Organization for O&M       Development Committee and Pump Committee       Presently, development committee is in charge of water fee collection. This system will be utilized in this project.         4) Construction Period       1 week (Period necessary for installation of sterilizer)       Purchase of hypo-chlorinate purchase cost. Q 260 be 3-4 times/year, be cause water use will be reduced during be reduced during be reduced during total Cost         5. Project Cost       1. Hypo chlorinate purchase cost. Q 16,400 be 3-4 times/year, d. Total Installation Cost (1~3). Cost for education activity. Q 18,920       Q 9,220 hypo-chlorinate would be 3-4 times/year, because water use will be reduced during the reduced during be reduced during the			1) Hy	po chl	orinate	es Dis	pense	r lu	nit	С	ontra	ctor								
3) Organization for O&M       Development Committee and Pump Committee       Presently, development committee is in charge of water fee collection. This system will be utilized in this project.         4) Construction Period       1 week (Period necessary for installation of sterilizer)       Purchase of hypo-chlorinate would be 3-4 times/year.         5. Project Cost       1. Hypo chlorinate dispenser			2) Pe	ople ed	lucatio	n				D	evelo	pment	t Com	mittee	; Etha					
3) Organization for O&M       Development Committee and Pump Committee       Presently, development committee is in charge of water fee collection. This system will be utilized in this project.         4) Construction Period       1 week (Period necessary for installation of sterilizer)       Purchase of hypo-chlorinate would 3. Other cost (Technical charge, etc.)       Purchase of hypo-chlorinate would be reduced during rainy season.         5. Project Cost       1. Hypo chlorinate sigpenser       Q 9,220 2. Hypo chlorinate purchase cost.       Q 16,420 5. Cost for education activity.       Q 16,420 9. Cost.         6. Monitoring & Evaluation       6. Total Installation Cost (1~3).       Q 16,420 9. Cost.       Deteclorind Maker         1) Users of improved water       Every 3 months       Dev. Committee       FIS       Study Team         2) Operation status of sterilizer       Monthly       Dev. Committee       FIS       Study Team         3) Number of diarrhea patient 4) Simple water quality test       Every 3 months       Dev. Committee       FIS       Study Team         7. Plan of Operation       0       0       1       1       1       1       0										st	udy to	eam)	pervis		the					
3) Organization for O&M       Development Committee and Pump Committee       Presently, development committee is in charge of water fee collection. This system will be utilized in this project.         4) Construction Period       1 week (Period necessary for installation of sterilizer)       Purchase of hypo-chlorinate sdispenser		a) Organization for	Darral		4 C			D	<u>C</u>							Dree	a	d		
a) Construction Period       1 week (Period necessary for installation of sterilizer)       of water fee collection. This system will be utilized in this project.         5. Project Cost       1. Hypo chlorinates dispenser		O&M	Devel	opmen	t Com	mitte	e and	Pump	Comn	nuee						committee is in charge				
A) Construction Period       1 week (Period necessary for installation of sterilizer)       1 week (Period necessary for installation of sterilizer)         5. Project Cost       1. Hypo chlorinates dispenser																of water fee collection.				
4) Construction Period       1 week (Period necessary for installation of sterilizer)       Purchase of hypo-chlorinate would be 3-4 times/year, because water use will be reduced during 6. Monitoring & Evaluation         6. Monitoring & Evaluation       Frequency       Data collector       Aggregation FIS       Decision Maker         1) Users of improved water 2) Operation status of sterilizer       Every 3 months       Dev. Committee FIS       FIS       Study Team         3) Number of diarrhea patient 4) Simple water quality test       Every 3 months       Dev. Committee FIS       FIS       Study Team         7. Plan of Operation 3) People education       09       10       11       12       01       02       03       04       05       06       07       08       09       10       11       12       01       02       03       04       05       06       07       08       09       10       11       12       01       02       03       04       05       06       07       08       09       10       11       12       01       02       03       04       05       06       07       08       09       10       11       12       01       02       03       04       05       06       07       08       09       10																This utili	syste zed in	m will this p	l be roject.	
Period       I. Hypo chlorinates dispenser		4) Construction	1 wee	k (Peri	od neo	essar	y for i	installa	ation o	f steri	ilizer)									
0. 1 Hype clock with the problem of	5	Period Project Cost	1 Hy	mo chl	orinate	es dist	nenser						0.9	220		Purc	hase	of		
3. Other cost (Technical charge, etc.)	0.		2. Hy	po chl	orinate	e purc	hase c	cost					Q	260		hypo-chlorinate would				
4. Total Instantation Cost (1×3) 6. Total Cost for education activity. Q 2,500Q 2,500 be reduced during rainy season.6. Monitoring & EvaluationItemFrequencyData collectorAggregationDecision Maker1) Users of improved water 2) Operation status of sterilizerEvery 3 monthsDev. CommitteeFISStudy Team2) Operation status of sterilizerMonthlyDev. CommitteeFISStudy Team3) Number of diarrhea patient 4) Simple water quality testEvery 3 monthsDev. CommitteeFISStudy Team7. Plan of Operation2001200220021011121) Purchase of equipment 3) People educationImage: study committeeImage: study committeeImage: study committeeImage: study committee2) Installation of sterilizerImage: study committeeImage: study committeeImage: study committeeImage: study committee3) People educationImage: study committeeImage: study committeeImage: study committeeImage: study committee1) Purchase of equipment 3) People educationImage: study committeeImage: study committeeImage: study committeeImage: study committee3) People educationImage: study committeeImage: study committeeImage: study committeeImage: study committeeImage: study committee1) ManitoringImage: study committeeImage: study committeeImage: study committeeImage: study committeeImage: study committee1) Purchase of equipment 3) People educationImage: study committee <td></td> <td></td> <td>3. Ot</td> <td>her cos</td> <td>t (Tecl</td> <td>hnical</td> <td>charg</td> <td>ge, etc.</td> <td>.)</td> <td>•••••</td> <td>•••••</td> <td></td> <td>Q6</td> <td>5,940</td> <td></td> <td colspan="4">be 3~4 times/year,</td>			3. Ot	her cos	t (Tecl	hnical	charg	ge, etc.	.)	•••••	•••••		Q6	5,940		be 3~4 times/year,				
6. Total Cost       Q 18,920       rainy season.         Q 18,920       rainy season.         6. Monitoring & Evaluation       Prequency       Data collector       A ggregation       Decision Maker         1) Users of improved water       Every 3 months       Dev. Committee       FIS       Study Team         2) Operation status of sterilizer       Monthly       Dev. Committee       FIS       Study Team         3) Number of diarrhea patient       Every 3 months       Dev. Committee       FIS       Study Team         4) Simple water quality test       Every 3 months       Dev. Committee       FIS       Study Team         7. Plan of Operation         2001       2001       2002       03       04       05       06       07       08       09       10       11       12         1) Purchase of equipment       Image: Imag			4. 10 5. Co	st for e	ducati	ion ac	tivity.	·····		•••••			Q10	2,500		because water use will be reduced during				
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$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		1) Users of improved wa	ter	Ever	y 3 mc	onths		Dev.	Comn	nittee		FIS				Stud	y Tear	n		
sterilizer         3) Number of diarrhea patient       Every 3 months       Dev. Committee       FIS       Study Team         4) Simple water quality test       Every 3 months       FIS       FIS       Study Team         Study Team         Operation         Image: colspan="4">Image: colspan="4">Study Team         Image: colspan="4">Study Te		2) Operation status of		Mont	hly			Dev.	Comn	nittee		FIS				Stud	y Teai	n		
3) Number of diarrhea patient 4) Simple water quality testEvery 3 months Every 3 monthsDev. Committee FISFISStudy TeamTISFISStudy Team7. Plan of Operation $2001$ $2001$ $2002$ $10$ $11$ $12$ $01$ $02$ $03$ $04$ $05$ $06$ $07$ $08$ $09$ $10$ $11$ $12$ 1) Purchase of equipment 3) People education $10$ $11$ $12$ $01$ $02$ $03$ $04$ $05$ $06$ $07$ $08$ $09$ $10$ $11$ $12$ 1) Monitoring $10$ $10$ $11$ $12$ $01$ $02$ $03$ $04$ $05$ $06$ $07$ $08$ $09$ $10$ $11$ $12$ 1 $10$ $10$ $11$ $12$ $01$ $02$ $03$ $04$ $05$ $06$ $07$ $08$ $09$ $10$ $11$ $12$ 1 $10$ $10$ $11$ $12$ $01$ $02$ $03$ $04$ $05$ $06$ $07$ $08$ $09$ $10$ $11$ $12$ 1 $10$ $10$ $10$ $10$ $10$ $10$ $10$ $10$ $10$ $10$ $10$ $10$ $10$ $10$ 1 $10$ <t< td=""><td></td><td>sterilizer</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		sterilizer																		
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Item       2001       2002         Item       08       09       10       11       12       01       02       03       04       05       06       07       08       09       10       11       12         Image: Description       Image: Descri		4) Simple water quality	test	est Every 3 months FIS FIS								Stud	y Teai	n						
Item       2001       2002         Item       08       09       10       11       12       01       02       03       04       05       06       07       08       09       10       11       12         1) Purchase of equipment       Image: state st																				
Item       08       09       10       11       12       01       02       03       04       05       06       07       08       09       10       11       12         1) Purchase of equipment       Image: Control of Sterilizer       Im	7.	Plan of Operation	2001 2002																	
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		3) People education																		
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### PDM #10: Water Quality Improvement Plan for the Existing Drinking Water Supply System (c-5) (Pilot Project)

Community:	Xeatzan Bajo	Target Group:	Beneficiaries of water supply system
Period:	Sep. 2001 ~ Dec. 2002	Implt. Organization:	MAGA & Water Committee

Iune	2001
June.	2001

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	<ol> <li>Poverty indicator of rural area will be improved up to the provincial average by 2015.</li> </ol>	<ol> <li>FIS Poverty Indicator and monitoring on Farmers.</li> </ol>	1. There will be no drastic change in development policy of Guatemalan Government.
<b>Project Purpose</b> <ol> <li>Health condition of         <ul> <li>inhabitants in Xeatzan             </li> <li>Bajo is improved.</li> </ul> </li> </ol>	<ol> <li>Morbidity of water-borne diseases in Xeatzan Bajo is reduced.</li> </ol>	<ol> <li>Interview survey of potable water users.</li> <li>Number of water-bone disease patients (such as diarrhea) in the health post.</li> </ol>	1. Similar type of projects will be implemented in other communities by utilizing monitoring results of the project.
<ul> <li>Outputs</li> <li>1. Quality of potable water is improved.</li> <li>2. Beneficiaries use improved potable water.</li> <li>3. Sterilizer is properly maintained.</li> </ul>	<ol> <li>No colon bacillus is detected in potable water.</li> <li>There is no reduction in the number of water user.</li> <li>Sterilizer is constantly in operation.</li> </ol>	<ol> <li>Simple water quality test</li> <li>Monitoring on potable water user</li> <li>Number of operating days of sterilizer.</li> </ol>	1. There is no chemical contamination occurs in potable water.
<ul> <li>Activities</li> <li>1. Education on use of improved water is made for beneficiaries through water committee.</li> <li>2. Sterilize is installed to the water supply system.</li> <li>3. O&amp;M and fee collection</li> </ul>	<ul> <li>Inputs</li> <li>1. Hypo chlorinates dispenser</li> <li>2. Hypo chlorinate purchase of</li> <li>3. Other cost (Technical charged)</li> <li>4. Total Installation Cost (1~2)</li> <li>5. Cost for education activity</li> <li>6. Total Cost</li> </ul>	Q 9,220 costQ 260 ge, etc.)Q 6,940 3)Q 16,420 Q 2,500 Q 18,920	<ol> <li>Installation of sterilizer is made with the consensus of community.</li> <li>No disaster that damages water system occurs such as earthquake.</li> </ol>
of the sterilizer are made by water committee.			<ul> <li>Pre-conditions</li> <li>1. There is no strong objection to the installation of sterilizer.</li> </ul>

#### Project Name: Coffee Production Improvement Plan (b-7) Community: Panyebar

Item	Contents										Remarks			
1. Objectives	Replacement of old trees is an urgent matter because there are many old trees of over 20 years in this village plantation, which is a major factor of low productivity. By applying coffee plantation management technology, improve present low profit plantation into high productivity sustainable coffee plantation, aiming at stable increase of farmers' income.											es W ee		
2. Number of Beneficiaries	72 fan	72 families, with population of about 400												
3. Implementation	Coffee	offee Growers association												
4 Project Contents														
1) Project Outline	(i) E	stablis	hment	ofnu	rsery	center								
	(ii) T	<ul> <li>Setting up a nursery</li> <li>Nursing seedlings of improved coffee variety and distribute to participants</li> <li>Technical training Conduct technical transfers to farmers by training on the coffee</li> </ul>											e	
	p	lantatio	on mai	nagem	ent te	chnolo	ogy.							
	(III) C	ash ma bere ar	iking ( 'e seve	operat ral ki	ion nds o	f nrom	nisina	fruits	whic	h co	uld be	cultiv	ated i	n
	C	offee n	ursery	and a	also n	arkete	ed, wi	ith high	s, wind gh pop	ulari	ty both	in do	mesti	c
	a	nd inte	rnatio	nal ma	arkets	. It sho	ould t	be effe	ective	to se	cure in	come	sourc	e
	to	o streng	then f	inanc	ial co	nditior	ns of t	his pr	oject.					
2) Facility / Activity	1) 17.	. 11	Facili		CTIVIT	les			Coff	Imp Coo ar		ntatio	n	
	1) Vir 2) Vir	iyl hou	se A 4	20  m	for f	coffee :	seedlin	ing	Con	ee gi	owers	associ	ation	
	2) VII 3) Wa	ter tanl	se D J k	75 111	101 1	iuit se	eanny	g						
	4) Ne	cessary	input	mater	rials									
	5) 2,5	00 pcs	s coff	èe se	edling	gs of	impr	oved						
	var	ieties	iocadi	s saad	linge	of Has	e vori	atu						
	and	1 300 p	cs nea	ch see	dling	of mas	s van	lety						
3) Organization for O&M	Coffee	e growe	ers ass	ociati	on									
4) Construction Period	About	2 mon	ths											
5. Project Cost	1) Tot	al proj	ect co	st/Q 1	28,07	6	~ .							
6 Monitoring & Evaluatio	(Q9	9,624 0	flabo	r cost	born	by ben	eficia	aries)						
	11													
Item		<b>F</b> 1 1	Fre	equen	су		D	ata c	ollecto	or	Ag	grega	ntion	Decision Maker
1) Number of renewed c	onee	End c	or rain	y seas	on			nee G	rower	S	MAC	JА		Study Team
2) Number of participan	t to	After	traini	igust) ng cot	irse cl	osed	Co	ffee G	rower	S	MAC	βA		Study Team
training course				0			Ass	sociati	ion					
3) Result nursery operation	ion	End c	of rain	y seas	on		Co	ffee G	rower	S	MAC	βA		Study Team
4) Sales of fruit seedling	s	(abo End a	out Au	gust)	~ **		Ass Co	sociati	lon rower	s	MAG	īΑ		Study Team
i) suice of fruit securing	5	End C	$\Delta 1 rain$	y seas	on		Ass	sociati	ion	5	1012 10			Study Poulli
	(about August)													
7. Plan of Operation														
1) Draviding group have	08	09	10	11	12	01	02	03	04	05	06	07	08	09 10 11 12
and input materials		$\odot$	0											
2) Operation														
3) Marketing of seedlings														
(planting season) (4) Training and monitoring	σ													
$\diamond$ technical training	5			$\land$				$\land$				$\land$		
© monitoring				$\sim$				$ \sim$				$\sim$	0	
		1				1		9			1	1	J	

## PDM #17: Coffee Production Improvement Plan (b-7) (Pilot Project)

Community:	Panyebar	Target Group:	Coffee Producers in Panyebar
Period:	Sep. 2001 ~ Dec. 2002	Implt. Organization:	MAGA, Coffee growers' association

June, 2001

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	<ol> <li>Poverty indicator of rural area will be improved up to the provincial average by 2015.</li> </ol>	<ol> <li>FIS Poverty Indicator and monitoring on Farmers.</li> </ol>	<ol> <li>There will be no drastic change in development policy of Guatemalan Government.</li> </ol>
<ul> <li>Project Purpose</li> <li>1. Income level of participants will be improved.</li> </ul>	<ol> <li>Income from coffee production will increase.</li> <li>Production increases to 10~15 qq from present 7~10 qq.</li> </ol>	<ol> <li>Monitoring on farmers and interview survey.</li> <li>Monitoring on farmers and interview survey.</li> </ol>	1. Similar type of projects will be implemented in other neighboring communities with utilizing the monitoring results of this project.
<ol> <li>Outputs         <ol> <li>Coffee growers' association is in act.</li> <li>Nursery is constructed, properly operated, and seedlings are distributed to the members.</li> <li>Association members master proper coffee cultivation technique.</li> <li>Association members master proper cultivation technique of cash crops like fruits.</li> <li>Association members get knowledge and experiences regarding marketing of cash crops</li> </ol> </li> </ol>	<ol> <li>Number of participants in Growers' association (over 70% of plan) and status of activities.</li> <li>Number of produced seedlings and number of distributed seedlings (over 70% of plan).</li> <li>Number of farmers who apply the introduced techniques (over 70% of plan).</li> <li>Number of fruits seedlings sold (over 70% of production).</li> </ol>	<ol> <li>Number of registered participants of association and record of activities</li> <li>Operation record of the nursery</li> <li>Monitoring of farmers and interview survey</li> <li>Monitoring of farmers and interview survey</li> </ol>	<ol> <li>There is no drastic reduction in demand and price of coffee.</li> <li>There is no drastic reduction in demand and price of fruits.</li> </ol>
<ul> <li>Activities</li> <li>1. Establishment of coffee growers' association</li> <li>2. Construction of nursery bed</li> <li>3. Technical training on the nursery operation</li> <li>4. Technical training on</li> </ul>	Inputs 1. Construction cost of nurser Greenhouse (420 m <sup>2</sup> ) Greenhouse (375 m <sup>2</sup> ) Water Tank Others 2. Operational expenditures	y bed Q 89,051(A)	1. There is no outbreak of pests and diseases that may affect coffee production.
<ul> <li>coffee production (renovation of old tree, pest management, organic fertilizer, etc.)</li> <li>5. Technical training of cultivation of cash crops likes, (avocado, etc.)</li> <li>6. Technical training on commercial nursery for raising cash crops</li> <li>7. Monitoring and evaluation of the project</li> </ul>	<ul> <li>Seeds <ul> <li>Consumables like plastic popertilizers, pesticides</li> </ul> </li> <li>3. Seedling <ul> <li>Coffee (2500 pcs)</li> <li>Avocado (500 pcs)</li> <li>Peach (300 pcs)</li> </ul> </li> <li>4. Technical guidance <ul> <li>Training on O/M of nursery</li> <li>Training on increasing of carbon content of the project (A) +</li> </ul> </li> </ul>	bt and etc. Q 9,175 (B) $Q 14,250(C)$ $Q 14,250(C)$ $Q 15,600(D)$ $Q 15,600(D)$ $Q 15,600(D)$ $Q 128,076$	<ul> <li>Pre-conditions</li> <li>1. There is no strong objection against the project among farmers.</li> </ul>

