Sea transport

Efficiency in shipping and port services is critical in promoting the domestic and international trade and tourism development of the DIDP Area.

1) International port

Sasa Port, as an international gateway, needs to be highly functional to respond to future demand expected through agri-industrialization and tourism development. It should be strengthened by increase in cargo handling capacity and to link with the national trunk network and international network through alternative port development and a new container port in Panabo.

2) Internal sea transport of DIDP

Improvement of Sta. Ana Wharf could play an important role in strengthening internal sea transport of the DIDP Area connecting with the Samal Island, Lupon and Mati, including commuting to Davao City and tourism circuits linking the DIDP Area with BIMP EAGA countries. An alternative sea access to Davao del Sur should be established to Malita, Jose Abad Santos and all the way to the Sarangani island. A sea lane may be developed from Mati to Baganga to provide an alternative link, which may be extended to Surigao del Sur.

3) Industrial ports

Public and private ports shall be developed to promote agri-industrial activities for PAICs like Maco, Sta. Cruz, Malalag, Malita, Mati and Baganga.

4) Tourist ports

Ports of the ecotourism zone in Samal, coastal areas in Davao Oriental and in the southern part of Davao del Sur including the Sarangani municipality shall be developed as tourist ports considering tourism cluster developments of the DIDP Area. Ports to island municipalities of Samal Island and Sarangani will be improved to ensure the accessibility under all conditions.

Air transport

Air transport also plays crucial role in promoting tourism development and agri-industrialization, and integration of Mindanao by establishing island-wide and international networks to BIMP EAGA countries, other East Asian countries, Australia, Europe and United States.

1) Davao international airport

The Davao international airport is under improvement to meet the international standards with extension of runway upto 3,000 m, construction of passenger and cargo terminals and installation of a navigation system. The handling capacity is expected to reach the saturation level in the near future. Considering on-going agri-industrialization and booming tourism development, further upgrading to the full status international airport will be necessary.

2) Mati airport

The Mati airport as a secondary airport will constitute an importnat part of local air services network connecting with other destinations of Surigao, Zamboanga,

Cagayan de Oro, General Santos etc. mainly for tourism purposes and for agri-industry business.

4.3. Development Paradigm

4.3.1. Viable concepts

(1) Derivation of viable concepts

The DIDP Area development is to be pursued on the balance between economic, social and environmental development. This is embodied in the development objectives defined in Section 3.1. In the economic sector, the DIDP Area development pursues not just economic growth but rather diversified and high earning employment opportunities for local people. The DIDP Area development pursues also improved environmental quality with high bio-diversity and a dynamic mixed-culture society.

The balance between economic, social and environmental development is to be supported by two fundamental ideas of regional development: (1) use of indigenous resources by and for the benefit of local people and communities, and (2) balance between the rural and the urban sectors (rather than between agriculture and industry). A necessary condition for attaining such balance is adequate economic growth. While agriculture and agro-industries fit the idea (1), they would not ensure the adequate economic growth nor the realization of the idea (2). Other industries, still related to agriculture and agro-industries, as well as related services should support agri-industrialization rather than agro-industrialization.

The balance between the rural and the urban sectors is to be pursued not only in economic aspects but also in socio-cultural and environmental aspects. This has two implications in the rural and the urban sectors, respectively. First, urban environment should not be sacrificed for economic growth and population increase; urban amenity is to be pursued. Second, rural amenity should also be pursued, aiming at improved environmental quality with high bio-diversity and a dynamic mixed-culture society as expressed in the DIDP development objectives.

The adequate economic growth cannot be attained without capitalizing on external markets in the increasingly borderless world and the free trade regime. The DIDP Area is in a strategic position for this in Mindanao and in the BIMP-EAGA context. The DIDP Area development is to be more or less outward-oriented.

All of the above will be pursued in fast changing external conditions of the free trade regime. As expressed in the DIDP development objectives, the DIDP Area development aims at establishing such a social system that is responsive to changing demands, and also at capturing emerging opportunities offered by the BIMP-EAGA cooperation. The DIDP Area development is to be supported by more risk-taking, venture-minded and entrepreneurial people to be generated by value development. Revitalizing cultural values, and maintaining traditional family values in the face of rapid urbanization and large in-migrants would also call for value development for emerging societies.

Viable concepts are derived from the above that will be useful in establishing a DIDP development paradigm. These concepts are (1) Diversification, (2) Agri-industrialization, (3) Value development, (4) Amenity creation, and (5) Outward

orientation. While these concepts may be applicable to other regions to varying degrees, specific points related to the DIDP Area are elaborated in the following (Table 4.7).

(2) Elaboration on viable concepts

1) Diversification

The socio-economy of the DIDP Area is characterized by the dichotomy between the traditional and the modern sectors as clarified in sub-section 3.1.1. Agriculture, the mainstay of the DIDP economy, is characterized by mono-culture typically of plantation crops under estate operation by major agri-business or otherwise of rice or corn. Existing industries are almost all agro-based with very limited foot-loose type or external market-oriented industries. To further develop the DIDP economy, diversification is a must.

The DIDP Area is characterized also by the socio-cultural pluralism as described. Socio-cultural diversity should be a source of dynamism of the society. This situation may become more pronounced as the DIDP Area pursues outward-oriented development through trading with neighboring countries especially of the BIMP-EAGA as well as other regions in the Country. The DIDP paradigm should encourage communications among peoples of diverse backgrounds. The booming economy driven by outward orientation, however, may aggravate disparities between the mainstream and the marginalized already existing in the DIDP Area as noted. To diversify opportunities particularly for the marginalized, alternative systems/mechanisms for production and marketing need to be established as against large scale estate type operations by major agri-business.

The watershed in the DIDP Area has been degrading rapidly due to "kaingin" and other improper agricultural land use and management. To pursue sustainable development on indigenous resources under the internal integration strategy, watershed areas need to be restored as a prerequisite. Coastal and marine resources are also degrading due to siltation, solid waste dumping, illegal fishing activities and squatters. Bio-diversity needs to be preserved in watershed areas and coastal and marine ecosystems.

2) Agri-industrialization

Agri-industrialization is a common theme not only of the DIDP Area but Mindanao as a whole. This is quite natural as Mindanao is endowed with favorable natural conditions for agriculture such as fertile soil, high temperature, well-distributed rainfalls and no typhoon. These conditions apply to the DIDP Area as well, but to a less degree as the Area has more extensive areas of hilly and undulating terrains. As a result, farming systems in the DIDP Area are more tree crops-oriented. This should be taken as an advantage. Promising tree crops have higher value-added, and some of them may be processed within the DIDP Area for further value-added. Thus the agri-industrialization fits even better to the DIDP Area.

Davao City has been established as a main distribution and marketing center in Mindanao as well as a processing center for various agro-products. These

Table 4.7 Strategic Elements in DIDP Development Paradigm Classified by Sector

	Economic development	Social development	Environmental development	Spatial/infrastructure development
Diversification	• Crop diversification • Alternative farming and marketing systems • Products development and market diversification • Robust economic structure	• Realization of mixed culture society with revitalized indigenous peoples	• Preservation of watershed with bio-diversity • Sustainable use of coastal and marine resources	• Improvement of rural access and linkages by multi-modal transport system
Agri-industrialization	• Productivity enhancement • Processing for final products • Improvement of marketing facilities and market information	• Efficient use of upland/ hillyland by IPs with appropriate technology	• Land use rationalization • Sustainable use of forest resources • Pollution control	• Improvement of urban infrastructure, water facilities, post-harvest facilities etc.
Value development	• Entrepreneurship development • R & D	• Restoration of indigenous value and cultures	• Enhancement of environmental awareness	• Telecommunication facilities
Amenity creation	• Eco-tourism, agro-tourism, factory tours etc.	• Cultural amenities	• Natural amenities	• Urban amenities
Outward-orientation	• Export drive • Provision of higher-order services to neighbouring countries and regions	• Human communications with people of different backgrounds	• Exchange of environmental information through international networking	• Port and airport development • Establishment of air services network • Establishment of sea lanes

Source: JICA Study Team

functions, established over decades, cannot be easily challenged by other urban centers due to the existing infrastructure facilities and the strategic location of the City. They may be further strengthened by improving related infrastructure. With these established functions, comparatively more service activities will be induced in the City and its vicinities. Agri-industrialization in the DIDP context means naturally more than agriculture and agro-processing but includes, more importantly, distribution, marketing and other related services as well as other related industries.

Preservation of watershed and efficient use of upland/hillyland will support the agri-industrialization by expanding the indigenous resource base. Agri-industrialization in the DIDP Area should involve indigenous cultural communities for watershed management and upland/hillyland farming with appropriate technology to re-vitalize their livelihood as well.

Agri-industrialization in the environment sector also means rationalization of land use and sustainable use of forest resources. Expansion of some industrial crops may contribute to soil erosion, and some resource-based industries may cause industrial pollution. These possible negative aspects are also part of agri-industrialization.

3) Value development

The DIDP Area will deserve pursuing an original development paradigm, rather than following other more developed economies. Its unique characteristics would justify this. Among the DIDP characteristics are:

- favorable natural conditions for high-value crops,
- relatively well preserved watershed,
- rich mineral resources,
- strategic location in Mindanao and within the context of BIMP-EAGA,
- fishery and coastal resources of Davao Gulf,
- presence of several higher-order education and research institutes, and
- presence of many indigenous peoples and cultural communities.

The key for capitalizing on these characteristics is value development: how to capture emerging opportunities and how to introduce innovative uses of the resources. Value development in the economic sector means entrepreneurship development, training in business and financial management for cooperatives, R & D for products development and new processing technology, and innovative management among others.

Indigenous value and cultures should be looked into in the new light to learn, for instance, traditional wisdom of living with nature. Integration of indigenous cultural peoples without assimilation in the modern society will call for value development to restore their cultural values. Rapid urbanization may involve changes in moral and family value, which should be guided by proper value development. Enhancement of environmental awareness is important part of value development in the environment sector.

To pursue an original development paradigm, the DIDP Area should become even the world leader in some selected fields where the Area has comparative advantages. An essential condition for the leader is to transmit new ideas and

information generated by value development for trend setting worldwide rather than staying at the receiving end of information transmitted by someone else.

4) Amenity creation

As income levels increase, people demand more amenity facilities of various kinds. Major urban centers in the DIDP Area should be equipped with increasing amenities, but Davao City should go even further. Davao City is already the largest urban center in the BIMP-EAGA and expected to serve as its de facto capital. The City should be equipped with high quality amenities and higher-order service facilities and functions not only for local people but also to attract visitors. It would also serve as a tourism gateway and a base for "fly and cruise" tourism in the Celebes Sea.

The DIDP development paradigm should pursue the creation of rich human environment in both urban and rural areas. In urban areas, various amenity facilities and quality services should be provided. Rural amenity will be supported by rich natural environment with high bio-diversity and well-preserved cultural diversity as well as lively rural socioeconomies. Restoration of indigenous value and cultures should be considered as important part of amenity creation for the DIDP paradigm.

5) Outward orientation

The Philippine Government has been taking policies of open economy. The Country has been a GATT member since 1986, and ratified WTO earlier than most developing countries. The DIDP Area is in the best position to take advantage of the forthcoming free trade regime. In fact, Mindanao used to be a center of free trade across the Indian Ocean – Southern Pacific region before the colonization took effects. This position may be effectively revived in the early 21st century with much vigor, centering on the DIDP Area. As the world moves to the free trade regime, information exchanges as well as financial transactions will become increasingly more active and important world wide. The DIDP Area, in pursuing its original paradigm, should not stay at the receiving end of such flow of information.

Outward-oriented development may be pursued, making most of open-mindedness and communication capability of Filipino people. The following are some of the aspects related to this concept:

- information transmission to lead the value development or trend setting,
- export drive for quality products,
- provision of higher-order services such as advanced research/education, high-grade health services, and international tourism-related services to provide services for other regions and countries as well, and
- human communications in various fields including culture, environmental concerns, trade and diplomacy.

