

BIMP-EAGA Construction Materials Merchandising Center Project (EC-22)

1. Background

1.1. Construction Materials Industry in DIDP Area

The DIDP Area has a lot of resource potential of construction materials. Quarrying resources such as sand and gravel are abundant in Davao Oriental, limestone for cement in Davao City, marble in Davao Province and Davao Oriental, pebbles and dimension stone in Davao Oriental, and fireclay in Davao del Sur as shown in Table 1. Based on these resources, there exist industries in the DIDP Area to produce crush aggregates, cement, concrete products, bricks, and so on. In addition, the DIDP Area has other construction materials industries to produce wood/lumber, plywood, bamboo, and steel including bar and corrugated sheets.

The DIDP Area has new construction materials. Fiber, concrete, roof tiles and wood wool cement board have been developed with the DOST supports. Wall panel using rice husk is already commercialized. Ceiling panel will be developed by composing coconut fiber. Bamboo abundant in the DIDP Area will be manufactured to be a construction material like plywood. As such, resource-recycling and environment-friendly composite construction materials are very promising.

Table 1 Deposits of Main Non-Metallic/Quarrying Resource in DIDP Area

	Average Grade	Unit	DIDP Total	Davao Province	Davao City	Davao del Sur	Davao Oriental
Silica		('000 M.T.)	7,500	1,000		500	6,000
Magnesite	Total	('000 M.T.)	83,212				83,212
	15%	('000 M.T.)	106				106
	35-38%	('000 M.T.)	77,975				77,975
	40-47%	('000 M.T.)	5,131				5,131
Pebbles		('000 C.M.)	20,000				20,000
Sand & Gravel		('000 M.T.)	20,100	9,100			11,000
Limestone	(Raw)	('000 M.T.)	7,854	7,854		○	
	(Cement)		35,072		35,072		
	(Lime)		153,725		153,725		500
	(Ind.)		123		123		○
	Marble		82,000	69,000	12,000		1,000
Shale		('000 M.T.)	7,145	3,000		4,145	
Rock Phosphate		('000 M.T.)	44	44			
Guano		('000 M.T.)	112	112			
Clay	Total	('000 M.T.)	134,664			134,644	
	(Bentonitic)		830			830	
	(Fire)		133,834			133,834	
Sulfur	11.48%	('000 M.T.)	5,009			5,009	
Tuff		('000 M.T.)	908			908	
Coal							○
Dimension Stone		('000 m ³)	1,000				1,000
Semi-precious Stone						○	○

Note: ○ = The deposits are proven, but the amounts are not estimated.

Source: Mines and Geoscience Bureau, Region XI, DENR/PENRO, Davao Oriental

1.2. BIMP-EAGA Cooperation and Trade

BIMP-EAGA is a sub-regional cooperation established in March 1994. Population and area of the sub-regions were 1,564,000 km² and 45.9 million in 1995, respectively.

The central goal of EAGA is to increase trade, investment, and tourism within the EAGA through crossborder cooperation in the manner that facilitates the free movement of people, goods, and services, and that shares common infrastructure and natural resources. In other words, EAGA is a strategic alliance of countryside areas in BIMP to convert them into a major location in ASEAN through an optimum utilization of resources, based on comparative advantage of and complementary cooperation among the participating sub-regions.

The BIMP-EAGA cooperation covers a wide range of activities, which have been led by the member countries specializing in respective areas. The Philippine EAGA centering on the DIDP Area is designated to lead the development of construction industry, based on abundant construction materials and skilled workers. In line with this, the Regional Construction Training Center in Mindanao is already operational in Davao City from 1997 assisted by ODA.

The DIDP Area has exported construction materials to the EAGA countries, such as plywood, cement, crush aggregates, and pebbles. The export is expected to expand corresponding to the progress of regional development and the increase in income in the EAGA sub-regions.

1.3. Constraints to Construction Materials Industry

Despite the presence of promising aspects, construction materials industry has constraints to its further growth as follows.

- Low quality of products, centering on woodworks, clay and ceramic materials, concrete products, steel bar, and structural metal products in terms of strength, precision of processing, and size;
- Lack of qualified testing laboratory able to meet international standards; and
- Weak marketing due mainly to a heavy dependence on the Government public works.

Low quality of construction materials is related closely not only to technological level of local enterprises, but also to people's low income, since the material price is the first, the quality is the second in consumers' buying criteria. Such a situation has discouraged many enterprises to produce construction materials in good quality, as they can not expect returns/profits from the expenses for quality development.

There is a testing laboratory for construction materials in the DIDP Area, which is under DPWH. However, the laboratory lacks the capability and capacity to conduct complex material testing and quality assurance test. This is a crucial problems to develop composite material industries including the ones based on local resources.

The Government public works are large and stable markets that suppliers of construction materials have only to qualify the government standards. In addition, the government standards not meeting international standards have not encouraged the suppliers to produce construction materials in good quality. This is another problem to hinder the development of construction materials industry within the globalizing economy.

2. Project Concept

2.1. Objectives

Based on the situations and to address the constraints to the DIDP construction materials industry as seen above, a BIMP-EAGA Construction Materials Merchandising Center (CMMC) aims:

- To expand trade of construction materials in good quality with the EAGA sub-regions and other ASEAN sub-regions;
- To establish a testing laboratory meeting international standards; and then
- To promote and lead the development of construction materials industry in the context of the BIMP-EAGA cooperation.

2.2. Project Components

The CMMC project will be implemented with the following components:

- Development of a merchandising center to accommodate producers, traders, and processors of construction materials such as stone including dimension stone, pebbles, sand, gravel, marble, steel, concrete products, wood/lumber, bamboo etc. some of which may be imported from outside the DIDP Area;
- Establishment of wholesaling and showcase functions of construction materials; and
- Installation of other supporting function to inspect and standardize construction materials in line with "EAGA/Global Standards," including construction standards set by regulators.

Buyers can procure any kind of qualified construction materials at the CMCC, i.e., a sort of one-stop-shopping center. Trader will exchange advanced information on technology as well as business, and thereby expand their business. This is a benefit resulting from synergy effects based on an agglomeration of industries and transaction at the CMCC. The CMCC inspection/standardizing center will also promote technology and product development.

3. Project Description

(1) Growth of Construction Materials Industry

The growth of construction materials would be higher than that of construction industry as a whole, since higher quality materials will expand their markets corresponding to increase in people' income. It is well known that demand for durable consumer goods, high grade house and infrastructure has rapidly expanded after per capita GDP was more than US\$1,500-2,000. Among the BIMP-EAGA sub-regions, Malaysia EAGA already reach the said income level, an Brunei is much more than that of Malaysia. The Indonesia and the Philippine sub-regions will reach the income level around the year 2010 based on 7-8% GDP growth per annum, even though the currency depreciation is taken in account.

Table 2 shows the growth elasticity of construction industry to GDP in the Philippines. The elasticity had fluctuated during 1985-1996, but it averaged 1.008 during 1990-1996. It might be reasonable to assume that the elasticity in the DIDP Area would be larger than the national average, since infrastructure development in the DIDP Area will progress rapidly more than in the rest of the Philippines. Thus, the DIDP construction industry will grow by 8.4% per annum up to the year 2016 from 1995, based on the growth elasticity, 1.27 (refer to Master Plan Report).

Table 2 Growth Elasticity to GDP in the Philippines

		1985	1986	1987	1988	1989	1990	84-90	
Growth Rates to Previous Year	Gross Domestic Product (GDP)	-7.3%	3.4%	4.3%	6.8%	6.2%	3.0%	2.6%	
	Electricity, Gas & Water	-6.5%	13.2%	-11.4%	12.6%	5.4%	-0.4%	1.7%	
	Construction	-48.2%	-1.7%	11.2%	4.7%	20.0%	5.0%	-4.7%	
Growth Elasticity to GDP									
		Electricity, Gas & Water	0.885	3.868 ▲	2.650	1.860	0.868 ▲	0.144	0.656
		Construction	6.593 ▲	0.494	2.596	0.697	3.221	1.635 ▲	1.808
		1991	1992	1993	1994	1995	1996	90-96	
Growth Rates to Previous Year	Gross Domestic Product (GDP)	-0.6%	0.3%	2.1%	4.4%	4.8%	5.7%	2.8%	
	Electricity, Gas & Water	4.7%	0.7%	2.9%	13.9%	13.0%	7.5%	7.0%	
	Construction	-15.7%	2.8%	5.7%	8.9%	6.5%	10.9%	2.8%	
Growth Elasticity to GDP									
		Electricity, Gas & Water	▲ 8.139	1.939	1.378	3.157	2.731	1.317	2.535
		Construction	27.152	8.193	2.714	2.039	1.366	1.919	1.008

Source: 1997 Philippine Statistical Yearbook (National Statistical Coordination Board)

Likewise, construction materials industry in the DIDP Area will grow at least by 8.4% per annum equivalent to the growth rate of construction industry. However, as already mentioned, the industry will grow rapidly more than construction industry. Thus, it could be assumed that construction materials industry will grow by around 10% per annum up to the year 2016, also taking in account the expansion of export in the context of the BIMP-EAGA cooperation.

(2) CMCC inspection/standardizing center

In order to realize the forecasted growth of construction materials industry in the DIDP Area, quality development is essential. To this end, an inspection and standardizing center is proposed. According to the document prepared by DTI and DOST, the center will provide the following services.

- To extend calibration and testing services for upgrading and standardizing quality of construction materials produced in the EAGA;
- To provide construction materials producers with technical consultation services;
- To carry out product certification services for construction materials;
- To undertake research and experiments on raw materials in search of alternatives for producing construction materials;
- To facilitate accreditation program for other testing laboratories within the EAGA; and
- To comply with ISO 9002 to give it an international image of quality.

The center is envisioned in the long term to be the nucleus of construction materials and supplies in the BIMP-EAGA sub-regions.

In addition, the center is expected to have training functions for quality control/management of construction materials.

(3) Location and development scale of CMMC

The CMMC will be developed in Davao City, at a site located outside the city center in consideration of size of local demand, transport conditions for export, and rational land use of the City. Practically, a site close to Sasa Wharf located in Ilang may be one of the

best candidate sites for the CMMC to store and export construction materials. The CMMC might have its local branch or sub-station in Compostela Valley with abundant in sand and gravel, and Davao Oriental abundant in sand/gravel and pebbles.

Development site area of the CMMC is assumed to be around 30 ha based on the following considerations.