#### Project Name: Rehabilitation Plan for Drinking Water System (c-4) Community: Panyebar

Item	Contents											Re	mark	s				
1. Objectives	To imp	rove p	otable	e wate	r supj	ply sy	stem a	nd										
2. Number of Beneficiaries	Users o	Users of present potable water supply system 298 households																
3. Implementation	Water C	Vater Committee of Panyebar																
4. Project Contents																		
1) Project Outline	JICA su the poin protecti of the r	ICA supply construction materials for the improvement of the facilities at he point where the pipelines cross the river, and for the performance of the protection work at the steep slope for about 4 km starting from the source of the river.																
2) Facility / Activity			Fac	cilities	:/Acti	vities				Im	plem	entate	or					
	<ol> <li>1) Rive</li> <li>2) Prote</li> <li>3) Distri</li> <li>4) Conv</li> <li>5) Conr</li> </ol>	er crosection ributic reyand rectio	ss worl work on tank ce pipe n pipe	k for pi c eline line	pelino	7 p e 2,4 1 u 3 p 30	ooints 400 m units cm m			1),2),4 Comr 3): Co	4),5): nittee ontrac	Water tor	-					
3) Organization for O&M	Water C	Comm	ittee						<b></b>									
4) Construction Period	About 1	0 mo	onth															
5. Project Cost	1. Reha 1) R 2) P 3) E 4) C 5) C T 2. Educ	1. Rehabilitation Works         1) River cross work       Q 25,290         2) Protection work for pipeline       Q 287,760         3) Distribution tank       Q 174,840         4) Conveyance pipeline       Q 114,160         5) Connection pipeline       Q 3,130         TOTAL       Q 605,180         2       Education of People         0       4 000																
6. Monitoring & Evaluation	3. Tota	I Cost	t								Q	609,13	80					
Item			Freau	iencv	,	Da	ata co	llecto	r	A	aare	aatior	1	Decision Maker				
<ol> <li>Progress of construct water supply</li> <li>Payment rate of wate</li> </ol>	ion of r charge	Mo Eve	nthly erv 4 n	nonths	3	Wate Wate	r Con r Con	mittee	e	FIS FIS	00	0		Study Team				
<ul><li>3) Status on O&amp;M of fa</li><li>4) Status of water use</li></ul>	cilities	One Mo	ce half nthly	year		Wate Wate	r Con r Con	mittee	e e	FIS FIS				Stud Stud	y Tear y Tear	m m		
7. Plan of Operation																		
ltem	08	09	2001	11	12	01	02	03	04	05	20 06	02	08	09	10	11	12	
1) Purchase of equipme	nt	03	10		12	07	02	00	07	00	00	07	00	03	10	11	12	
2) River cross work	iii ii																	
2) River closs work																		
5) Protection work for																		
pipeline																		
4) Distribution tank																		
5) Conduction pipeline/																		
Connection pipeline																		
6) Monitoring												$\bigtriangleup$	$\bigtriangleup$	$\triangle$	$\triangle$	$\triangle$		
																	-	

## PDM #21: Rehabilitation Plan for Drinking Water System (c-4) (Pilot Project)

Community:	Panyebar	Target Group:	Beneficiaries of water supply system
Period:	Sep. 2001 ~ Dec. 2002	Implt. Organization:	Water Committee

			June, 2001
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	1. Poverty indicator of rural area will be improved up to the provincial average by 2015.	1. FIS Poverty Indicator and monitoring on Farmers.	1. There will be no drastic change in development policy of Guatemalan Government.
<ul> <li>Project Purpose</li> <li>1. Water will be always available at each house.</li> <li>2. Time and energy spent for water collection will be reduced.</li> </ul>	<ol> <li>Water supply to each house will be stable.</li> <li>Time spent for water collection per day or per week will be reduced.</li> </ol>	<ol> <li>Monitoring on water users.</li> </ol>	<ol> <li>Similar type of projects will be implemented in other communities by utilizing monitoring results of the project.</li> </ol>
<ol> <li>Outputs         <ol> <li>Water system is improved.</li> <li>Water charge is collected by the water committee.</li> <li>Water system is properly maintained by the beneficiaries themselves.</li> <li>Water is properly used at each house and saved.</li> </ol> </li> </ol>	<ol> <li>Status of water system improvement.</li> <li>Collection rate of water charge is more than 80%.</li> <li>Maintenance condition of water supply system (collected water charge is properly used of maintenance purpose)</li> <li>5% of amount of water used at each house will be reduced.</li> </ol>	<ol> <li>Record of repair work</li> <li>Record of water charge collection</li> <li>Account record of water charge</li> <li>Monitoring on beneficiaries.</li> </ol>	<ol> <li>Available water amount will not be reduced and water quality at water source will not be deteriorated.</li> </ol>
<ul> <li>Activities</li> <li>1. Improvement of water supply system</li> <li>2. Strengthening of water committee (improvement of water fee collection system)</li> <li>3. Operation and</li> </ul>	Inputs 1. Repair cost of water supply 1) River cross work 2) Protection work for pipelir 3) Distribution tank 4) Conveyance pipeline 5) Connection pipeline	v system Q 25,290 neQ 287,760 Q 174,840 Q 114,160 Q 3,130 Q 605,180	<ol> <li>There is no occurrence of natural disasters that damages water system drastically such as earthquake.</li> </ol>
<ul><li>maintenance of water supply system by the water users.</li><li>4. Training on water saving for the water users</li></ul>	2. Cost for training for water s (Public meeting x 2 times &	saving & follow-up) Q 4,000 <u>Total: Q 609,180</u>	<ul> <li>Pre-conditions</li> <li>People have intention to participate in repair work of water system and are willing to pay water charge.</li> </ul>

#### Project Name: Water Quality Improvement Plan for the Existing Drinking Water Supply (c-5) Community: Panyebar

Item			Ren	narks	;								
1. Objectives	To improve health condition of the community residents through improvement of drinking water quality by installation of sterilizer.												
2. Number of Beneficiaries	Users of present p (approximately 1)	ootable water 730 persons	r supply sy )	vstem 29	98 hou	isehold	ls						
3. Implementation	Water Committee	;											
Organization 4 Project Contents													
1) Project Outline	Sterilizer will be injected into the p People education continuously and	Sterilizer will be installed to the water tank and hypo chlorinate will be injected into the potable water in order to eliminate bacteria. People education will be conducted so that people use improved water continuously and pay necessary expense for the operation of sterilizer.											
2) Facility / Activity	Facili	ities/Activitie	es	Ĩ		Impler	nenta	tor					
	<ol> <li>Hypochlorinat</li> <li>People education</li> </ol>	e Dosing 2 ion	2 unit	C V s te	Contra Vater ( upervi eam)	ctor Commi ision o	ittee (1 f the s	under tudy	the				
3) Organization for O&M	Water Committee	;											
4) Construction Period	1 week (Period no	ecessary for i	installatior	n of ster	ilizer)								
5. Project Cost	<ol> <li>Hypochlorinat</li> <li>Hypochlorinat</li> <li>Other cost (Te</li> <li>Total installati</li> <li>Cost for educa</li> <li>Total Cost</li> </ol>	e dosing 2 e purchase c chnical charg on cost (1~3 ttion activity	sets ost ge, etc.) )				Q Q Q Q	18,44 1,03 13,88 33,35 2,50 35,85	0 0 0 0 0 0				
6. Monitoring & Evaluatio	n												
Item	Freq	uency	Data d	collecto	or	A	ggreg	gation	1	Dec	cision	Mak	er
1) Users of improved wa	ter Every 3 m	nonths	Dev. Cor	nmittee		FIS				Study	/ Tean	1	
2) Operation status of sterilizer	Monthly		Dev. Cor	nmittee		FIS				Study	/ Tean	1	
3) Number of diarrhea p	atient Every 3 m	onths	Dev. Cor	nmittee		FIS				Study	/ Tean	1	
4) Simple water quality	test Every 3 m	nonths	FIS			FIS				Study	/ Tean	1	
7. Plan of Operation	200												
Item	<u> </u>									09	10	11	12
1) Purchase of equipment	ıt												
2) Installation of steriliz	er 📕												
3) People education									_	_	_		
4) Monitoring								$\square$	$\bigtriangleup$				$\bigtriangleup$

### PDM #22: Water Quality Improvement Plan for the Existing Drinking Water Supply System (c-5) (Pilot Project)

Community:	Panyebar	Target Group:	Beneficiaries of water supply system
Period:	Sep. 2001 ~ Dec. 2002	Implt. Organization:	Water Committee

			June, 2001
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	1. Poverty indicator of rural area will be improved up to the provincial average by 2015.	<ol> <li>FIS Poverty Indicator and monitoring on Farmers.</li> </ol>	1. There will be no drastic change in development policy of Guatemalan Government.
<ul><li>Project Purpose</li><li>1. Health condition of inhabitants in Panyebar is improved.</li></ul>	<ol> <li>Morbidity of water-borne diseases in Panyebar is reduced.</li> </ol>	<ol> <li>Interview survey of potable water users.</li> <li>Number of water-borne disease patients (such as diarrhea) in the health post.</li> </ol>	1. Similar type of projects will be implemented in other communities by utilizing monitoring results of the project.
<ul> <li>Outputs</li> <li>1. Quality of potable water is improved.</li> <li>2. Beneficiaries use improved potable water.</li> <li>3. Sterilizer is properly maintained.</li> </ul>	<ol> <li>No colon bacillus is detected in potable water.</li> <li>There is no reduction in the number of water user.</li> <li>Sterilizer is constantly in operation.</li> </ol>	<ol> <li>Simple water quality test</li> <li>Monitoring on potable water user</li> <li>Number of operating days of sterilizer.</li> </ol>	1. There is no chemical contamination occurs in potable water.
<ul> <li>Activities</li> <li>1. Education on use of improved water is made for beneficiaries through water committee.</li> <li>2. Sterilizer is installed to the water supply system.</li> <li>3. O&amp;M and fee collection</li> </ul>	<i>Inputs</i> 1. Hypochlorinate dosing: 2 s 2. Hypochlorinate purchase c 3. Other cost (Technical charg 4. Total installation cost (1~3 5. Cost for education activity 6. Total Cost	dets       Q 18,440         ost       Q 1,030         ge, etc.)       Q 13,880         )       Q 33,350         Q 2,500       Q 35,850	<ol> <li>Installation of sterilizer is made with the consensus of community.</li> <li>No disaster that damages water system occurs such as earthquake.</li> </ol>
of the sterilizer are made by water committee.			<ul> <li>Pre-conditions</li> <li>1. There is no strong objection to the installation of sterilizer.</li> </ul>

#### Project Name: Coffee Processing Plan for Workload Reduction in the Mountainous Area (c-14) Community: Panyebar

Item					Co	ntent	s							Rei	mark	5
1. Objectives	The m carry o	ain obj coffee b	ective of eans wal	the proking th	oject is rough	to rec very s	luce tl teep s	he wo lopes.	rkloac	l of fa	rmers	who				
	Additi reduct matter	onal prion of for con	roject be pollution nposting	enefits n of At	are: i) itlan l	incre ake w	ase o vaters;	f farr iii) a	ners' availat	net in pility	ncome of org	e; ii) ganic				
2. Number of Beneficiaries	80 small coffee farmers							Farm than are e proj	ners h 1 ha e exclud ect be	aving of coff led as neficia	more fer area direct ary.					
3. Implementation Organization	Devel	opment	pment committee of Panyebar													
4. Project Contents																
1) Project Outline	Four g their f Coffee farms farme	ar groups of small coffee farmers are formed considering the location of ir farm plots. The groups are integrated by 15 to 25 coffee farmers. ffee pulping machines will be installed in selected sites near by the ms of each group. The cost of machines is born by the project. Each														
2) Facility / Activity		F	acilities/	Activiti	es				Imple	menta	ator					
	<ol> <li>Pur</li> <li>Co</li> <li>Co</li> <li>Ins</li> <li>Ac</li> </ol>	Purchasing pulping machines Confirmation of installation sites Installation of pulping machines Acquisition of drums and plastic sheets Development committee Fach farmer by itself								Assi	sted b	y Stud	ly team			
3) Organization for O&M	Each and m	ach group of small coffee farmer will prepare its own schedule for using ad maintaining the pulping machines.														
4) Construction period	One n	ionth, N	lovembe	r 2001												
	<ol> <li>2) Coi</li> <li>3) Pur</li> <li>4) Vin</li> <li>5) Pur</li> <li>6) Tra</li> </ol>	chase of yl for dr chase of ining act	<sup>1</sup> protection <sup>1</sup> weighing <sup>1</sup> ying coffer <sup>2</sup> 50 plastic tivities;	ng scales ng scales ee; e drums	s for pu s at 2,3(	00 Que	nachir tzal; on; <b>Total</b>	nes at 3 Proje	3,000 C Sub-t Sub Sub Sub Sub	Quetzal total = -total = -total = -total = -total = <b>ost = (</b>	s per h Q 12,0 = Q 2,3 = Q 2,0 = Q 6,2 = Q 2,0 <b>2 75,3</b>	ouse; 000 000 250 000 <b>70</b>	prov and 50 fa smail 30 fa land their drum	ride pl vinyl armers ller lan armers are sho own fo	astic c sheets s with nd are with la puld ac erment drying	lrums to the as. rger quire ation sheets.
					-								-			
Item		F	requent	:y	Da	ata co	llecto	or	4	Aggre	gatior	า	De	ecisio	n Mak	(er
1) Installat. pulping machin	ies	Week	ly		Deve	el. con	nmitte	e	MAG	GΑ			Stud	y Tea	n	
2) Operation of pulping		Week	ly		Deve	el. con	nmitte	e	MAG	GA			Stud	y Tea	n	
3) Reduction of coffee beau	ıs	Montl	nly		Deve	el. con	nmitte	e	MAG	GA			Stud	y Tea	n	
4) Price of coffee		Month	nly		Deve	el. con	nmitte	e	MAG	GA			Stud	y Tea	n	
7. Plan of Operation																
	2001 2002									-		-				
Item	08	<u>3 09 10 11 12 01 02 03 04 05 06 07 08</u>								09	10	11	12			
1) Ordering of Machines																
2) Installation of facilities																
3) Training Activity																
4) Monitoring			۵	Δ	$\bigtriangleup$	$\triangle$									$\triangle$	$\bigtriangleup$

## PDM #25: Coffee Processing Plan for Workload Reduction in Mountainous Area (c-14) (Pilot Project)

Community:	Panyebar	Target Group:	80 Coffee Farmers of Panyebar
Period:	Sep. 2001 ~ Dec. 2002	Imp. Organization:	Farmers Coop-MAGA-ANACAFE-INTECAP

June 2001

			June, 2001								
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions								
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	<ol> <li>Poverty indicator of rural area will be improved up to the provincial average by 2015.</li> </ol>	1. FIS Poverty Indicator and monitoring on Farmers.	<ol> <li>There will be no drastic change in development policy of Guatemalan Government.</li> </ol>								
<ol> <li>Project Purpose</li> <li>Workload of coffee farmers at harvesting time will be reduced.</li> <li>Income level of small coffee farmers will be improved.</li> <li>Job opportunities will be created in Panyebar Model Project Area.</li> </ol>	<ol> <li>Time consumption for transporting the harvested coffee will be reduced</li> <li>The income level of beneficiary farmers will increase about 10 %.</li> <li>Number of labors employed for depulping.</li> </ol>	<ol> <li>Monitoring and interview survey.</li> <li>Monitoring production costs and selling prices of dry and fresh coffee beans.</li> <li>Monitoring of employed farmers.</li> </ol>	1. Similar type of projects will be implemented in other neighboring communities with utilizing the monitoring results of this project.								
Outputs											
<ol> <li>Coffee producers are organized into 4 groups of 15 to 25 farmers each and the groups are in action.</li> <li>Coffee beans are processed into depulped and dry coffee beans nearby farms site.</li> <li>The weight of coffee to be transported is reduced compared with fresh beans.</li> <li>Coffee farmers sell dried coffee bean with added value.</li> <li>Organic materials for compost production become available.</li> <li>Selection of 80 coffee farmers and Organizing 5 groups for coffee</li> </ol>	<ol> <li>Number of groups organized and their member</li> <li>About 4,800 quintals of coffee beans are depulped and dried up every year by 80 beneficiary farmers (over 80% of raw coffee production).</li> <li>The weight of coffee is reduced to 1/5.</li> <li>The price will be higher by 10 % compared with the price of fresh beans.</li> <li>Number of farmers who apply organic matter from depulping.</li> <li>Inputs</li> <li>Technical assistance fee f processing groups: Q 20,5</li> </ol>	<ol> <li>Monitoring on membership of the organized coffee farmers groups.</li> <li>Monitoring on depulped coffee.</li> <li>Monitoring of the weight of depulped coffee.</li> <li>Monitoring on coffee sale of group members.</li> <li>Monitoring on farmers.</li> </ol>	<ol> <li>Demand and prices of coffee will not decrease greatly and farmers continue producing coffee.</li> <li>1. There is no occurrence of natural disaster that</li> </ol>								
<ol> <li>5 groups for coffee pulping.</li> <li>2. Deciding on sites for installing coffee pulping and drying facilities.</li> </ol>	2. Purchase and Installation Pulping Machines (max. o Q 8,470 x 6 units = Q 50,	of 6 units of Manual Coffee capacity: 35 qq/hour) 820	damages the facilities.								
<ol> <li>Installation of 6 Manual Coffee Pulping Machines.</li> <li>Provision of vinyl sheets for drying coffee.</li> <li>Training members of coffee pulping groups.</li> <li>Contact markets outlets for selling dry coffee beans.</li> </ol>	<ol> <li>Cost of coffee drying ving</li> <li>About 10 Man-days of IN specialists for training corr of depulping and drying a</li> <li>Total Cost: <u>Q 75,370</u></li> </ol>	t of coffee drying vinyl sheets: Q 2,000 put 10 Man-days of INTECAP and ANACAFE cialists for training coffee farmers on management lepulping and drying activities: Q 2,000 al Cost: <u>Q 75,370</u>					<ul> <li>Cost of coffee drying vinyl sheets: Q 2,000</li> <li>About 10 Man-days of INTECAP and ANACAFE specialists for training coffee farmers on management of depulping and drying activities: Q 2,000</li> <li>Total Cost: Q 75,370</li> </ul>				

#### Project Name: Reforestation Plan (a-3) Community: Pachum

	Item						Co	ntents							Remarks			
1.	Objectives	To p area soil envi	oromote s by con conser ronmen	soil struct vation t in th	conservition of in or e area l	vation nurse der 1 by hin	n in st eries au that lo mself.	eep fari nd implo ocal peo	nlan emer ople	nds an ntation will	nd plan n of tra be al	ntation aining ole to	n in f grelat cons	orest ed to serve				
2.	Number of Beneficiaries	Plan Plan	tation in tation in	n com n priva	munity ate area	area	: 150 h househ	ouseho	lds (a oout	about 290 p	900 p persons	ersons 3)	5)					
3.	Implementation	Plan	tation (	Commi	ittee of	Pach	num					/						
4	Organization Project Contents																	
т.		<b>F</b>	1.4.1			1 1		1 1		1	1 . 1			11 1				
	T) Project Outline	raci pror Trai tech Env	Facilities of nursery will be installed and managed, and plantation will be promoted for forest and soil conservation. Training will be implemented for local people to make him acquire basic techniques concerned with seedling production and plantation. Environmental education and study tours will be done for local people to enhance his understanding on environmental conservation.															
	2) Facility / Activity			Facili	ties/Ac	ctiviti	es		I	I	Implei	menta	ator		The	study	team	and
		1) F 2) S 3) A p 4) T	) Facilities of nursery2 unitsPlantation Committee (under the supervision of consignee organization)(2) Storage2 unitsPlantation Committee (under the supervision of consignee organization)(3) Activities of seedling production and plantationproduction and plantation(4) Training(1) Training								MA have cons abou activ	GA To to co ignee it deta rities.	otonic nfer w organ ils of	apán vith ization				
	3) Organization for	Plan	tation C	Commi	ittee			1	c					1 /				
	O&M	(The	comm manag	ittee i ement	nust be	e unc serv)	ler gui	dance of	of co	onsign	lee org	ganiza	tion a	ibout				
	4) Construction	1) N	1) Nursery construction 1 week															
-	Period	2) S	torage of	constru	uction	1	1	week				0	20.20					
6.	Monitoring & Evaluatio	2) S 3) P 4) C 5) T	torage of lantatic cost for transpor	constru n tool trainir tation	uction . s ng	 	· · · · · · · · · · · · · · · · · · ·	Tot	al			Q Q Q Q 1	7,35 3,55 86,58 4,92 1 <b>40,7(</b>	51 38 38 20 <b>)4</b>				
ΙΓ	ltem			Frequ	lency		Da	ata colle	ecto	r	A	ggre	gatior	ı	Decision Maker			
	1) Number of seedling		Eve	ry 3 m	onths		Pla. (	Commit	tee		MAC	βA			Stud	y Tear	n	
	production																	
	2) Number of plantation		1 tin	ne (Au	igust)		Pla. (	Commit	tee		MAC	ЪА			Stud	y Tear	n	
	3) Number of participant	t on	Eve	y 3 m	onths		Pla. (	Commit	tee		MAC	βA			Stud	y Tear	n	
	training and activities																	
7.	Plan of Operation						1											
Ιr	ltem	0	8 09	200	1 11	12	01	02	03	04	05	20	02	08	09	10	11	12
	1) Purchase of equipmen	it																
	2) Seedling raising																	
	3) Forestation																	
	4) Training		$\triangle$		$\triangle$			$\triangle$		$\triangle$		$\triangle$		$\triangle$			$\triangle$	
	5) Monitoring				$\triangle$			$\bigtriangleup$			$\triangle$			$\triangle$			$\bigtriangleup$	