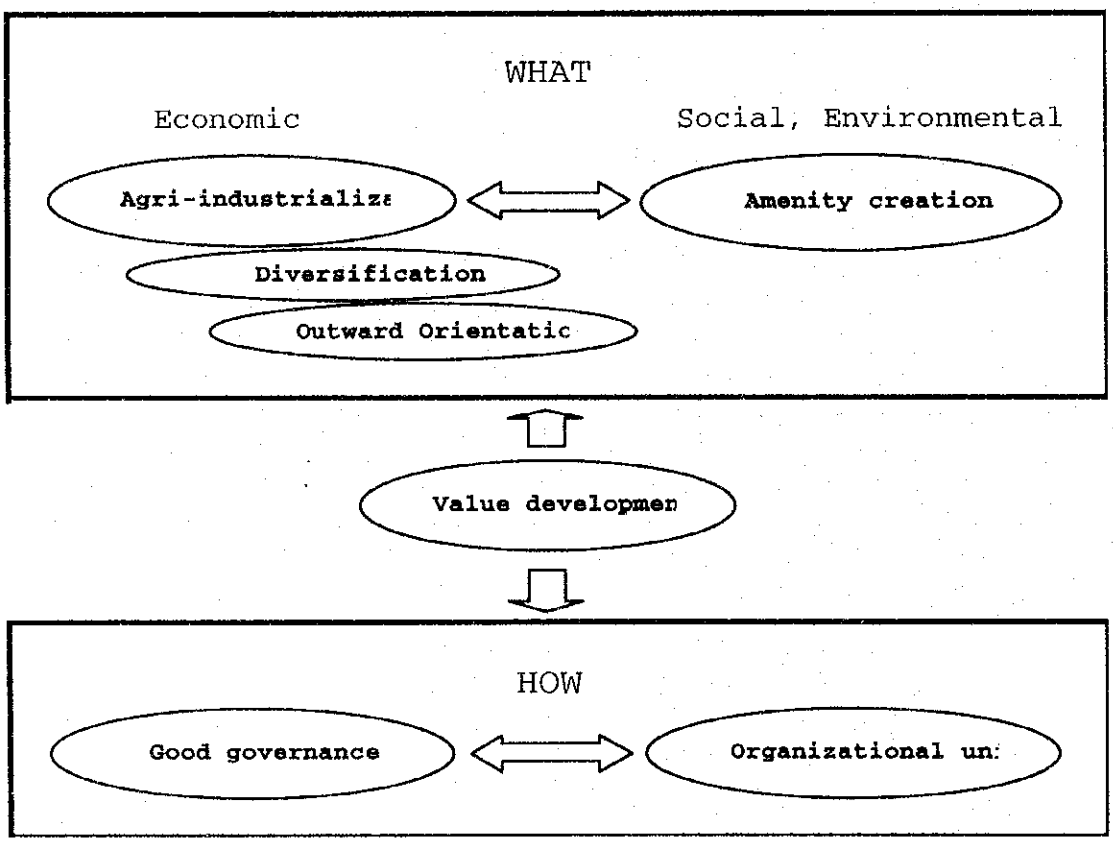
4.3.2. DIDP development paradigm

Incorporating the five viable concepts described above, the following present the seven point definition of the DIDP development paradigm.

(1) The DIDP development paradigm consists of WHAT to develop and HOW to plan and implement the development.

WHAT to develop means specific developmental activities. HOW to develop refers to broad development management. WHAT to develop in the DIDP Area is supported by agri-industrialization with diversification and outward orientation, and amenity creation. HOW to develop in the DIDP Area is supported by good governance and organizational unity. Both WHAT and HOW are supported by value development (Figure 4.7).

Figure 4.7 Schematic Presentation of DIDP Development Paradigm



(2) The DIDP development paradigm aims at adequate levels of economic growth to attain the balance between economic, social and environmental development.

The DIDP development paradigm pursues the balance between economic, social and environmental development. Without adequate economic growth, such balance is difficult to attain. Enhancement of livelihood of indigenous cultural communities and other socially deprived should contribute also to the economic growth. Improvement of environmental quality should be undertaken by providing economic incentives.

(3) The DIDP development paradigm is to pursue agri-industrialization with diversification and outward orientation.

Crop diversification should be pursued, avoiding mono-cropping as much as possible. It is to be effected through inter-cropping (e.g. coconut with corn or abaca), multi-storey farming (e.g. forest tree with coffee), paddy-based mixed farming (e.g. with pulses and vegetables), and integrated farming combining crops and livestock/poultry/aquaculture. Fishery should also be diversified with more aquaculture and mariculture of various forms, including some innovative practices (e.g. seaweed culture and sea ranching).

Diversification of industries should be pursued by promoting the formation of industrial clusters with strategic industries as cores and related industries to be established in line with the PAIC initiative. They may take forms of confectionery and ceramics industries in Davao del Sur, bamboo/rattan and abaca industries in Davao del Norte, jewelry and bamboo/rattan industries in Compostela Valley, abaca and construction materials industries in Davao Oriental, as well as coconut industry. Most of these industries can produce for export with improvement of product quality and products development.

Service activities will diversify responding to the diversification of agriculture and industry. Outward orientation is supported by trade, transport/ communication/storage, business services and financial services. International tourism is promoted by establishing tourism circuits linking diverse tourist attractions in the BIMP-EAGA under the concept of "coopetition".

(4) The DIDP development paradigm is to pursue amenity creation on a broad base including both urban amenity and rural amenity.

Urban amenity should be improved in all the urban centers in the DIDP Area in line with assigned functions of urban centers at different tiers of the urban hierarchy. Davao City should be equipped with high grade amenity facilities as a *de facto* capital of the BIMP-EAGA to attract visitors. Each municipal center should have basic education and health facilities, public market and sanitary abattoir, library, sporting complex and other cultural/recreational facilities, and sufficient water supply, power and telecommunications services.

Amenity creation in rural areas is considered important part of the DIDP development paradigm. Rural amenity is symbolized by lively rural socioeconomies throughout the DIDP Area including far-flung communities and indigenous cultural communities. A necessary condition is to enhance the livelihood of even the most deprived communities and integrate them into the DIDP socioeconomy, while preserving cultural diversity. To ensure the rich indigenous resource base for various livelihood activities, natural environment should be well preserved and enhanced with high bio-diversity.

(5) The DIDP development paradigm should build in good governance to be supported by the local initiative and people's participation.

The best governance is self governance. To substantiate the local initiative of the alliance of LGUs for the DIDP, financial and administrative capacities of LGUs need to be much enhanced. This is a necessary condition. To ensure the accountability and transparency of the governance, enlarged people's participation

should be institutionalized. In particular, bottom-up participatory planning should be effected from the MBN survey leading to program formation and impact assessment to complement the formal planning process at every LGU level.

(6) **The DIDP development paradigm is supported by organizational unity from the top to the bottom and across all the segments of the society to allow effective cooperation between the efficient public sector and the active private sector.**

Organizational unity means coherent organizational arrangements to implement the DIDP with public-private partnership. This is both necessary and desirable. It is necessary because, given the limited capacities of LGUs, more developmental resources will have to come from the private sector. It is desirable because the DIDP development paradigm should represent collective aspiration of local people and the private sector, which should be supported by concerned LGUs, and a management entity for the DIDP Area development should embody such collective local concerns and interests.

(7) **The DIDP development paradigm is supported by value development or human resourced development oriented to value systems of the coming age and emerging societies.**

The DIDP development paradigm is composed of various innovations in different sectors such as introduction of new crops/crop varieties and alternative farming systems, products and market development, establishment of higher order services and high grade amenity facilities, and new institutions and organizational arrangements. To realize these, value development will have to generate more risk-taking, venture-minded and entrepreneurial people.

Value development should also change popular perceptions of people related to health and sanitation, education, environment and socio-cultural and family values. Dependency mentality to health services may be changed through more self-reliant, community-based health care systems. Degree bias in education may be rectified through more demand-responsive education systems. Environmental awareness may be enhanced through community-based resources and environmental management. Socio-cultural pluralism should be considered not as a hindrance in pursuing efficiency but as a source of identity and dynamism for socioeconomic development.

Through the pursuit of the DIDP development paradigm, the DIDP Area is expected to become the world leader in some fields where the Area has comparative advantages. The world leader of any sort would not stay at the receiving end of information in the particular field. Transmission of new ideas and information is an essential condition to lead the world by setting trend and directing the development. Value development is a vital condition for the DIDP development paradigm.

4.4. Institutional Framework for DIDP Area Development

The DIDP Area development will take place basically within the framework of existing development administration. Administrative capacities for development planning, finance and management, however, are expected to increase especially at the local level along with the DIDP Area development. How and to what extent the

capacities will increase depend, in turn, on institutional arrangements for the DIDP Area development. In this section, therefore, the existing development administration in the Philippines is outlined as related to the DIDP Area, and conditions to be satisfied by institutional arrangements for the DIDP Area development are clarified.

4.4.1. Existing administrative framework

(1) Basic structure of development administration

The development administration in the Philippines consists of the National Government and three tiers of local governments. Many agencies of the Government have their regional offices to exercise central administrative (line) functions at the regional level. Recently, more functions have been delegated to agency regional offices (deconcentration), while agency central offices exercise mainly the function of policy setting.

In line with the deconcentration of development administration, Regional Development Councils (RDCs), created in 1972 by the Integrated Reorganization Plan, have been strengthened in steps to improve development planning and coordinating functions at the regional level. RDCs prepare, facilitated by respective NEDA regional offices, Regional Development Investment Programs (RDIPs), that form a basis for the annual budget formulation and resource allocation across the respective regions.

The local governments consist of provinces, cities, municipalities and barangays. Cities are classified into highly urbanized cities allowed their autonomy from the province, and component cities. Each local government unit (LGU) has executive officials and the local development council (LGC) as the legislative body, that are all elected for a three year term. There are also a limited number of appointive officials, more at the provincial level, in designated sectors.

(2) Local Government Code

The Local Government Code (LGC) of 1991 has devolved many government functions formerly held by the National Government to LGUs. This aimed at the following:

1) to make development administration more efficient at the national and local levels, overcoming various bureaucratic hindrances of central government agencies due to excessive centralization,
2) to improve resource allocation through more effective coordination at the local level,
3) to rectify inter-regional disparities through increasing and more equitable resource allocation to regions, and
4) to enhance participation of local people and communities to the development.

In particular, the 1991 LGC has devolved to all the LGUs the administration of five basic services: agriculture, health, social welfare, maintenance of public works and highways, and environmental protection, with corresponding transfer of resources and personnel. The Local Tax Code enacted earlier has provided local councils the authority to impose certain taxes to raise the revenues needed for their projects. At

the same time, the function of tax collection has been decentralized to branch offices of the Bureau of Internal Revenues and local treasury offices.

The 1991 LGC has expanded opportunities for LGUs to procure their development fund through various means including loans and bonds. For grants, LGUs can make direct access to donor agencies. The criteria for internal revenue allotment (IRA) allocation have been unambiguously determined to assure the stable/reliable revenues for LGUs.

The 1991 LGC has clarified roles of local development councils (LDCs) at province, city, municipality and barangay levels, respectively. Each LDC has been mandated to prepare a multi-year, multi-sector development plan for its jurisdiction.

(3) Development planning and budgeting system

The 1991 LGC has strengthened a bottom-up development planning system, through which LGUs at different levels take the initiative in preparing development plans. The plans are approved by respective LDCs, and integrated in steps through the hierarchical structure of local governments into provincial/city plans and eventually regional development plans.

RDCs prepare the RDIPs as the basis for multi-year investment programming, that are translated into annual budget formulation and resource allocation across the administrative and planning regions. The Regional Development Assembly, created by the RDC reorganization in 1987, provides for greater interactions in project selection and fund allocation of infrastructure projects among all the stakeholders including Congressmen as well as Senators, local officials, RDC chairman, and NGO representatives.

NEDA and the Department of Budget and Management have adopted a Synchronized Planning-Programming-Budgeting System (SPPBS) to coordinate planning and budgetary activities at the regional and local levels, and to allow multi-year budgeting. The SPPBS specifies overall, sector-wise, departmental and regional ceilings for budget allocation in line with Government's revenue and deficit targets reflected in the Medium-Term Plan. Applied at the local level, the SPPBS will allow the RDIPs endorsed by LDCs be incorporated in the Medium-Term Public Investment Program.

(4) Development finance for local development

The main source of revenue for LGUs is the internal revenue tax, which is shared with the National Government. The 1991 LGC has raised the share to be allocated to LGUs from 20% to 40% of the tax collected. The IRA allocation to LGUs is shared according to the following: 34% to municipalities, 23% to cities, 23% to provinces, and 20% to barangays. The IRA allocation is divided according to the criteria: 50% based on population, 25% by land area, and 25% equal sharing. It is stipulated that 20% of the IRA allocation be disbursed for development fund.

LGUs can impose real property tax, license and business tax, and other local taxes. Cities and municipalities impose the amusement tax. Business licenses to be given by cities and municipalities are subject to barangay clearance. Other local taxes include franchise, professional, and immigration taxes. Additional revenues may

be derived from government business operations such as rentals, sales of agricultural products, and market/slaughterhouse operations.

The share of IRA allocation in the total revenue of LGUs exceeds 70% for all the regions except the NCR, where the share was 30% in 1995. Other than cities in the NCR, only a few cities and provinces have local tax revenues exceeding the IRA. These cities and provinces were Olongapo City, Batangas City, Iloilo City, Cebu City, Cotabato City, Ilocos Sur province, and Quirino province in 1995.

4.4.2. Existing development administration and finance in DIDP Area

(1) Development plans and investment programs

The DIDP Area has four provinces, 59 municipalities, one highly urbanized city (Davao City), two component cities (Tagum City and Island Garden City of Samal), and 1,152 barangays. The provinces of the former Davao, Davao del Sur and Davao Oriental and Davao City and most municipalities have prepared multi-year, multi-sector development plans, including both socioeconomic and physical plans. The newly created province of Compostela Valley is yet to prepare its multi-year, multi-sector development plan. They also have local development investment programs (LDIPs), but most of them are more like a shopping list. Planning-budgeting linkages are weak.