- To provide the land-intensive industries of construction materials with enough site area not only for storing them, but also for the processing, while taking into account their future expansion of business;
- To prepare the site for Inspection and Standardizing Center;
- To prepare enough area for the internal roads on which large carriers will be operated; and
- To prepare a good landscaping with an ample greenery conducive to image-up of construction materials industry as well as environmental protection.

(4) Relation to other projects

The CMMC will link to the Marble Processing Zone proposed to be developed in and around Mati, Davao Oriental. In this context, it is reasonable that a branch of the CMMC will be established in Davao Oriental.

4. Project Implementation

4.1. Project Schedule/Cost

The CMMC project will be implemented during Phase 2 (2005-2010), based on progress and expansion of the BIMP-EAGA cooperation.

The CMMC will cost ₱46 million (off-site infrastructure plus the cost to establish the Construction Materials Inspection and Standardizing Center) excluding costs for land preparation and on-site infrastructure.

4.2. Institutional Arrangements

(1) Implementation body/developer

There are mainly three options for the developer of the CMMC: the private sector, Davao City/LGUs, and other.

In case of the SMEs IE, implementation by PAIC alliances or LGUs is recommended in the Study in view of its character of a basic infrastructure for SMEs. However, the CMMC is not a basic infrastructure necessary for business operation of construction materials industry. The industry can carry out business without the CMMC, but it could get much more business opportunities with the CMMC. In this context, The CMMC concept is a sort of guideline to create better business environments.

The private sector can develop the CMMC, but dependent on its profitability. Profitability is sometimes inconsistent with planning concept, and tends to be conducive to delay of project implementation.

Thus, joint undertaking between the public and private sector is considered in view of both achieving planning concept and creating better business environments. To this end, Davao Trade Corporation (DTC) is expected to be established by a public-private partnership. DTC is also a trigger project in the DIDP development proposed by the Study (refer to No. EC-32, Project Report), and will be in charge of the following activities:

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- To develop and manage the BIMP-EAGA construction Materials Merchandising Center,
 - To develop the Davao Trade Business Center,
 - To put forward "By Davao and Buy Davao Movement" ,
 - To collect and disseminate information on markets, products and technologies to guide local producers,
 - To play a role of regional trading arm with market-match, wholesaling, financing, stock-holding functions, and
 - To play a role of match-maker for joint venture and conduct investment promotion.

This DTC will be fully privatized after its going into profitable operation as a trigger project.

(2) Action program to implementation

A feasibility study (FS) will be conducted to identify and select the CMMC site, identify potential investors, design the CMMC including the inspection and standardizing center as well as to estimate the costs and profitability.

If the Davao Trade Corporation (DTC) is already established as the proposed developer of the CMMC, it will conduct the FS. Also, a FS on the inspection and standardizing center will be conducted under the close coordination between DTI, DOST, the Bureau of Research and Standards, and the Bureau of Product Standards.

On the other hand, investment promotion will be undertaken strongly supported by DTI in the context of the BIMP-EAGA cooperation.

Integrated SMEs IE Development Program (EC-24)

1. Background

1.1. Present Status of IE Development

Industrial estate (IE) development is effective in terms of orderly land use and intensive investment in infrastructures including pollution control. In addition, IE is instrumental to industrial clustering.

IE had not been developed in the DIDP Area until several years ago, due probably to the peace and order situations. Now, seven IEs have been planned, three of which are partly complete or under construction as shown in Table 1.

Table 1 Present Status of IE Development in DIDP Area (as of May, 1998)

City/Province	Davao Province	Davao City	Davao City	Davao City	Davao del Sur	Davao del Sur	Davao del Sur
Name	Apo Estates Agro-industrial Project	Ilan Agri IE Davao City	First Mindanao Technology Park	First Oriental Agri-industrial Park	Tan Kim Kee IE	Sta. Cruz IE	Ayala Agri- IE
Location	Madaum Tagum	Panakan	Panakan	Panakan	Tagabuli, Sta. Cruz	Darong, Sta. Cruz	Darong, Sta. Cruz
1. Type	PAIC/SEZ	RAIC/IE	RAIC/EPZ	RAIC/EPZ	within PAIC	within PAIC	within PAIC
2. Developer	Hijo Plantation Inc.	Ilan Agri Industrial Estate Corp.	Lapanday Prime Devt Corporation	First Oriental Business & In- dustrial Park	Tan Kim Kee IE	San Miguel Properties, Inc.	Ayala Agri- Devt Corp.
3. Status of of Dev't	Under Construction	- Under Construction	- Waiting for DAR Approva	- Partly Complete	- Just Planning	- Just Planning	- Just Planning
4. Relation to to CARP	-	No Relation	No Relation		No Relation	No Relation	Partly Related
5. Area - Schedule: up to 1998 1999-2005 2006-2010	445 ha	24.6 ha 3.0 ha	367.0 ha 100.0 ha 267.0 ha	100.0 ha 60.0 ha	219.7 ha	119.3 ha 27.0 ha 32.9 ha	695.0 ha
6. Land Price		P3,000/m ²		P2,000/m ²			
7. Locational Conditions							
National Road	Connected	Along	7 km	Along	Along	Along	Along
Davao Port	50 km	Close	14 km	4 km	50 km	33 km	33 km
Davao Airport	45 km	6 km	14 km	6 km	50 km	33 km	33 km
Electricity			1 km		100 km	Inside IE	200 m
Water Supply				4,000 m ³ /day		6,055 m ³ /day	
Waste Water Treatment	Inside IE	Inside IE	Outside IE	Inside IE	Inside IE	Inside IE	Inside IE
Garbage Treatment	Inside IE						

Source: Planning and Development Offices (PDO) of City/Province

1.2. Agri-industrialization and RAIC/PAICs

Agri-industrialization is the basic strategy for the DIDP regional development, and aims to localize and increase value added through forward and backward linkages between agriculture and industry (manufacturing).

To put forward the agri-industrialization, there are a Regional Agri-industrial Center (RAIC) and seven Provincial Agri-industrial Centers (PAICs) in the DIDP Area. RAIC and seven PAICs are those shown in Table 2.

Table 2 Seven PAICs in DIDP Area

Name of PAIC	Components of Industrial Area	Total Area (ha)	Site Name	Project Site	Topography	Planted Crop	Land Use
Panabo	J. P. Laurel, Cagangoan, San Pedro, portion of Sto. Nino, New Panda, and San Vicente	571	J. P. Laurel (32 ha)	4.2 km south of Poblacion	- Flat	- Coconut, a few fruits	- Agriculture
Tagum	Madaum	675	Madaum (745 ha)	11 km north of Poblacion	- Flat	- Coconut, cacao, bamboo	- Agriculture (already under construction)
Nabunturan	Libasan, San Roque, Linda, and Magsaysay	158	Libasan (38 ha)	15 km south of Poblacion	- Flat to slightly rolling terrain	- Coconut, banana, and other fruits	- Agriculture
Sta. Cruz	Dargon, Tuban and Tagabuli	1,034	Tagabuli (233 ha)	3 km north of Poblacion	- Flat to rolling terrain	- Coconut, cacao, peanut, fruits	- Agriculture
Malalag	Bulacan (Malalag), Kiblagon (Sulop)	626	Bulacan (626 ha)	1.5 km south of Poblacion	- Flat to semi-rolling terrain	- Coconut, banana, and other coomer. Trees	- Agriculture
Mati	Dahican	500	Dahican (500 ha)	6 km east of Poblacion	- Flat to rolling terrain	- Coconut	- Agriculture
Baganga	Lambajon and Baculin	80	Lambajon (50 ha)	5 km north of Poblacion	- Flat terrain	- Coconut	- Agriculture

Source: Pre-Feasibility Study for the Establishment of PAIC Region XI (NEDA Region XI, DAP)

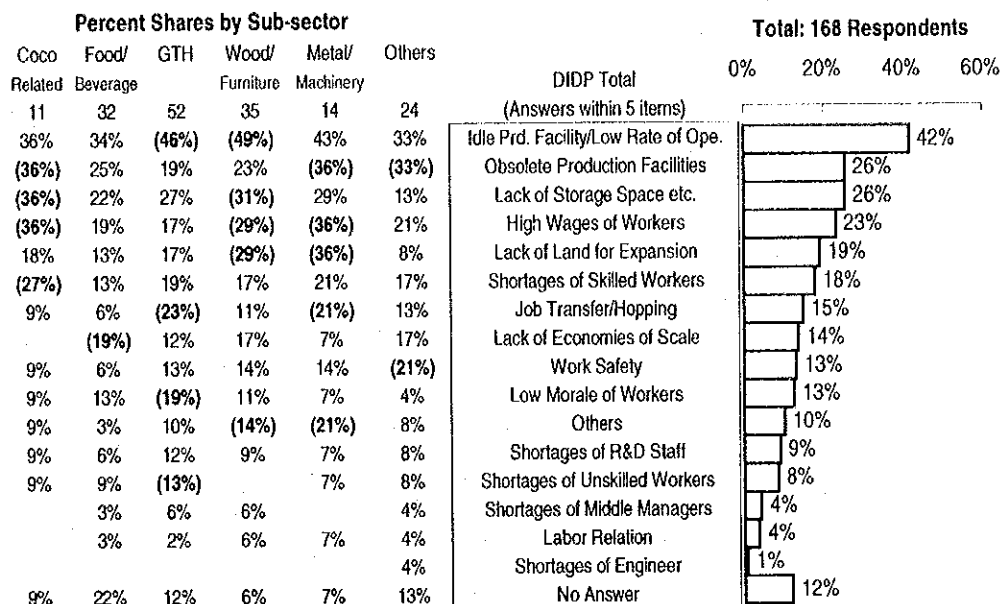
Every PAIC already identified its industrial area. In the Tagum PAIC, an IE development project has started construction. The Sta. Cruz PAIC has three IE development plans. Other PAICs have not yet IE development plan, though some IE projects are under consideration in Panabo, Davao del Norte.

1.3. Constraints to DIDP Manufacturers

The Study conducted the Industrial Questionnaire Survey (IQS) with 168 respondents in June 1998 to identify current situations and development needs of the DIDP manufacturers. They are mostly livelihood business or small and medium enterprises (SMEs) with paid-up capital less than ₱0.99 million. According to the IQS, they have internally critical problems as shown in Figure 1, such as low operation rate and obsolete production facilities. Also, lack of land/site is one of their critical problems, as lack of space for storage or warehouse ranks at the third, and narrow site area/lack of land for expansion at the fifth, within limited 5 answers out of 16 prepared answers.