PDM #28:	Reforestation	Plan	(a-3)
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Community:	Pachum
Period:	Sep. 2001 ~ Dec. 2002

Target Group:Village peopleImplt. Organization:Plantation Committee / MAGA

		-	June 2001
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	<ol> <li>Poverty indicator of rural area will be improved up to the provincial average by 2015.</li> </ol>	<ol> <li>FIS Poverty Indicator and monitoring on Farmers.</li> </ol>	<ol> <li>There will be no drastic change in development policy of Guatemalan Government.</li> </ol>
<ul> <li>Project Purpose</li> <li>1. Farmlands and forest are improved.</li> <li>2. People's income increases through promotion of agro-forestry and fruit plantation.</li> </ul>	<ol> <li>The condition of farmlands is improved.</li> <li>Farmer's income increases.</li> </ol>	<ol> <li>Number of plantation</li> <li>Interview with farmers.</li> </ol>	<ol> <li>Similar type of projects will be implemented in other communities by utilizing monitoring results of the project.</li> </ol>
<ul> <li>Outputs <ol> <li>Plantation is managed.</li> <li>Effectual trees for the improvement of farmlands' condition are planted.</li> <li>Agro-forestry effectual for increase of harvest is implemented.</li> <li>Fruit trees (peach and avocado) are introduced as cashing crop.</li> <li>Plantation of watershed protection is implemented.</li> <li>Plantation for firewood is implemented.</li> <li>Tools to continue the plantation are secured for local people.</li> <li>People's understanding on forest management is enhanced through training.</li> </ol> </li> </ul>	<ol> <li>4,000 seedlings are produced.</li> <li>Farmlands where effectual trees are applied for improvement of soil condition increase.</li> <li>98 cuerdas of farmland area of agro-forestry increase.</li> <li>700 fruit trees increases.</li> <li>Area of plantation spreads in areas of the water source.</li> <li>Area of plantation for fuel woods spreads.</li> <li>Facilities of nursery are constructed in each sector.</li> <li>80 % of participants in the project benefit from training and participate on forestation activities.</li> <li>Environmental education is implemented in class of primary school</li> </ol>	<ol> <li>Implementation records of nursery</li> <li>Plantation records</li> <li>Interview with farmers and Plantation records</li> <li>Interview with farmers and Plantation records</li> <li>Water survey in dry season.</li> <li>Plantation records</li> <li>Number of nursery</li> <li>Number of participants in training and forestation activities</li> <li>Hours of classes about environmental education in primary school.</li> </ol>	<ol> <li>There is no drastic change in demand for forestry products.</li> <li>There is no problem for water right within peoples.</li> <li>Earthquakes or abnormal climate don't prevent from growth of trees after the plantation.</li> <li>Farming techniques which bring about soil erosion in inclined land are not applied</li> <li>Trees are not felled any more illegally.</li> <li>Depopulation of the community is not accelerated.</li> </ol>
<ul> <li>Activities</li> <li>1. Nursery construction</li> <li>2. Promotion of agro-forestry</li> <li>3. Fruit plantation</li> <li>4. Plantation for soil conservation.</li> <li>5. Plantation for watershed protection.</li> <li>6. Plantation for fuel wood securing.</li> <li>7 Making compost</li> </ul>	Inputs         1. Cost for nursery manageme         - Seedlings production         - Nursery construction         - Purchase cost of seedlings         and farming tools         2. Storage construction	<ol> <li>Land condition does not deteriorate more than present condition by the earthquake and abnormal weather.</li> <li>Pre-conditions         <ol> <li>The technical cooperation by MAGA will be continued</li> </ol> </li> </ol>	
<ol> <li>8. Training for people related to plantation.</li> <li>9. Study tour to advanced areas.</li> <li>10. Implementation of environmental education.</li> </ol>			2. Security condition surrounding the target community does not deteriorate more than present.

#### Project Name: Layer-Chicken Raising Plan for Women's Group (b-6) Community: Pachum

Item						Co	ntent	s							Rei	mark	3
1. Objectives	Group eggs fo	of vi or sale	llage v s local	wome lly. Tł	n sh 1e m	all eng	age ii irned	n the by the	raisin e sales	ig chic shall	kens be res	for la erved	ying as a				
	revolv	ng fu	nd for	next	rais	ing. Th	ie sca	le of	busin	ess sh	all be	incre	ased				
	step by	v step. vemen	Thus t of nu	, incr	ease us co	of incondition	me, p in vil	oromo lage i	tion control	of villa are ex	ge ind	dustry d.	and				
2. Number of	150 fa	nily, a	bout 9	900 pe	eople	;					1						
Beneficiaries	Wama	Vomen's Group															
Organization	wome	women's Group															
4. Project Contents																	
1) Project Outline	1) Prov	1) Provide input materials: young chicken, feed, medicine and vitamin															
	2) Con	struct	hen ho	ouse u	ising	materi	als gra	inted	by pro	oject							
	(3) Ope	n trair	ling co	ourse i	tor n	odern (	chicke kot in	en rais	sing pi	ractice	S						
	5) Sav	the f	und fo	r esta	blish	ing nex	t gene	eratio	n activ	ittes							
2) Facility / Activity		F	aciliti	ies/Ad	ctivit	ies				Imple	menta	ator					
	1) Her	-hous	e (5x3	8m) 4	units	3		E	Benefi	ciaries							
	2) Tra	ning o	on rais	ing te	chni	que		١	IGO o	or MA	GA						
3) Organization for	Wome	Vomen's Group															
4) Construction	One m	One month															
Period																	
5. Project Cost	1) input $(2)$ here	1) input materials: Q 38,808										Cost	t born	by	2 600		
	2) nen 3) vari	ous tr	aining		•••••		•••••		Q3, 022	852 100				bene	inciai	ies. Q	2,000
	4) silo	const	ruction	n					Q4,	100							
	5) oth	ers:							Q 2,	065							
6 Monitoring & Evaluati	6) Tota	al proj	ect co	st					Q 73,	082							
						<b>D</b> -	to 00	llaata			~~~~	rotion					
Item			⊢requ	iency	'	Da	ta col	iecto	r	A	ggre	gation	1	De	CISIO	n Mar	er
1) Raising condition (m rate of laving egg)	ortality,	Ev	ery 3 i	month	1	Wome	n's gr	oup		MAG	ЪА			Stud	y Tear	n	
2) Sales of eggs, saving	money	Ev	ery 3 i	month	ı	Wome	n's gr	oup		MAG	ЪА			Stud	y Teai	n	
of egg sales																	
7. Plan of Operation																	
140.000	00	00	2001		10	01	00	00	01	05	20	02	00		10	44	10
Item	08	09	10		12	01	02	03	04	05	00	07	08	09	10	11	12
1) Preparing input materia	ls																
2) Construction hen-house	25																
3) Starting raising																	
4) Evaluation					$\triangle$			$\bigtriangleup$			$\bigtriangleup$			$\triangle$			$\triangle$
L	1		1			1				1							J

## PDM #31: Layer-chicken Raising Plan for Women's Group (b-6) (Pilot Project)

Community:	Pachum	Target Group:	Women's group with 20 members
Period:	Sep. 2001 ~ Dec. 2002	Implt. Organization:	MAGA & Women's Group

			June, 2001	
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions	
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	<ol> <li>Poverty indicator of rural area will be improved up to the provincial average by 2015.</li> </ol>	1. FIS Poverty Indicator and monitoring on Farmers.	1. There will be no drastic change in development policy of Guatemalan Government.	
<ul> <li>Project Purpose</li> <li>1. Income level of the beneficiaries will be improved.</li> <li>2. Women's status will be improved within the community.</li> </ul>	<ol> <li>Q 5.0/day will be paid constantly to labors.</li> <li>Women's participation in socio-economic activities will increase.</li> </ol>	<ol> <li>Account book of women's group</li> <li>Monitoring on number of women who participate in any village activities or committees as permanent staff.</li> </ol>	1. Similar type of projects will be implemented in other neighboring communities with utilizing the monitoring results of this project.	
<ul> <li>Outputs</li> <li>1. Women's group is in action.</li> <li>2.Participants will master raising technique and practice chicken raising.</li> <li>3. Eggs and old chickens are jointly sold.</li> </ul>	<ol> <li>About 200 chickens (50 chickens/group) are raised by 4 groups.</li> <li>160 eggs are produced and sell in local market daily.</li> <li>Participants in the project increase.</li> </ol>	<ol> <li>Activity report of the women's group</li> <li>Interview survey to the beneficiaries</li> <li>Number of members of the women's group</li> </ol>	<ol> <li>There is no drastic change in demand for eggs within the surrounding area.</li> <li>There is no drastic decrease in egg price.</li> </ol>	
<ul> <li>Activities</li> <li>1. Establishment of women's group (4 groups with 10 members each)</li> <li>2. Joint purchase of young layer-chicken</li> <li>3. Raising of layer-chicken</li> </ul>	Inputs <ol> <li>Young chicken, feed, othe</li> <li>Material for chicken house</li> <li>Silo construction</li></ol>	r inputsQ 38,808 eQ 5,832 Q 4,100 Q 22,100 Q 2,065 Q 73,082	1. There is no unusual outbreak of diseases (New Castle Disease, etc.).	
<ul><li>and provision of technical assistance</li><li>4. Selling of egg and old chicken in and around the community.</li><li>5. Monitoring and evaluation of the project</li></ul>	6. Labor cost born by benefic	<b>Pre-conditions</b> 1. There is no strong objection to the project or conflict among the community people.		

#### Project Name: Water Quality Improvement Plan for the Existing Drinking Water Supply (c-5) Community: Pachum

Item	Contents									Remarks							
1. Objectives	To ii impro	nprove vement	heal of dr	th co inking	onditi g wate	on of er qual	f the ity by	con insta	nmuni llation	ty res of ste	sidents rilizer	s thro	ough				
2. Number of Beneficiaries	Users of present potable water supply system System 1: 70 houses (about 360 persons) System 2: 51 houses (about 260 persons)																
3. Implementation Organization	Water	Comm	ittee														
4. Project Contents																	
1) Project Outline	Sterili injecto Peopl contir	Sterilizer will be installed to the water tank and hypo chlorinate will be injected into the potable water in order to eliminate bacteria. People education will be conducted so that people use improved water continuously and pay necessary expense for the operation of sterilizer.															
2) Facility / Activity		F	aciliti	es/Ac	tivitie	es		Ī		Implei	menta	ator					
	1) Hy 2) Pe	po chlo ople ed	orinate ucatio	es Disj n	pense	r2u	init	( V s t	Contra Water ( uperv eam)	ctor Comm ision o	ittee ( of the s	under study	the				
3) Organization for O&M	Water	Comm	ittee														
4) Construction Period	1 wee	k (Perio	od nec	essary	y for i	installa	ation c	of ster	ilizer)								
	<ol> <li>Hy</li> <li>Hy</li> <li>Dis</li> <li>Dis</li> <li>Ott</li> <li>To</li> <li>Co</li> <li>Co</li> <li>To</li> </ol>	1. Hypo chlorinates dispenser       2 sets       Q 18,440         2. Hypo chlorinate purchase cost       Q 1,030         3. Distribution tank       2 units       Q 193,860         4. Other cost (Technical charge, etc.)       Q 13,880         5. Total installation cost (1~4)       Q 227,210         6. Cost for education activity       Q 4,000         7       Total Cost       Q 231,210															
6. Monitoring & Evaluation	on																
Item		F	requ	ency		Da	ata co	llecto	or	A	ggre	gatior	ו	Decision Maker			
1) Users of improved w	ater	Every	3 mo	nths		Dev.	Comn	nittee		FIS				Stud	y Teai	n	
2) Operation status of sterilizer		Monthly Dev. Committee FIS						FIS				Study Team					
3) Number of diarrhea r	atient	Every	3 mo	nths		Dev	Comn	nittee		FIS				Stud	v Tear	m	
4) Simple water quality	v test Every 3 months FIS FIS						Study Team										
7. Plan of Operation																	
Item	Item 08 09 10 11 12 01 02 03 04 05 06 07 08								08	09	10	11	12				
1) Purchase of equipme	nt																
2) Installation of steriliz	er																
3) People education																	
4) Monitoring			$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$ \land $	$\bigtriangleup$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\bigtriangleup$

### PDM #36: Water Quality Improvement Plan for the Existing Drinking Water Supply System (c-5) (Pilot Project)

Community:	Pachum	Target Group:	Beneficiaries of water supply system
Period:	Sep. 2001 ~ Dec. 2002	Implt. Organization:	Water Committee

			June, 2001
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	<ol> <li>Poverty indicator of rural area will be improved up to the provincial average by 2015.</li> </ol>	<ol> <li>FIS Poverty Indicator and monitoring on Farmers.</li> </ol>	<ol> <li>There will be no drastic change in development policy of Guatemalan Government.</li> </ol>
<ul><li>Project Purpose</li><li>1. Health condition of inhabitants in Pachum is improved.</li></ul>	1. Morbidity of water-borne diseases in Pachum is reduced.	<ol> <li>Interview survey of potable water users.</li> <li>Number of water-borne disease patients (such as diarrhea) in the health post.</li> </ol>	<ol> <li>Similar type of projects will be implemented in other communities by utilizing monitoring results of the project.</li> </ol>
<ul> <li>Outputs</li> <li>1. Quality of potable water is improved.</li> <li>2. Beneficiaries use improved potable water.</li> <li>3. Sterilizer is properly maintained.</li> </ul>	<ol> <li>No colon bacillus is detected in potable water.</li> <li>There is no reduction in the number of water user.</li> <li>Sterilizer is constantly in operation.</li> </ol>	<ol> <li>Simple water quality test</li> <li>Monitoring on potable water user</li> <li>Number of operating days of sterilizer.</li> </ol>	<ol> <li>There is no chemical contamination occurs in potable water.</li> </ol>
<ul> <li>Activities</li> <li>1. Education on use of improved water is made for beneficiaries through water committee.</li> <li>2. Sterilizer is installed to the water supply system.</li> <li>3. O&amp;M and fee collection of the sterilizer are made by water committee.</li> </ul>	<i>Inputs</i> 1. Hypo chlorinates dispenser 2. Hypo chlorinate purchase o 3. Distribution tank: 2 units 4. Other cost (Technical charg 5. Total installation cost (1~4 6. Cost for education activity 7. Total Cost	r: 2 setsQ 18,440 costQ 1,030 Q 193,860 ge, etc.)Q 13,880 )Q 227,210 Q 4,000 Q 231,210	<ol> <li>Installation of sterilizer is made with the consensus of community.</li> <li>No disaster that damages water system occurs such as earthquake.</li> <li><b>Pre-conditions</b> <ol> <li>There is no strong objection to the installation of sterilizer.</li> </ol> </li> </ol>

#### Project Name: Plan of Extension of Improved Cooking Stoves and Sauna Baths "*Temascal*" (c-6) Community: Pachum

	ltem	Contents									Rer	narks					
1. Obje	ectives	- Ree	luction	of the da	aily con	sumpti	ion of t	ĩrew	ood in	n order	to cor	nserve	the				
		forest in the mountain area.															
		- Mitigation of heavy duty of firewood transportation with the reduction															
		of the firewood consumption.															
		- Im	provem	ent of	the vill	agers'	healt	h cc	onditio	n with	i intro	oducir	ng a				
		comfortable and economical sauna bath.															
2. Num	nber of	Impro	ved sto	ve:	130 h	ouses											
Ben	eficiaries	Impro	ved Ter	nascal:	40 ho	ises											
	le mentetie m	D. 1			MA	C.A.	1 110	• 04	1 T								
3. Impi Orga	anization	Pachu	m stove	e commi	ttee, MA	IGA a	na JIC	A St	uay Ie	eam							
4. Proj	ect Contents																
	Draigat Quitling	Dragar	+1 in	the com		naanla				fire or	d 1100	tro diti	onal				
1)	Project Outline	sauna	hath	which a	nunity, ire high	fuel-	consum	wiin ing	and	incom	u use fortab	le du	e to				
		smoke	filled	inside. T	o impro	ve thi	s situa	tion,	130 u	nits of	impro	oved s	stove				
		and 4	0 units	of impr	oved sa	una b	ath wi	ll be	e insta	lled ar	nd edu	ucatio	n on				
		facilit	y use ai	nd on for	est cons	ervati	on will	be r	nade.								
2)	Eacility / Activity		E	acilities	/Activiti	<u></u>				Implei	mont	otor					
۷)	Facility / Activity	1) Im	roved	stove:	ACUVIU 13(	units			MAGA	inipiei 4		2101					
		2) Im	proved	Temasca	ıl: 40	units			MAGA	À.							
		3) Dei	nonstra	tion and	capacit	ation a	and		MAGA	4							
	One and a stimulation for	<u> </u>		1 . 1.	41	1											
3)	Organization for	Comn	iunity p	beople by	/ themse	lves											
4)	Construction	Appro	ximate	ly 4 mon	ths												
	Period													<u> </u>			
5. Proj	ect Cost	1) Ins 2) Ins	tallatio tallatio	n of imp	roved st	ove				ا Q 0	31 20	)U )O		beneficiaries: O 19 20(			
		2) IIIs 3) De	3) Demonstration and capacitation				Inclui	<b>cs</b> . Q	.9,200								
		4) Tot	al Cost							Q1	66,00	00					
6. Mon	nitoring & Evaluation	n															
	Item		F	requen	cy	Da	Data collector Aggregation					ו	De	cisior	Make	ər	
1) Pe	eople's impression o	n	Befor	e installa	tion	Villa	Villagers MAGA					-		JICA Study Team			1
fa	acility use		& 3 n	nonths af	ter the												
			instal	lation													
2) Fi	irewood consumptio	m	Befor	e installa	tion	tion MAGA MAGA IICA				Study	v Tean	1					
be	efore and after the p	roject	& 3 n	nonths af	ter the										· · · · · ·	)	
	_	installation															
	of Operation																
7. Plan	of Operation	2001 2002															
	Item	08 09 10 11 12 01 02 03 04 05 06 07 08						09	10	11	12						
1) D																	
1) D	esigning &																
de	emonstration	n															
2) C	2) Construction works																
3) M	Ionitoring &																
	ionitoring <b>a</b>																
E	valuation																