(2) Revenue and expenditures

The share of IRA allocation in the total revenue of the LGUs in the DIDP Area was 65%, based on revenue data of all the provinces, Davao City and most municipalities. The share was 60% in Davao City, and over 85% in Davao Oriental. The total revenue in 1997 was the largest in Davao City over ₱1,500 million and the smallest in Davao Oriental less than ₱600 million. The per capita revenue in 1997 is calculated only at ₱ 1,220, ranging from ₱1,480 in Davao City and ₱1,000 in Davao Province. Close to 80% of the total expenditure in 1997 was used for current expenditures.

(3) Manpower

Manpower resources of the provincial, city and municipal governments in the DIDP Area totaled about 16,000 in 1997. Davao City has by far the largest with 7,048 in 1997, consisting of 2,617 plantilla, 361 temporary and 4,400 casual/contractual workers. The total number of workers or the number of permanent staff has not increased much in recent years, except Davao City increased the numbers significantly in 1997. In the City government, the number of permanent staff increased significantly in 1997 in the offices of the Planning and Development Coordination, Administrator, Treasurer, Social Services and Development, City Health and CENRO, while the offices of Engineering and Agriculture reduced their staff.

(4) Recent developments

According to a rapid field appraisal on the implementation of the 1991 LGC, an emerging trend toward NGO-LGU collaboration is observed on projects and service delivery. Some of early examples include:

- livelihood projects such as animal dispersal programs,

- joint venture for construction of the Tagum terminal,
- partnership where a cooperative is tapped as the collector of market fees for remittance to the municipal government, and
- privatization of hospital operation, comfort room operation at a public market, terminal building operation, slaughterhouse management etc.

The appraisal also noted continuing positive trend in the use of credit financing schemes. Examples are:

- Security Bank for a heavy equipment loan in Panabo,
- Development Bank of the Philippines (DBP) for construction of an integrated overland transport terminal complex in Tagum,
- Land Bank of the Philippines for a heavy equipment loan in Sta. Cruz,
- DBP for infrastructure projects in Digos, and
- Philippine National Bank for a wide range of credit financing in Davao City.

Bond floatation and BOT schemes were not used as of 1994.

Collaboration among LGUs has been increasing in substantive way. The DIDP itself is the LGU initiative, and now formally recognized as one of Area Development Programs. PAIC development represents another form of LGU collaboration.

4.4.3. Issues for development administration

The direction and framework of development administration set by the 1991 LGC are generally sound, but the existing system of development administration faces various problems, as pointed out by many. They may be summarized as follows.

(1) Local government structure

There are many LGUs at different levels, and each of them tends to pursue its own agenda that are narrowly defined, often affected by local political interests. This tendency constrains more effective local/regional development on a broad base, especially where locally available development resources are limited.

(2) Local government capacities

Despite the substantial transfer of resources and personnel and the implementation of the Capacity Building Program started in 1993, most LGUs have insufficient capacities in organization development, systems development, various procedural and management skills. Their capacities are even less adequate for strategic planning, project development and fund sourcing.

(3) Revenue generations and utilization

LGUs depend heavily on the IRA, which is a block grant. Its proper use is conditional on LGU's will to budget for various uses with clear prioritization. The collection of local taxes by LGUs depends on their assessment ability and collection efficiency.

Most LGUs are still not knowledgeable about various lending schemes from both local and foreign sources. This is partly due to insufficient awareness of LGU personnel on expanded roles and responsibilities, which, in turn, may be due to limited access to relevant information.

(4) Local government planning

Local planning tends to be piece-meal and sector-wise without clear spatial dimension. Knowledge and experiences are limited for multi-year socioeconomic planning, physical (land use) planning, and investment programming. The bottom-up planning system established by the 1991 LGC is not properly functioning in most cases due to lack of feedback mechanism from planning, and weak coordination between sectors and LGUs. Planning-budgeting linkages are very weak.

(5) Regional Development Council

As LGUs take the initiative in planning and implementing their own projects, coordination between LGUs themselves and between government agencies and LGUs becomes more important. RDCs are expected to meet this challenge. Most RDCs, however, remain to be more of an authorization mechanism for decisions made elsewhere (e.g. by government agencies) rather than a decision making mechanism through coordination between various agencies and LGUs.

(6) Scope of devolution

There exist wide variances in financial, manpower and other administrative capacities of LGUs. Uniform devolution of a fixed set of functions to all the LGUs at a certain level tends to aggravate disparities among the LGUs.

Chapter 5
Development Strategy by Sector

5. Development Strategy by Sector

5.1. Strategy for Economic Development

5.1.1. Agriculture

(1) Constraints

Common constraints in the DIDP Area

About 35% of the land in the DIDP Area is more than 500 m in altitude and 41% of the land with slope gradient over 30%, which restrict overall agricultural activities and access to communities. These conditions tend to aggravate disparities between urban and rural areas without intervention.

Abundant rainfalls sometimes cause floods, which bring about not only loss of property in urban areas, but also crop failure. Floods are said to be becoming more serious due to the deterioration of watershed. Same structual measure may be taken for flood control, but rehabilitation of watershed provide a long-term solution to ensure sustainability.

Corn growers, who are in general small or marginal, are generally found in upland areas. They plant corn on slopes, where soil is generally less fertile. Since they cannot afford input like fertilizer, the yield is naturally low. This practice decreases the soil fertility further, and thereby degrades the upland. Once degraded, vegetation cover becomes poor, leading to further deterioration of the land.

Lack of farm-to-market roads is still a major constraint to transport farm products to market places. Production of perishable vegetables tends to be discouraged in mountainous areas suited to such production. Insufficient or lack of post-harvest facilities increases crop loss and decreases the quality of products.

Banks and other formal lending institutions are biased against agriculture due to the risk and low profitability of the sector. Also farmers hesitate to go to the formal lending sector because of its tedious procedure to avail of credit. Farmers are discouraged to plant tree crops which require longer time (more than five years at least) to obtain harvest or produce.

The number and mobilization of extension workers pose a real problem. Except for Davao City, one extension worker usually covers three to five barangays scattered in the municipality. Mobilization of extension workers is also a problem. As no motorbike is provided, they have to walk or use animal as means of transportation.

Constraints by province/City

Constraints more specific to different provinces and the City are listed, partly extracted from the workshop discussions.

1) Davao Province (Davao del Norte and Compostela Valley)

- Inadequate road system developed initially to serve plantations,
- Deforestation and inadequate land use and management causing extensive soil erosion and flooding, and

- Severe competition of banana industry with Latin America that has caused not only the decline of the industry but also the loss of a market for a bamboo cooperative supplying banana supports.

2) Davao City

- Indiscriminate conversion of productive agricultural land for property development and the fear thereof,
- Decreasing profitability of rice, due partly to cartelized trading, resulting in conversion to other crops,
- Lack of support policy and programs for cutflowers,
- Monopolized marketing of vegetables, coffee and cacao by middlemen and traders,
- High cost of concentrated feed constraining backyard livestock raising, and insufficient feed availability for dairy cooperatives, resulting in low milk production,
- Small production and ineffective market matching by DA, DTI, and NGOs to attain required volumes for exports (e.g. cutflowers and mango),
- Aging rubber trees accounting for 75% to 80%, and low technology for maintenance and extraction of rubber,
- Lack of support for rehabilitating the declining abaca production,
- Inability of the Government to support export of processed ramie, low technology for ramie processing, and low acceptability of ramie cloth, and
- Ill-equipped City Veterinarian Office with only one technician for artificial insemination (AI) for cattle, and lack of equipment and tools for AI and liquid nitrogen.

3) Davao del Sur

- Narrow and enlongated land and the island municipality constraining any socioeconomic activities,
- Degradation of watershed by deforestation,
- Non-mechanized farming without even power tiller or thresher,
- Limited access to market information, and
- Unstable international markets for some agro-products such as fruits, rubber and coconut oil.

4) Davao Oriental

- Poor access from neighboring provinces and the capital town that tend to confine the local economies to coconut and corn based agricultural systems, and
- Soil erosion due primarily to mismatch of land use and potentials, represented by corn growing by upland people in hilly areas without taking any conservation measures.

(2) Objectives for DIDP agriculture and basic strategy

Objectives

Objectives for agricultural development in the DIDP Area are set in line with the economic, environmental and social objectives of the DIDP regional development. They are:

1) to contribute to agri-industrialization through expanding the raw materials base for the industrial sector as well as meeting increasing local consumption demand, and broadening employment opportunities and increasing income levels of local people,

2) to promote rational and sustainable land use through appropriate agricultural land use practices and management, and

3) to contribute to the integration of indigenous cultural communities and other socially deprived into the DIDP socioeconomy through enhancing their livelihood with viable agro-related activities.

Basic strategy

The basic strategy for agricultural development in the DIDP Area is established, corresponding to the development constraints identified above, with seven components: (1) diversification, (2) market-oriented production, (3) linkage strengthening with other economic sectors, (4) environmentally sound production practices, (5) cooperative development, (6) R & D and extension linkages and (7) strengthening of support services. These are mutually supportive in attaining the objectives as described below in generic terms. Specific strategies are presented in the next subsection.

1) Diversification

Agricultural production in the DIDP Area has been dominated largely by several major crops led by rice, corn, coconut and banana. The productivity of corn and coconut has been low, and banana faces marketing problems recently. Diversification should be pursued to increase agricultural value-added. The potential for diversification is large in the DIDP Area owing to topography, soil conditions, long coastline, and strategic location in Mindanao and the BIMP-EAGA.

The diversification strategy pursues crop diversification, development of alternative farming systems, and market development. Crop diversification should be promoted on the basis of competitive advantages in terms of land suitability and marketing. Tree crops should be promoted more in the DIDP Area in view of its dominantly undulating/rolling terrains and favorable climatic conditions. Alternative farming systems would promote environmentally sound farming practices and contribute to localizing agricultural value-added. Market development should take advantage of emerging opportunities offered by inter-regional and sub-regional cooperation.

In pursuing the diversification strategy, R & D and extension supports need to be strengthened. Extension would ensure effective dissemination of technical

know-how to framers, and R & D would support products development and diversification of their uses.

2) Market-oriented production

Entrepreneurship should be promoted among producers to allow them to capture emerging marketing opportunities. Cooperative development and training on business and financial management should be encouraged. Agrarian reform beneficiaries should be organized and supported by credit, guarantees and insurance, and technical extension.

A telecommunication facility that extends to centers of production areas should be installed, in addition to the existing postal system in municipalities, for timely trading of agricultural goods. A network of roads that link production areas to markets should be improved to facilitate transport of inputs from outside and produce to markets, and to minimize transportation loss of harvests. This should be coupled with construction of trading places in strategic areas.

3) Linkages strengthening with other economic sectors

Linkages between diversified agro-products and their processing should be promoted by R & D efforts for products development and improvement of processing technology. Eco-tourism or agro-ecotourism should be promoted to attract tourists by establishing orchid gardens, tourism ranches with barbecue gardens, tourism orchards and other amenity facilities.

4) Environmentally sound production practices

The agricultural sector should play a leading role in realizing sustainable environmental development, and rehabilitating degraded land. Alternative farming systems should be developed especially for upland farmers, while reforestation with valuable trees should be encouraged on denuded forest areas. Alternative farming systems include multi-storey cropping, inter-cropping, SALT, agro-pastoral, silvi-pastoral and paddy-fish integration, and home gardening.

Coastal areas should be conserved for tourism purposes, while aquaculture and mariculture promoted through development/improvement of fishponds, sea stations, seaweed culture and coral reefs.

Use of chemical substances should be rationalized to minimize environmental load by introducing integrated pest management and promoting organic farming. Locally available resources should be used such as compost, animal manure, herbal plants, trichoderma (bacteria for compost making) and trichogramma (kind of predaceous insect), which will also reduce production costs. Charcoal may be used as soil amendments especially in upland areas to improve physical and biological properties of soil.

5) Cooperative development

Cooperatives are self-help organizations, and may offer viable alternatives for maintaining economies of scale after agrarian reform has distributed land of commercial farms. However, the prevailing state of cooperatives may not lend

commercial operation due to poor financing and management. Thus, existing cooperatives will have to be made visible through appropriate training and financial support. Business training courses including business planning and financial management should be offered to both leaders and members of cooperatives.

The cooperatives should also be monitored in order to evaluate the effectiveness of the programs and to determine a better strategy to improve their performance. Thus, it is important that comprehensive databases on cooperatives operating in their respective provinces be constracted..

Cooperative development and training on business management should be pursued to help small farmers/producers acquire inexpensive inputs and better prices for their products. Agrarian reform communities (ARCs), organizing agrarian reform beneficiaries (ARBs), should likewise progress into cooperatives. ARCs should be supported with appropriate credit programs since the ARBs are new entrepreneurs whose only capital is a piece of land.