In addition, they have critical problems such as high cost but poor electricity, poor telecommunications, both of which are infrastructure-related, and insufficient supply system of local raw materials (high cost, instability, and low quality).

Figure 1 Most Critical Internal Constrains of DIDP Manufacturers



Note: () Responding rates = 4% points more than the average of all Industries except for "No Answer"
 Source: Industrial Questionnaire Survey (IQS) by DIDP-PMO and JICA Study Team

2. Project Concept

2.1. Objectives

Based on the situations and to address the constraints to the DIDP manufacturers as seen above, SMEs IE aims:

- To promote the growth and development of SMEs toward agri-industrialization through providing IE with good infrastructures not only for their clustering but for planned/orderly land use, since SMEs have spontaneously been scattered in the DIDP Area, particularly in urban area;
- To integrate various policy measures and apply them intensively to the clustered SMEs; and then
- To foster them as commercial business enterprises while promoting the development of new products, since a sizable number of SMEs are household or livelihood enterprises.

2.2. Project Components

This program will be implemented with the following components:

- 1) To develop IEs to accommodate SMEs centering on them engaged in strategic sub-sectors in the DIDP Area such as confectionery, fruit processing, GTH/handicraft, pottery/ceramics, jewelry etc.;
- 2) To build "factory apartment" or standard factory for SMEs to minimize their initial cost;
- 3) To install common service facilities for basic processing, prototype fabrication, R&D including design and packaging, incubation, training, marketing, and meeting, if necessary; and
- 4) To promote specialization/division of labor, and exchange of information and

technology among the locators in order to strengthen marketing capability, and

- 5) To enhance productivity and competitiveness while focusing on “Davao Brand” product development with local specialty.

The SME locators will be organized into respective cooperatives, and joint bulk-buying of raw materials and joint marketing including tracking by the cooperative members will be conducive to stable sourcing and decrease in production cost.

3. Project Description

(1) Demand for SMEs IE

Demand for the SMEs IE is strong. According to the IQS with 168 manufacturer respondents, 89 respondents prioritized to develop IE for small, medium and cottage industries, while 61 and 94 prioritizing integrated industrial clustering and “Davao Brand” product development, respectively.

If all of the respondents prioritizing SMEs IE development locate in IE, the site demand will amount to 8.9 ha, based on 1,000m² per factory, which is the average size of factory sites among the respondents to the IQS engaged in GTH, jewelry making, and pottery.

(2) Development scale and strategic industries by PAICs

It might be reasonable that the SMEs IE will be developed and become a core of PAIC development, since PAIC areas have been less developed in terms of infrastructure compared with Davao City. The three IE will be available for SMEs in Davao City, but locally rooted SMEs in the provinces can not afford to avail of them due mainly to long distance from their existing sites.

Table 3 shows an estimated development scale of the SMEs IE and its strategic industries by PAIC, latter of which are selected based on the study in Economic Sector Report and existing studies on PAICs.

Table 3 Development scale and strategic industries by PAICs

Name of PAIC	Area	Standard Factory	Strategic Industries/Clustering
Panabo	4 ha	12,000 m ²	Gifts/Toys/Housewares (GTH), Pottery/Ceramics (Novelty etc.)
Tagum	4 ha	12,000 m ²	Jewelry Making, Friut Processing
Nabunturan	2 ha	6,000 m ²	GTH, Jewelry Making
Sta. Cruz	4 ha	12,000 m ²	Pottety/Ceramics (Novelty etc.), Confectionaries
Malalag	2 ha	6,000 m ²	Fruit Processing
Mali	2 ha	6,000 m ²	GTH, Pottety/Ceramics (Novelty etc.)
Baganga	2 ha	6,000 m ²	GTH (abaca-related)
Total	20 ha	60,000 m ²	

Source: JICA Study Team

Unit size of SMEs IE is assumed to be 2 ha with standard factory/factory apartment, of which floor area is 3,000 m². The site area totals 20 ha, almost double of 8.9 ha that is estimated based on the IQS above. This is because of taking into account the site demand of SMEs not responding to the IQS. In addition, land zoning ordinance might make many SMEs difficult to operate their production at existing sites. Accordingly, it may be reasonable that estimated site demand for the SMEs IE is larger than that based on the IQS. Three PAICs of Panabo, Tagum and Sta. Cruz are assumed that they will

have two SMEs IE in consideration of industrial clustering by their strategic industries.

Size of floor area is decided based on the building-to-land ratio. The standard factory will be a sort of multi-purpose building able to be used not only for factory, but also for warehouse, meeting room, training room, management office etc.

(3) Relation to other projects

Strategic industries in the DIDP Area other than those designated to be locate in the SMEs IE will be accommodated in the Resource Recycling Estate (RRE). These industries comprise integrated coconut processing, food processing, fiber industry complex, and wood/furniture complex.

The SMEs IE may play a role of start-up and incubation of commercial business. Accordingly, SMEs already successful and transformed into commercial business in some SMEs IE might establish their own factories in other sites within or outside the IE to move from the standard factory/factory apartment. In turn, some student ventures through the MOLT Program will locate in the standard factory/factory apartment (refer to Part 5, Economic Sector Report and Project Profile).

4. Project Implementation

4.1. Project Schedule/Cost

Table 4 shows project schedule and cost of the SMEs IE development program. The program is assumed to be implemented during Phase 1(1994-2004)-Phase 2 (2005-2010). Scale of the site development is determined basically corresponding to the DIDP manufacturing GVA growth set by Economic Sector Report: 7.5% per annum during Phase 1 and 11.4% during Phase 2.

Table 4 Project Schedule and Costs of SMEs IE Development Program

Name of PAIC	Site Development (ha)			Costs (P million)			Note (Unit Cost)
	Total	Phase 1	Phase 2	Total	Phase 1	Phase 2	
Panabo	4	2	2	140	70	70	1. Site Development
Tagum	4	2	2	140	70	70	- 400 Pesos per m ²
Nabunturan	2		2	70		70	
Sta. Cruz	4	2	2	140	70	70	2. Standard Factory
Malalag	2	0.8	1.2	70	20	50	- 8,000 Pesos per m ²
Mati	2	2		70	70		
Baganga	2		2	70		70	3. Off-site Infra./Facilities
Total	20	8.8	11.2	700	300	400	-(1 + 2) X 25%

Source: JICA Study Team

The development costs will total ₱700 million: ₱80 million for site development including road, water supply, sewerage etc., ₱480 million for standard factory, and ₱140 million for off-site infrastructures such as access roads and the common service facilities. It is noted that costs for the site development and off-site infrastructures will be practically variable depending on the site conditions.

4.2. Institutional Arrangements

(1) Implementation body/developer

There are two options for the developer of SMEs IE. One is the private sector, the other is LGU or PAIC alliance. Except for EPZ/SEZ by the Philippine ECOZONE Authority (PEZA), IE development has been shouldered by the private sector. However, the Local

Government Code of 1991 (LDC 1991) allows LGUs to provide the basic services also through establishing economic enterprises (ECs). Accordingly, it is possible for LGUs to develop the SMEs IE as one of ECs, though the LDC 1991 does not specify IE development. The DIDP LGUs or PAICs alliances are expected to develop the SMEs IE recognizing it as a basic infrastructure for SMEs that can not afford to locate in ordinary IEs with higher land prices.

(2) **Action program and support system**

Table 5 summarizes an action program and support system to put forward the SMEs IE project, including the roles of DDA that may be a new autonomous entity to be transformed from existing DIDP PMO. After starting the SMEs IE project, it will take around two years or 24 months for SMEs able to locate in the developed SMEs IE.

Table 5 Action Program and Support System for SMEs IE Development

	After Starting Project (Duration)					Implementation	
	6 mn	12 mn	18 mn	24 mn	Onward	Implementer	Cooperator
1. Formulation of SMEs IE Dev't Plan ♦ Review of PAIC Plans ♦ Identification of IE Sites ♦ Organizing SMEs ♦ Conducting Pre-feasibility Study ♦ Conducting Feasibility Study	→	→				DDA	LGUs/PAICs/DTI/BOI/ DOST/DA/DAR/DAP/ LGSP
2. Fund Sourcing	→					DDA	
3. Selection of IE Developer			→				PAICs
4. Land Acquisition			→			Developer	PAICs/DA/DAR
5. Construction of IE ♦ Land Development ♦ Standard factory etc. ♦ Infrastructure/On-site ♦ Infrastructure/Off-site			→	→	→	Developer RECs etc. LGUs/ DPWH etc.	
6. Investment Promotion ♦ Preparation of Promotion Collaterals ♦ Conducting Investment Briefing/Fora. ♦ Promotion of Joint Venture ♦ Conducting Inboard/outboard Investment Missions			→	→	→	DTI/BOI/ LGUs/ PAICs	
7. Establishment of Managing Body				→		Developer	
8. Location of SMEs ♦ Financing ♦ Installation of Common Service Facilities ♦ Granting Incentives ♦ Supports to Training ♦ Supports to Marketing ♦ Bulk Buying/Joint Marketing etc. ♦ R&D Supports				→	→	SMEs DTI/DOST SMEs BOI/LGUs DTI/DOST DTI SMEs DTI/DOST	DTI/BOI
9. Monitoring/Evaluation					→	DDA/PAICs	Relevant agencies

Source: JICA Study Team

DIDP PMO/DDA will be assigned to formulate a SMEs IE development plan including PFS and FS in cooperation with concerned agencies. Also, DDA will organize SMEs into respective cooperatives by strategic industry, while acting the conduit for sourcing

into respective cooperatives by strategic industry, while acting the conduit for sourcing funds for the IE at home and from abroad.

The following institutional arrangements will contribute to successful implementation of the SMEs IE.

- SMEs to be granted the BOI and LGU incentives automatically when they will locate in the SMEs IE (The 1998 Philippine Investment Priorities Plan of BOI says that "BOI will continue to target a minimum of 80% SME registered companies relative to total registrations as previously specified in the past IPPs.");
- SMEs to be granted such a incentive as deduction of income by selling its existing site and facilities from taxable income (in case of its relocation into the SMEs IE);
- SMEs in the IE also to establish joint ventures with enterprises including SMEs in advanced countries so that they can upgrade their technology and ensure their product market channels;
- SMEs IE development likely to mobilize the foreign assistance including financing to the implementation including installation of common service facilities based on its public character as a basic infrastructure for SMEs like irrigation for farmers; and
- SMEs IE development also able to be implemented through the public and private joint venture/partnership, e.g., in such a manner that LGUs provides the land wherein a private company develop the IE facilities including factory apartment/standard factory.