### PDM #37: Plan of Extension Use of Improved Cooking Stoves and of Sauna Baths "Temascal" (c-6) (Pilot Project)

Community: Pachum	2002	Target Group: Residen	ts of Pachum		
1 erioù. 3ep. 2001 ~ 1	Jec. 2002		Luna 2001		
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions		
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	1. Poverty indicator of rural area will be improved up to the provincial average by 2015.	1. FIS Poverty Indicator and monitoring on Farmers.	1. There will be no drastic change in development policy of Guatemalan Government.		
<ul> <li>Project Purpose</li> <li>1. Forest will be conserved because firewood consumption will be reduced.</li> <li>2. Work load will be reduced because firewood collection will be reduced.</li> <li>3. Respiratory disease will be reduced because improved stove / sauna do not give smoke inside the room.</li> <li>4. Health condition will be improved because of bathing will be increase.</li> </ul>	<ol> <li>Reduction of firewood consumption (over 20% reduction of present use of firewood consumption) and reduction of time consumption for firewood collection.</li> <li>Reduction of respiratory disease</li> </ol>	<ol> <li>Monitoring on users</li> <li>Record of health post</li> </ol>	<ol> <li>Similar type of projects will be implemented in other communities by utilizing monitoring results of the project.</li> </ol>		
<ul> <li><i>Outputs</i></li> <li>1. Improved stove will be installed and people use them properly.</li> <li>2. Improved sauna will be installed and people use them properly.</li> </ul>	<ol> <li>Number of installed stove and number of user family</li> <li>Number of installed sauna and number of user family</li> </ol>	1.Monitoring on user families	1. There will be no drastic reduction in available amount of firewood because of forest fire, etc.		
<ul> <li>Activities</li> <li>1. Designing of improved sauna / stove through people's participation</li> <li>2. Demonstration of improved sauna / stove</li> <li>3. Installation of improved stove (150 units)</li> </ul>	<i>Inputs</i> 1. Installation cost for improv 2. Installation cost for improv 3. Cost for demonstration, ins facility use and education / on forest conservation 4. Total Cost	Ped stoveQ 114,400 red saunaQ 31,200 truction on capacitation Q 20,400 Q 166,600	1. There is no occurrence of natural disaster that damages the facilities such as earthquake.		
<ol> <li>Installation of improved sauna (40 units)</li> <li>Instruction on use of improved facility</li> <li>Education on forest conservation</li> </ol>	5. Cost born by beneficiaries.	<ul> <li>Pre-conditions</li> <li>1. There is no strong objection for installation of improved stove and sauna</li> </ul>			

#### Project Name: Plan for Installation of Minimal Pharmacy Unit (MPU) (c-11) Community: Pachum

ltem			Remarks				
1. Objectives	Impr cover progr	oving the access to suffic ring whole population s ram.					
2. Number of Beneficiaries	Appr	coximately 900 persons in					
3. Implementation	NGC	) CDRO					
4. Project Contents							
1) Project Outlin	ne Estal	olishing sustainable revo	lving drug fund system	at MPU cheaper and			
.,	acces The (CDI phan will incer	ssible essential drugs as v project will be manage RO) who will provide macist trained by CDRO supervise the activity o ntives to the promoter in o					
2) Facility / Activ	/ity	Facilities/Activitie	es	Implementator			
	1) 2) 3) 4)	Training promoters Installing MPU Initial drug input Monitoring	1) Cl 2) C 3) Cl 4) Hea	DRO ontractor, community People. DRO Ith committee, CDRO			
3) Organization	for Heal	th committee ad NGO CI	DRO.				
4) Construction Period	Train	ning 2 weeks, Installing N	APU 1 month				
5. Project Cost	1) Tr 2) D 3) M 4) To	raining: Q 15,110 rug input: Q 19,158 laterials and Installing M otal Cost: Q 51,392					
6. Monitoring & Eva	luation						
Item		Frequency	Data collector	Aggregation	Decision Maker		
1) stock control an	d monthly	Monthly	Health committee	NGO CDRO	Study Team		
accounting							
2) Number of first	aid	Monthly	Health committee	NGO CDRO	Study Team		
treatment attend	ed						
3) Amount and use	e of money	Three times / month	NGO CDRO	Study Team	Study Team		
reserved by heal	th						
committee							
7 Plan of Operation	,						
		2001		2002			
Item	Item 08 09 10 11 12 01 02 03 04 05 06 07 08						
1) Training							
2) MPU construction	on						
3) Purchasing drug	S						
4) Monitoring							
5) Retraining							
# PDM #41: Plan for Installation of Minimal Pharmacy Unit (MPU) (c-11) (Pilot Project)

Community:	Pachum	Target Group:	Population in Aldea Xesana
Period:	Sep. 2001 ~ Dec. 2002	Implt. Organization:	CDRO(SIAS), Community
			Pharmacist and Health Committee

			June, 2001
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	<ol> <li>Poverty indicator of rural area will be improved up to the provincial average by 2015.</li> </ol>	<ol> <li>FIS Poverty Indicator and monitoring on Farmers.</li> </ol>	<ol> <li>There will be no drastic change in development policy of Guatemalan Government.</li> </ol>
Project Purpose <ol> <li>The quality of health service will be improved by operating MPU.</li> </ol>	<ol> <li>Number of patients comes to MPU increased.</li> <li>Decrease of spending on drugs per month (including opportunity cost)</li> </ol>	<ol> <li>Monthly record of MPU</li> <li>Cost and distance comparison of MPU, Health Center and private pharmacies</li> </ol>	1. Similar type of projects will be implemented in other neighboring communities with utilizing the monitoring results of this project.
<ul> <li>Outputs</li> <li>1. Drugs becomes easily available geographically and economically (cheap and near)</li> <li>2. Supply of drugs is sustained through revolving drug fund system</li> </ul>	<ol> <li>Drugs are sold constantly per month (more than Q800)</li> <li>Stock of drugs are well sustained and revolved.</li> <li>Accounting of MPU is properly kept.</li> </ol>	<ol> <li>Daily and monthly record on MPU( sales, stock control etc)</li> <li>Record of MPU (Incoming and outgoing of the stock)</li> <li>Bookkeeping of MPU</li> </ol>	<ol> <li>There is no drastic change of pricing structure of drugs.</li> <li>Demand for drugs is not drastically reduced.</li> <li>NGO gives supervision constantly.</li> </ol>
<ul> <li>Activities</li> <li>1. Organizing health committee</li> <li>2. Choosing community pharmacist</li> <li>3. Training for community pharmacist and committee members</li> <li>4. Establishment of MPU</li> </ul>	<ol> <li>Inputs         <ol> <li>Initial training of community</li> <li>Initial training of health comm</li> <li>One day job on training</li> <li>Retraining of community pha</li> <li>Monthly follow up and monit</li> <li>Purchasing of initial drug and</li> </ol> </li> </ol>	<ol> <li>Adequate and constant supply of drugs is sustained.</li> <li>Ministry of health (health center, etc.) will support the project.</li> <li>Good coordination with public health facilities</li> </ol>	
<ol> <li>Operation of MPU in charge of selling essential drugs at cheaper price</li> <li>Provision of initial drugs and equipment and their transportation</li> <li>Monthly supervision by health committee and CDRO</li> <li>Retraining (every six month)</li> <li>Every three month, MPU orders necessary drugs and purchase from CDRO at a certain rate.</li> <li>Monitoring and Evaluation</li> </ol>	<ol> <li>Initial drug input</li></ol>	Q 19,158 Q 2,669 Q 438 Q 438 Q 13,967 Q 51,392	<ul> <li>Pre-conditions</li> <li>1. There is strong needs for cheaper and easily accessible drugs in the community</li> <li>2. The candidate for community pharmacist who meets certain requirements is available.</li> <li>3. People do not object to the introduction of MPU concept.</li> </ul>

#### Project Name: Plan of Model Farm on Potato Production (b-2) Community: Palestina

Item				Remarks						
1. Objectives	To inv product	volve farmers in extension extension of the second se	ension activit	ies and with ap	l to improv plving ICTA	ve potato				
	cultivat	tion method and other	r various fact	ors of	increasing p	production				
2 Number of	(compc	est feeding, IPM technol	logy, use of cle	an seeds	5)					
Beneficiaries	210 141	iners								
3. Implementation	Develo	pment Committee,								
Organization	Potato	Section								
4. Project Contents										
1) Project Outline	(1) Th	e following technologi	es regarding p	ootato p	roduction in	crease are				
		played at Model Farm:	ard							
	2) Ap	plication of various q	uantities of c	ompost	to improve	nutritious				
	con	ndition for potato plants	5.	1	1					
	3) Ap	plication of IPM to re-	nd prevent							
	4) Us	e of clean seeds	icals.							
	(2) Th	e project provides varie	g Training							
	col	urses and field days.								
2) Facility / Activity		Facilities/Activitie	S		Implemente	ator				
	1) Mod	lel farm 10 cuerda	ac)	Progre	ssive farmer	S				
	2) Trai	ning on potato cultivation	on	ICTA (	or NGOs					
3) Organization for	Develo	pment Committee and a	advanced farme	er who p	orovides land	l and labor				
O&M	for carr	y out the project.					<b>.</b>	1 (115	C	
4) Construction Period	One we	eek					2002	a until 1" ci	rop of	
5. Project Cost	1) Inpu	t materials (fertilizers,	seeds, agro-che	emicals)	:	Q 8,780	Cost bo	rn by		
	2) Tran 3) Tota	ning and others:			)	24,375	beneficiaries: Q 3,875			
6. Monitoring & Evaluation	<u>)</u> 101a				Q	15,155				
Item	-	Frequency	Data colle	octor	Aggreg	ration	Decision Maker			
1) Potato growing condi	tion	45 day after seeding	Dev. commit	tee	MAGA	gation	Study Te	-am		
2) Harvested quantity of	potato	Harvesting time	Dev. commit	tee	MAGA		Study To	eam		
3) Number of participan	ts in	After meetings	Dev. commit	tee	MAGA		Study Te	eam		
training and field day		8-					~~~~) = -			
7. Plan of Operation										
		2001			20	02				
Item	08	09 10 11 12	01 02 0	3 04	05 06	07 08	09 10	2 11 1	12	
1) Preparation of input		••• •• •• ••	••••••							
materials				2						
2) Opening Model Farm	L									
3) Training $\triangle$ & Fie	ld			$\triangle$	$\land$ $\land$	$\triangle$				
day▲										
4) Monitoring◆					•	•				

# PDM #47: Plan of Model Farm on Potato Production (b-2) (Pilot Project)

Community:	Palestina	Target Group:	Potato Producing Farmers
Period:	Sep. 2001 ~ Dec. 2002	Implt. Organization:	Potato Growers' Association

June, 2001

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions				
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	1. Poverty indicator of rural area will be improved up to the provincial average by 2015.	1. FIS Poverty Indicator and monitoring on Farmers.	<ol> <li>There will be no drastic change in development policy of Guatemalan Government.</li> </ol>				
<ul> <li><i>Project Purpose</i></li> <li>1. The productivity will increase from present 15 qq/crd to 25~30 qq/crd by cultivation technology transfer and extension.</li> <li>2. Income level of potato producers will be improved.</li> </ul>	<ol> <li>The productivity in the communities will increase.</li> <li>Income of the participants will increase.</li> </ol>	<ol> <li>Monitoring on farmers in the communities (sample survey).</li> <li>Monitoring on farmers in the communities (sample survey)</li> </ol>	1. Similar type of projects will be implemented in other communities by utilizing monitoring results of the project.				
<ol> <li>Outputs         <ol> <li>Productivity is improved by the replacement of conventional seed potato with clean seed potato.</li> <li>Effect of organic fertilizer is proved and excessive reliance on chemical fertilizer is reduced.</li> <li>Disease resistant variety is cultivated and use of medicines and chemicals is reduced</li> <li>Farmers take interest in the demonstration.</li> </ol> </li> </ol>	<ol> <li>Yield of potato will be increased (over 130% of the present yield).</li> <li>Yield of potato in each plot, namely, 1) No compost, 2) 1 kg/m<sup>2</sup>, and 3) 2 kg/m<sup>2</sup>.</li> <li>Chemical application will be reduced from present 7~8 times to maximum 4 times.</li> <li>Participant rate is over 70%.</li> </ol>	<ol> <li>Monitoring of crop yield in model farm</li> <li>Monitoring of crop yield in model farm</li> <li>Survey by interviewing farmers</li> <li>Record of visitors</li> </ol>	<ol> <li>Market price of potato will not deteriorate from present level.</li> <li>Demand for potato will not deteriorate from present level.</li> <li>Supply of clean seed from ICTA will not cease.</li> <li>Farmers can obtain seed potatoes of disease resistant variety to prevent damages by epidemics.</li> </ol>				
<ul> <li>Activities</li> <li>1. Establish model farm <ol> <li>ICTA Standard <ul> <li>Cultivation Section</li> <li>c.5 cuerda)</li> </ul></li></ol> </li> <li>2) Clean seed section <ul> <li>(2.5 cuerda)</li> </ul> </li> <li>3) Compost section <ul> <li>(2.5 cuerda)</li> </ul> </li> <li>4) IPM corroborative section <ul> <li>(2.5 cuerda)</li> </ul> </li> <li>4) IPM corroborative section <ul> <li>(2.5 cuerda)</li> </ul> </li> <li>2. Cultivation and display in model farm, conduct corroborative tests.</li> </ul> <li>3. Training activities on cultivation technology.</li> <li>4. Monitoring and evaluation of the project.</li>	<ul> <li><i>Inputs</i></li> <li>1. Farm input cost (materials</li> <li>2. Training cost</li> <li>3. Others</li> <li>4. Total Cost</li> <li>5. Operation cost (born by be</li> </ul>	eneficiaries)Q 3,875	<ol> <li>There is no abnormal spread of plant disease (especially epidemics).</li> <li>There is no abnormal weather, specially drought and no frost damage</li> <li>Pre-conditions</li> <li>Governmental organization such as ICTA will cooperate in technical assistance.</li> </ol>				