6) Strengthening of R & D and extension linkages

Agricultural R & D should be conducted by strengthening the triad linkages among universities/colleges, public research institutions and private research organizations. The R & D should focus on the following:

- processing of fruits (canned, dried, jams, juice, puree, etc.),
- processing of fiber crops (fiber treatment and product development),
- coconut product processing (coir, charcoal, oleo-chemicals, etc.),
- bio-technology for developing new orchid hybrids,
- bamboo processing (for plywood and charcoal),
- marine resources-based industries,
- market identification for fruit products,
- development of low cost feeds and feed supplements for poultry and livestock to reduce dependency on imported feeds, and
- upgrading the native variety chicken, particularly to shorten the raising period, and
- groundwater characterization for shallow tube wells developments.

Dissemination of R & D results from research centers to target users could be fast tracked by linking SMARRDEC with all agricultural research institutions through a computer network. New technologies which will be repackaged by Regional Applied Communications Office (RACO) under SMARRDEC should be spread to each provincial agricultural office (e.g. One Stop Information Center at PAO in Tagum) also through a computer network for access by extension workers and/or farmers.

In the light of the insufficient number of farmer-extension worker contacts, increase in the number of extension workers is a prerequisite for efficient and frequent technology transfer. Each of these extension workers should be a

specialist who can be an authority in at least one field. Each of these specialists can be shared by all barangays in the respective municipality. Successful farmers in the Area should be involved in the extension activities. This can be accomplished through an effective merit and award system.

In order to make technology transfer more effective, extension service has to be attractive to the worker as well as the service recipient. To this effect, a viable extension worker-farmer partnership in agricultural production can be established. For example, an extension worker can provide the farmer a pig to be raised through a technology being promoted by the former and share profit. This strategy addresses two objectives at a time, i.e., increasing the income of both the farmer and the poorly paid extension worker.

7) Strengthening of support services

Irrigation: Smaller irrigation schemes should, in principle, be promoted, for their viability, quick yielding, smaller initial investment cost, relatively easy operation, easier maintenance, relatively easy cost recovery, etc. Shallow tube wells (STWs) should be more developed where ample groundwater resources are found, based on a groundwater potential survey.

Irrigation for non-rice crops should be developed. Aside from gravity irrigation systems, introduction of pressurized irrigation systems, including overhead sprinkler irrigation, micro sprinkler irrigation and drip irrigation, should be adopted selectively, especially for high value crops in upland areas. For the purpose of increasing the efficiency of irrigation service, R&D for irrigation should be established, to pursue a continuing search for appropriate irrigation schemes with low cost, high water delivery efficiency and better water management.

Rational credit program: Vigorous growth of the countryside shall be promoted by improving access to credit by small farmers. Credit for agriculture will no longer be subsidized by the Government. Hence, efforts shall be directed towards enhancing credit-worthiness in the farming business to bring in more players from the banking sector, private and public financing institutions. Cooperatives shall be the major conduits of government lending programs for specific purposes. In the DIDP Area, credit programs should be formulated for the following:

i) Acquisition and installation of STW pumps for individual farmers,

ii) Establishment of post-harvest facilities for various crops by cooperatives that would like to engage in post-harvest processing,

iii) Capital for tree crops planting for either individuals, cooperatives or enterprises, and

iv) Credit line system of production credit for temporary crops (rice, corn, vegetables, etc.) to cover various input such as seed, fertilizer and pesticides.

(3) DIDP strategy in agriculture

Specific strategies for DIDP agricultural development are taken in steps in line with the DIDP strategy. In Phase 1, renewed initiatives are taken in several fields for the Internal Integration as described:

1) Establishment of community-based alternative systems for production and marketing to localize value-added such as cooperative marketing of rice and copra;

2) Provision of integrated support services to ARCs including market information, extension, farm-to-market roads, post-harvest facilities and credit through organizing ARB's;

3) Environmentally sound farming systems in the upland/hillyland such as proper use of fertilizer and agro-chemicals, SALT, inter-cropping with tree crops etc.;

4) Improved watershed management with community participation encompassing sustainable use of forest resources, expanded application of SWIM, SRIP and other viable schemes; and

5) Establishment of viable technologies for simple processing of agro-products through R & D – extension linkages to encourage production of, and diversify marketing outlets for various commercial crops.

These strategies will help to improve the resource base for agri-industrialization through crop diversification, market and products development, and enhancement of land productivity. Depending on the degree of success as well as existing resources base in different areas, another set of strategies are taken for the Globalization Drive, which will be pursued at full steam during Phase 2. These strategies are:

1) Crop diversification in favor of export crops and other industrial crops that can be processed within the DIDP Area;

2) Cooperative development and training on financial and business management to strengthen the alternative marketing systems through entrepreneurship development;

3) Provision of market information for emerging marketing opportunities and the viable technologies for production and processing through extension;

4) Promotion of agro-ecotourism for international tourists; and

5) R & D for alternative production and processing technologies to develop high value agro-products.

Further agricultural development under these strategies will create both specialty products that may symbolize the DIDP Area, and larger and varied demands due to high income levels. Such development may be further pursued through Phase 3 under the High Tech – High Services strategy with the following specific components:

1) Products development to meet new demands due to changes in dietary habits such as processed dairy and meat products, and also due to increased environmental concerns and varied social values;

2) Specialty/quality products to cater for demands of international tourists and high income people such as organic farming products and herbal plants;

3) Industrial agriculture for quality vegetables, some fruits, mushrooms and cutflowers; and

4) Advanced R & D to produce new agro-products such as new brand orchid.

(4) Sub-sector strategies

Crop cultivation

Specific strategy for various crops cultivated in the DIDP Area is summarized in Table 5.1. Key production areas for major fruits are indicated in Table 5.2.

Table 5.1 Specific Strategy for Various Crops Cultivated in the DIPD Area (1/2)

Crop	Prospects	Strategy	Priority
Paddy	Production to increase for self-sufficiency	• Expansion of irrigatin area through surface water and groundwater development • Integrated pest management • Promotion of fancy varieties for premium prices • Improved post-harvest technology	• Small scale irrigation • Throughout the DIDP Area where suitable
Corn	White corn production to increase in upland as staple	• Promotion of contour farming, SALT, terracing, intercropping with legumes etc. with increased input	• Upland areas through-out DIDP Area
	Yellow corn to increase in under-utilized agricultural land to support livestock sub-sector	• Use of high yielding varieties with proper input	
Coconut	Coconut industry as most important export sub-sector	• Provision of high yielding varieties for replanting • Better farming practices including optimum use of fertilizer • Promotion of coconut based integrated farming especially among agrarian reform beneficiaries • Development of simple processing facilities such as kiln for charcoal and dryer for copra to improve quality	• ARCs
Banana	Cavendish plantations to be maintained	• Formation and strengthening of cooperatives out of ARBs in commercial farms • Integration of small farms to attain economies of scale through lease back and joint-venture agreements with ARBs • Rejected bananas to be used for processing into ketchup, chips etc. or for animal feed	• Davao Province, Davao City, and Davao del Sur • ARBs
	Local banana production to increase in upland	• Intercropping with other fruit trees such as durian, rambutan etc.	• Upland of the above
Fruits	Production to increase using upland areas with soil conservation	• Planting based on agro-ecological suitability by agro-forestry development approach for land conservation • Intercropping with annual crops at establishment stage • Orchard gardens for year-round tourism	• High value exotic fruits - durian, mango, mangosteen, rambutan, lanzones, citrus etc. (see Table 5.2)

Table 5.1 Specific Strategy for Various Crops Cultivated in the DIDP Area (2/2)

Crop	Prospects	Strategy	Priority
Vegetables	Much enhanced to meet growing demand and to improve nutrition of people	• Development and distribution of certified seed and technical assistance on farming • Establishment of strategic cropping pattern to exploit market opportunities • Soil convervation measures such as contour farming, organic matter application etc. • Market information system • Improvement of farm-to-market roads	• Temperate vegetables - white potatoes, tomatoes, cabbage, lettuce, Chinese cabbage, carrot etc. • Also strawberry • Kapatagan (Davao del Sur), Maragusan (Davao Province), Marilog (Davao City) New areas to be identified based on land capability
Rubber	More tree planting in upland where land and climate are suitable	• Encouragement fo private investments into processing for sheet rubber and latex • Senile trees to be cut and used for furniture industry • Organizing rubber tree growers	• Davao Province and Davao Oriental
Sugarcane	Production to increase to maintain existing sugar refineries	• Mechanization, irrigation, use of high yielding varieties etc. to enhance productivity through clustering of sugarcance farmers • Promotion of rational land use in cooperation with neighboring provinces	• Davao del Sur
Coffee	Area expansion in upland	• Agro-forestry and/or multi-storey cropping systems along with organic fertilizer • Indigenous peoples to be involved in high value coffee cultivation • Improving post-harvest technology	• High value arabic type coffee on higher elevation in Davao Province, Davao City, Davao del Sur
Cacao	Production to be maintained for future confectionery industry	• Provision of technical assistance and production credit especially to agrarian reform beneficiaries • Improving post-harvest technology	• ARCs
Fiber crops	Abaca and ramie to be revitalized in the light of suitable growth conditions	• Development of processed products and improvement in processing technology • Inter-cropping with tree crops and coconut	• Davao Province, Davao City and Davao Oriental
Ornamental plants	Production of orchid, foliar plants, cutflowers etc. to expand to supply growing urban markets	• Development of new brand orchid by using bio-technology • Identification of marketable wild orchid • Ordinary ornamental plants for local market • Orchid gardens as tourism attractions in combination with other commercial plants and fruits	• Davao City, Davao Province, Davao del Sur and Davao Oriental

Source: JICA Study Team

Table 5.2 Key Production Areas for Major Fruits

Fruits	Davao Province	Davao City	Davao del Sur	Davao Oriental
Durian	x	x	x	x
Mango	x	x	x	x
Mangosteen	x	x		x
Rambutan	x	x	x	
Lanzones	x	x	x	
Citrus	x	x	x	x

Note: x denotes "promising/to be promoted"
Source: JICA Study Team

Livestock

Artificial insemination (AI) centers should be increased and capability of breeding centers should be enhanced to improve the breeds of large animals (cattle and carabao). Importation of breeder cattle should be continued to support upgrading of local breeds while import of cattle fatteners should be continued only in the short term to meet market demand for beef and prevent slaughtering of young and breeder cattle. A farming system consisting of a cattle ranch and backyard raisers should be developed in the DIDP Area - ranch as producer of calves and small farmers as raisers. Cattle ranches should be supported with good incentives to continue production of cattle in order to decrease the import over time.

AI of native carabaos with murrah buffaloes to increase milk production as undertaken by USP Tagum should be supported in order to inseminate as many carabaos. This should be complemented with vitalizing existing dairy cooperatives to promote dairy production through market expansion. With ample extension services for milk production, farmers should be organized into cooperatives to produce commercial quantity to supply the market. This could lessen dependence on imported powdered milk, as milk is an important component of children's diet but a very much deficit commodity in rural areas.

Backyard raising of both large and small animals should continuously be encouraged through dispersal programs to augment small farmers' income. Small scale livestock raising, particularly by small farmers is generally cost effective since some portions of the feed can be sourced from crop residues.

Livestock auction markets should be established to ensure market outlets and to encourage sound and competitive environment. Market information may be effectively disseminated there.

R & D should give more attention to reduction of feed costs through development of feeds out of abundant local sources such as crop residues, by-products of processing, etc. In areas where suitable, forage crops such as signal grass, king grass, napier grass, Flamingia macrophylla and Desmondium rensonii etc. should be grown more extensively. In order to control animal disease outbreaks, disease diagnostic laboratories should be established in every province.

Poultry

Broiler production is a very established industry in the DIDP Area led by the private sector. However, high cost of feeds remains a constraint faced by producers. R & D for poultry should therefore be directed towards addressing this problem.

Native chicken is still the most sought-after poultry meat because of its taste. R & D has already reduced the length of growing period from 12 months to six months. The demand, however, cannot be met as native breeds are much smaller in size. The size of native chicken could be increased by crossing it with large breeds like the Luzviminda, New Hampshire, etc. An effective extension strategy should be formulated to reach all native chicken raisers if it should make an impact. One strategy could be to exchange a native male chicken with a Luzviminda male in one barangay to ensure that next generation in such a particular barangay are all improved breed. Low cost and nutritious feeds and supplements should be given to these new breeds to reach the desired size. This can be copied on to the next barangays.

Forestry

Watershed areas should be protected by both engineering measures like sabo dams, terracings, etc., and vegetative measures including bamboo planting along the riverbank, fast growing trees planting like Glyrisidia sepium, Paraserianthes falcataria, Acacia mangium, Acacia auriculiformis, Gmelina arborea, Eucalyptus deglupta, etc., for fast vegetation cover to control erosion. Community-based efforts should be continued, and outside people's participation also be encouraged for expanding the activities.

Denuded forest areas should be rehabilitated to recover the bio-diversity. Fast growing trees should be planted first to prevent further erosion, followed by indigenous high value tree species like Narra (Pterocarpus indicus) and Dipterocarpaceae spp. including Lauan, Philippine mahogany, etc. The private sector should be encouraged to be involved as well as local people including indigenous peoples.