As for the public supports to the SMEs locators, SMEs IE will be managed in cooperation with existing laboratories of DOST and trade centers/trade houses of DTI.

BIMP-EAGA R&D Triad Linkages Program (BIMP-TLP) (EC-29)

1. Background

1.1. R&D Situations in DIDP Area

(1) Manufacturing enterprises

R&D situations of the DIDP manufacturing sub-sector is summarized as follows, according to the results of the Industrial Questionnaire Survey (IQS) with 168 manufacturer respondents conducted by the Study.

- At least 102 manufactures (61%) carrying out R&D solely by themselves;
- Joint R&D activities being conducted by 16 manufacturers (10%) with domestic enterprises other than subcontractors, and 23 (14%) with public R&D institutes;
- Public R&D institutes playing an important role in technology transfer since 28 manufacturers (17%) have been transferred technologies from the institutes;
- Universities/colleges playing smaller roles than public institutes in R&D and technology transfer as a whole; and
- Production technology development and product development are relatively active in coconut-related and food/beverage industries, and design development is active in GTH and wood/furniture industries.

The DIDP manufacturers are relatively active in R&D as seen above. R&D is carried out not only by R&D staffs exclusively engaged in R&D, but also maybe by engineers, owners or managers, and even workers depending on levels and contents of R&D activities. Among the 168 manufacturers, at least 65 R&D staffs are working for 26 manufacturers, and 32 designers are working for 23 manufactures centering on GTH industry including jewelry making.

Also, the DIDP Area has four manufacturers certified with ISO 9002. The ISO enterprises are producing beer, carton box, synthetic resin adhesives and their related chemicals, cement, and galvanized and pre-painted steel sheets, respectively.

(2) DTI and DOST

DTI Region XI has supported R&D of the DIDP manufacturers centering on the design and product development of GTH and furniture industries through its institutes including the Product Development Design Center of the Philippines (PDDCP). The regional Trade and Crafts Training and Production Center has provided comprehensive supports including R&D for woodworking industry in cooperation with the University of Southeastern Philippines (USEP) and other institutions.

DOST Region XI has provided manufacturers with various services based on the Science and Technology Agenda for National Development (STAND 2000: 1992-1998). STAND classifies fields of technology into four categories: export winners, basic domestic needs, support industries, and support to the coconut industry.

DOST Region XI is providing technical and testing services to SMEs through the Regional Metals Testing Laboratory, the Regional Volumetric Calibration Center, and the Regional Analytical and Testing Laboratory. However, DOST Region XI has only one researcher and one R&D staff in its one laboratory for seaweed stock farm.

(3) Other institutions including universities and colleges

Institutes/laboratories other than those under DTI and DOST have supported R&D of

the DDIDP manufactures, e.g., the Philippine Coconut Authority (PCA) for coconut processing, the Dairy Training Research Institute for fresh milk processing, and the Philippine Textile Research Institute for hand-woven industry.

Universities/colleges or high education institutes (HEIs) are assigned to both education and R&D. DOST entrusted some R&D and training projects to HEIs like USEP, Ateneo de Davao University, and the Davao Oriental State College of Science and Technology, among others. Also, some consortia have been organized between colleges and universities mostly oriented to agriculture-related R&D. As such, joint and organized R&D has become popular through complementary relationships among concerned organizations to utilize limited resources.

1.2. High Tech Industrialization

The DIDP regional development strategy combines the three strategies: Internal Integration, Globalization Drive, and High Tech-High Services. High tech industry has the following attributes.

1) Large contribution to income increase

High tech industry could be defined by an indicator: more than around 2% R&D expenditure to the total sales. According to a Japanese industrial statistics, labor productivity of the 24 categories of high tech industry (3 digit classification base) had stood at 30-40% higher than that of other industries. This might contribute to shortening the duration for the DIDP Area to achieve a targeted income/GRDP increase.

2) Large market potential

High technology is working in the field of molecule and atom, and therefore could supply numerous products to meet the needs of highly demanding consumers or markets through combining technologies and materials. Such just meeting the consumer's needs would be essential for the survival and growth of manufacturers under severe competition within the globalizing economy. In this context, high tech industrialization is an essential portion of the DIDP regional development.

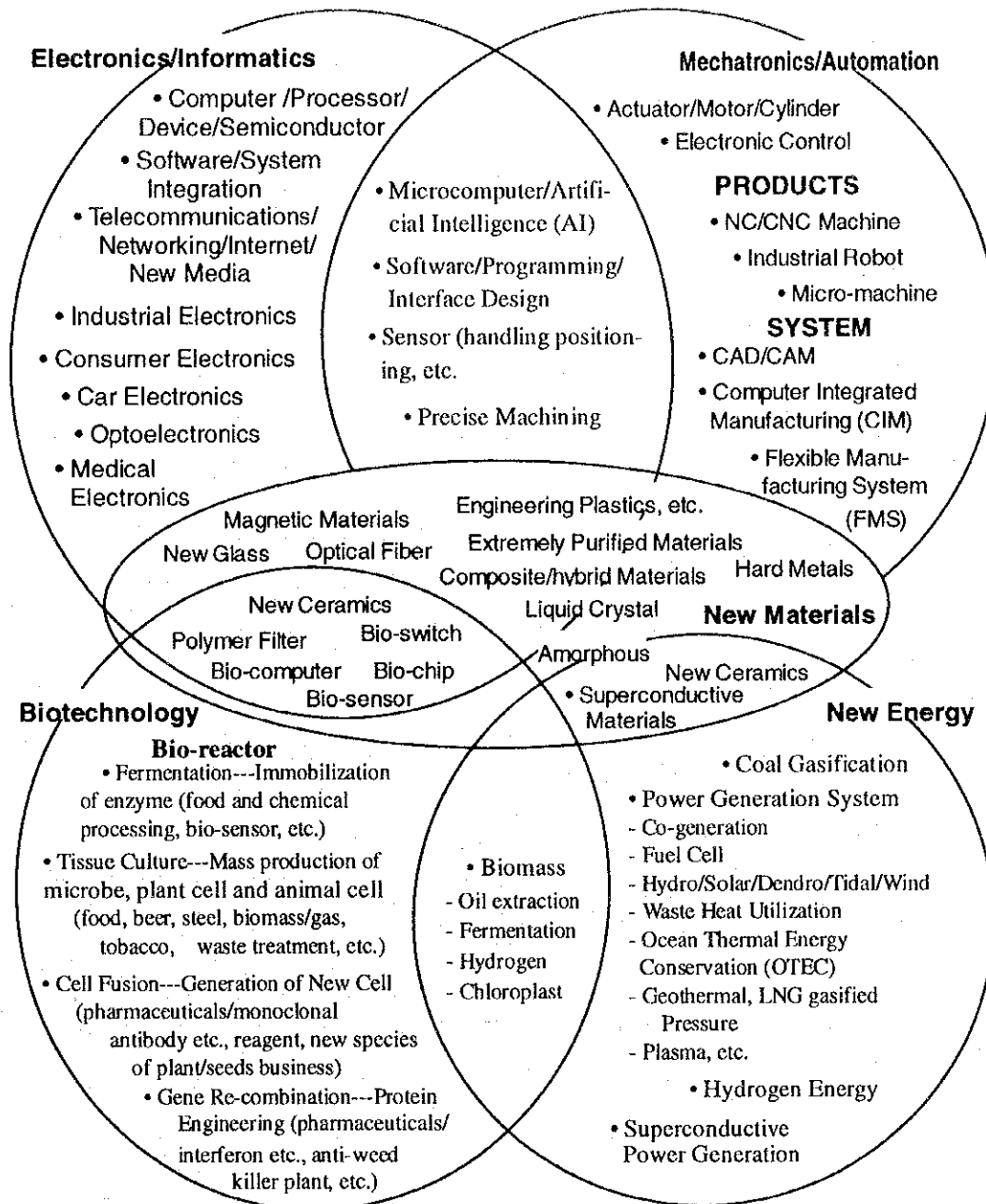
3) Synergy effects

A larger contribution of high tech industry to income/GDP increase has enabled the domestic market to grow faster. In addition, a complex production structure of high tech products has contributed to clustering of the supporting industries producing their parts/components and R&D-related services. Such multiplied effects of industrial agglomeration have brought about a synergistic cycle of economy conducive to the sustainable growth.

4) Interdisciplinary linkages

This attribute is derived from that high technology is working in the field of molecule and atom. High tech industries are closely linked with each other or interdisciplinary as shown in Figure 1. New materials are the most interdisciplinary and linked with each high tech field such as informatics (information technology/IT) or electronics, mechatronics, biotechnology, and new energy.

Figure 1 Interdisciplinary Linkages in High Tech Industry



Source: JICA Study Team

5) Continuous and joint R&D

One of the original attributes of high tech industry is technology innovation, which demands a continuous R&D activity. High tech industry has to shoulder a sizable R&D expenditure to develop new technologies, new fields, and new products. This is also a factor that necessitates joint R&D activities coupled with the interdisciplinary character of high tech industry.

1.3. BIMP-EAGA cooperation

The central goal of EAGA is to increase trade, investment, and tourism within the

EAGA through crossborder cooperation in the manner that facilitates the free movement of people, goods, and services, and that shares common infrastructure and natural resources.

The BIMP-EAGA cooperation covers a wide range of activities, which have been led by the member countries specializing in respective areas. Human resources development is one of the subjects for the cooperation, centering on education and skills training, but cooperation for R&D has not been emphasized to date. The DIDP Area is expected to take initiatives in R&D promotion in the context of the BIMP-EAGA based on its agglomeration of R&D functions.

2. Project Concept

2.1. Objectives

In view of the DIDP regional development in the context of the BIMP-EAGA cooperation, BIMP-EAGA R&D Triad Linkages Program (BIMP-TLP) aims:

- To strengthen R&D functions of public sector including universities/colleges in specific fields with the DIDP comparative advantage;
- To lead the BIMP-EAGA cooperation in terms of R&D; and then
- To promote to high tech industrialization in both the DIDP Area and the EAGA sub-regions, while contributing to the formation of High Tech Frontier Zone in the DIDP Area.