#### Project Name: Potato Storage Plan (b-3) Community: Palestina

1. Objectives       To search an effective means of long term storage and to ascertain the accentability of the quality of storage potato by conducting storage test both at farmers' level and at association level. To stabilize farm-gate price of potato by conducting storage test both at farmers' income by operating cold storage and farm level storing.         2. Number of Beneficiaries       210 farmers with population of about 1,500         3. Implementation       Development committee, potato section         0'rganization       0'sorage at farmers level shall be conducted in cellar with cool condition (5-7C pdf he project site.         1) Project Outline       1) Storage at farmers level shall be conducted in cellar with cool condition (5-7C pdf he project site.         2) Facility / Activity       1) Storage at association level shall be done in law-temperature warehouse (3-5C) which is constructed by the project for this purpose.         3) Organization for       Development committee, Potato section         1) Storage in law-temperature warehouse (3-6C publics Activities       Development committee, Potato section by technical training and guidance by consultant.         2) Facility / Activity       1) Storage cellar (2 16,080       Development committee, Potato section by technical training and guidance by consultant.         4) Organization for       0 operatoin training (2 2,000       Total Cost Q 655,712         5. Project Gost       1) Storage cellar (2 16,080       Study team committee, Orage volume         2) Cost and profit of storage final mether commencement of	Item						Со	ntent	S							Rer	nark	s		
acceptability of the quality of stored potato by conducting storage test both at fammers' level and at association level. To stabilize farmers income by operating cold storage and farm level storing.         2. Number of Beneficiaries       210 farmers with population of about 1,500         3. Implementation Organization       Development committee, potato section         4. Project Contents       1) Storage at farmers level shall be conducted in cellar with cool condition (5-7C.) of the project site.         2.) Storage at association level shall be done in law-temperature warehouse (3-5C.) which is constructed by the project for this purpose.         3. (Toplet Coutline       (2-7C.) of the project site.         2.) Storage at association level shall be done in law-temperature warehouse (3-5C.) which is constructed by the project for this purpose.         3.) Organization for OSM       Collection of res data and monitoring shall be done periodically.         Pacifity / Activity       Facilities/Activities         1.) Storage in aux-temperature warehouse (2-5C) which is constructed by the project for this purpose.         3.) Organization for OSM       Development committee, Potato section         3.) Organization for OSM       Development committee, Potato section by technical training and guidance by consultant.         4) Construction       3 (three) months         5. Project Cost       1) Storage cellar (2 16,080         2.) Storage cellar (2 Law temperature warehouse / Q 617,632         3.) Organization	1. Objectives	To se	arch a	n effec	tive	mean	s of l	ong te	erm	storag	e and	to as	certair	n the						
at attames level and at association level.     To stabilize farmers' income by operating cold storage and farm level storing.       2. Number of Beneficiaries     210 farmers with population of about 1,500       3. Implementation Organization     Development committee, potato section       4. Project Outline     1) Storage at atments level shall be conducted in cellar with cool condition (5-7 C) of the project site.       2.) Facility / Activity     1) Storage at association level shall be done in law-temperature warehouse (3-5 C) which is constructed by the project for this purpose.       3.) Organization for OSM     2.0 Collection of test data and monitoring shall be done periodically.       3.) Organization for     1.5.10 q dp rol-2 months 2.000q about 100 test data and guidance by consultant.       3.) Organization for OSM     2.0 Storage in law-temperature warehouse.       3.) Organization for OSM     2.0 Storage in law-temperature warehouse.       3.) Organization for OSM     2.000q about 100 tarting and guidance by consultant.       4.) Construction     3.0 transing / 0.2 2000 Total Cost       5. Project Cost     1) Storage callar/Q 16,080       2.1 Law temperature warehouse / Q 617,632       3.) Organization storage       1.9 tota price and its storage volume       2.00 Cost and profit of storage       1.9 tota price and its storage volume       2.0 Cost and profit of storage       2.1 aw temperature warehouse       2.1 hot progenation       2.1 hot		accept	ability	of the	quali	ty of	store	1 potat	to by	v condu	ucting	storag	e test	both						
To summary the provide of point on the standing of the point of the standing of the point of		at farr	hers le	farm_g	a at a	ssocia	f pota	evel.	augh	the ve	ar and	l to in	orease	and						
2. Number of Beneficiaries       210 farmers with population of about 1,500         3. Implementation Organization       Development committee, potato section         4. Project Contents       1) Storage at farmers level shall be conducted in cellar with cool condition (5-7C) of the project site.         2.) Facility / Activity       1) Storage in call are sociation level shall be done in law-temperature warehouse (3-5C) which is constructed by the project for this purpose.         3.) Collection of test data and monitoring shall be done periodically.       Implementator         1.) Storage in association level shall be done periodically.       Implementator         1.) Storage in association level shall be done periodically.       Potato section bits         2.) Activity       1.5 10 qg for 1-2 months       Development committee, Potato section bit (2000 gfbort) (2000 gf		stabili	ze farn	ners' in	ncome	by o	perati	ng col	ld sto	brage a	nd fari	n leve	el stor	ing.						
Beneficiaries	2. Number of	210 fa	rmers	with po	opulat	tion o	f abou	ıt 1,50	00					<u> </u>						
3. Implementation Organization       Development committee, potato section         4. Project Contents       1) Project Outline       1) Storage at association level shall be conducted in cellar with cool condition (5-7°C tof the project site.         2) Storage at association level shall be done in law-temperature warehouse (3-5°C) which is constructed by the project for this purpose.       3) Collection of test data and monitoring shall be done periodically.         2) Facility / Activity       Isorage in cellar 1, 5, 10 qq for 1-2 months 2, Storage in law-temperature warehouse 2,000qq/about100tons potato for 3-4       Development committee, Potato section by technical training and guidance by consultant.         3) Organization for O&M       Development committee, 1, 5, 10 qq for 1-2 months       Development committee, Potato section by technical training and guidance by consultant.         4) Construction       3 (three) months       Development committee, 2, 000qq/about100tons potato for 3-4       Development committee, Potato section by technical training and guidance by consultant.         5. Project Cost       1) Storage cellar/Q 16,080 2) Law temperature warehouse / Q 617,632 3) Organization training / Q 22,000 Total Cost       Development committee       MAGA       Study team         1) Potato price and its storage volume       Once a month after commencement of storage volume       Development committee       MAGA       Study team         2) Cost and profit of storage 1) Construction of storage 2) Implementation and raining* (1) storage cellar (2) Law temperature warehouse 3) Collection data	Beneficiaries																			
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1) Project Outline       1) Storage at tarmers level shall be conducted in cellar with cool condition (5-7C) of the project site.         2) Facility / Activity       Storage at association level shall be done in law-temperature warehouse (3-5C) which is constructed by the project for this purpose.         3) Collection of test data and monitoring shall be done periodically.         1) Storage in cellar         1) Storage in cellar         1) Storage in cellar         2) Facility / Activity         Facilities/Activities         1) Storage in a w-temperature warehouse         2) Organization for         2) Storage in law-temperature warehouse         2) Organization for         Development committee,         Potato section by technical training and guidance by consultant.         4) Construction         Period         5. Project Cost         1) Storage cellar/ Q 16,080         2) Law temperature warehouse / Q 617,632         3) Organization training / Q 22,000         Total Cost       Q 655,712         6. Monitoring & Evaluation         Item       Frequency       Data collector       Aggregation         Decision Maker         1) Potato price and its       Once a month after       Development       Committee         1) Potato price and its       Once a mont		1) (1)	Changes of formany level shall be as all stall be selling. Must be a little											12.2						
1       10 for the project site.         2)       Storage at association level shall be done in law-temperature warehouse (3-5°C) which is constructed by the project for this purpose.       3)         3)       Collection of test data and monitoring shall be done periodically.       Development committee, Plato section         3)       Organization for OSM (for Points)       Distance in cellar (15,10 qg for 1-2 months)       Development committee, Plato section         3)       Organization for OSM (for Pointe)       Development committee, Pointo section       Development committee, Plato section         4)       Construction Period       1       Storage cellar/Q 16,080       Development committee, Comparization training /Q 22,000         5.       Project Cost       1)       Storage cellar/Q 16,080       Dica cellar/Q 16,080         2)       Law temperature warehouse / Q 617,632       3)       Organization training /Q 22,000         Total Cost Q 655,712       Cost and profit of storage       Once a month after committee committee committee for a grage volume       MAGA         1)       Storage at month after commencement of storage       Once a month after committee for a grage cellar of storage       Development committee for storage         2)       Cost and profit of storage       Once a month after committee for storage       Development for storage       MAGA       Study team         1)       Sto	1) Project Outline	1) Sto	) Storage at farmers level shall be conducted in cellar with cool condition $(5, 7^{\circ})$ of the project site											lition						
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5. Project Cost       1) Storage cellar/Q 16,080         2) Law temperature warehouse / Q 617,632         3) Organization training / Q 22,000         Total Cost       Q 655,712         6. Monitoring & Evaluation <i>Frequency Data collector</i> Aggregation               Decision Maker          1) Potato price and its             storage volume               Once a month after             commencement of             storage               Development             committee               MAGA               Study team          2) Cost and profit of storage             facilities operation               Once a month after             commencement of             storage               Development             committee               MAGA               Study team          7. Plan of Operation               2001               20               20               20               20               2001               2002               In               In               Study team               marehouse               study team                 In               Study team	Period	5 (uno		iuis																
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2) Cost and profit of storage facilities operation       Once a month after commencement of storage       Development committee       MAGA       Study team         T. Plan of Operation         2001       2002       0       0       0       1       1       2       01       02       03       04       05       06       07       08       09       10       11       12         1) Construction of storage       1       1       12       01       02       03       04       05       06       07       08       09       10       11       12         1) Construction of storage       1	storage volume		comr	nencen	nent c	01	com	nittee												
facilities operation       commencement of storage       committee       non-provident for the storage         Image: the storage       Image: the storage       Image: the storage       Image: the storage         Image: the storage       Image: the storage       Image: the storage       Image: the storage         Image: the storage       Image: the storage       Image: the storage       Image: the storage         Image: the storage       Image: the storage       Image: the storage       Image: the storage         Image: the storage       Image: the storage       Image: the storage       Image: the storage         Image: the storage       Image: the storage       Image: the storage       Image: the storage         Image: the storage       Image: the storage       Image: the storage       Image: the storage         Image: the storage       Image: the storage       Image: the storage       Image: the storage       Image: the storage         Image: the storage       Image: the storage       Image: the storage       Image: the storage       Image: the storage       Image: the storage         Image: the storage       Image: the storage       Image: the storage       Image: the storage       Image: the storage       Image: the storage       Image: the storage         Image: the storage       Image: the storage       Image: the storage	2) Cost and profit of st	orage	Once	a mon	th aft	er	Deve	elopme	ent		MAG	GA			Stud	v team	ı			
storage         Item       08       09       10       11       12       01       01       01       01       11       12       01       01       11       12       0 <th< td=""><td>facilities operation</td><td>0</td><td>comr</td><td>nencen</td><td>nent c</td><td>of</td><td>com</td><td>nittee</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>,</td><td></td><td></td><td></td></th<>	facilities operation	0	comr	nencen	nent c	of	com	nittee								,				
Item       08       09       10       11       12001       2001         Item       08       09       10       11       10       01       01       01       01       01       01       01       11       12         1       Storage cellar       2       2       1       Storage cellar         2)       1       2       1       1       1       1       1       1       1       1       1       10       11       12         1       Storage cellar       2       2       2       1       1       1       1       1       1       1       1       1       1       1 <th cols<="" td=""><td></td><td></td><td>stora</td><td>ge</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th>	<td></td> <td></td> <td>stora</td> <td>ge</td> <td></td>			stora	ge															
Item       08       09       10       11       12       01       02       03       04       05       06       07       08       09       10       11       12         1) Construction of storage (1) Storage cellar (2) Law temperature warehouse       Image: Construction and training*       Image: Cons																				
Item       08       09       10       11       12       01       02       03       04       05       06       07       08       09       10       11       12         1) Construction of storage (1) Storage cellar (2) Law temperature warehouse       1       1       12       01       02       03       04       05       06       07       08       09       10       11       12         2) Law temperature warehouse       *	7. Plan of Operation			2001								20	02						٦	
1) Construction of storage         (1) Storage cellar         (2) Law temperature warehouse         2) Implementation and training*         (1) storage cellar         (2) Law temperature warehouse         3) Collection data         4) Monitoring	Item	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	-	
<ul> <li>(1) Storage cellar</li> <li>(2) Law temperature warehouse</li> <li>2) Implementation and training*</li> <li>(1) storage cellar</li> <li>(2) Law temperature warehouse</li> <li>3) Collection data</li> <li>4) Monitoring</li> </ul>	1) Construction of storage						-												1	
<ul> <li>(2) Law temperature warehouse</li> <li>2) Implementation and training*</li> <li>(1) storage cellar</li> <li>(2) Law temperature warehouse</li> <li>3) Collection data</li> <li>4) Monitoring</li> </ul>	(1) Storage cellar																			
2) Implementation and training* (1) storage cellar (2) Law temperature warehouse 3) Collection data 4) Monitoring $\bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc$	(2) Law temperature																			
<ul> <li>a) Inprime and the training*</li> <li>(1) storage cellar</li> <li>(2) Law temperature warehouse</li> <li>(3) Collection data</li> <li>(4) Monitoring</li> </ul>	2) Implementation and																			
(1) storage cellar (2) Law temperature warehouse 3) Collection data 4) Monitoring $\odot$ $\odot$ $\odot$ $\odot$	training*					*	*	*	*											
(2) Law temperature warehouse 3) Collection data 4) Monitoring $\odot$ $\odot$ $\odot$ $\odot$	(1) storage cellar																			
3) Collection data 4) Monitoring       Image: Collection data	(2) Law temperature				ļ			-	-											
4) Monitoring	3) Collection data																			
	4) Monitoring					0	0	6	6											
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## PDM #48: Potato Storage Plan (b-3) (Pilot Project)

Community: Palestina		Target Group: Potato P	roducers in Palestina
Period: Sep. 2001 ~ I	Dec. 2002	Implt. Organization: MAGA	
			June, 2001
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	<ol> <li>Poverty indicator of rural area will be improved up to the provincial average by 2015.</li> </ol>	1. FIS Poverty Indicator and monitoring on Farmers.	1. There will be no drastic change in development policy of Guatemalan Government.
Project Purnose			

	provincial average by 2015.		Government.
<ul><li><i>Project Purpose</i></li><li>1. Farm income level will be improved.</li><li>2. Supply and price of potato will be stabilized in Palestina area.</li></ul>	<ol> <li>Income from potato production will be improved.</li> <li>Marketed volume and price of potato in Palestina area.</li> </ol>	<ol> <li>Monitoring on association members</li> <li>Interview survey with potato traders in Palestina area</li> </ol>	1. Similar type of projects will be implemented in other communities by utilizing monitoring results of the project.
<ul> <li>Outputs</li> <li>1. Growers' Association is in act.</li> <li>2. Potatoes are stored for 3 months at farmers level and 4~5 months at low temperature storage.</li> <li>3. Potatoes are sold at higher price.</li> </ul>	<ol> <li>Number of association members and status of activities.</li> <li>Stored volume, period, amount sold, and selling price (80% of planned volume).</li> <li>Stored volume at farmers' level</li> </ol>	<ol> <li>Activity record of the association</li> <li>Operation record of storage facility</li> <li>Monitoring on farmers</li> </ol>	<ol> <li>There is no extreme reduction in the demand for potatoes.</li> <li>There is no heavy drop of potato price.</li> </ol>
<ul> <li>Activities <ol> <li>Establishment of Potato Growers' Association</li> <li>Provision of facilities of potato storage: <ul> <li>Farmer level</li> <li>Association level</li> </ul> </li> <li>Execution of storage test <ul> <li>temperature, humidity</li> <li>potato quality in storage</li> </ul> </li> <li>Operation of low temperature warehouse and maintenance.</li> <li>Technical assistance <ul> <li>technical guidance to farmers by ICTA</li> <li>technical training on operation &amp; maintenance of the cold storage by Consultants</li> </ul> </li> <li>Monitoring and evaluation of the project.</li> </ol></li></ul>	<ul> <li><i>Inputs</i></li> <li>1. Storing facility (farm level)</li> <li>2. Construction cost for low temperature warehouse</li> <li>3. Organization training</li> </ul>	Q 16,080 Q 617,632 Q 22,000 <u>Total Cost: Q 655,712</u>	<ol> <li>No natural disasters (such as earthquake) that damage the facility occur.</li> <li>Growers bring part of their produces to the facility.</li> </ol> <b>Pre-conditions</b> <ol> <li>Related parties such as Municipality of Palestina and ICTA should be cooperative to the execution of the project.</li> </ol>

#### Project Name: Mini-Irrigation Plan (b-5) Community: Palestina

1. Objectives To increase farmers' income by means of with a pumping-up irrigation system	() increasing	the grop intensity									
With a numning-up irrigation everem	. 1 to 1 1	the crop intensity									
diversification and 3) organization of users a facilities and marketing.	and vinyi lassociation in	terms of O&M of									
2. Number of Beneficiaries in the initial stage : 75 farmers	, (150 farmers	s in total)									
3. Implementation Irrigation Committee of Palestina de Los Als	os										
Organization											
1) Project Outline In Palestina area, the farmers cultivate low and maize, under rainfed conditions. Becau and topographic limitations, the agricultur	profitable croj se of small la e production	ps, such as potato nd areas, climatic in Palestina area									
cannot sustain their families at present. Th	is project aim	is to stabilize and									
irrigated cultivation with spring water which the area.	ch is not utili	zed effectively in									
2) Facility / Activity Facilities/Activities	Facilities/Activities Implementator										
1) Pump station (1 pump, 1 house)	Contractor	(1-3)									
Distribution pipeline : 3.2 km											
3) Elevated regulating tank : 180 m <sup>3</sup>	ICTA / INIT	ECAD/montrating									
and marketing	and marketing an										
5) Organization of the irrigation committee	Organization of the irrigation committee The study team										
3) Organization for Irrigation committee (in cooperation with the O&M	rrigation committee (in cooperation with the Municipality office)										
4) Construction 4.5 month Period	4.5 month										
5. Project Cost 1) Construction cost	Q 1,180,000		Cost born by								
2) Training cost	Q 48,000 O 1.228.000		beneficiaries: O 143.000								
6. Monitoring & Evaluation											
Item Frequency Data	collector	Aggregation	Decision Maker								
1) No. of beneficiary's Everyday during Irri. Con attendants to the construction period	nmittee	MAGA	Study Team								
construction work			Study rouni								
2) Progress of construction Every half month MAGA.	PJT staff	Study Team	Study Team								
3) Total benefits Before and after 1 <sup>st</sup> crop MAGA	PJT staff	Study Team	Study Team								
4) Collection rate of the water Every month Irri. Con charge	nmittee	MAGA	Study Team								
7 Plan of Operation											
2001		2002									
Item 08 09 10 11 12 01 02 0	03 04 05	<u> </u>	09 10 11 12								
1) Construction works											
2) Technical assistance	nical assistance										
3) Cultivation											
4) Monitoring $\bigtriangleup$ $\bigtriangleup$ $\bigtriangleup$ $\bigtriangleup$ $\bigtriangleup$		$ \land \ \land $	$ \land \land \land \land \land $								

# PDM #50: Mini-irrigation Plan (b-5) (Pilot Project)

Community:	Palestina	Target Group:	75 Vegetable Producers
Period:	Sep. 2001 ~ Nov. 2002	Implt. Organization:	MAGA & Water Users' Association
-			

June, 2001

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions				
<b>Overall Goal</b> 1. Poverty condition in central highland will be mitigated.	1. Farm income level will increase up to the provincial average by 2015.	<ol> <li>Monitoring of farm income through sample interview survey and statistics.</li> </ol>	<ol> <li>There will be no drastic change in development policy of the Guatemalan government.</li> </ol>				
<ul><li>Project Purpose</li><li>1. Income level of the beneficiaries will be improved.</li></ul>	1. Income level of the beneficiaries (income from vegetable production) will increase.	1. Monitoring of farm income through interview survey.	1. Similar type of projects will be implemented in other neighboring communities with utilizing the monitoring results of this project.				
<ol> <li>Outputs         <ol> <li>Irrigation system is utilized.</li> <li>Water users' association is in act.</li> <li>Water charge is properly collected.</li> <li>The facility is properly maintained by the water users.</li> <li>Farmers master skill of vegetable production.</li> <li>Increase of land use intensity from 2 harvests to 3 harvests per year.</li> <li>Increase of crop yield and quality.</li> </ol> </li> </ol>	<ol> <li>Number of water users association and number of facility users</li> <li>Collection rate is more than 80%.</li> <li>Condition of operation and maintenance of the facility (Utilization of water charge and actual working days of the facility)</li> <li>Number of farmers that practice vegetable production.</li> </ol>	<ol> <li>Record of water users' association and water users.</li> <li>Record of water charge collection (account book).</li> <li>Monitoring of the facility</li> <li>Monitoring of farmers</li> <li>Monitoring on agricultural production.</li> </ol>	<ol> <li>Demand for vegetable will not be worsen.</li> <li>There is no extreme reduction in the price of vegetable.</li> </ol>				
<ul> <li>Activities</li> <li>1. Construction of irrigation system.</li> <li>2. Establishment of water users association and its strengthening</li> <li>3. Collection of water charge by water users' association.</li> </ul>	<ul> <li>Inputs</li> <li>1. Construction cost, training maintenance of irrigation sy</li> <li>2. Cost for technical assistance practices and organizationa association (its establishme Q 48,000)</li> <li>3. Total Cost: Q 1,228,000</li> </ul>	cost for operation and ystem and: Q 1,180,000 e of agricultural farm l assistance for water users' nt and strengthening):	<ol> <li>There is no abnormal weather such as drought, abnormal scale typhoon, etc.</li> <li>There is no abnormal outbreak of pests and/or diseases of vegetables.</li> </ol>				
<ol> <li>Operation and maintenance of system by water users themselves</li> <li>Training on vegetable production</li> <li>Acquisition of farm inputs for vegetable production</li> <li>Arrangements for obtaining credit from Rural Bank or contract growers</li> <li>Arrangements for marketing of vegetables</li> </ol>	4. Cost for provision of initial production (born by benefic	farm inputs of vegetable ciaries): Q 143,000	<ul> <li>Pre-conditions</li> <li>1. People have intention to participate in construction of irrigation system and are willing to pay necessary cost (water charge, etc.)</li> </ul>				

#### Project Name: Water Quality Improvement Plan for the Existing Drinking Water Supply (c-5) Community: Palestina

Item						Co	ntent	5							Rei	marks	S
1. Objectives	То	improve	heal	th co	onditi	on o	f the	com	muni	ty res	sidents	s thro	ough				
	impi	ovemen	t of dri	nking	wate	er qual	ity by	instal	lation	of ste	rilizer						
		0		. 1 1				1	0 ( 1		1 .						
2. Number of Beneficiaries	User	s of pres	sent po	table	wate	r suppl	y syst	em: 1	06 ho	uses (a	about	530					
Denencianes	pers	·,															
3. Implementation	Wate	Vater Committee															
4 Project Contents																	
	~																
1) Project Outlin	e Ster	lizer wi	II be 1	nstalle table i	ed to	the v	vater t	ank a	nd hy	ypo ch	lorina	te wi	ll be				
	Peor	Injected into the potable water in order to eliminate bacteria. People education will be conducted so that people use improved water.										vater					
	cont	ontinuously and pay necessary expense for the operation of sterilizer.															
		-															
2) Facility / Activ	∕it∨	F	aciliti	es/Ac	tivitie	es		I		Imple	menta	ator					
, ,	1) H	ypo chl	orinate	s Dos	ing	3 unit		C	ontra	ctor							
	2) P	eople ed	lucation	n				V	Vater	Comm	ittee (	under	the				
								SI te	upervi	ision c	of the s	study					
									Juilij								
3) Organization	for Wate	er Comn	nittee														
O&M																	
4) Construction	1 we	ek (Peri	od nec	essary	for i	installa	ation o	f steri	ilizer)								
Period		·															
5. Project Cost		lypo chl Iypo chl	orinate	es dosi	ing	 cost					Q 2	/,660					
	2. I 3. I	Distributi	ion tan	k				· · · · · · · · · · · · · · · · · · ·			Q9	5,930					
	4. 0	Other cos	st (tech	nical	charg	ge, etc.	)				Q 2	0,820					
	5. 7	otal inst	allatio	n cost	(1~4	·)					.Q 140	5,570					
	7. 1	otal Cos	st				• • • • • • • • • • • • • • • • • • • •	•••••			Q.4 .0 150	+,000 ),570					
6. Monitoring & Eva	uation										<u> </u>						
ltem		I	reque	ency		Dá	ata co	llecto	r	A	ggre	gatior	ו	De	cisio	n Mak	er
1) Users of improv	ed water	Ever	v 3 mo	nths		Dev.	Comn	nittee		FIS				Stud	v Teai	n	
2) Operation status	of	Mont	hlv			Dev	Comn	nittee		FIS				Stud	y Tear	n	
2) Operation status	01	WIOII	uny			Dev.	Comm	intee		115				Stud	y icai	11	
sterilizer																	
3) Number of diarr	hea patient	Ever	y 3 mo	nths		Dev.	Comn	nittee		FIS				Stud	y Teai	n	
4) Simple water qu	ality test	Ever	y 3 mo	nths		FIS				FIS				Stud	y Teai	n	
7. Plan of Operation			2001			<u> </u>					20	02					
ltem	08 09 10 11 12 01 02 03 04 05 06 07 08							08	09	10	11	12					
1) Purchase of equi	nment																
i) i dichuse oi equi	pinent																
2) Installation of st	erilizer	er 📕															
3) People education	n																
	-																
4) Monitoring			$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\bigtriangleup$