Non-wood forest products should be harvested from the remaining forests including mushroom, fern, bamboo shoots etc. to ensure continuous cash income for upland peoples. Rattan planting should be encouraged to supply materials for furniture industry to be promoted under the PAIC initiative. Bamboo should also be planted not only to prevent soil erosion but also to supply materials for plywoods, charcoal making etc. Agro-forestry activities should be promoted to a limited extent even in forest areas for local people to obtain cash income while conserving land. Fruits should be planted in combination with forest trees. Neem tree (Azadirachta indica) should also be planted more widely for its value as bio-pesticide (insect repellent).

5.1.2. Fishery

(1) Constraints

Fishery in the DIDP Area is characterized by the dominance of subsistence-oriented municipal fishery, the decline of commercial fishery and under-developed aquaculture. Municipal fishery production in recent years does not show any clear

sign of decline, except in Davao Oriental. In fact, the municipal fishery production has increased in Davao City, Davao Province and Davao del Sur in the past few years, relying exclusively or largely on Davao Gulf waters. Despite a general belief, fishery resources in Davao Gulf may still have capacities to support more viable fishery activities.

Commercial fishery production, on the other hand, declined sharply in recent years, except in Davao Oriental having a long coastline facing the open sea. The share of commercial fish production in the total DIDP fish production decreased from 34% in 1992 to less than 20% in 1996.

Aquaculture performance in the DIDP Area has been inconsistent in recent years. This is due to unstable market for shrimps and resultant shift to milkfish. The latter, however, suffer from insufficient supply of fry and high costs of feed.

Given the situations outlined above, constraints to fishery development in the DIDP Area are identified below for municipal fishery in Davao Gulf and aquaculture. Municipal fishery in remote coastal areas facing the open sea is constrained by lack of basic infrastructure and remoteness to larger markets with poor transport links.

Municipal fishery in Davao Gulf

1) Conflicts with commercial fishery

   Conflicts between commercial and municipal fisheries are observed within municipal waters. Better-equipped fishing rigs using powerful lights to enter municipal water were observed in some fishing grounds in Davao Province, Davao Oriental and Davao del Sur.

2) Water pollution

   According to water sampling data from the rapid resource appraisal of Davao Gulf, most rivers entering the Gulf have high silt contents and sediments accumulate at their mouths. Also, pesticide-contaminated run-offs from banana plantations and other agricultural farms and effluents from factories as well as domestic sewage find their ways into the Gulf.

3) Illegal fishing

   Illegal fishing such as dynamite fishing, cyanide poisoning, and skin dive fishing using compressors are still reported in the DIDP Area. These activities have degraded fisheries natural resources such as coral reefs and seagrasses. Although "Bantay Dagat", formulated by local governments, watches illegal fishing activities, the officials conduct patrol works voluntarily and authorized manpower is insufficient.

4) Lack of basic infrastructure

   Despite the newly established Davao Fish Port Complex, basic fisheries infrastructure even in the Davao Gulf area is largely inadequate with limited fish landing places poorly equipped. Transportation means are very limited in the DIDP Area due to the poor road network. Most of fish catches are transported by small trucks of less than 5 tons.

5) Weak resource management

There are few viable fisheries cooperatives in the DIDP Area. Most fisheries cooperatives are inactive due to lack of capital to sustain their operation. The Davao Gulf Management Board (DGMB) organized in 1995 is still weak, and only a few programs have been implemented by the Board.

Aquaculture

Aquaculture in the DIDP Area suffers from lack of overall supports in fry production and distribution, extension, and marketing. There are only a fewer than 20 cold storage facilities and four processing plants in the DIDP Area for aquaculture products. These conditions make aquaculture operation, whether it be for shrimp or milkfish, unprofitable.

(2) Fishery development objectives

Objectives for DIDP fishery development are to support the economic, social and environmental objectives of the DIDP Area development. First, commercial fishery should be further developed, capitalizing on pelagic fish resource potentials especially in the southern offshore of Davao del Sur and Davao Oriental, and effectively utilizing the Davao Fish Port Complex (DFPC) for marketing. Second, municipal fishery should be developed into viable economic activities through organizing small fisheries and providing support services to cooperatives. Third, aquaculture should be selectively strengthened based on the establishment of economic and financial viability for various schemes as well as environmental soundness to diversity income opportunities for coastal people.

(3) Fishery development strategy

Specific strategies for DIDP fisheries development are introduced to attain the DIDP fishery development objectives. Phase 1 for the International Integration pays particular attention to making small fisherfolks more viable and strengthening community-based management of fisheries and coastal resources. The following strategies are taken:

1) Organizing small fisherfolks into cooperatives and allowing them to enter into larger scale operation within expanded municipal waters,
2) Using newly established or revitalized fisheries cooperatives as recipients of technical extension and viable economic entities for marketing and processing,
3) Improving existing fisheries infrastructure selectively to support the municipal fishery,
4) Strengthening the DGMB for fisheries and coastal resources management with the support of LGUs, local communities and NGOs/POs, and
5) R & D for improving traditional fishing gears and methods and various aquaculture practices.

Once the municipal fisheries are revitalized, they may be commercialized; some of them may produce for export under the Globalization Drive in Phase 2. More viable aquaculture practices to be established through Phase 1 may also produce for export as well as mariculture of seaweed. Prerequisites for all these activities are

the establishment of resources base especially of Davao Gulf and the provision of infrastructure and R & D supports.

Therefore, the following strategies are introduced for the Globalization Drive in Phase 2:

1) Inter-linking the improved fisheries infrastructure with the DFPC to promote commercialization of municipal fishery,
2) Conducting a Davao Gulf fishery resources inventory, taking at least a few years to determine specific conditions with respect to distribution of fish species, coral reefs, seagrasses, and seabed conditions,
3) Upgrading existing mariculture of seaweed for quality control, products development and market diversification,
4) Establishing support centers for more viable aquaculture practices with fry production and distribution, extension and applied research, and
5) Strengthening the State College for Science and Technology for applied research as well as for training and education in the fields of marine biology, marine and coastal environmental management, fish preservation and processing, and aquaculture and mariculture technologies.

Through these fisheries practices, a solid base will be developed for some innovative/advanced practices in Phase 3 to contribute to the High Tech – High Services development under the following:

1) Establishing innovative mariculture practices through experimenting in the Davao Gulf areas close to the open sea, and
2) Upgrading the State College for Science and Technology for advanced research on marine and coastal ecosystems strengthening links with other related institutes in the DIDP Area, Mindanao, and the BIMP-EAGA.

5.1.3. Mining

(1) Constraints

The mining sector in the DIDP Area has been facing constraints as described below.

1) **Severe competition**: A large mine in Compostela Valley was closed due mainly to a fall in the price of copper. Metallic ores and metals are mostly international commodities, and their prices are very sensitive to the world market. Copper prices went down particularly between 1992 and 1993, while production of copper concentrates has increased in the world led mainly by Indonesia, Chile, and China.
2) **Mining permits conflicts**: Small-scale mining has been under the control of respective provincial governments as part of devolution. Some mining areas are under a lawsuit for effectiveness of conflicting permits issued by the national government before the devolution and by the local government

3) **Idle production facilities/low operation rate**: This is partly connected with the mining permit conflicts mentioned above as well as environmental problems. According to the Industrial Questionnaire Survey (IQS) with 18 gold processor respondents, nine processors answered that their most critical problem was idle production facilities and/or low rate of operation. In line with the mining permit conflict resolution, "moratorium of all mining related activities will be effective until such time when all legal, safety and environmental requirements are complied with."

4) **Environment problems including work safety**: It is reported that mercury and cyanide laden wastes from small scale mines have been discharged into rivers in Davao del Norte and Compostela Valley. In addition, work safety in small-scale mining is a problem as well as destruction of natural environment caused by illegal or improper mining and exploration practices.

   According to the IQS, 14 out of 18 gold processors dump their industrial wastes and 12 processors have their own dumping sites. Monitoring of emission gases and wastewater is conducted by 14 processors, and 12 processors have "Pollution Control Officers."

5) **Lack of wide public acceptance**: Small-scale gold processors including those properly operating their plants face complaints from residents around their plant locations. This leads sometimes to difficulty in acquiring waste disposal sites.

6) **Other critical problems**: Other critical problems to gold processing are summarized below according to the Industrial Questionnaire Survey (IQS) with 18 gold processor respondents.

   - High cost of electricity: This is pointed out by some 13 processors. Gold processing using ballmill is electricity-intensive, and therefore the processors expect lower cost electricity, though the cost is around ₱2:65 per kWh (Davao del Norte Electric Cooperative).
   - Depreciation of Peso: This was pointed out as a problem by 13 processors. The Philippine Peso has been depreciated due to the Asian economic crisis from ₱25 per US$ to ₱40 per US$, i.e., around 38% depreciation. This would cause not only price hike in imported raw materials such as cyanide, mercury, and others, but also weakening of purchasing power of buyers.
   - Unstable supply or lack of local raw materials: This was pointed out by 10 processors, and closely connected with the moratorium of all mining activities in the short term. It reflects also the nature of mining that raw ore sourcing depends on unstable chance to find out ores with good quality.
   - Limited access to low interest loans: Some 10-15 processors pointed out this as a problem. Many loan facilities are available, but interest rates are usually higher than 15% per year. This is a costraint not only for gold processors but for other industrialists.

(2) Mining development objectives

The mining and quarrying in the DIDP Area should support the economic, social and environmental objectives of the DIDP Area development.The mining and quarrying should contribute to generation of employment and income opportunities

for mineral developers, and processors as well as mine workers, creation of lively rural socioeconomies suppotive of local communities, and protection of natural environment.

(3) Mining development strategy

Development strategy for the mining and quarrying the DIDP Area is established to attain the subsector objectives spelled out above in line with the DIDP strategy composed of Internal Integration, Globalization Drive, and High Tech - High Services.

In Phase 1 for the Internal Integration, the mining development in the DIDP Area may be pursued along two lines: (1) organizational/institutional development, and (2) inter-industry linkages development. These are pursued under the following strategies.

1) Organizational/institutional development

To make the DIDP mining and quarrying more environment-friendly and socially acceptable, as well as economically viable, management of mineral development needs to be improved. This is pursued through open information system, community involvement, and strict enforcement of relevant laws and regulations against illegal activities and mining-related pollution.

2) Inter-industry linkages development

This strategy is to promote local processing of minerals including gold, silver, marble and limestone, and also to develop forward linkages with jewelry making and trading to increase and localize value-added.

As mining activities in the DIDP Area are streamlined through the Internal Integration in Phase 1, more successful mineral developers and processors are expected to develop in two ways. First, they should develop into export business. Second, they should develop as socially more responsible entities by bearing more responsibilities for social effects of their activities. These developments should be supported in Phase 2 for the Globalization Drive as follows.

1) Establishment of export channels

Some merchandizing/marketing functions should be developed to make the mining and quarrying sector a leading sector in the BIMP-EAGA cooperation. This strategy should focus particularly on construction materials and gold/silver.

2) Responsibility enhancement of mineral developers

The Globalization Drive necessitates the application of global standards in all aspects of mineral development. Mineral developers should take responsibilities for their effects on natural environment and local communities.

Once these conditions are satisfied, the mining and quarrying in the DIDP Area will be qualified to contribute to the High Tech – High Services development in Phase 3. It is to be supported by the following strategies.

1) R & D supports

To date, there is no substantial public supports for R & D on gold processing available in the DIDP Area. To attain higher competitiveness, R & D at

universities and research institutes in the DIDP Area should be geared to mineral processing technologies.

2) Integration with tourism

Mining development in the DIDP Area should contribute also to preserving and enhancing rural amenities through mining community development and landscaping in and around mining sites. Integration with tourism is a proven strategy elsewhere such as Aspen in USA and Ashio in Japan.

5.1.4. Manufacturing

(1) Constraints

Constrains to industrial development of the DIDP Area could be summarized as follows, based on existing studies/plans, and results of the provincial/City workshops.

Internal constraints of existing manufacturers

1) Idle production facilities or low rate of operation due to unstable supply of local raw materials, limited market and seasonal operation;
2) Obsolete production facilities due to lack of capital and limited market, accountable also for low level of technology;
3) Small site area or lack of land for expansion, especially for factories located in urban areas of Davao City; and
4) High wages of workers, reflecting the demand-supply situation.

Infrastructure-related constraints

1) High electricity cost and poor electricity quality particularly in Compostela Valley and Davao Oriental;
2) Poor telecommunications especially in Compostela Valley and Davao Oriental; and
3) Inadequate transport conditions, including traffic congestions in Davao City, lack of sea lanes, and deficiencies in road network.

External constraints to existing manufacturing

1) Insufficient and unstable supply of local raw materials;
2) Limited market demand;
3) Lower/weaker pesos affecting manufacturers depending on imported raw materials;
4) High interest rates of commercial loans; and
5) Lack of access to appropriate information on market, advanced technology and business opportunities.

Environmental constraints

Existing environmental problems caused by manufacturing activities are not serious yet. As the DIDP manufacturing develops further, however, more careful countermeasures may become necessary, including recycling as well as monitoring.