2.2. Project Components

Development of High Tech Frontier Zone is a long term strategy for the DIDP. As a step to the end, this program will be implemented with the following components:

- To establish Joint R&D Centers to promote R&D activities on tropical/agri-biotechnology, informatics/information technology (IT) and life science which are prospective and comparatively advantageous in the DIDP Area based on the relevant resource endowment and existing agglomeration;
- To conduct joint R&D activities on the said fields through organizing and coordinating enterprises, universities/colleges, and public institutes not only in the DIDP Area, but also in Mindanao and EAGA sub-regions toward efficient and fruitful activities, and then
- To lead high-tech industrialization, attract foreign direct investment in the said fields, and streamline scientific/basic research, applied research, product and production technology development including design, and prototype fabrication toward commercialization of the results of R&D.

3. Project Description

(1) High Tech Frontier Zone

This is a long-term strategy of the DIDP industrial development, and pursues a combined development to spatially integrate R&D-related functions with high tech industrial location at a compound area so as to maximize efficiency of high tech development.

High tech industry is complex in terms of production structure, and high tech industrial clusters have been formed in specific areas, while "global division of labor between production processes" being popular in recent years. High tech industrial clusters or

“Technopoles” have been developed in and around the metropolitan areas excluding USA and part of Germany: Paris-Sud, London-M4 Corridor, Milan, Moscow-Zelenograd, Tokyo including Tsukuba, and Soul-Inchon. Also there are well known “Technopoles” such as Nice-Sophia Antipolis, the Hshichu Science-Based Industrial Park in Taipei, Singapore, Shanghai, Sao Paulo, Barcelona, and so on.

Such spatial continuity has contributed to the high tech industrial clustering through the generation of synergy effects between R&D/production of high tech industries and their supporting industries.

The DIDP Area has the metropolis of Davao City and some excellent universities/colleges: UP Mindanao, USEP, Ateneo de Davao University, the Davao Medical Foundation, and the Davao Oriental State College of Science and Technology. In this respect, High Tech Frontier Zone in the DIDP Area is viable coupled with prospective location of high tech foreign enterprises.

(2) High tech fields with DIDP advantage

Tropical/agri-biotechnology is an advantage of the DIDP Area, since multi-national agribusiness enterprises located in the DIDP Area have a sizable number of researchers/engineers. Also, the DIDP universities/colleges have experiences of R&D. Particularly the Davao Oriental State College of Science and Technology is prospective in tropical/agri-biotechnology including marine-biotechnology.

There are many universities/colleges with the courses of computer, computer science, and informatics/information technology (IT) in the DIDP Area. USEP, UP Mindanao, and Ateneo de Davao University are prospective in this field.

As for life science, The DIDP Area has the Davao Medical Foundation well known as one of the “Center of Excellencies (COE)” in the BIMP-EAGA sub-regions.

(3) Joint R&D centers

Joint R&D centers in charge of the three fields are the cores for R&D triad linkages, and will be established respectively at the university/college in the DIDP Area, as mentioned above.

Joint R&D centers are common service facilities open to enterprise, public institutes, and universities/colleges not only in the DIDP Area, but also in Mindanao and BIMP-EAGA sub-regions.

Table 1 shows selected universities/colleges with science, industrial and engineering course in the EAGA countries other than the Philippines. These universities/colleges will be partners of the joint R&D and users of the joint R&D centers.

To start up the joint R&D centers, it is considered that foreign experts in advanced countries will be invited to lead R&D activities in the centers. Also, expert exchanges between universities/colleges, public institutes, and enterprises across the BIMP-EAGA sub-regions will be effective. The DIDP enterprises are expected to strengthen their R&D functions through utilizing the BOI incentives to in-house R&D.

(4) Relation to other projects

R&D Expert Development Program proposed by the Study will be closely related to this program. Capable and qualified researchers and R&D staffs fostered by the expert development program are essential for the formation of efficient and substantial R&D triad linkages.

Table 1 Selected Universities/Colleges in EAGA Countries Other Than the Philippines (science/industrial/engineering courses)

Country/ Region	Name of Institution	Course/Program/Specialization		
Brunei	Jefri Bolkliah College of Engineering	- Manufacturing/Electrical/Electronic/Computer Study		
	Brunei Institute of Technology	- Electrical/Electronic/Computer Study		
	Sultan Saiful Technical College	- Electrical/Electronic/Computer Engineering		
	University Brunei Darussalam	- Science		
Indonesia	Kalimantan	Mulawarman University	- Faculty of Forestry	
			- East	- Agronomy/Forestry/Processing etc.
			- South	- Information Management/Programmer Analyses System
	Sulawesi	- South	Hassanuddin University	- Engineering (mechanical/electrical/agriculture/forestry)
			Cokroaminoto University	- Agriculture/Fishery/Communication/ Techniques
	- Southeast	Halu Olee University	- Ergonomics	
		Maluk	Pattimura University	- Mechanical Engineering/Management of Industry
	Irian Jaya	Cendrawaish University	Polytechnic Pattimura University	- Engineering (mechanical/electrical)
			- Agriculture	
	Malaysia	Sabah	Principal Agriculture Institute of Sabah	- Agriculture
Informatics Institute			- Informatics (Information Technology)	
Sabah Institute of Art			- Computer Aided Design	
Kinabalu College			- Computer (National Computer Center)	
Sabah Institute of Technology			- Electrical Engineering	
Sarawak		Kian Kok Institute	- Electrical Basic/Semi-Conductor/Computer	
			Inti College Sarawak	- Engineering (electrical/electronic)/Computer Study
			Stamford College	- Computer Information Science
			Kuching Polytechnic	- Electrical/Electronic Engineering, CAD, CNC

Source: Directory of Training Institutions (BIMP-EAGA) 1997 (MEDECO)

4. Project Implementation

4.1. Project Schedule/Cost

This BIMP-EAGA R&D Triad Linkages Program will be started during Phase 2 and last during Phase 3.

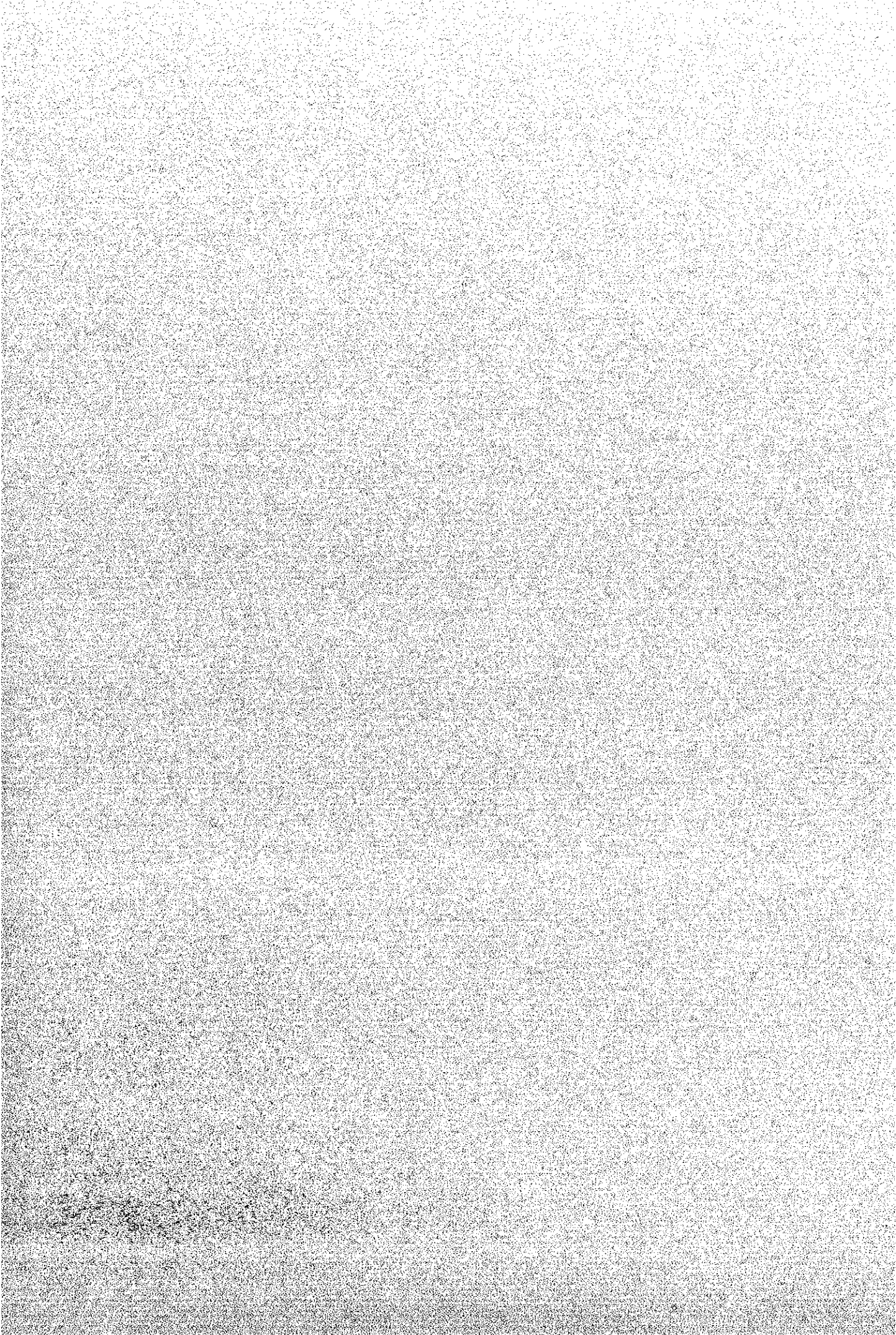
Costs for this program is assumed to be P360 million for twelve years (each 2 subjects for 3 fields, including cost for equipment).