## PDM #55: Water Quality Improvement Plan for the Existing Drinking Water Supply System (c-5) (Pilot Project)

Community:	Palestina	Target Group:	Beneficiaries of water supply system
Period:	Sep. 2001 ~ Dec. 2002	Implt. Organization:	MAGA & Water Committee

June.	2001
sunc,	2001

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	1. Poverty indicator of rural area will be improved up to the provincial average by 2015.	<ol> <li>FIS Poverty Indicator and monitoring on Farmers.</li> </ol>	<ol> <li>There will be no drastic change in development policy of Guatemalan Government.</li> </ol>
<b>Project Purpose</b> <ol> <li>Health condition of         <ul> <li>inhabitants in Palestina is             improved.</li> </ul> </li> </ol>	1. Morbidity of water-borne diseases in Palestina is reduced.	<ol> <li>Interview survey of potable water users.</li> <li>Number of water-bone disease patients (such as diarrhea) in the health post.</li> </ol>	<ol> <li>Similar type of projects will be implemented in other communities by utilizing monitoring results of the project.</li> </ol>
<ul> <li>Outputs</li> <li>1. Quality of potable water is improved.</li> <li>2. Beneficiaries use improved potable water.</li> <li>3. Sterilizer is properly maintained.</li> </ul>	<ol> <li>No colon bacillus is detected in potable water.</li> <li>There is no reduction in the number of water user.</li> <li>Sterilizer is constantly in operation.</li> </ol>	<ol> <li>Simple water quality test.</li> <li>Monitoring on potable water user.</li> <li>Number of operating days of sterilizer.</li> </ol>	1. There is no chemical contamination occurs in potable water.
ActivitiesInputs1. Education on use of improved water is made for beneficiaries through water committee.1. Hypo chlorinates dosing2. Sterilizer is installed to the water supply system.3. O&M and fee collection3. O&M and fee collection7. Total Cost		Q 27,660 costQ 1,160 Q 96,930 ge, etc.)Q 20,820 )Q 146,570 Q 4,000 Q 150,570	<ol> <li>Installation of sterilizer is made with the consensus of community.</li> <li>No disaster that damages water system occurs such as earthquake.</li> </ol>
of the sterilizer are made by water committee.			<ul> <li>Pre-conditions</li> <li>1. There is no strong objection to the installation of sterilizer.</li> </ul>

#### Project Name: Municipality Community Health Service Plan (c-12) Community: Palestina

	Item						Co	onten	ts							Re	mark	S
1. (	Objectives	To off and vi located to the	er be llage d in v comn	tter ac level, illage nunity	cess by s s; as	to che elling well a	aper a PRO s offe	and m AM di er sust	ore v rugs a ainab	ariety it Mur le heal	of dru nicipal lth edi	igs at Phar ucatio	munio macy n prog	cipal Unit gram				
2. N	Number of	Appro	xima	tely 3,	000 p	erson	s in 32	25 hou	isehol	ds in 5	5 villa	ges.						
3. I	mplementation	Health	Health Committee of Los Cabrera and Los Diaz, Health Center and							and								
	Organization	Munic	Municipality/JICA Study Team															
4																		
	<ol> <li>Project Outline</li> <li>Project Outline</li> <li>Facility / Activity</li> <li>Organization for</li> </ol>	Introd Pharm Health Health charge PROA be kee educat month health 1) P 2) D 3) P 4) A Health	Pharmacy and two Minimal Pharmacy Unit (MPU) in village level.         Health Promoters will be in charge of the MPUs previously trained by         Health Center and professional pharmacist. Auxiliary Pharmacist in         charge of Municipal Pharmacy must be trained to full fill requirements of         PROAM. Selling price of drugs can be increase 133% and the profit can         be keep as incentive for promoters and health committee for sustainable         education program to the community. The operation must be supervised         monthly by municipality for accountant issues ad technical assistance by         health center.         Implementator         1) Pharmacy building and equipment         2) Drug input for 6 months         3) Promoter Training         4) Auxiliary Pharmacist training         Health Center,         Professional Pharmacist         4) CEGIMED															
	O&M	1 mor	4 month training Auviliary Pharmacist 3 weaks training promotors 1															
	Period	month	4 month training Auxiliary Pharmacist, 5 weeks training promoters, 1 month construction MPU.															
5. F 6. N	Project Cost Monitoring & Evaluatic	<ol> <li>Equipment MPU: Q. 34,355</li> <li>Drug Input: Q. 22,932</li> <li>Training: Q. 34,550</li> <li>Total Cost: Q 91,837</li> </ol>																
	Item		. Erequency Data collector Aggregation					De	ecisio	n Mal	ker							
<ol> <li>Drug sales and stock control</li> <li>Health education participants</li> <li>Amount and use of money reserved by health committee</li> <li>Participation of health center in education session</li> </ol>		Me Me Ev	onthly onthly onthly rery 3	mont	hs	H. d H. d Mu Mu	comm comm nicipa nicipa	ittee ittee llity llity		Mu Hea Mu Stu	nicipa alth ce nicipa dy Te	llity enter llity am		Stud Stud Stud Stud	ly Tea ly Tea ly Tea ly Tea	m m m		
7. F	Plan of Operation																	
_	ltern	00	00	2001	11	10	01	02	02	04	05	20	02	00	00	10	11	12
		00	09	10	11	12	01	02	03	04	00	00	07	00	09	10	11	12
2	<ol> <li>1) Training</li> <li>2) Installation MPU</li> </ol>																	
3	3) Registration to																	
	PROAM																	
4	4) Health education																	
5	5) Monitoring					Δ		Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ

# PDM #58: Municipality Community Health Service Plan (c-12) (Pilot Project)

Community:	Palestina	Target Group:	People in relevant communities
Period:	Sep. 2001 ~ Dec. 2002	Implt. Organization:	Municipality, Health Center,
			Municipal Pharmacy, Health
			Committee, Health Promoter

Iuna	2001	
June.	2001	

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	<ol> <li>Poverty indicator of rural area will be improved up to the provincial average by 2015.</li> </ol>	<ol> <li>FIS Poverty Indicator and monitoring on Farmers.</li> </ol>	<ol> <li>There will be no drastic change in development policy of Guatemalan Government.</li> </ol>
<ul> <li>Project Purpose</li> <li>People will have sufficient knowledge on health and hygiene.</li> <li>Improvement of rural health service quality.</li> </ul>	<ol> <li>Reduction of particular morbidity rate.</li> <li>Increase of family planning utility and vaccination rate.</li> <li>Distance, time and cost saved to buy drugs.</li> </ol>	<ol> <li>Medical statistics at Municipal level</li> <li>Sample survey in the 5 communities</li> <li>Cost and distance comparison of MPU and private pharmacies.</li> </ol>	<ol> <li>Similar type of projects will be implemented in other neighboring communities with utilizing the monitoring results of this project.</li> </ol>
<ol> <li>Outputs         <ol> <li>Drugs are available at cheap price as well as first aid treatment at the village level</li> <li>Drugs at Municipal Pharmacy become cheaper by introduction of PROAM</li> <li>Regular health education program is conducted at village level</li> <li>Incentives for health promoters are sustained through revolving drug fund.</li> </ol> </li> </ol>	<ol> <li>Drugs are sold at MPU and Municipal Pharmacy more than Q800 / month/ MPU.</li> <li>Participants in health education increase.</li> <li>Stock is controlled accurately and accounting is kept appropriately.</li> <li>Number of health promoters in active does not reduce.</li> </ol>	<ol> <li>Accounting record of MPU and Municipal Pharmacy</li> <li>Monitoring of health education by health promoter</li> <li>Monthly accounting and stock control record</li> <li>Monitoring by health committee and municipality</li> </ol>	<ol> <li>There is no drastic change in pricing structure of drugs.</li> <li>Demand for drugs is not drastically reduced.</li> <li>People's interest and willingness to participate in health education is sustained.</li> </ol>
<ul> <li>Activities</li> <li>1. Establishment of health committee</li> <li>2. Selection of auxiliary pharmacist and promoter candidates</li> <li>3. Training of 1 auxiliary pharmacist and 2 health</li> </ul>	<ol> <li>Inputs         <ol> <li>Training cost of an auxiliary p                 <ul> <li>Course for 200 hours by CE</li> <li>Training cost of two health Pr who will be in charge of MPU                     <ul></ul></li></ul></li></ol></li></ol>	<ol> <li>Supply of drugs from PROAM is stable.</li> <li>Sales of drugs are sufficient in order to give incentives to health promoters.</li> </ol>	
<ul> <li>a. Introduction of cheaper PROAM drugs at Municipal pharmacy</li> <li>5. Installation of Minimal Health Unit in charge of selling cheap PROAM drugs and first aid treatment in the village</li> <li>6. Monthly health education by promoters and health center</li> <li>7. Monthly supervision of MPU by committee as well as municipality</li> </ul>	<ul> <li>One day by professional phi</li> <li>One day by professional phi</li> <li>Initial cost for drug inputs an equipment (shelf, table, chair boxes, administrative materia aid kit) for 2 MPUs and trans</li> <li>Building cost of MPU</li> <li>Cost for Health Education Material</li> </ul>	armacist d initial , safety ls, first portation Q 29,453 Q 27,934 aterials Q 3,600 <u>Total Cost: Q 91,837</u>	<ul> <li>Pre-conditions</li> <li>1. Cooperation and good coordination among municipality, municipal pharmacy and health center are sustained.</li> <li>2. Candidates for health promoters and auxiliary pharmacist who will meet certain criteria are available and they are able to attend the training courses.</li> </ul>

#### Project Name: Plan for Migrant People to the Coastal Areas (c-13) Community: Palestina

	Item		Remarks					
1. 2. 3.	Objectives Number of Beneficiaries Implementation Organization	People econor hacien agricul very se contan educat preven 5 abou	in Palestina de Los Al- my remains at subsistent le da in the coastal area to ltural labor. However, the evere. Most of the people s nination by agricultural ch- ional training for migrant ting diseases and contamin t 200 households in 5 cases at people committee/JICA S					
4.	Project Contents							
	1) Project Outline	<ol> <li>A base-line survey will be carried out for selected farmers to grasp and identify problems of living conditions such as health, sanitation, agricultural chemical contamination, etc.</li> <li>An educational training system will be established. And training programs will provide technical services on health control with migrant people.</li> <li>Provision of materials (simple water filter system, materials to prevent agricultural chemical contamination, seeds of repellent plant and simple toilet) for preventing migrant people from diseases and contamination.</li> </ol>						
	2) Facility / Activity	Facilities/Activities     Implementator       1) Training for 10 staff of health center and 10 school teachers     1) NGO       2) Training for 20 health promoters     2) NGO/auxiliary nurses       3) Training for 200 migrant people     3) NGO, auxiliary nurses, school teachers       4) Provision of materials necessary for preventing diseases and contamination     4) NGO/JICA       5) Setting up committee     5) NGO						
	3) Organization for	5) 50	ting up committee					
	O&M 4) Construction Period	1) Bas 3) train and 5)	e line survey:4 weeks, 2)training for health promoters: monitoring: 2months					
5.	Project Cost	oject Cost       1) Training (including base line survey/monitoring)         2) Cost of materials to prevent diseases and contam         3) Cost of materials for training : Q 18,000         4) Total cost : Q 394,000			g): Q 116 mination:	,000 Q 260,000		
6.	Monitoring & Evaluation							
[	Item		Frequency	Data colle	ctor	Aggregation	Decision Maker	
	1) Use condition of water filter and toilet		2 times/15 months	NGO		NGO	JICA Study Team	
	<ol> <li>Use condition of materials for agri, chem, contamination</li> </ol>		2 times/15 months	NGO		NGO	JICA Study Team	
	<ol> <li>Growing condition of repellent plants</li> </ol>		2 times/15 months	NGO		NGO	JICA Study Team	
4) Number of morbidity 2 times/15 months			NGO NGO			JICA Study Team		
7.	Plan of Operation			-				
r	Itom	00	2001		12 04	2002		
		00			<i>J</i> 04		03 10 11 12	
	<ol> <li>Base-line survey</li> <li>Educational training</li> </ol>							
	3) Provision of materials							
	4) Monitoring					$\triangle$	$\land$	
1								

# PDM #59: Plan for Migrant People to the Coastal Areas (c-13) (Pilot Project)

$\frac{\text{Community: Palestina}}{\text{Period: Sep 2001} \sim D}$	ec 2002	Target Group:MigrantsImplt Organization:IICA	in Palestina de Los Altos
1 chou. 5cp. 2001 * D	. 2002		Juna 2001
Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> 1. Poverty condition in central highland region will be mitigated.	<ol> <li>Poverty indicator of rural area will be improved up to the provincial average by 2015.</li> </ol>	1. FIS Poverty Indicator and monitoring on Farmers.	<ol> <li>There will be no drastic change in development policy of Guatemalan Government.</li> </ol>
<ul> <li>Project Purpose</li> <li>1. Health condition of the migrants will be improved.</li> </ul>	1. Reduction of top-ten illness of migrants by 15 per cent.	1. Result of and sample survey on morbidity of migrants	<ol> <li>Similar type of projects will be implemented in other neighboring communities.</li> </ol>
<ol> <li>Outputs         <ol> <li>Migrants use the water filter and obtain safe drinking water.</li> <li>Migrants use pesticides properly and are free from diseases.</li> <li>Migrants cultivate repellents plants.</li> <li>Migrants prepare and use simple toilets and improve sanitary conditions.</li> <li>Health personnel train migrants on the 4 subjects (safe water, pesticides, Malaria/Dengue &amp; toilets)</li> </ol> </li> </ol>	<ol> <li>80% of the migrants use water filter.</li> <li>80% of the migrants use pesticides-precaution set.</li> <li>80% of migrant perceive that there is repellent effect by plants.</li> <li>80% of the migrants prepare toilets</li> <li>Number of mobility</li> </ol>	1. Result of sample survey in the field	1. The living condition of migrants does not change dramatically in the destination.
<ul> <li>Activities <ol> <li>Use of safe water</li> <li>Provision of water filter</li> <li>Training* on use of water filter</li> <li>Training* on use of water filter</li> <li>and general knowledge of safe water</li> <li>Precaution of pesticide use</li> <li>Provision of precaution material (mask, grove, etc.)</li> <li>Training* on pesticide precaution and general knowledge on pesticides</li> <li>Malaria/Dengue prevention</li> <li>Provision of seeds of anti-Malaria / Dengue plants.</li> <li>Training* on practical knowledge for prevention of tropical disease.</li> <li>Sanitation</li> <li>Provision of simple toilets for migrants</li> <li>Training* on use of simple toilet and general knowledge on sanitary</li> </ol></li></ul> <li>* Training will be conducted for Health Center, School teacher, Health Promoter and Migrants.</li> <li>5. Provision of teaching materials to general transformation</li>	Inputs         1. Purchasing cost of necessary e         - Water filters (@520 x 200 +         - Precaution materials (@200 +         - Plant's seeds (@100 x 200 +         - Simple toilets (@500 x 200 +         2. Training cost         - Safe water use         - Precaution         - Toilet use         3. Purchasing cost of teaching m for school teachers         4. Total Cost	equipment units)Q 112,000 0 x 200 units)Q 40,000 units)Q 20,000 0 units)Q 88,000 Sub-total: Q 260,000 Q 116,000 aterials Q 18,000 Q 394,000	<ol> <li>Trained personnel in the health center and health promoters remain in Palestina in the following year.</li> <li>Trained school teachers remain in Palestina</li> <li>The destination of migrants do not change dramatically</li> </ol> <b>Pre-conditions</b> <ol> <li>The migrants in Palestina and fincas do not object the project.</li> </ol>

#### 8.4 Implementation of Pilot Projects

The proposed organization is shown below. The JICA Study Team will be responsible for overall management of implementation of Pilot Projects in corporation with MAGA. The formulated 18 Pilot Projects cover various fields of development and work components, including (i) environmental and conservation plan (ii) plans for increasing income generation and improvement plan for living conditions. With exception of the Pilot Projects in an agricultural field that MAGA will implement, participation of other organizations relevant to the implementation of Pilot Projects in other fields is essential. Therefore, it is proposed to establish a steering coordination committee of representatives from relevant organizations.

The committee headed by a representative of MAGA. The member of the committee will consist of representatives from SEGEPLAN, MSPAS, ICTA, FIS, INTECAP, JICA/JOCV office, governors of the four provinces (Chimaltenango, Sololá, Totonicapán and Quetzaltenango), four relevant municipalities (Patzun, Panyebar, Santa Maria Chiquimula, and Palestina de Altos) and JICA Study Team.

Provincial offices of the organizations that participate in a steering committee will make supervision of project implementation and monitoring for Pilot Projects. The results of supervision and monitoring will be submitted to the JICA Study Team.

With respect to farmers' organization for implementation of project, as mentioned in chapter 7, farmer's participation also becomes one of the most important factors in the case of implementation of Pilot Projects. The basic concept for farmers' participation composed of following three components.

- (1) Participation in project implementation
- (2) Farmers' sharing of construction cost
- (3) Operation and maintenance of project by farmers themselves

For each Pilot Project, development committee will be made for participation in construction work and O&M work after construction of Pilot Project. In set up of development committee, existing development committee, if any, will be used as much as possible.

With regard to cost sharing, it is planned that the government of Japan will provide a grant for main facilities, training costs and technical guidance. Farmer side bears provision of labor force and lands necessary for construction of facilities, cost for farm inputs, irrigation facility on farm level and O&M cost of Pilot Project. It is planned that cost necessary for farm inputs, irrigation facility on farm level, and medicines at first cultivation stage will be loaned to beneficiary farmers with no or very low interest rate. After construction of Pilot Project, each development committee will manage it.

Though implementation period of each Pilot Project is different, total period of implementation and monitoring of Pilot Projects will be 15 months. After 15 months, it is expected that monitoring work of each Pilot Project should be also continued



#### 9. CONCLUSIONS AND RECOMMENDATIONS

- It may be concluded that the peoples in the Central Highland Region of Guatemala seriously suffer from poverty from the view points of low income, poor quality of living environments and devastation of natural resources.
- It may be concluded that the methodology of the participatory survey approach introduced into this Study is very effective in extracting the problems, needs and potentials from the farmers' viewpoints and motivating community people, that are critical factors for the formulation of sustainable bottom-up rural development plans.
- It is recommended that 18 Pilot Projects selected in this Study should be implemented as soon as possible. Through the implementation of the Pilot Projects, countermeasures for problems and constraints should be identified and the methodology of surveys and formulation of project development in this Study should be improved.
- It is proposed that a steering coordination committee headed by MAGA should be established before commencement of the Pilot Projects for their smooth implementation and effective monitoring.
- It is recommended that the implementation of the projects on the sustainable rural development should be carried out for four provinces of Chimaltenango, Sololá, Totonicapán and Quetzaltenango based on the above improved methodology.