Regional aspect of critical constraints

There are critical constraints to the industrial development of the DIDP Area as follows:

1) The DIDP Area not yet fully integrated into the globalizing economy, meaning the DIDP Area is still at initial stage of industrialization;

2) Only a few enterprises and manufacturing sub-sectors leading a growth of the DIDP Area economy or lack of "critical mass" of industries and "growth industries";

3) A large difference in the development level of infrastructure and the agglomeration of industries and services between Davao City and other areas; and

4) Small foreign direct investments (FDIs) due to the conditions listed above and also insufficient marketing.

(2) Objectives for DIDP manufacturing and basic strategy

Objectives

The Manufacturing subsector is expected to serve as a main driving force for the DIDP Area development. It should offer major marketing outlets for a variety of agri-products for processing, and generate a wide range of service activities, thereby contributing directly and indirectly to high economic shown and generation of a large number of employment opportunities.

Basic strategy

To attain these objectives effectively, the manufacturing subsector itself would have to be strengthened and diversified to realize robust structure of the DIDP economy. The basic strategy for the DIDP manufactuing encompasses the following elements.

1) Generation of new export industries or export winners not only in the local resource-based sub-sectors, but also in non resource-based sub-sectors such as footloose industries with high growth potentials, taking into account the DIDP Area's resource availability and capitalizing on emerging opportunities under the BIMP-EAGA cooperation;

2) Development of knowledge industries and hi-tech industries, mobilizing the DIDP Area's potential of well educated manpower;

3) Generation of an integrated resource recycling industry, addressing the problems of industrial wastes and localizing "would be" value-added;

4) Diversification by industrial clustering in specific sub-sectors like GTH or craft villages, and by introducing flagship enterprises to induce agglomeration of satellite industries;

5) Promotion of cooperatives toward industrial clustering;

6) Fostering of the first generation of industrialists with a strong entrepreneurship capable of leading other enterprises into manufacturing business;

7) Restructuring of the existing manufacturing sub-sector in response to the globalizing economy;

8) Institutionalizing more competitive investment incentives to attract foreign investors, especially into RAICs and PAICs;

9) Extension of a strategic marketing through the segmentation of specific markets in the Asian-Pacific region including the BIMP-EAGA sub-region, while mobilizing Inter Net; and

10) Strengthening and prioritizing manpower development, and public R&D supports for specific targeted growth sub-sectors.

(3) Specific strategies for phased manufacturing development.

Specific strategies for the DIDP manufacturing development are established by combining, in time and in space, the Internal Integration, the Globalization Drive, and the High Tech – High Services strategies in line with the DIDP strategy. The Internal Integration applies throughout the DIDP Area in Phase 1, as it is a sort of survival strategy for the DIDP economy within the globalizing free trade regime represented by the AFTA/WTO agreements. This is to be pursued along two lines: (1) productivity enhancement and market development, and (2) formation of industrial complex. Important components of these strategies are described.

1) Productivity enhancement and market development

- Enhancement of the total quality management (TQM) to meet the global standards, especially for exporting agri-processing products; to this end, an inspection system and products development are expected to be institutionalized in public R&D institutes, and manpower training should be strengthened.
- Strengthening of market information system through further database development at the computerized Regional Trade Information Service Center of DTI XI in Davao City, initiation of "By Davao and Buy Davao" movement by involving mass markets such as supermarkets, schools, firms and government offices, and creation of "regional trading corporation" as a match maker.

2) Formation of industrial complex

- Development of agri-industrial villages including cultural villages of indigenous peoples linking with tourism development, if viable; some of these projects may be a component of PAICs development; prospective products are abaca processing, integrated coconut processing, furniture, GTH including crafts, and jewelry processing, of which production could be efficient through the division of labor among enterprises.
- Development of various types of industrial estates including a resource-recycling estate (RRE) and a new industrial town; RRE aims to integrate industries that utilize wastes and by-products of other industries for complete cycle processing.

All the PAICs and other IEs should establish viable sets of industries through the Internal Integration in the form of industrial cluster or complex. Some of them are expected to pursue outward-oriented development, which will become common in Phase 2 for the Globalization Drive. The following strategies will support them.

1) Development of consolidated export base

- Establishment of a Construction Materials Merchandising Center as already proposed in the mining and quarrying sector.
- Development of additional EPZ/SEZs in Davao del Sur and Panabo in line with the PAIC initiative.
- Development of products with Davao specialty to exploit new export markets, capitalizing on local resources including mixed culture.

2) Expansion of BIMP-EAGA linkages

- Creation of a BIMP-EAGA free trade zone with the following components:

- Institutionalization of duty-free trade of all goods,
- Market place/merchandising center to wholesale the BIMP-EAGA local made products,
- Logistics center with processing function,
- Convention/exposition center,
- Shopping arcade and entertainment facilities,
- Hotels and guest houses, and
- Management body of FTZ.

Since the manufacturing sector is expected to lead the high growth of the DIDP economy, further steps should be taken through Phase 3 for the High Tech – High Services development. The following strategies are set for this.

1) Strengthening of triad linkages for joint R & D

The strategy aims at integrating activities such as basic research, applied research, product development including prototype fabrication, production technology development, design development toward commercial production through organizing universities, public R & D institutes, and enterprises.

To this end, the government sector is expected to coordinate such linkages, and R & D functions of the partners in the DIDP Area should be strategically strengthened. In this respect, the DIDP universities are expected to put more emphasis on R & D activities. Some R & D pilot projects would be implemented by the triad linkages centering on biotechnology closely related to agri-industry, and information technology (IT) including multi-media in response to rapid informatization within the globalizing economy and the BIMP-EAGA cooperation.

2) Development of high tech frontier zone

This is a combined development to spatially integrate R&D related functions along with high tech industrial location at a compound area so as to maximize efficiency of high tech development. Some universities are expected to be the core for relevant agglomeration, and high tech industries would be located by foreign investors, which could be instrumental for high tech transfer. Also, a sub-regional joint R & D center, e.g. "Tropical Biotechnology Center," "BIMP-

EAGA Informatics (IT) Center" or "BIMP-EAGA Life Science Center" is conceived along with the progress of the BIMP-EAGA cooperation. The triad linkages for high tech development would be institutionalized including an incubation system.

(4) Common strategies

In addition to the strategies mentioned above, the following should be effected throughout the development phases to substantiate the DIDP strategy.

1) Integrated enterprise development to foster the commercial businessmen from the livelihood businessmen, capable SMEs, and the first generation of industrialists to become "Flagship Enterprises" leading other enterprises with success stories; this may be effected through combining such policy measures as training, public R&D and marketing support, financing with long term credit including venture capital, and intermediation of joint ventures as well as establishment of forum for various exchanges between enterprises.

2) Productive manpower development and technology transfer to match needs of industries including high tech industry; this may be effected through instructor training, expert exchanges including international ones, extension of technical advisory service, subsidizing on-the-job training, and establishment of "Manpower Bank" with data base and matchmaking functions; also networking training centers, public R&D institutes and universities in the DIDP Area would be effective for efficient functional sharing between and among them, given the limited resources.

3) Efficient R&D promotion toward the free trade regime where subsidy for export promotion will be prohibited but public R&D supports are instrumental for technical improvement and innovation of industries; this may be effected through capability strengthening of public R&D institutes including increase in researchers, support staff and advanced facilities, specializing their activities into targeted/strategic sub-sectors or technologies, integrating into the triad linkages for joint R&D with universities and enterprises.

4) Strong investment promotion to attract investors including foreigners through differentiating incentives depending on the four provinces and Davao City in the DIDP Area; special incentives would be offered to strategic sub-sectors like high tech industry and "Flagship Enterprises" by mobilizing LGUs' allowable budget including taxes on fixed assets as well as the mobilization of the strategies for the globalization drive such as the "BIMP-EAGA Free Trade Zone"; in addition, a database of potential investors should be established, and commonly utilized by investment promotion agencies in the DIDP Area, where DTI Region XI is expected to be an active coordinator and intermediator for the investment promotion.

5) Maximum utilization of existing organizations and facilities for R&D including design development, marketing, training, and others related to industrial development; in this context, such organizations should be effectively and flexibly responsive to changes in socioeconomic environment, and therefore their restructuring and integration among them might be essential for their needs-oriented operation and management.

5.1.5. Tourism

(1) Constraints and prospects

Constraints

The DIDP Area abounds in tourism resources such as tropical rain forests, mangrove forests, mountains in the wilderness and colorful indigenous cultures. These resources justify the stipulation in the DOT's national tourism master plan: Mindanao as "an exotic wilderness and cultural destination". These and other resources are not properly used at present, resulting in the following unfortunate conditions:

1) over-dependence on local market,
2) lack of tourism circuits,
3) concentration of visitors in Davao City,
4) poor market awareness of the DIDP Area as a resort destination,
5) insufficient integration of tourism establishments,
6) segmented beaches, and
7) inadequate interpretation of indigenous cultures.

The improper utilization of various tourism resources is a result of insufficient human and financial resources and capacities. Even up-market tourism establishments in Davao City that are considered as international class facilities have problems in services and maintenance due to insufficient attention and investments by the management. Another aspect is that local communities' participation in tourism is limited mostly to menial jobs for tourism establishments. Lack of sufficient resources and awareness results also in improper garbage disposal that hampers tourism images and in inadequate maintenance of accessible nature areas.

Prospects

In addition to various potential tourism resources, the DIDP Area has some favorable conditions for tourism development. The BIMP-EAGA cooperation would offer opportunities for joint tourism promotion, capitalizing on similar tourism resources in different countries, toward the long-haul international market by pooling limited resources. It may also be possible to establish multi-country tourism circuits under a common theme like colorful ethnic cultures, attractive diving spots and tropical rain forests.

Indigenous cultures are envisaged as one of the most important tourism resources in the DIDP Area, and tourism, if guided properly, could promote conservation and enrichment of the cultural heritage. Davao City itself represents another advantage of the DIDP Area for tourism. As the largest urban center in the BIMP-EAGA, Davao City could create an attractive urban area that would be a symbol for residents and a "must-see" for visitors. The PAIC initiative could also be used effectively to promote local resource-based tourism.

(2) Objectives of DIDP tourism development and basic strategy

Tourism development in the DIDP Area should contribute to the attainment of the economic, social and environmental objectives for the DIDP Area development. In the economic aspect, the DIDP tourism should generate high-earning

employment opportunities serving international tourism directly or indirectly, capitalizing on rich and diverse resources mentioned above. In the social aspect, the DIDP tourism should serve as an integrating factor of indigenous cultures and socioeconomies into the mainstream of the DIDP Area development. In the environmental aspect, the DIDP tourism is expected to provide economic incentives for the protection and enhancement of natural environment. To attain these objectives effectively, the basic strategy for DIDP tourism development is established with several elements reflecting the constraints and prospects as perceived above. Some strategic elements have been taken from the outcome of the City/provincial workshops conducted in February 1998.

1) Diversification of tourism products and establishment of tourism circuits

Tourism circuits should be established in steps by combining various tourism products. Improvement of road conditions and assurance of security are prerequisites. The circuits can be expanded to link with tourism resources in other areas of Mindanao. The lake Sebu area in South Cotabato, which is the home to T'boli people renowned for their culture and handicraft, would be an important partner of beach tourism in Samal Island. In the medium to long-term, multi-country tourism circuits will be established such as cruizing in the Celebes Sea..

2) Local participation in tourism

Local communities should become active players of tourism development rather than a source of labor force. Public sector's supports would facilitate local people to participate in tourism such as training of tourism skills for operating tourist lodges. Promotion of tourist attractions based on local industries and agriculture such as agro-tourism, agro-ecotourism and factory tours would also be conducive to community-based tourism development.

3) Preservation of indigenous cultures and integration into tourism

Indigenous cultures should be regarded as a source of distinct identity for the DIDP Area. The tourism sector should pay more attention to maintaining the authenticity of this type of tourism resources. This would be achieved by enhancing indigenous communities' initiative in tourism use of their cultures.

4) Development of Davao City as a major tourism gateway

Davao City is advertised as a new MICE (meeting, incentive, convention, and event) destination. This needs to be more substantiated by upgrading tourism facilities and services. With the creation of attractive urban areas with amenity facilities, Davao City should be made into a must-see tourism destination as well as a major tourism gateway in the Southern Philippines.

5) Creation of man-made attractions based on local resources and cultures

Although the DIDP Area should be specialized in resource-based tourism, additional man-made attractions should be created to diversify tourism products. Those to be established relatively easily may include tourism orchard, orchid garden, retirement or wellness village, amusement or theme park, and touristic herbal garden and health center. More culture-based facilities would be relevant

in establishing identity for the DIDP tourism such as cultural festivals, cultural monuments/museums, and craft villages.

6) Development and maintenance of access to nature areas

Tropical rain forests are potential tourism resources in the DIDP Area rivaling indigenous cultures. Development of infrastructure for the access to these resources may lead to deforestation and deterioration of the resources. This strategy, therefore, should be taken carefully in combination with the local participation strategy and indigenous communities initiatives.

7) Socio-cultural education

To enhance awareness of local people and various business as well as the tourism industry for the socioeconomic importance of tourism in general and environmentally sound and culturally sensive tourism in particular, tourism and socio-cultural education should be part of general school curriculum.