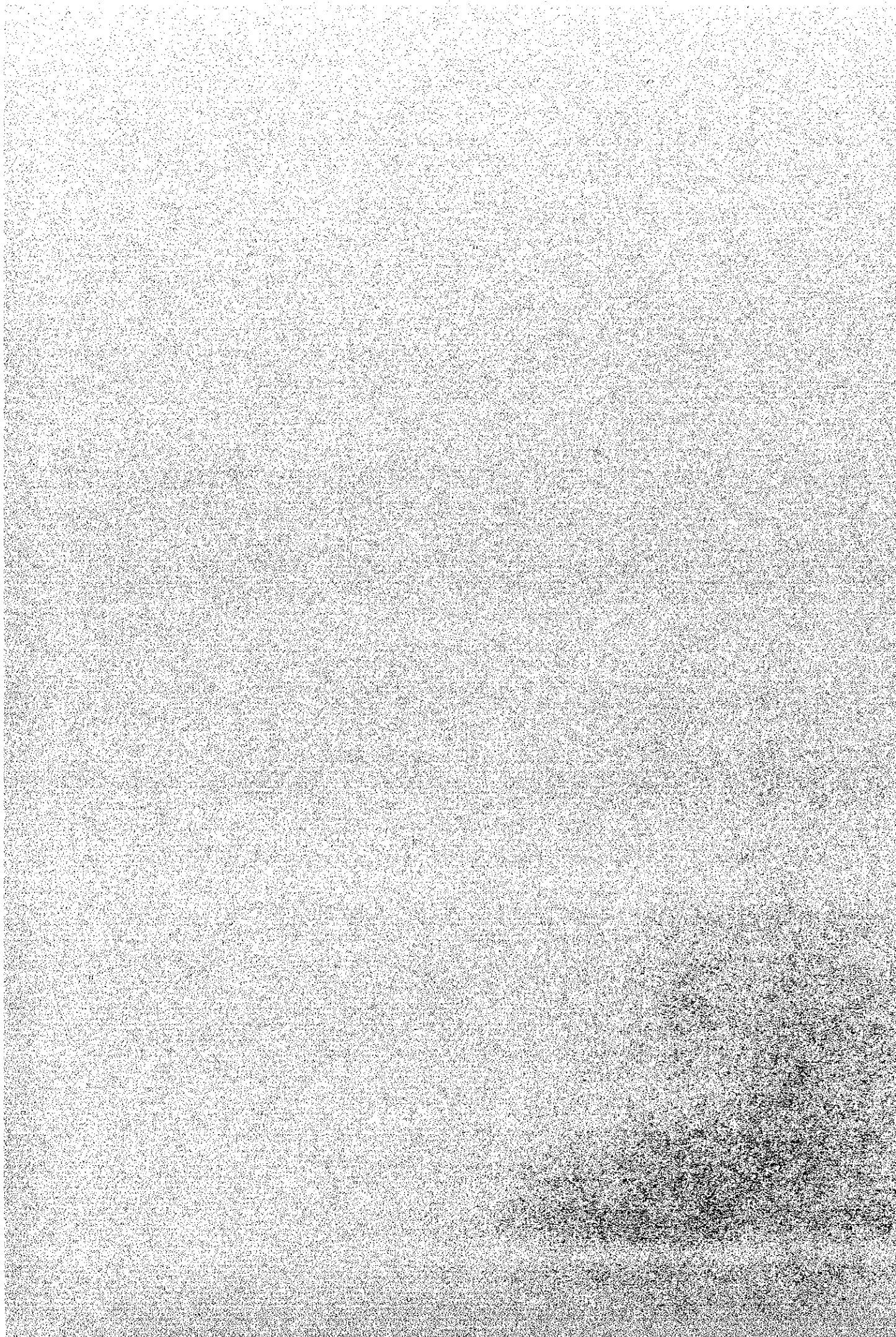
4.2. Institutional Arrangements

As mentioned so far, this program is formulated in view of high tech industrialization, and also directed to the formation of a high tech frontier zone in the DIDP Area in the long run. The main component is to establish joint R&D centers at the DIDP existing universities/colleges through the following.

- Commission of Higher Education CHED to mobilize its own fund and foreign assistance fund for the establishment of joint R&D centers in the said DIDP universities/colleges (refer to the page 3-86) ;
- CHED to organize the BIMP-EAGA universities/colleges for joint R&D activities relative to tropical/agri-biotechnology, information technology (informatics), and life science;

-
- DIDP enterprises and other BIMP-EAGA enterprises to participate in joint R&D activities relative to the said fields through sending their R&D staff to the centers;
 - DTI/DOST to mobilize foreign fund and experts for joint R&D projects; and
 - DIDP PMO/DIDA to coordinate and monitor the joint R&D projects in cooperation with DTI, DOST, CHED, and other concerned organizations.





Poverty Alleviation and Community Transformation (PACT) Project (SO-1)

1. Rationale

Statistics show that poverty incidence in Region XI has improved to 45.6% in 1994 from 51.6% in 1991. This figure, however, is still high compared to the national poverty incidence of 40.6%. In the rural areas of Region XI, it was already high at 49.5% in 1991 and higher still in 1994 when it went slightly up to 50.2%.

According to the municipal tribal chieftains who participated in the series of consultative meetings, poverty incidence in the ICCs is in the vicinity of 60%.

The 1995 NSO Census of Population also reported that at least 16.5% or 504,491 indigenous people occupy most of the upland and far flung communities in the DIDP Area. It should be noted, however, that census of Muslim/ICC population has been an issue since 1970 because NSO uses data based on mother-tongue and not on actual count of the population.

It should be noted that any form of assistance will not immediately result to total elimination of poverty. Programs to this effect should be planned so as to have long-term sustainability. A series of well-planned training programs and follow-through courses, backed up by well identified feasibility studies and reinforced with appropriate skills training marketing must be undertaken to ensure not only smooth and successful implementation of the project but effectiveness of the programs/projects, as well.

Assistance to poor families in far-flung communities in order to create and establish new income sources or establishing alternative sources of livelihood are strategies to help alleviate poverty. Thus, the PACT Project.

2. Objectives

Generally, the PACT Project aims to help alleviate the lives of the poor/disadvantaged sectors in the DIDP Area especially among low-income and far-flung communities.

Specifically, the Project aims to:

- (1) transform communities into active partners in development undertakings;
- (2) establish income-augmenting or alternative income-generating projects in at least 350 barangays or 30% of the 1,152 barangays in the DIDP Area up to year 2016 to increase income of women, OSYs, able-bodied elderlies, persons with disabilities, and other interested/disadvantaged groups;
- (3) establish additional Day Care Centers for children ages 3 – 6 years old to prepare them for formal education, and supplemental feeding if necessary;
- (4) establish a center where Senior Citizens can avail of recreational, educational, and health programs; and,
- (5) conduct an extensive Information, Education, and Communication (IEC) campaigns on gender and development, self-reliance, disaster preparedness, and other family and human development concerns.

3. Expected Effects

Capability building programs providing the beneficiaries enhanced knowledge, skills and attitude characterized by a heightened level of awareness, and active involvement in community activities, thus, promoting community cohesion.

Active/rapid community economy arising from viable livelihood projects and providing

increased income.

Senior Citizen Day Centers providing services that helps keep the physical and mental faculties of the senior citizens sound and alert.

Day Care Centers will help children ages 3 – 6 years old better prepared to enter formal education.

4. Project Costs

₱157,000,000 in 16 years or average of ₱9,812,500 per year.

Breakdown

Phase 1	Pilot implementation, One Project per District including IGCSamal or 10 Pilot Projects	Year 1 & 2	₱7,760,000
Phase 2	Expansion to 50 Barangays	Year 3 to 5	₱37,300,000
Phase 3	Expansion to 150 Barangays	Year 6 to 10	₱111,900,000
Phase 4	Expansion to 150 Barangays	Year 11 to 16	(Financing will come from amortization/other income of the above projects)

5. Project Description

5.1. Components

(1) Community mobilization, preparation, organization and development (COMPROD) component shall undertake the following activities:

- MBN Survey including poverty mapping.
- Mobilization of target beneficiaries giving priority to women, OSYs, able-bodied elderlies, persons with disabilities, and other disadvantaged persons/groups.
- Community training programs such as but not limited to:
 - Values Orientation
 - Organizational Training (Handling meetings, conflicts, etc.)
 - Leadership Training
 - Basic Management/Enterprises Management
 - Gender and Development
 - Disaster Preparedness
 - Continuing Programs and IEC campaigns on relevant family and human development concerns
 - Project Proposal Preparation (including conduct of their own simple business study, etc.)
 - Cooperativism: principles, organizing, registration, etc.

(2) Micro-lending/assistance

- Micro-lending/assistance-in-kind are extended to registered organizations/cooperatives/associations which will in turn re-lend/distribute to individual members (depending on the type of project).

(3) Day care centers

- Training of day care workers/parent-volunteers

- Mobilization of parents with children ages 3 – 6 years old
- Mobilization of labor and other available resources for the construction phase
- Conduct meetings with parents/children/workers
- Home visitation to parents of difficult children if necessary

(4) Day centers

- Training of day workers/volunteers
- Mobilization of senior citizens
- Mobilization of labor and other available resources for the construction phase
- Programming of activities, physical check-ups, home visitation if necessary

5.2. Principles of PACT Project

- **Equitable contribution and capital build-up**
It is essential for the beneficiaries to put up their counterpart in kind, labor, or cash depending on the individual's capacity.
- **Leadership rotation**
As much as possible, all members shall have equal opportunity to hold the reigns of leadership in the organization. Thus, all officers, specially the president, shall serve only one term to give chance to other members. This principle also advocates the development of second line leaders.
- **Participation**
Active involvement in all facets of organization management, project implementation and the activities evolving therefrom, is a must.
- **Collective responsibility and liability**
Everyone in the organization – members and officers, are collectively and severally liable, thus, responsible of all their organization's undertakings.
- **IA – LGU – BU complementation**
Support/assistance by the implementing agencies, the LGUs and barangay units to the project must be clearly defined such that efforts are complementary, supportive and harmonious.

5.3. Development Stages/phases

(1) Target area

Pilot/Phase 1: one per district

- | | |
|-------------------|-------------------------------|
| • Davao Norte | 2 Districts |
| • Davao Sur | 2 Districts |
| • Davao Oriental | 2 Districts |
| • Comval Province | 2 Districts |
| • Davao City | 3 rd District Only |
| • IGC of Samal | <u>1 Site</u> |
| | 10 Pilot Areas |

(2) Stages and phases

Stage 1 Internal Integration will be a continuing process. This is because sustainable organizational processes takes time to mature therefore changes are introduced gradually.

In terms of organizational processes, there will be four (4) phases of

development:

Pilot/Phase 1		Phase 2		Phase 3		Phase 4
Year 1 & 2		Year 3 to 5		Year 6 to 10		Year 11 to 16
One Pilot Project per District/IGCS	MUNICIPAL FEDERATION	Expansion to 50 Barangays	POVINCIAL FEDERATION	Expansion to 150 Barangays	GULF AREA FEDERATION	Expansion to 150 Barangays

In terms of economic integration, towards the end of every phase (as shown above), organizations are strengthened and federated (including existing CIDSS Projects), and livelihood projects with high potentials/viability are linked to ensure product quality and quantity and respond to market demands locally and later, export markets.