# **TABLES**

#### Table 1 List of Counterpart Personnel and JICA Study Team

Name

Official Position

Chief Counterpart, MAGA

### **Counterparts**

Roberto Chávez Juan José Cano Mario Roberto Gomez Rafael Raúl Rodriguez Cojolón Carlos Rolando Santos Girón Juan Gerardo Mendez G. Cristobal Antonio Márquez Artero Orlan Rodas de León Jorge Guevara Santos Oliverio B. Portillo Méndez Oscar César López Maldonado Mario Norberto López Rodríquez

# MAGA Coordinator, Chimaltenango province MAGA Coordinator, Chimaltenango province MAGA Coordinator, Chimaltenango province MAGA Coordinator, Chimaltenango province MAGA Coordinator, Sololá province MAGA Coordinator, Sololá province MAGA Coordinator, Totonicapán province MAGA Coordinator, Quetzaltenango province MAGA, Development management Division PLAMAR PLAMAR

# **JICA Experts**

Kenjiro Onaka	Team leader
Koh Watanabe	Expert for participatory development
Yuji Hatakeyama	Environmental expert
Toru Ide	Environmental expert
Yusuke Goto	Environmental expert
Yasuo Aonishi	Sociologist
Luis Rosado	Agronomist
Makoto Yamada	Marketing and agricultural processing expert
Fumiaki Murakami	Infrastructure engineer
Katsuya Kamisato	Infrastructure engineer
Junichi Usami	Infrastructure engineer
Saeko Ichikawa	Health expert
Minako Kakuma	Health expert
Ronald Castellanos	Health expert
Ayako Nishiwaki	Expert for participatory development and gender
Michinori Yoshino	Logistic coordinator

No.	Name of Municipality	Indicator	Classification	Evaluation	Land Use	Evaluation	Limitation of	Evaluation for	Overall
		of Poverty	of Poverty:*	for Poverty		for Land Use	Uptake of Water**	Uptake Water	Evaluation
	Chimaltenango	12.83	p	No	Maize, Frijol, Vegetables	Yes	No	Yes	No
7	San Jose Poaquil	12.74	q	No	Maize, Frijol, Vegetables, Coffee	Yes	No	Yes	No
e	San Martin Jitotepeque	16.74	c	Yes	Coffee, Maize, Frejol	No	No	Yes	No
4	Comalapa	19.8	c	Yes	Maize, Frijol, Vegetables	Yes	Yes	No	No
5	Santa Aplonia	13.65	р	No	Maize, Frijol, Vegetables	Yes	No	Yes	No
9	Tecpan Guatemala	12.8	q	No	Maize, Frijol, Vegetables	Yes	Parcialy		No
7	Patzun	17.95	J	Yes	Maize, Frijol, Vegetables	Yes	Parcialy		Yes
$\infty$	Pochuta	16.91	c	Yes	Coffee, Maize, Frejol	No	No	Yes	No
6	Patzicia	29.59	p	No	Maize, Frijol, Vegetables	Yes	Yes	No	No
10	Santa Cruz de Balanya	21.75	q	No	Maize, Frijol, Vegetables	Yes	Yes	No	No
11	Acatenango	16.66	c	Yes	Coffee, Maize, Frejol	No	No	Yes	No
12	Yepocapa	14.15	p	No	Coffee, Maize, Frejol	No	No	Yes	No
13	San Andres Itzapa	20.46	q	No	Maize, Frijol, vegetables	Yes	Parcialy		No
14	Parramos	26.73	q	No	Maize, Frijol, Vegetables	Yes	No	Yes	No
15	Zaragoza	17.52	c	Yes	Maize, Frijol, Vegetables	Yes	Yes	No	No
16	El Tejar	10.97	q	No	Maize, Frijol, Vegetables	Yes	No	Yes	No

Table 2 Land Use and Classification of Poverty Based on the FIS Criteria for Chimaltenango Province

\*: Poverty Classification

a: Exstreme poverty, above 30

b: Severe poverty, 20-29.99

c: Regular poverty, 15-19.99 d: Relative poverty, 10- 14.99

e: Low poverty, below10

\*\*: Chimaltenango province plays an important role in the provision of drinking water to Guatemala city. Especially water from the basin of the Pixcaya river is the most important. It is considered that adjustment and coordination of water use for drinking water in Guatemala city and agricultrural water use in Chimaltenango province are very difficult and municipalities where cover the Pixcaya river basin should be excluded for selection of model microcuenca.

Name of	Number	Name of	Area of	Name of
River Basin		Microcuenca	Microcuenca	aldeas or
			(km2)	caserios
Los	C-1	El Llano	4.8	Los Pinos, El Llano, Pacaman
Chocoyos	C-2	Los Pinos	6	Cruz de Santiago
	C-3	Xeoj	3.7	Xeoj
				Patzun, Saquiya, Mocolicxot
	C-4	Los Idolos	8.7	Alto, Mocolicxot Bajo
				Chisal, Chuiquel, Mocolicxot
	C-5	Chuiquel	5.3	Alto, Mocolicxot Bajo
	C-6	Sabalpop	1.2	Sabalpop
	C-8	Pacacquix Bajo	4	Chichoy Alto Paraíso
		1 0		Xepatan, Finca Patoquer,
				Chuchuca Alto, Chuchuca
				Bajo, Finca Chuiquel, Xeatzan
	C-8	Pacacquix Alto	9.3	Alto, Xeatzan Bajo
		1		
Madre Vieja	M-1	Chichoy	2.7	Chichoy, Chichoy Bajo
_				Chichoy Alto Paraiso,
	M-2	Paxula	3.1	Chipiacul, Panimaquim
	M-3	Panibaj	1.6	Panibaj, Chipiacul,
		-		Panimaquim, Chinimachicaj,
	M-4	Panimaquim	5.2	Chuaquenum
	M-5	Chinimachicaj	8.1	Chinimachicaj, Chuaquenum
		-		
San Jorge	S-1	Xejolon	8.4	Xejolon, Popobaj
				Finca San Rafael la Vega, Finca
				San Jose Panimache, Finca San
	S-2	La Vega	14	Antonio Panimaquim
	S-3	Chicap	4.6	Finca Chicap
Nican	N-1	Xetzisi	8.4	Xetzisi, Xepatan
	N-2	Los Encuentros	2.1	Los Encuentros
	N-3		9.2	
V	<b>V</b> 1	<b>X</b> A 1/	0.1	F. 0 I
хауа	X-1	Xaya Alto	8.1	Finca San Jorge
	XZ O	X7'11 T ' 1	0.2	villa Linda, Nimaya, Pacoc,
	X-2	Villa Linda	8.3	Chuchupate, Finca Las
	X-3	La Vega	3.6	La Vega
	X-4	Cojobal	2.5	Finca La Sierra, Cojobal
	N C	L	1.2	Las Camelias, Los
	X-3	Las Canoas	4.2	Encuentritos, Finca San
				Finca San Antonio las Odillas,
				La Irompeta, Irompetilla, La
		T T	= 0	Cienaga, San Lorenzo, Joya de
	X-6	La Trompeta	7.2	la Ramona
	·· -	T T		El Sitio, San Isidro, Finca San
	<b>X-</b> 7	Las Flores	4	Ratael el Sitio
	X-8	Zaren	3.9	El Garabato, Finca la Estancia
	X-9	Pachumulin	2.7	Pachumulin,
	X-10	La Pila	1.5	La Pila
	X-11	Pena Colorada	3.8	Pachut, La Pila

Table 3 List of Micro-basins in Patzun Municipality

	imaltenango Province
ξ	5
	II
•	Dasins
	MICTO-
ć	n of
•	lectic
ζ	Ň
¢	' tor
	mmunity
ζ	5
د	ot
- F	Evaluation
- 	I able 4

																_
tnəmssəssA İlsıəvO				No	No	No	No	No	Yes	Yes	No	No	Yes	No	No	No
Adlea or Cacerio		sess	ent							'es				-	-	
for the Survey by heads of	es	T AS	0 U							es Y						
Survey by head of Municipality	Y	ssess c	nent N	•	•	•	•	•	•	Yes Y	•	•	•			
Cooperation for the	es -	I	u o							es 1						
Intention foro	λ	SS	nt n	'			'	 '	- s	s Y(	'	'	- s	-		
Overrapd Another Municiparity		s Asse	io mer	'	'	•	1	'	Ye	Ye	'	'	Ye	'	'	'
	2	, Ke	t or n	'	1	'	I	'	ž	ž	1	'	ž	ı	1	1
Social Problems		r Asses	sment	•	'	•	'	•	Yes	Yes	'	•	Yes	•	•	'
	A	Y es o	No	•	•	•	ı	•	No	No	•	•	No	1	•	1
Projects		ASSess	ment		·	•	ı		Yes	Yes			Yes		•	
TothonA vd boggergovO	Yes	Ъ;	No	•	ı	ı	ı	ı	No	No	ī	ı	No	ı	ı	ı
Legal Uptake of Water Source		ASSess	ment	ı	ı	1	ı	ı	Yes	Yes	ı	ı	Yes	ı	ı	
		Assess	ment		ı	ī	ı		Yes	Yes	ı		Yes			,
Access (beer diam most diam)		,	(km)		,	1	ı	,	7.4	8.2	ı	,	5.4			
		ASSess	ment	1	ı	ı	ı	ı	Yes	Yes	ı	ı	Yes	ı		
Use		1	SC						table	table			table			
Land			d of cro				ı		ops+vege	ops+vege	ı		ops+vege			
		;	Kin						basic cr	basic cr			basic cr			
ארפם סד לגועפר Basin (km²)		ASSess	ment	ı	-	-	-	ı	Yes	Yes	-	No	Yes		ı	No
, , , , , , , , , , , , , , , , , , ,		í	km2)		ı		ī		8.4	9.3	ī	1.6	9.3		-	2.7
		ssessme	nt (	No	No	No	No	No	Yes	Yes	No	Yes	Yes	No	No	Yes
ni sblodsen of Households in Communy	~	A Å	(o	3	(0)*	7	6	5	9	12	6	~	66	3	5	0
		`	u)	0	62(]	7	4	1	9	2]	1	S	16	1	2	2
Indicators for Poverty				19.35	18.95	18.70	16.63	21.00	20.61	14.76	14.47	14.05	14.02	13.85	13.80	13.64
Name of Community				1 Caserio La Trompetilla	2 Caserio El Garabato	3 Caserio Pachut	4 Caserio Popabaj	5 Caserio Chicaman, Villa Patzun	6 Caserio Xetziti, Xepatan	7 Aldea Xeatzan Bajo	8 Caserio Pachumulin	9 Adlea Panibaj, Panibaj	10 Aldea San Jose Xepatan	11 Caserio Chaquenum	12 Caserio Mocolixot Bajo	13 Aldea Chichoy
Name of Municipality				Patzun												

\*: not identify this location

Overall	Evaluation	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	
Evaluation	for Land Use	No	No	Yes	No	Yes	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	
Land Use		Vegetables, Potato, Maize	Potato, Vegetables, Maize	Coffee, Potato, Maize	Potato, Vegetables, Maize	Coffee, Maize, Vegetables, Potato	Coffee, Banana, Maize	Coffee, Maize	Vegetables, Potato, Maize	Maize, Vegetables, Flowers	Maize, Vegetables	Maize	Coffee, Vegetables	Coffee, Maize, Frejol	Coffee, Vegetable, Maize	Coffee, Maize, Vegetables	Maize, Vegetables	Coffee, Maize, Vegetables	Coffee, Maize, Vegetables	Coffee, Maize, Frejol	
Evaluation	for Poverty	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	
Classification	of Poverty*	e	q	e	e	q	q	þ	а	q	q	þ	а	þ	þ	а	а	c	q	а	
Indicator of Poverty		9.67	12.12	9.07	8.09	11.05	12.01	24.76	45.74	14.07	11.25	29.65	31.08	26.75	23.31	39.45	36.62	15.16	13.4	41.9	
Name of Municipality		Solola	San Jose Chacaya	Santa Maria Visitacion	Santa Lucia Utatlan	Nahuala	Santa Catarina Ixtahuacan	Santa Clara La Laguna	Conception	San Andres Semetabaj	Panajachel	Santa Catarina Palopo	San Antonio Palopo	San Lucas Tomliman	Santa Cruz La Laguna	San Pablo La Launa	San Marcos La Laguna	San Juan La Laguna	San Pedro La Laguna	Santiago Atitlan	
No.		-	2	ε	4	5	9	7	8	6	10	11	12	13	14	15	16	17	18	19	

Table 5 Land Use and Classification of Poverty Based on the FIS Criteria for Solola Province

\*: Poverty Classification a: Exstreme poverty, above 30 b: Severe poverty, 20-29.99 c: Regular poverty, 10- 14.99 d: Relative poverty, 10- 14.99 e: Low poverty, below10

Name of	Number	Name of	Area of	Name of
<b>River Basin</b>		Microcuenca	Microcuenca	aldeas or
			(km2)	caserios
Quebrada Seca	Q-1	San Juan La Laguna	9.9	Pueblo San Juan La Laguna
Yatza	Y-1	Paquib/Palestina	2.8	Part of Paqub and Palestina
	Y-2	Palestina	3.2	Palestina
	Y-3	Panyevar	5.7	Aldea Panyevar
	Y-4	Pasajquim	5.8	Pasajquim
	Y-5	right of Yatza	3.2	-

Table 6 List of Micro-basins in San Juan La Laguna Municipality

Overall Assessment					No	Yes	
tor the Survey by heads of Adlea or Caserio		Assess	ment		ı	Yes	
Intention for Cooperation	Yes	or	No		•	Yes	
for the Survey by head of Municipality		Assess	ment		·	Yes	
Intention foro Cooperation	Yes	or	no		•	Yes	
Municipality		Assess	ment		ı	Yes	
rodion & baorrout	Yes	or	no		·	No	
sməldor4 laiso2		Assess	ment		ı	Yes	
	Yes	or	No		1	No	
Dverrapped by Another Projects		Assess	ment	-	1	Yes	
	Yes	or	No		•	No	
Legal Uptake of Water Source		Assess	ment	-	•	Yes	
(length from main road)		Assess	ment		ı	Yes	
Access			(km)			9	
0		Assess	ment		ı	Yes	
Land Us			Kind of crops			Coffee +Basic crop	
( <sub>շ</sub> աጻ)		Assess	ment		·	Yes	
Area of River Basin			(km2)			5.8	
in Community		Assess	ment		No	Yes	
splodosuoII to rodomi			(ou)		585	206	
Indicators for Poverty					19.01	14.03	
		-	Name of Community		1 Pueblo San Juan La Lagun	2 Panyevar	
			Name of Municipality		1 San Juan La Laguna		L

Table 7 Evaluation of Community for Selection of Micro-basins in Solola Province

No.     Name of Municipality     Indicator of Poverty     Classification     Evaluation     Land Use (%)     Overall       of Poverty*     for Poverty     and Rank**     Evaluation	K**         Over           k**         Evalua           1         No           1         No           3         No           1         No           1         No           1         No	Land Use and Rank 54% (4 27% (7 28% (6 15% (8 15% (8 45% (5 61% (2) 66% (2)	Evaluation for Poverty No Yes Yes Yes No	Classification of Poverty* e d d c c c c c c c c c c	Indicator of Poverty 7.6 16.15 14.35 14.35 14.35 15.81 15.81 15.24 18.02 37.45 13.11	Name of Municipality Totonicapan San Cristobal Totonicapan San Francisco El Alto San Andres Xecul Momostenango Santa Maria Chiquimula Santa Lucia La Reforma	× 7 6 5 4 3 2 -
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Table 8 Land Use and Classification of Poverty Based on the FIS Criteria for Totonicapan Province

\*: Poverty Classification

b: Severe poverty, 20-29.99
c: Regular poverty, 15-19.99
d: Relative poverty, 10- 14.99
e: Low poverty, below10 a: Exstreme poverty, above 30

\*\*: Rate of coverage by forests and ranks

Name of	Number	Name of	Area of	Name of
River Basin		Microcuenca	Microcuenca	aldeas or
			(km2)	caserios
			· /	
Alajsimier	A-1	No	7.1	No
Pacaranat*	P-1	Chiaj	9.9	Chiaj
	P-2	No	1.9	No
	P-3	Chicastro	6.9	Chicastro
	P-4	Patzam	4.2	Patzam
				Chipu
Tzancorral	T-1	Chuijom	5.2	Chuijom
Sajcoclaj	S-1	No	2.7	No
	S-2	Pamesabal	1.9	Pamesabal
Pachac	PC-1		7.7	No
	PC-2	Racana	7.3	Xocol
				Racana
	PC-3	Camaja	4.9	Camaja
				Xesuc
				Cipo
	PC-4	Chicaxul	3.9	Chicaxul
				Chuicabaj
				Chuecutinez
	PC-5	Chuiaj	8.1	Chuiaj
				Part of Santa Maria Chiquimula
	PC-6	El Rancho	5.9	Pamaxcolabaj
				Chuinatux
				Patzichaj
				Chuitacaj
	PC-7	Chuisena	4.5	Chuisena
				Chuisela
				Xeabaj
	PC-8	Xesana	9.1	Xesana
				Sanjuyup
				Chimisiya
	PC-9	Pachum	10.5	Pachum
	PC-10	Chuitacabaj	5.9	Chuibacabaj
				Chuanovez

Table 9 List of Micro-basins in Santa Maria Chiquimu Municipality (1/2)

Name of	Number	Name of	Area of	Name of
River Basin		Microcuenca	Microcuenca	aldeas or
			(km2)	caserios
Sacmequena	PC-SAC-1	Chuichipop	1.4	Chuichipop
Ĩ	PC-SAC-2	Ximulul	5.7	Ximulul
				Xesiquel
				Chuichac
	PC-SAC-3	Sacxoc	5.5	Sacxoc
	PC-SAC-3	Pugertinamint	2.8	Pugertinamint
	PC-SAC-4	Chuisiguan	19	Chuisiguan
	PC-SAC-5	Chuijoj	1.9	Chuijoj
	PC-SAC-6	Xebe	8.5	Tzansiguan
	re brie o	11000	0.0	Xetulun
				Xehe
				Tuluyan
				Patulup
	PC SAC 7		11 7	Chinibaiuwun
	IC-SAC-7		11./	Votene
				Vaaaahalai
				Cororillo
				Chileon
				Taununuu
	DCCACQ		10.0	I Zununux
Cashai	PC-SAC-8	Chasa a mal	10.9	INO Democe
Sacdaj	5A-1	Choacorrai	13.1	Pansac Chimining in
				Chivisicaja
	G A 2	V	0.0	
	SA-2	Chimaila	0.8	Chimaila
	SA-3	Chimejia	0	Chimejia
T	SA-4	Paxan	/.3	Paxan
Izununa	IZN-I	Izununa	5.3	l zununa
		D. (		Xecaquix
	IZN-2	Pacomontux	4.2	Pacomontux
	IZN-3	Casa Blanca	7.1	Xecaja
				Xolabix
		~		Casa Blanca
	TZN-4	Chuachituj	7	Chuachituj
	TZN-5	Chuiabaj	2.9	Chuiabaj
	TZN-6	Pachoc	7.8	Tzansıbiche
				Pachoc
	TZN-7	Chuijox	9.1	Chuijox
				Panabesac
				Papuerta
				Pachiyut
				Las Trojadas
	TZN-8	Panimajiox	6.6	Panimajiox
	TZN-9	Chomazan	6.6	Chomazan
				Aprisco chuipachec

 Table 9 List of Micro-basins in Santa Maria Chiquimu Municipality (2/2)