8) "Coopetition" (cooperation & competition) within the BIMP-EAGA

Tourism destinations in the BIMP-EAGA are competitors, particularly for the short-haul market as they have more or less similar tourism resources. The similarity, however, would provide a rationale for cooperation in tourism promotion. Destinations in the BIMP-EAGA would be able to create a favorable tourism image as a whole, which would facilitate joint tourism campaign for the long-haul international market.

(3) DIDP strategy in tourism

Specific strategies for DIDP tourism development are derived from the basic strategy described above to support the overall DIDP strategy, which combines, in time and space, the Internal Integration, the Globalization Drive and the High Tech – High Services strategies. Phase 1 for the Internal Integration focuses mainly on establishing/improving more promising tourism resources by using domestic tourism as a main vehicle and encouraging people's participation. The following are more specific strategies for the internal integration:

1) Establishing domestic tourism circuits combining a few comparatively more promising tourism objects in the DIDP Area,
2) Encouraging local people's participation in tourism through training and IEC,
3) Promoting tourist attractions based on local industries and agriculture,
4) Preserving indigenous cultures as a means to establish identity for the DIDP tourism,
5) Creating man-made tourist attractions based on local resources and cultures, and
6) Developing and maintaining access to nature areas.

Along with the domestic tourism development in Phase 1, international tourist arrivals will increase steadily. Phase 2 for the Globalization Drive is to meet particularly increasing and varying demands of international tourism through

developing/providing more varied and high grade tourism products. The following are more specific strategies for the Globalization Drive:

1) Establishing international tourism circuits inter-linking DIDP tourism areas with others in neighboring regions and countries,
2) Establishing man-made tourist attractions of international class/quality,
3) Integrating indigenous cultures into international tourism through craft tour, immersion/communication tour etc.,
4) Improving urban amenity of Davao City catering for demands of international tourists, and
5) Promoting "coopetition" with BIMP-EAGA.

As the international tourism develops in the DIDP Area, two considerations will become increasingly more important. One is to see DIDP tourism as an integral part of BIMP-EAGA tourism marketing to the rest of the world. The other is, within this context, to maintain the identity and high image of the DIDP Area as the gateway and the center. The following strategies are valid for DIDP tourism development through Phase 3 for the High Tech – High Services development.

1) Strengthening marketing to sell DIDP or BIMP-EAGA brands for world-class tourist attractions based on local resources and cultures (e.g. "fly and cruise Celebes", ethnic gourmet tour), and
2) Registering the Mt. Apo National Park with its sacred areas for indigenous cultures and habitat of Philippine eagles as a World Heritage.

5.2. Strategy for Social Development

5.2.1. Social Welfare

(1) Constraints

Constraints facing the social welfare sub-sector in the DIDP Area were identified through a series of consultation meetings with different offices involved in the sub-sector, including the DSWD Regional Office, the Provincial Social Welfare and Development Offices, and the City/Municipal Social Welfare and Development Offices. More specific problems faced by some indigenous cultural communities and other minorities were identified through discussions with tribal chieftains, key informants and barangay officials. The Rapid Social Survey conducted by the NGO consortium identified problems and constraints faced by selected upland, lowland and coastal barangays. These results are summarized.

Common constraints

1) LGUs have limited resources, and only a meager budget can be allocated to social welfare related offices to allow only limited activities. This takes the largest toll of most upland and other far-flung communities. Typical problems are the following.
   (a) Basic infrastructures such as power, water, bridges, day care centers and all-weather roads going to barangays/sitios are generally inadequate, if not absent, constraining social workers' mobility, marketing of produces, and even children attending schools.

(b) Social mobilization/preparation, community participation, IEC campaign, and training activities are insufficient; and

(c) Increasing social problems due to population increase and urbanization cannot be handled properly as the limited budget constrains hiring of additional professional workers, and purchase of office equipment and facilities.

2) Muslim and other cultural communities are not given adequate recognition in terms of the following:

(a) Ancestral domain issues are not sufficiently addressed;

(b) Their arts and culture are not being looked into;

(c) Communication, coordination, and partnership/participation are not given enough attention;

(d) Development projects and other lowland activities tend to ease out the IPs from their lands and culture;

(e)Some leaders tend to commercialize cultural practices, etc.; and,

(f) Illiteracy rates among cultural communities are still high, and problems in education and extension continue.

1) Squattering is also becoming a problem but is not given appropriate attention. Resettlement/housing/shelter improvements are very much needed.

Common problems faced by upland/Muslim/cultural communities

The following problems were noted through focused group discussions in communities with dominant Muslim or other cultural peoples.

(a) Education

1) Insufficiant teachers with the average pupils-to-teacher ratio of 1:60.

2) Low educational attainment with only 50% up to Grade III.

3) Multi-grade system held by 95% of the teachers.

4) Dilapidated school buildings, lack of classrooms and desks, old/worn-out books and instructional materials at 75% of schools.

5) No roads but only trails for pupils from far-flung sitios.

6) Communication problems for 95% of the teachers holding classes from Grade I to II with only 10% of the teachers belonging to indigenous cultural communities.

7) Hardships faced by teachers who walk 2 to 4 hours one-way every week, or hire motorcycle at an average rate of ₱300.00.

8) Highschool location far from homes preventing 70% of the elementary graduates from attending.

9) Mild to severe malnutrition suffered by 60% of school children.

10)Illiteracy of 65% on the average.

(b)Health

1) Only about ₱10,000 per year allocated for the purchase of medicines per barangay with 2,000++ population, or less than ₱5.00 per person per year.
2) Common illnesses prevailing such as goiter, malaria, TB, fever, colds, cholera, ulcer, dengue, skin diseases and schistosomiasis.
3) Limited number of midwives poorly renumerated.
4) Lack of health clinic/centers for 70% of barangays.
5) No training on herbal medicine.

(c)Day care

1) Lack of day care center for 50% of barangays.
2) No provision for materials.
3) Low survival rate averaging 60%.

(d)Mothers

1) No alternative source of livelihood.
2) Illiteracy.
3) No non-formal education/literacy classes conducted for mothers in far flung sitios.

(e)Youth

1) OSYs reaching 80%.
2) No training programs.
3) Lack of sports facilities to keep them away from vices for 80% of barangays.

(f) Farmers

1) Inability to procure inputs for corn (20%of farmers).
2) Low yield of corn production (about 25 cavans per ha).
3) High transport cost at ₱0.75 to ₱1.00 per km.
4) No seminars or information dissemination on farm technologies.
5) Poor service coverage by a Municipal Agriculture Officer.
6) Lack of post-harvest facilities (80% of farmers).
7) Lack of farm-to-market roads ensured only for 29% of farmers.
8) Only 27% benefited from a church-based organization.
9) Poor farmer organizing with little support or none at all.
10)Lack of working animals for 80% of farmers.
11)Poverty incidence at 60%.

(g)Infrastructure

1) National road to Jose Abad Santos requiring maintenance and improvement (no bridges on six rivers).
2) Poor access only by trail for 33% of sitios.
3) Poorly maintained roads, impassable after heavy rains.

4) Power services enjoyed only by 30% from electric cooperatives, 27% by their own generators and 29% without electricity.

5) Lack of water system for 11%.

6) Inadequate water resources development and management causing denuded forests and alarming state of soil erosion for 50% of barangays.

Constraints identified also through the focused group discussions in lowland, upland and coastal communities are summarized in Table 5.3.

(2) DIDP social welfare objectives

Objectives for the DIDP social welfare development are defined to support the DIDP Area development objecties. In view of the constraints identified above, specific objectives are expressed as follows:

1) to enable the marginalized people to capture livelihood opportunities,

2) to provide basic socioeconomic infrastructure supports to all communities, and

3) to ensure basic social welfare services as part of minimum basic needs.

(3) DIDP strategy in social welfare

All the constraints identified above may be categorized into four classes: (1) basic infrastructure such as water, energy, roads/bridges, and resettlement/shelter, (2) social services encompassing early childhood development, disaster preparedness, IEC, institution/capability building for the disadvantaged and those in difficult situations, (3) livelihood involving women, out-of-school youth and elderly, and (4) environmental management to safeguard remaining forest cover, enhance watershed and improve waste management. Social welfare services in Phase 1 shall address to these aspects to provide a social safety net for the socially deprived under the Internal Integration strategy as a sort of survival strategy.

The DIDP strategy shall go beyond such a survival strategy. Through improved social welfare services in Phase 1, an increasing number of the socially deprived will establish their livelihood supported by improved provision of basic infrastructure, better delivery of social services, and community-based resources management. This will expand both the resource base and viable economic agents for the Globalization Drive in Phase 2. The social welfare strategy in this phase should also aim at realizing lively rural socioeconomies which represent rural amenities together with cultural diversity and rich natural environment.

To contribute to the High Tech – High Services development in Phase 3, social welfare services should take more proactive rather than reactive strategy. Instead of re-establishing the livelihood of those once socially deprived, the strategy aims at self-reliant human development oriented to emerging opportunities in the changing society. Early childhood development would be an important component of the strategy.

Table 5.3 Constraints Faced by Lowland/Upland/Coastal Communities Identified through Focused Group Discussions

	Upland Communities	Lowland Communities	Coastal Communities
Davao Province	1) Low productivity due to lack of skills in water management, farming technology, capital for production, and high prices of farm inputs. 2) Lack of employment opportunities for women. 3) Poor health and nutrition (malnutrition, skin diseases and allergies, and insufficient supply of potable water). 4) Low income and poverty due to small volume of produce, low buying prices, high cost of transportation, and lack of alternative sources of income.	1) Lack of irrigation water. 2) Low productivity. 3) Floods. 4) Absence of potable water. 5) Lack of technological knowhow.	1) Decreasing volume of fish catch by municipal fisherfolks caused by illegal fishing, intrusion of commercial fishing, biased implementation of fishery laws, shortage of law enforcers, etc. 2) Lack of security of land tenure for homelots. 3) Problems on health and environment sanitation. 4) Unemployment, lack of employment, security and low salaries. 5) Drug addiction. 6) Lack of education facilities. 7) Insufficient potable water.
Davao City	1) Low income resulting from lack of farm-to-market roads, reliance on traders-financiers, lack of technical skills, and lack of other sources of income. 2) Problem on land tenure. 3) Distance of highschools and colleges, and low income hindering children to acquire higher education. 4) Poor health resulting from malnutrition, diseases and lack of medical facilities. 5) Lack of potable water supply.	1) Unemployment and salary downgrading caused by retrenchments, lack of job opportunities, lack of skills and training, and contracting services. 2) Insecurity of land-homelots tenure. 3) Sanitation problem. 4) Drug abuse. 5) Low income.	
Davao del Sur	1) High cost of production. 2) Low family income. 3) Lack of potable water. 4) Continuous soil erosion and depletion.	1) Insufficient family income. 2) Low productivity. 3) Lack of potable water. 4) Deteriorating soil fertility.	
Davao Oriental	1) Low productivity. 2) Regularity of flood occurrences resulting from illegal logging. 3) Poor health conditions. 4) Lack of potable water. 5) Lack of farm-to-market roads.	1) Lack of employment opportunities. 2) Flashfloods. 3) Lack of medical services. 4) Lack of roads/potable water.	

Source: JICA Study Team

(4) Social welfare strategies

1) Support to places difficult to reach

People in hard-to-reach areas are not motivated to produce more or diversify their production because it will be very hard for them to bring their produce to the nearest market. Government services, on the other hand find it physically difficult to serve them because of the local conditions. The thrusts, therefore, must be in setting up of social infrastructure that will motivate the people to participate actively in community and economic development.

2) Support to early childhood development

Children 3 – 5 years old become active and better prepared when they enter formal school if they are given an early training. This is also in response to the number one unmet MBN (Table 2.5).

3) Assistance to other services

A comprehensive and integrated social sector program similar to the Comprehensive and Integrated Delivery of Social Services (CIDSS) Program needs to be formulated, but programs and services to be extended must be area-specific. Also to be included are assistance to people in difficult circumstances, human resources development, community disaster preparedness, livelihood, environmental projects, housing and/or resettlement, etc.

5.2.2. Education

(1) Constraints

Through the analysis on existing conditions of the education sector, problems and constraints facing the sector in the DIDP Area have been identified. They are presented below for basic education, higher education, and non-formal education to give an overall picture of the sector in the DIDP Area.

Basic education

The basic education in the DIDP Area faces the same problems and constraints besetting the entire sub-sector in the Country, but more prominent in the Area are related to the quality of, and access to the basic education. Presence of indigenous cultural communities and Muslim minorities in the DIDP Area makes these problems more serious concerns. Different aspects of these concerns are described.

1) Poverty

The high incidence of poverty in the DIDP Area prevents children from attending or continuing school. While tuition at public schools is free, additional costs incidental to schooling greatly reduce the participation of children from poor families. This tendency may be seen in low survival rates and low retention rates in public elementary schools particularly in Davao Oriental having the highest poverty incidence (62.1% in 1994) as shown in Table 5.4.