As soon as some of these projects are able to penetrate export markets, this indicates that they have entered the next stage, referred to as:

Stage 2 Globalization

- Cooperatives/organizations are strengthened further to meet national/international linkages.
- Viability/sustainability of the livelihood projects are upgraded (product quality/ quantity, market acceptability/capability, packaging/design, shipment/delivery, etc.) to meet product standards of both local and foreign markets.

Towards the end of Phase 4, the Federations/individual member organizations will set up Common Service Facilities or Multi-Service Facility/ies to hasten delivery of services/exchange of information to both members and customers. This stage is referred to as:

Stage 3 High Tech – High Services

5.4. Monitoring and Evaluation (M/E)

M/E is conducted from the inception of the PACT Project. It will be a continuing process, at the beginning/end of every activity, every phase, and every stage. M/E will be conducted to determine effectiveness and efficiency of the organization, technical capability, financial viability, marketing competence among many others.

Special Indigenous Peoples Education Program (SIPED) (SO-6)

1. Background and Rationale

The primary asset of Mindanao is its people. The DIDP hosts some 40 or so ethno-linguistic groups as well as migrants from Luzon and the Visayas. This pluralism of cultures is a major strength which, if properly harnessed, provides a unique opportunity for its populace to become productive partners in the pursuit of the development of the DIDP Area.

The DIDP Area is home to about 504,491 indigenous peoples (IPs) representing a significant 16.5% of its population. Among the four provinces and two cities of the Davao Gulf Area, Davao Oriental has the biggest concentration of IPs in proportion to its population—43.6% (or 179,991) in all; followed by Davao del Sur with 24.5% (165,813); Compostela Valley with 11.4% (58,089); Davao del Norte, 3.64% (47,860); Davao City with 5.24% (45,887); and Tagum City, 4.39% (6,851).

The *Davawenos* and the *Mandayas* compose the biggest groups of IPs in Davao Oriental with 127,528 in 1995. On the other hand, the *Manobos* and *Bagobos* with a total of 63,761 are dominant in Davao del Sur although the *Badjaos*, migrants from the Sulu Archipelago, are a close second with 52,262. *Mansakas* and *Mandayas* dominate the highlands of Compostela Valley with 42,035 population while *Dibabawaons*, *Atas* and *Ata-Manobos* (21,442 in all) inhabit Davao del Norte.

A significant number, however, live in poverty and cultural isolation caused by at least three factors: 1) insurgency associated with inequitable distribution of resources, and heterogeneity of the population comprising indigenous cultural communities and migrants; 2) geographical and sociocultural isolation their frequent abode being found in the highlands and far-flung rural communities; and 3) limited opportunities for social services and productive activities, including inequitable access to and poor quality of basic education.

Provision of basic education to IPs is still one of the major challenges facing the education sector in the DIDP Area. That is on top of the fact that basic education services in Mindanao, according to a 1997 report of Asian Development Bank, is the poorest among the three main regions of the Philippines. The literacy rate in 1994 was 86% in Mindanao, 95% in Luzon and 91% in the Visayas. In 1996, the gross enrollment rates in Mindanao were 79.6% for elementary and 49.7% for secondary levels. These are significantly lower than the national averages of 87% for elementary and 58% for secondary schools. In 1994, the average score in elementary achievement test in Mindanao was 67, as opposed to 71 in Luzon and 69 in the Visayas.

In the Davao Gulf Area, literacy rate at 95.63% in 1996 was reportedly higher than the Mindanao figure although the functional literacy rate was low at 79.4%. Participation rate in the elementary level was also much higher than the Mindanao and Philippines figures but the survival rate at 65% is disturbing. The figure implies simply that the educational system, one way or the other, systematically excludes 35% of elementary age pupils from enjoying the benefits of basic education.

No study has been made on the participation of IPs in all levels of education but it may be safe to assume that the social and economic deprivation of our IP communities and other cultural minority groups extends to deprivation of access to basic education. The formal system is like a giant sorting machine which keeps children from well-off city families and throws out children from rural and poor families.

The public schools have hardly met the needs of tribal Filipinos for three reasons: inaccessible schools; an inflexible schedule which fails to accommodate the economic activities of the tribal learners; and curriculum and instructional materials which are irrelevant to the needs or cultural characteristics of the people. Their teachers, generally from the lowlands, are unfamiliar with the ways of life of the tribal groups. The requirement that DECS own school sites prevents the building of schools on ancestral lands.

It is apparent that there is a delicate socio-cultural dimension to basic education services in Mindanao. Cultural minorities in Mindanao perceive that the centrally defined framework and content of basic education are not sufficiently relevant to their economic and sociocultural patterns. Therefore, basic education services that will attract and retain the currently underserved population need not only be available and affordable, but also relevant and applicable to the sociocultural context within which it operates.

In this context, improvement of basic education services is given high priority for peaceful coexistence of heterogeneous population and capacity building of presently disadvantaged groups. The DIDP will pursue a new paradigm which places emphasis on indigenous peoples through education for empowerment. This will involve a fundamental transformation of value systems of both indigenous groups and the cultural majority as regards education as well as a re-orientation of basic education to suit the needs and aspirations of indigenous peoples. This can be done if alternative learning strategies are incorporated into the total learning system and the language used maximizes learning.

2. Objectives

General: To improve the delivery and quality of basic education services that are relevant to the needs and aspirations of indigenous peoples (IPs) of the Davao Gulf Area with a view towards institutionalizing the same.

Specific:

1. To tailor basic education to the needs and aspirations of indigenous peoples.
2. To develop educational leaders among IPs in the Davao Gulf Area.
3. To generate accurate and relevant data on IPs as bases for sectoral planning.
4. To document the culture and traditions of IPs.
5. To develop the institutional capacity of key institutions involved in the program.

Working Paradigm: This Program, essentially an initiative to decrease the disadvantage of Indigenous Peoples in development, would have considered carefully the underlying barriers to equal participation. It aims and would measure for equity of impact, not just equality of opportunity. In such context, it recognizes that the diversity of peoples and their cultures will enrich society. In the Davao Gulf Area, SIPED will preserve IP identity and, at the same time, empower them to participate optimally in the mainstream of Philippine society. Preservation and enhancement of culture, traditions, and technology of IPs is a central concern of the Program.

3. Expected Effects

In development, we do not necessarily seek equality of opportunity but also equity of impact. Basic education for IPs is expected to democratize relations between peoples by opening access to knowledge and peoples' ideas thereby reducing conflict and increasing cooperation. Hopefully, the 'equalizing' efforts of basic education, will help make IPs better placed to exploit opportunities like the rest of the population.

The institutionalization, therefore, of culture-responsive and relevant basic education for IPs is one building block from which fundamental changes in the lives and livelihood of IPs very likely to emerge. By enabling the increasing participation of every IP in societal activities as an 'equal' and as a 'partner' will contribute to further recognition in practice of his/her right to equality. Enriching and enhancing the role of IPs in development is fundamental to the development of the entire Davao Gulf Area and the entire Philippines, for that matter. Development is better seen in the development not only of the economic and other material resources but also in the physical, moral, intellectual and cultural growth of the human person. Basic education will help provide IPs with the necessary means for increasingly claiming, achieving, enjoying and utilizing equality of opportunity.

4. Project Costs

(1) Foreign Assistance Component ----- US\$6,000,000

Major indicative components of the foreign assistance requested are the following:

- A. Space requirements for every pilot school of five pilot schools
 - Six (6) Classrooms, at least.
 - One room for a library (5)
 - One laboratory room (5)
 - One audio-visual room (5)
 - One computer room (5)
 - Dormitory (expansion of USEP dormitory)
 - Offices (5)
 - Improvement of academic facilities of USEP
- B. Laboratory and computer equipment and fixtures
 - Basic sciences equipment
 - Computers and peripherals
 - Library and computer fixtures
 - Audio-visual equipment
- C. Operating expenses of foreign and local experts
(Salary, housing, field expenses, communication, etc.)
- D. Training/study visits abroad
(For consortium officials and pilot schools supervisors and teachers)
- E. Others
 - Printing and copying facilities for curriculum and instructional materials
 - Three vehicles (1 for consortium, 1 for DECS XI and 1 for NCIP XI)
 - Research Grants

(2) Local Counterpart Component ----- P40,000,000
(5 Years)

DECS, CHED and the members of the Consortium shall contribute to the Program personnel, space, and maintenance and operational costs.

- A. Administrative/Technical support
 - Administrative personnel
 - Laboratory, library and other personnel
- B. Faculty for teacher education
- C. Utilities

Electricity and water
Repair and maintenance of equipment and vehicles
Oil and lubricants
Janitorial services
Security services
Communications

D. Books and reference materials

E. Research subsidies/grants

5. Implementation Schedule

Implementation schedule is indicated in the attached.

Implementation Schedule for SIPED Program

Components/ Tasks	Year 1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1. Management/ Administration														
a. Visioning	**													
Organizing of SIPED consortium and IIPED	*													
Tasking	*													
b. Planning	***													
Preparation of detailed plans, identification of pilot sites.	**													
c. Advocacy, lobbying with DECS, CHED, NCIP, etc.	*****	***												
e. Budget proposal	***	***	***	***	***	***	***	***	***	***	***	***	***	***
preparation of funding support request to NGAs														
f. Program/policy review			***	***	***	***	***	***	***	***	***	***	***	***
2. Research, Curriculum writing, and piloting														
a. Research and Report Writing	*****													
b. Curriculum writing for both teacher education and basic education		*****												
c. Field testing of basic ed. curr.		*****												

Tasks (cont'd.)	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
d. Implementation of piloting in 5 schools (Group B)		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
e. Implementation of piloting in 5 schools (Group A)				*****										
f. Formative/impact evaluation							****							
f. Adoption (or modification)/revision)														
3. Teacher Training														
a. Curriculum review by Institute	***				***		***							
b. Selection of scholars	***													
c. Training of scholars	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
d. First and subsequent batches finish				*	*	*	*	*	*	*	*	*	*	*
e. Continuing education				**	**	**	**	**	**	**	**	**	**	**
4. Non-formal Education														
a. Advocacy campaign among IPs & NGOs	****													
b. Organizing at Area level (LCC)	***													
c. Organizing at pilot area level (LCCs)	***													
d. Conduct of TNAs	**	**	**	**	**	**	**	**	**	**	**	**	**	**
e. Fund sourcing		****												
f. Trainings			**	**	**	**	**	**	**	**	**	**	**	**
5. Monitoring and evaluation														
a. Planning for M & E	****	****	****	****	****	****	****	****	****	****	****	****	****	****
b. Periodic monitoring		**	**	**	**	**	**	**	**	**	**	**	**	**

Tasks (cont'd.)	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
c. Formative evaluation														
d. Summative/impact evaluation of teacher education basic ed curriculum						***								
Group A							****							
Group B										****				
6. Technical Assistance														
a. Identifying experts needed and hiring	****													
b. Engagement of experts for M and E and IE		*****								*****				
c. Experts for curriculum		*****								*****				
d. Study visits/training of admin., training & pilot school staff	**	**	**											
7. Infrastructure and physical facilities														
a. Pre-F of buildings and equipment		*****												
b. Project design		**	*											
c. Bidding, etc.			***											
d. Construction of building			*****											
e. Acquisition of equipment			****											

6. Program Description

The Program will exhibit the following components:

- (1) Research,
- (2) Teacher training of IP scholars who will be trained to become teachers and continuing education,
- (3) Basic education, curriculum writing and instructional materials development,
- (4) Evaluation and monitoring,
- (5) Non-formal education for out-of-school youth and adults among the IPs,
- (6) Infrastructure and facilities development,
- (7) Technical assistance and training, and
- (8) Piloting.