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for the Survey by heads of		Asse	men									Yes				,	ı	
Intention for Cooperation	Yes	or	°N									Yes				,	ı	
to me survey by mean of Municipality		Asses	ment									les/						
Intention foro Cooperation	Ye	s or	no s				-		-		-	Yes		-		-	-	
Auguana		sess	nt					s				s	s					
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	Ye	s or	ou			1	ı	ž				ž	ž	ı	ı	1	ı	
Social Problems		Asses	ment					Yes				Yes	Yes					
	Yes	or	No					, No				, No	, No					
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Overrapped by Another	s	$\mathbf{As}$	me			ı	ı	Ye				Ye	Ye	ı	ı	1	ı	
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Legal Uptake of Water Source		Assess	nent			-	_	Yes	-		_	Yes	Yes	_				
		SSS /	<u>-</u>														1	
(length from main road)		Asse	men					Yes				Yes	Yes				ı	
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Area of River Basin		<	12) IT		1	1.9 N	1.4 N	4.2 Y	0.8 N	2.8 N	1	0.5 Y	3.9 Y	1	1	-1	1	
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τι ςοιμαιτλ		Asses	nent		<u>v</u> 0	Yes	Yes	Yes	Yes	Yes	<u> </u>	Yes	Yes	No	20	No	No	
Number of Households		7	-		321	61	57	50	83	198	391	68	63	(25)	40]	44 ]	301	
			(no		<b>~</b>	<b>~</b>	_	(	<b>(</b>	_	+	0	<b>~</b>	8 62(	~	10	(	
vtravod rof stoteoihul					19.6	18.69	18.5	18.00	17.59	17.2(	$16.5^{2}$	16.32	16.19	15.73	15.6	15.4	15.00	
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Overall Evaluation		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No**	No	No	No	No	No	Yes	
Evaluation for Land Use		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	Yes	
Land Use		Maize, Vegetable, Potato	Maize, Fruits	Maize	Maize	Maize,	Maize, Fruits	Maize, Fruits	Maize	Maize, Fruits, Potato	Maize, Potato, Fruits	Maize, Potato	Potato, Maize, vegetables	Vegetables, Maize	Maize, Fruits	Maize, Fruits	Maize, Vegetables	Coffee, Maize	Maize	Coffee, Maize	Pasture, Sugar, Maize, Rice, Coffee, Rubber	Pasture, Maize, Coffee, Rice, Oil palm, Rubl	Coffee, Maize	Maize, Fruits	Maize	
Evaluation for Poverty		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	Yes	No	Yes	
Classification of Poverty*		q	q	p	e	e	e	а	p	q	þ	q	q	q	e	q	q	q	C	þ	q	а	J	q	J	
Indicator of Poverty		11.13	12.05	12.62	7.87	4.92	9.64	42.16	24.57	14.34	22.63	12.5	14.26	12.06	8.75	11.02	12.81	24.83	16.99	22.58	13.66	30.39	19.66	10.49	15.27	
Name of Municipality	-	Quetzaltenango	Salcaja	Olintepeque	San Carlos Sija	Sibilia	Cabrican	Cajola	San Miguel Siguila	Ostuncalco	San Mateo	Concepcion Chiquirichapa	San Martin Sacatepequez	Almolonga	Cantel	Huitan	Zunil	Colomba	San Francisco La Union	El Palmar	Coatepeque	Genova	Flores Costa Cuca	La Esperanza	Palestina De Los Altos	
No.		-	2	3	4	5	9	7	~	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	

Table 11 Land Use and Classification of Poverty Based on the FIS Criteria for Quetzaltenango Province

\*\*: An average of poverty in San Francisco La Union municipality indicates "c" and Maize in land use, however, there are no communities having "c" in poverty as shown below: Then this municipality was evaluated as no and eliminated.

Name of Community	Indicator of Poverty	Classification
Pueblo San Francisco la Uni	66.09	а
Pala	9.26	e
Xeaj	8.42	e
Tzanjuyu	7.72	е
Chuestancia	6.48	e

\*: Poverty Classification a: Exstreme poverty, above 30 b: Severe poverty, 20-29.99 c: Regular poverty, 15-19.99 d: Relative poverty, 10- 14.99 e: Low poverty, below10

T - 12

Name of	Number	Name of	Area of	Name of
River Basin		Microcuenca	Microcuenca	aldeas or
			(km2)	caserios
Turbala	T-1	Tuimuj	2.6	Tuimuj
	T-2	El Carmen	2.3	El Carmen
				El Carmen-2
				Altamira
	Т-3	San-Ishidro	3.2	San-Ishidro
				Cabrera
				Loz Perez
	T-4	El Socorro	1.3	El Socorro
				Los Marroquiness
				Buena Vista
				Roble Grande
	T-5	Los Gonzalez	2.5	Los Gonzalez
				Pueblo Palestina de Los Alto
	T <b>-</b> 6	El Desierto	9.3	El Desierto
				Los Laureles
Palana	P-1	El Eden	2.7	El Eden
				Sinai
	P-2	Mira Pena	3.3	Mira Pena
Patzacan	PZ-1	Las Delicias	2.1	Las Delicias
				Buenos Aires
Ixchol	IX-1	Toj Guabil	4.1	Toj Guabil
				Toj chol
				Asuncion

 Table 12
 List of Micro-basins in Palestina de Los Altos Municipality

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Overall Assessment				No	No	No	No	Yes	Yes	Yes
the Survey by heads of Adlea o Caserio		Assess	ment					Yes	Yes	Yes
Intention for Cooperation for	Yes	or	No	÷	•			Yes	Yes	Yes
the Survey by head of Municipality		Assess	nent					Yes	Yes	Yes
Intention foro Cooperation for	Yes	or	no	ı	•	•		Yes	Yes	Yes
tilsqioinuM rəthonA bqsrrsvO		Assess	ment	No				Yes	Yes	Yes
	Yes	or	ou	Yes	ı	•	•	ou	ou	no
Social Problems		Assess	ment	Yes	•	,	,	Yes	Yes	Yes
	Yes	ss or	No	°N N	•	•	•	°N N	°N N	No
Overrapped by Another Project		Asses	ment	Yes	•	1	•	Yes	Yes	Yes
	Yes	or	No	ž	'	1	'	ž	ž	NC
Legal Uptake of Water Source		Assess	ment	Yes	•			Yes	Yes	Yes
(length from main road)		Assess	ment	Yes	•	•	•	Yes	Yes	Yes
ssəooA			(km)	less 1	•			less 1	less 1	less 1
Jse		Assess	ment	Yes	•	,	,	Yes	Yes	Yes
Land (			Kind of cro	basic crops				basic crops	basic crops	basic crops
		Assess	ment	Yes	No	No		Yes	Yes	Yes
(2mg) nize I ravi g to sar (			(km2)		1.5	-	,	3.2	=	=
Соттиту		Assess	ment	Yes	Yes	Yes	No	Yes	:	=
ni sblodəsuoH fo rədmu <sup>N</sup>			no)	51.00	52.00	76.00	275.00	77.00	85.00	60.00
Indicators for Poverty			<u> </u>	19.90	19.52	15.46	16.58	17.66	15.59	18.75
Name of Community				1 Caserio Tojguabil	2 Caserio Los Marroquines	3 Caserio El Socorro	4 Aldea El Carmen	5 Caserio Los Cabrera o Molinos Los Ca	6 Caserio SanIsidro o Los Diaz	7 Caserio Los Perez
Name of Municiparity				1 Palestina De Los Altos						

Steps	Activities	Contents	Output at each stage	Final Output
Explanation of Study Procedure (Opening)	1) Public Meeting-I	<ul> <li>Explanation of objectives, outline, procedure of the study.</li> <li>Request cooperation of community members.</li> </ul>		<ol> <li>Community Profile</li> <li>Socio-economy</li> <li>Agriculture &amp; Livestock</li> <li>Infrastructure</li> <li>Environment</li> <li>Health &amp; Sanitation</li> </ol>
Study on Present Situation	<ol> <li>Key-informant Interview</li> <li>Questionnaire Survey</li> </ol>	<ul> <li>Interview with 5~10 key-informants with semi-structured interview.</li> <li>Interview with 10~20 households with using simple questionnaire.</li> </ul>	<ul> <li>Brief community profile (draft)</li> <li>List of problems and needs</li> </ul>	<ol> <li>A definition of the second of t</li></ol>
Identification of Problems & Needs	<ol> <li>Public Meeting-II, III</li> <li>(by gender, by age group)</li> <li>2) Public Meeting-IV</li> </ol>	<ul> <li>Identification of problems and needs</li> <li>Consensus on problems and needs</li> </ul>	<ul> <li>List of problems &amp; needs with ranking</li> <li>List of representatives</li> </ul>	<ol> <li>Key-informant Interview</li> <li>Key-informant Interview</li> <li>Questionnaire Survey</li> <li>Field Inspection</li> <li>Public Meeting (I)~(V)</li> <li>Representative Meeting (I)~(II)</li> </ol>
	(by all memoers)	<ul> <li>Ranking of needs</li> <li>Selection of representatives</li> </ul>		
Investigation of Problems, Needs & Potentials	<ol> <li>Field Inspection with representatives</li> </ol>	<ul> <li>Confirmation of problems and potentials through site inspection</li> <li>Preparation of Resource Map</li> <li>Marketing condition in/around the cuenca</li> <li>Environmental impact in/around the cuenca</li> </ul>	<ul> <li>List of confirmed problems &amp; needs</li> <li>Resource map</li> </ul>	
	2) Representative Meeting-I	- Problem analysis	- Problem trees	
Investigation of Solutions	<ol> <li>Representative Meeting-II</li> <li>Public Meeting -IV (by all members)</li> </ol>	<ul> <li>Alternative (Approach) analysis</li> <li>Consensus on approaches</li> <li>Ranking of the approaches</li> </ul>	- Objective trees with approaches	

Table 14 Procedure of the Participatory Study

		Xeatzar	ı Bajo			Panye	var			Pachum			Pa	lestina	
Activities	Date	P	articipants	S	Date	P	articipants	S	Date	Particit	ants	Date		Participa	ıts
		Male	Female	Total		Male	Female	Total		Male Fem	ile Tot	al	Male	Female	Total
Public Meeting															
1. Public Meeting 1	07/18	150	90	240	07/17	80	80	160	07/19	50	20	- 70	6	5 95	190
2. Public Meeting II	07/31	140	80	220	07/26	94	84	178	08/02	50	30	- 80	9	3 132	195
3. Public Meeting III	08/01	155	135	290	07/27	101	71	172	08/08	29	10	39 -	S	56 55	153
4. Public Meeting IV	08/07	125	120	245	08/01	106	797	203	08/16	43	30	73 -	S	32 85	141
5. Public Meeting V	08/28	90	80	170	08/09	88	71	159	08/30	47	37	84 -	5	7 101	158
Average Participation		132	101	233.0		93.8	80.6	174.4		43.8 2:	5.4 6	9.2	64.	2 103.2	167.4
Number of Households			<u> </u>	325			<u> </u>	360				60			297
Participation Rate (%)				71.7				48.4			4	3.3			56.4
Other Activities															
1. Key-informant Interview	7/19~21	15	3	18	7/18~20	8	4	12	7/25~26	14	3	17 -	2	2 8	30
2. Questionnaire survey	7/24~28	ı	1	30	7/20-23	29	2	31	$7/21 \sim 8/1$	47	2	- 49	10	8 15	123
3. Representative Meeting I	08/24	20	10	30	08/04	17	7	24	08/23	23	8	31 -	1	9 11	30
4. Representative Meeting II	08/25	19	9	25	08/07	20	6	29	08/23	23	8	31 -	1	9 11	30

Activities
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	L(	os Cabrera	a/Morales		I	Los Diaz/	Sector I			Los P	erez	
Activities	Date	d	articipants		Date	Ρ	articipant	s	Date	d	articipant	s
		Male	Female	Total		Male	Female	Total		Male	Female	Total
Public Meeting												
1. Public Meeting 1	07/21	30	35	65	07/21	30	40	70	07/20	35	20	55
4. Public Meeting II	08/04	14	54	68	08/03	21	50	71	08/02	28	28	56
5. Public Meeting III	60/80	17	17	34	08/10	24	43	67	08/11	13	39	52
6. Public Meeting IV	08/16	16	33	49	08/17	18	32	50	08/18	18	24	42
9. Public Meeting V	09/13	12	37	49	09/12	27	40	67	09/11	18	24	42
Average Participation		17.8	35.2	53		24	41	65		22.4	27	49.4
Number of Households				83				107				107
Participation Rate (%)				63.9				60.7				46.2
Other Activities												
2. Key-informant Interview	7/28-29	L	3	10	7/26-27	7	3	10	7/24-25	8	2	10
3. Questionnaire survey	7/31-8/1	39	3	42	8/2-3	43	11	54	8/4-7	26	1	27
7. Representative Meeting I	08/22	L	3	10	08/22	9	5	11	08/22	9	3	9
8. Representative Meeting II	08/22	L	3	10	08/22	9	5	11	08/22	9	3	9

No.	Name of the Project	Mon	litoring Indicators	Organization of monitoring
		condition of before implementation	condition after implementation	
		of the project	of the project	
Environ	ment and Conservation Plans			
a-1 -	Restoration plan of the collapsed lands	1. Progress of completion of construction	1. Growth rate of trees	An environmental committee in the community
		2. Qualitative monitoring soil erosion	2. Soil amounts to be eroded	A executing office
		3. Farmer's participation rate		
a-2 5	Soil Conservation plan for steep farm lands	1. Progress of completion of construction	1. Growth rate of crop	An environmental committee in the community
		2. Farmer's participation rate	2. Soil amounts to be eroded	An executing office
a-3 F	-orestation plan	1. Progress of completion of construction	1. Growth rate of trees	An environmental committee in the community
			2. No. of participant for forestation and training	An executing office
		2. Farmer's participation rate	programs	
a-4 /	Agro-forestry development plan	1. Progress of completion of construction	1. Growth rate of crops and trees	An environmental committee in the community
			2. No. of participation for tree planting	An executing office
ļ		2. Farmer's participation rate	and training programs	
a-5 h	Management plan of water quality	1	1. Content of toxity materials in water	Municipality office
a-6 5	Solid wastes treatment plant	1. Progress of completion of construction	1. Quantity of solid wastes	An committee in the municipality
			2. Amount of produced composts	A municipality office
			3. Financial status of a executing committee	An executing office
Plans fo	r Increasing Income Generation		3. Financial statement	
b-1 F	Plan for making composts	1. Progress of completion of construction	1. Production cost of compost per ton	A municipality office
			2. Production of composts	An executing office
			3. Financial statement	
b-2 F	Plan of model farm on potato	1. Progress of completion of implementation	1. Number of farmer's visitors	An executing committees in the municipality
4	production		2. Yield of potatoes	An executing office
b-3 F	<sup>o</sup> otato storage plan (a) farmer's level	1. Progress of completion of construction	1. Price of potatoes	A executing committee in the community
			2. Amount damaged during storage period and	An executing office
			quality of potatoes	
-	<sup>3</sup> otato storage plan (a) commercial level	1. Progress of completion of construction	1. Price of potatoes	An executing committee in the municipality
			2. Quality of potatoes	A municipality office
			3. Financial statement	An executing office
b-4 F	Potato processing plan	1. Progress of completion of construction	1. Production cost	Cooperatives in the community
			2. Financial statement	An executing office
P−2 -	Mini-irrigation plan	1. Progress of completion of construction	1. Net benefits	Irrigation committee in the community
		2. Farmer's participation rate for provision	2. Collection Rate of water charge	An executing office
		of labor force for construction		
-9−9	Dayer-chicken Raising Plan	1. Progress of completion of construction	1. Status for raising	Women' cooperative in villages
+	or women's groups		2. Amount of eggs and saled eggs, and net profit	An executing office

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Š	Name of the Project	Monito	oring Indicators	Organization of monitoring
		condition of before implementation	condition after implementation	
		of the project	of the project	
∠-q	Project for improvement of coffee plantation	1. Progress of completion of construction	1. Growth rate of coffee seedlings	A coffee farmer's cooperative in the community
			2. Areas that replanted by new seedlings	An executiong office
			3. Number of farmers who use composts and	
			imporved technical methods	
			4. Yield of coffee and other cash orchard trees	
			5. Financial statement of cooperative	
h−8	Coffee processing plan	1. Progress of completion of construction	1. Total amount of coffee bean to be pulped	Coffee processing cooperatives in the community
			2. Rate of milling	An executiong office
			3. Financial statement of cooperative	
6-q	Agro-processing development plan	1. Progress of completion of construction	1. Total production	Agro-processing farmer's cooperatives in the community
			2. Amount of sales of production	An executing office
			3. Financial statement of cooperatives	
b-10	Plan of direct sale of vegetables	1. Progress of completion of construction	1. Total amount of agricultural products to	Crop production cooperatives in the community
			be dealt with	An executing office
			2. Price of agricultural products to be dealt with	
b-11	Improvement plan for maize threshing	1. Consumed time to be threshed for maize	1. Consumed time to be threshed for maize	A committee in the community
		by traditional method	by threshing equipment	An executing office
b-12	Institutional plan for	1. Progress of completion of implementation	1. Number of meetings	A nucleus farmer committe in the community
	fostering nucleus farmers		2. Improvement of capacity of nucleus	An executing office
			farmers	
b-13	Plan of Revolving fund for hand weaving	1. Progress of completion of implementation	1. Amount of sales and stock of thread	Cooperatives
	thread		2. Financial status of committee	An executing office
			3. Reduction of production costs	
Impr	wement plan for living environments			
	Rehabilitation plan of roads in the village	1. Progress of completion of construction		A road committee in the community/ an executing office
c-2	Rehabilitation plan of regional roads	1. Progress of completion of construction		Mininstry concerned
c_3	Plan of rural electricity	1. Progress of completion of construction	1. Collection rate of electric charge	A electric and energy committee in the community/an execulting office
c-4	Rehabilitation plan for drinking	1. Progress of completion of construction	1. Collection rate of water charge	Water committee in the community
	water system		2. Frequency and duration of suspension	An executing office
			of water supply	
c-2	Water quality improvement plan for	1. Progress of completion of construction	1. Number of users	Water committee in the community
	the existing drinking water supply system		2. Status of water treatment system	An executing office
			3. Number of diarrhea patients	
			4. No. of colon bacillus in potable water	
c_6	Plan of extension use of improved cooking	1. Consumption of wood fuel	1. Farmer's perception	A committee in the community
	stoves and of Sauna bath "Tamascal"		2. Consumption of wood fuel	
<u>1</u> -2	Plan of provision toilette facilities	1. Progress of completion of construction	1. Status of facilities	A committee in the community

Table 16 Monitoring Indicators and Organization of the Implementation and Management of the Projects (2/3)
No. Name of the Project	Monit	oring Indicators	Organization of monitoring
	condition of before implementation	condition after implementation	
	of the project	of the project	
c-8 Plan of night time health education		1. Number of participants	Health committees in the community/an executing office
c-9 Plant medicine growing plan	1. Progress of completion of construction	1. Yield of medical crops	Health guards in the community
		2. Amount of sales of production	An executing office
		3. Financial status	
c-10 Improvement plan of service	1. Progress of completion of implementation	1. Maternal mortality rate	Comadronas , Health committees in the community
quality given to Comadronas		2. Number of paitients	An executing office
c-11 Plan for installation of	1. Progress of completion of implementation	1. Kind and aomount of drug to be saled and stocked	A health committee in the community
minimal phaaarmacy unit (MPU)		2. Profit in MPU	MPU
		3. Accounting status of MPU	An executing office
		4. Budget use in health committee	
c-12 Integrated community health	1. Progress of compretion of implementation	1. Kind and aomount of drug to be saled and stocked	A health committee in the community
activity Plan		2. Profit in MPU	MPU
		3. Accounting status of MPU	A municipality office
		4. Budget use in health committee	An executing office
c-13 Plan for immigrant people to the	1. Progress of completion of implementation	1. % of farmers contaminated by agricultural	A committee in the community
coastal areas		chemicals	An executing office
		2. Number of diarrhea patients	
c-14 Plan for reducing work load in	1. Progress of completion of implementation	1. Income of beneficiaries	A committee in the community
the mountainous area		2. Processed amount of coffee and milling rate	An executing office
through coffee processing			

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