6.1. Research

The Program will first quickly review secondary data to describe the present situation of basic education services for indigenous peoples in the Davao Gulf Area looking into standard basic education indicators, and paying particular attention to their situation, needs and demand for basic education services.

Primary data will be gathered where secondary data is insufficient and will be used for accurate characterization of indigenous populations. Situation analysis of the basic education services in their respective areas and population will be done through review of school distribution among IPs, status of enrollment and retention, factors inhibiting enrollment and retention, status of schools, facilities, parental/community perception of education, availability of non-formal programs, availability of instructional materials and relevance of their contents. The qualifications of the teachers assigned to IP communities and their attitudes towards teaching will likewise be examined.

During the next phase, the Program will collect and review existing secondary data on socioeconomic, demographic and other circumstances of IPs with a view towards identifying information and knowledge gaps. Existing ethnographic studies on IPs in Mindanao and the Davao Gulf Area will likewise be reviewed.

The results of the review of secondary data will lead to the conduct of research to gather primary data to bridge earlier identified knowledge gaps on IPs. Ethnographic research will be done in the pilot communities to document the culture of the people not only for its cultural significance but also to be used as resource for the preparation of curriculum materials for both teacher education and basic education.

The analysis of all secondary data gathered from documents and ethnographic studies already done will also give careful attention to disaggregating the data by cultural/tribal groups, including gender, in order to facilitate identification of specific disparities that require further review and analysis.

6.2. Teacher Education

The University of Southeastern Philippines, Ateneo de Davao University and Holy Cross of Davao College will establish the *Institute for Indigenous Peoples Education* (IIPED) as a consortium of the three institutions. Cor Jesu College of Digos, DOSCST in Mati and St. Mary's College in Tagum shall be chosen as cooperating institutions in the provinces. USEP shall be the host institution. Its existing facilities will be used.

However, the other facilities of the member institutions will be made accessible for the use of the Program.

A special curriculum shall be designed for the teacher education of a select group of scholars who shall be selected from among the IPs. The teacher training will be the equivalent of a 4-year degree program completed in three years (including summer sessions) only and will contain the minimum requirements for general education required by CHED. The professional courses will be so designed and taught with the special needs of IP learners in mind. Indigenous education shall be the area of specialization. These and all other remaining courses will be determined and designed by a group of local and foreign experts with experience in indigenous education.

The practicum/internship component of the training will be done in the pilot schools and supervised by the province-based cooperating HEIs (Cor Jesu, St. Mary's and DOSCST). All other courses will be taught at the USEP by a composite group of teachers coming from the three consortium members.

To fast track the Program, teacher training will be started even before the special teacher education curriculum is completed. By the time the scholars are in the second semester of their sophomore year, the special curriculum would have been ready for implementation.

The IP teacher-scholars shall be required to teach in the IP pilot schools for at least three years upon finishing the program. While teaching, they shall be granted additional incentives and privileges, like hazard pay, housing allowance/quarters, living expenses and travelling allowance when on travel, etc. While on scholarship, they shall be housed in a dormitory with free room and board, entitled to a reasonable monthly stipend, free books and educational materials plus other incentives.

A scheme for the continued upgrading and updating of skills and knowledge of IP teachers should be built into the Program.

6.3. Basic Education, Curriculum Writing and Instructional Materials Development

A special curriculum shall be designed by a group of local and foreign experts composed of educators and anthropologists experienced both in curriculum writing and indigenous education. It will be implemented in the five pilot schools. The subjects will be taught largely by the IP teacher-scholars using resource materials especially developed for the Program.

Curriculum preparation shall be research-based and done only after a thorough review and careful consideration of the results of the research studies on IPs. Wide consultation with the IPs themselves, advocates and educators should be undertaken, issues clarified and a working paradigm adopted in order to guide the curriculum writers.

A revised school calendar should be adopted taking into account the economic activities of the IPs as well as other factors worthy of consideration.

The curriculum shall be field-tested for a period of time to be determined by the curriculum experts and revised accordingly before being implemented.

6.4. Evaluation and Monitoring

The whole gamut of the monitoring and evaluation process will be planned by a team of foreign and local evaluation experts.

At the very least, however, two types of evaluation will be done to determine the

worthiness of the Program. These are monitoring and program (or impact) evaluation. To be subjected to periodic monitoring is the ways by which the Program is implemented to ascertain the manner by which resources are used and to alert implementors to problem areas as well as successes. Correspondingly, results of the monitoring will serve as inputs in the review and modification/revision of the program components.

Impact evaluation will be both formative and summative. It will be done at least three times—once every two years—the third as summative evaluation. It will provide management with a perspective of project effects as well as the effects of the Program on the intended beneficiaries. Measures to be used are those related to relevance, adequacy, efficiency and effectiveness of input-output process. Also to be evaluated are the impacts of the project on the economic, social and cultural aspects of people's lives.

Participatory monitoring and evaluation at the level of the youth and adults among the IPs should be encouraged, especially as regards NFE activities.

Results of both monitoring and evaluation will be accordingly weighed against expected results and will become the bases for policy regarding basic education for IPs.

A body independent of and external to DECS and the members of the consortium will be formed to do both process and impact evaluation. It could be a composite team of foreign and local evaluation experts assisted by a local staff.

6.5. Non-formal Education in Partnership with NGOs

A team of local experts will formulate a non-formal education package customized to the needs of each pilot community in consultation with the local Literacy Coordinating Council (LCC). Like the formal basic education component, the package will also be research-based and tailored to meet the needs of the IP community. It is imperative that non-formal education for IPs will have livelihood components.

Skills training for IPs should aim at the transfer of basic skills on home-based and indigenous activities and self-employment. Programs could be implemented to upgrade existing skills and transfer new technologies—improved quality, product design and new products—related to the available local raw materials, such as fruits, flowers, handicrafts, cottage industries and ceramics.

The School Division and the pilot school will undertake the non-formal education activities in cooperation with an NGO as service provider under the Literacy Service Contracting Scheme (LSCS). NGOs can be more focused and selective of their target groups as well as innovative and flexible. This component could be financially assisted by the Department of Trade and Industry (DTI), LGU and the NCIP.

6.6. Infrastructure and Physical Facilities Development

- (1) At the pilot schools. This component of the Program will entail the construction of *new classrooms*, where there is none in the pilot school, under the existing JICA capital assistance to Mindanao schools. Other physical structures to be found in each of five pilot schools will include a *school library, physical science laboratory, audio-visual room and a computer room.*

Standard school equipment will include the following: *computers and peripherals for classroom and office use, a photocopier, audio-visual equipment, basic science laboratory equipment, library equipment and furniture, and classroom amenities.*

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- (2) At the USEP, ADDU and HCDC. The libraries of the SIPED schools will need new acquisitions of books and references in indigenous education, pedagogy and curriculum writing.

USEP, as the seat of the Program, will need to improve some of its classrooms, upgrade some of its instruction-related facilities, and expand its dormitory to house the IP teacher-scholars. A *vehicle* for use of the three institutions and the two cooperating institutions will be necessary in the supervision of internship activities of IP scholars.

- (3) DECS XI and NCIP XI. As those directly involved in the Program, the two regional offices will need new office and communication equipment.

DECS XI may need one *vehicle* to be used for the supervision of the five pilot schools as well as in the conduct and supervision of NFE activities in the pilot areas. NCIP XI should likewise have one *vehicle* for its use in gaining easy access to the pilot areas to undertake activities meant to ensure the sustainability of the Program in all its forms. Continued advocacy activities would be critical to the success of the Program.

6.7. Technical Assistance

The Program shall, from time to time, employ a team of foreign experts in indigenous education, such as those from Japan, Australia and other Asian countries. The foreign experts will work with their local counterparts during certain periods of program development and implementation as will be determined by the SIPED Management Committee.

Other activities to be included under this category include the following:

- (1) Study/observation visit of consortium members and cooperating institutions to an Asian or nearby nation with a strong IP education scheme, like Australia.
- (2) Short-term training of pilot schools staff and evaluation and monitoring staff.

6.8. Piloting

The special program will be piloted in five (5) selected elementary schools in the Davao Gulf Area—one each for Davao Oriental, Davao del Sur, Davao del Norte, Compostela Valley and Davao City. The pilot schools should be in a rural area but accessible by land transportation, have access to electricity, and should have a substantial student population of IPs. Each of the five pilot schools, therefore, should address one major IP tribe in a province/city so that the Program will cover at least five (5) major tribal groups in the Davao Gulf Area.

The piloting will be started upon assignment of the IP teacher-scholars to the pilot school. Piloting will be done with two groups of pupils in each school—the first group are those who will start as Grade One pupils (*Group A*) during that academic year, and *Group B*, or those who already are in grades 2 to 6.

Group A will become the subject of a longitudinal study on the impact of the special curriculum on certain yet-to-be-defined attributes both from the learners' side and attributes external to the learners. The results of the study on Group A will determine largely the decisions on adoption/rejection of the curriculum or revision/modification of some of its parts as a result of periodic evaluation. Group B, on the other hand, will be taught the special curriculum and its impact monitored and evaluated periodically. The results will also be treated as inputs to the whole process.