Table 5.4 Performance Indicators of Public Elementary Schools, SY 1997-98

	Davao Province	Davao City	Davao del Sur	Davao Oriental	Region XI	Philippines*
Growth rate of enrollment (%)	4.0	4.1	4.1	3.0	4.2	5.9
Participation ratio (%)	97.2	89.2	99.3	103.9	96.0	94.3
Survival rate	65.9	83.6	58.4	56.0	66.5	72.1
Retention rate	90.4	95.2	88.4	87.3	91.0	91.5

Note: * 1996-97
Source: DECS Annual Report

2) Imbalance between urban and rural areas

The spatial distribution of elementary and secondary schools is biased against rural areas, despite the dominance of public schools in basic education. Private schools of basic education, totaling 235, account only for 12% of the total number of schools in this category. In Davao City, both public and private schools are concentrated in Poblacion. Davao City has 76 out of 137 private elementary schools, and 40 out of 104 private secondary schools in the DIDP Area (Table 5.5).

There are also wide variations in the distribution of teachers among schools in urban and rural areas. Although the teacher-student ratio at elementary schools was within the national standard of 1 : 40, except 1 : 42 in Davao Province in 1992, the ratio could be as large as 1 : 60-70 in some schools in rural areas.

Table 5.5 Elementary and Secondary Schools in the DIDP Area, SY 1996-97

	Davao Province	Davao City	Davao del Sur	Davao Oriental	DIDP Area	Philippines
No. of elementary schools						
Public	558	287	373	300	1,518	2,069
Private	37	76	8	10	131	241
No. of secondary schools						
Public	62	40	30	30	162	213
Private	30	40	23	11	104	153

Source: DECS Annual Report

3) Low education performance

The percentage of secondary school students who passed the NSAT for the school year 1994-95 indicates that the education performance in the DIDP Area is lower than averages in Region XI. This is shown in the percentage of passers at public schools as shown in Table 5.6.

Table 5.6 Percentage of Passers at Public Schools in the 1994-95 NSAT

	Subjects			
	Mathematics	Science	English	Filipino
DIDP Area	55.0	58.5	74.5	66.9
Region XI	56.0	68.5	75.0	68.9

Source: NSAT

4) Low quality of teacher training

The teacher factor has been identified as a constraint to quality basic education. Quality of training in science, mathematics and English seems to be the poorest. DECS and other agencies try to fill the gap through in-service training seminars and workshops. It is apparent, however, that these have not been quite productive as seen in the poor academic performance of students.

5) Inadequate facilities

DECS XI reported that in the school year 1997-98, all the provinces and City in the DIDP Area had classroom-student ratios at secondary schools way above the standard of 1 : 50. Davao Province had the highest ratio with 1 : 107, followed by 1 : 99 in Davao City, 1 : 68 in Davao del Sur, and 1 : 57 in Davao Oriental. Only one desk for every three pupils is available at elementary schools, and the armchair-student ratio at secondary schools was 1 : 1.75 in the DIDP Area.

6) Neglect of early childhood or pre-school education

Early childhood or pre-school education appears to be the least concern of basic education in the DIDP Area. There were only 18,465 pupils enrolled in pre-school education in the DIDP Area in the school year 1996-97, including both public and private schools.

7) Social dimensions

Basic education in the DIDP Area, as in the rest of Region XI and Mindanao, hardly meet the education needs of the Muslims and indigenous cultural communities. The reasons are (1) lack of access to schools, (2) an inflexible schedule without consideration for socioeconomic activities in rural areas, and (3) curricula and instruction materials that are not relevant to their cultures. Madrasah schools suffer from insufficient and irrelevant textbooks and instruction materials, lack of qualified teachers and lack of funds. Moreover, lowland teachers sent to IP communities lack familiarity with their culture.

Higher education

The EDCOM report summarized the characteristics of higher education in the Philippines as follows: (1) large enrollment, (2) unbalanced distribution, (3) under-investment and poor quality, (4) lack of fit between programs and graduates on the one hand and the need of society on the other, and (5) limited and underdeveloped graduate education. These characteristics generally apply to the DIDP Area, but more specific constraints to higher education in the Area are presented below.

1) Low quality

Low quality of higher education in the DIDP Area is manifested in the poor performance of graduates, low level of technology generated and poor linkages with non-academic institutions. Laboratory facilities and equipment are inadequate, more so at public institutions. Moreover, faculty qualifications are inadequate. A significant number do not have the appropriate master/doctoral degrees.

2) Lack of adequate linkage between HEIs and the industry sector

There is a mismatch between the products of HEIs and the need of the industry. Educational institutes lack knowledge of how much and what kind of manpower to produce. Enrollment in graduate education in the DIDP Area is small, with a bulk concentrating in education, public administration and business management (Table 5.7). The capability of most HEIs to offer innovative programs is limited by the lack of funding and qualified faculty. Besides being less capital intensive, education, business and liberal arts-oriented programs are more profitable for educational institutes. Thus, HEIs in the DIDP Area fail to respond to the need for higher level professionals who can provide leadership in science, engineering and technology.

Table 5.7 Enrollment of HEIs by Program, SY 1997-98

Degree Program	Public	Private	Total
1 Information Technology	0	4,762	4,762
2 Arts and Sciences	1,181	13,119	14,300
3 Business Education	1,559	41,289	42,848
4 Law	0	622	622
5 Criminology	33	5,447	5,480
6 Religion/Theology	0	336	336
7 Medicine and Halth Related	98	5,788	5,886
8 Teacher Education	1,803	14,107	15,910
9 Maritime Education	0	8,430	8,430
10 Engineering Education	579	11,066	11,645
11 Agriculture Education	1,597	1,142	2,739
12 Graduate Education	1,526	2,745	4,271
Total	**8,376**	**108,853**	**117,229**

Source: CHED Report

At the graduate level, the enrollment in the DIDP Area is concentrated in a few areas. Of all the graduates enrolled in the DIDP Area, 3,573 in private and public schools in the school year 1997-98, 874 were in education/education management, 496 in business education, and 467 in public management.

2) Lack of networking among HEIs

Opportunities for networking and complementation among state universities and colleges (SUCs) have been explored, but better equipped private HEIs do not easily link up with SUCs. Only one private HEI has pioneered on the link with a SUC in the DIDP Area.

3) Inadequate financial resources

Among SUCs, inadequate budgetary resources have been a perennial problem. Despite yearly increments in these resources, budget allocations have not been significant in the face of the depreciating peso. In fact, four SUCs in Region XI have received, consistently for many years now, one of the smallest shares of the total allocation for all SUCs in the whole Country. If this trend remains unchanged, there is a need to find alternative sources of funds in order for the SUCs to adequately respond to demands for their services.

4) Poor access to education opportunities

Of 68 public and private tertiary schools in the DIDP Area, 36 (53%) concentrate in Davao City. The City also hosts the most comprehensive institutions in the Area, including the University of Southern Philippines, the University of Mindanao, and the Ateneo de Davao University as well as the University of the Philippines Mindanao. Of these colleges, 32 are located in Poblacion, and one in Mintal district. In the former Davao Province, most of 16 HEIs are located in Tagum and Panabo. In Davao del Sur, most of 11 HEIs are concentrated in the northern part. In Davao Oriental, all the three HEIs are located in Mati. As a whole, access to higher education is very limited for the rural poor and those living in far-flung barangays. The situation cannot be rectified easily as SUCs, limited by their mandate and the dearth of resources, can accommodate only a limited number of students and offer only a limited number of programs, while private schools account for over 80% of all the HEIs in the DIDP Area.

5) Weak supervision and regulation of private HEIs

The corporate nature of private HEIs is a constraint to relevant and quality education. CHED issued in 1997, 19 temporary permits and 12 recognition papers to private HEIs allowing them to offer new degree programs. Of 41 new permits issued, 18 were for commerce/business management, 12 for engineering and technology, and 11 for teacher education; none in agricultural and other sciences. The Government has difficulty in enforcing quality standards by private HEIs due partly to the inability to provide financial supports.

Non-formal education

In spite of recent efforts of integrating activities of several sectors involved in non-formal education, there still is a fragmentation of organizations and programs of different agencies. Also some programs and activities are undertaken without taking much into account the particular needs and socioeconomic circumstances of the clientele.

1) Inadequate collaboration with NGOs and LGUs

While DECS has gone into service contracting schemes with NGOs and LGUs in the conduct of non-formal education, they list as problems the qualification of proponents to undertake projects and the slow liquidation of cash advances by service contractors. This undermines two other important considerations – commitment and sincerity. There is a need for DECS to intensify the implementation of capacity-building trainings component of the Literacy Services Contracting Scheme.

2) High illiteracy

Although the literacy rate in Region XI was 95.6% in 1995, higher than the national average of 93.8%, illiteracy rates are still relatively high in the DIDP Area. Illiteracy rates of out-of-school youth and adults in Davao del Sur and Davao Oriental are both substantially higher than the respective rates in Region XI as shown in Table 5.8.

Table 5.8 Illiteracy by Population Group, 1996

	Davao Province	Davao City	Davao del Sur	Davao Oriental	DIDP Area	Region XI
No. of illiterate out-of-school youth	13,689	7,941	22,792	9,954	54,376	79,375
Illiteracy rate (%)	1.05	0.77	3.24	2.31		1.69
No. of illiterate adults	26,341	1,342	28,903	14,471	83,183	126,969
Illiteracy rate (%)	2.02	1.31	4.11	3.36		2.70
Total no. of illiterates	40,030	21,364	51,995	24,425	137,814	206,344
Illiteracy rate (%)	3.28	2.05	7.58	5.86	4.10	3.96

Source: DECS XI Annual Report

3) Poor access by the rural poor

The relatively high illiteracy rates especially in Davao del Sur and Davao Oriental are due mainly to the poor access to non-formal education in far-flung areas and indigenous peoples in the highland. Poverty continues to be a single most important factor for the exclusion of young illiterates as they often are indispensable participants in economic activities for survival in rural areas. The peace and order situation remains another obstacle to effective delivery of services to the countryside.

4) Degree bias of recruitment system

The present recruitment does not seem to favor job seekers with knowledge and skills acquired through non-formal education. More often than not, formal certificates are asked or required of job applicants. Even in the workplace, role allocations are based on formally earned certificates.

(2) Objectives for DIDP education

The ultimate goal of education in any region is to produce empowered and dynamic people who would respond to changing needs for the development of region. The DIDP Area will pursue outword-oriented development with various socioeconomic activities, capturing diverse opportunities of emerging societies. The DIDP Area development, therefore, should be supported increasingly by more risk-taking, venture-minded and entrepreneurial people to meet challenges of fast changing societies. As a presequsite, however, access to education at all the different levels should be improved throughout the DIDP Area so that everyone can respond to new socioeconomic opportunities in his/her own way.

Objectives for DIDP education may be expressed as follows:

1) to improve access to quality education at all the levels,

2) to generate increasingly more risk-taking, venture-minded and entreprene urial people to respond to changing needs and diversifying opportunities, and

3) to provide advanced education and research and contribute to generation of new ideas and value.

(3) DIDP strategy in education

Strategies for basic, higher and non-formal education are established to support the DIDP strategy that will shift emphasis from the Internal Integration, through the

Globalization Drive to the High Tech – High Services. Basic education and literacy constitute an important part of the minimum basic needs. The imbalance in availability of basic education in urban and rural areas needs to be rectified, education performance and quality improved, and the illiteracy reduced under the Internal Integration in Phase 1. Also bias toward degrees and certificates rather than practical skills and knowledge should be rectified gradually during Phase 1 through all the levels of education.

Higher education is expected to generate a cadre of professionals with skills and technologies to meet changing and diversifying demands of the industrial sector in line with the Globalization Drive in Phase 2. Given the limited financial resources and the existence of several respectable institutions, networking among HEIs would be a viable strategy. This can be initiated early in line with the Internal Integration, but will become fully operational in Phase 2. Common research facilities may be established respectively at relevant institutions for use by students in the same fields of different colleges.

Some HEIs with common research facilities will be further upgraded to become advanced research institutes to serve other regions and BIMP-EAGA in Phase 3 for the High Tech – High Services development. Early childhood or pre-school education should be emphasized for human resources development oriented to value systems of the new age the emerging societies through Phase 3.

(4) Education sector strategies

More specific strategies for the education sector are established responding to the constraints identified above. They are presented by sub-sector in line with the DIDP strategy clarified above.

Basic education

1) Greater involvement and participation of LGUs and NGOs

Satisfying varied educational needs of the rural and urban poor, indigenous peoples, the Muslim population and other special groups necessitates the involvement of all stakeholders in education. The participation of LGUs and NGOs should be encouraged, particularly in educational planning and policy-making. With its broader powers of self-determination, LGUs should, in the long-term, assume greater responsibility for basic education in partnership with DECS.

In the short-term, however, LGUs, along with NGOs, should support DECS in partnership schemes to promote basic education particularly in under-served rural areas and IP communities. Workable contracting schemes should be adopted and implemented in places where there are no schools and in schools with no teachers.

LGUs should seek out on its own local and foreign grants to fund innovative projects as well as sustain ongoing ones. In coordination with the Government, LGUs should map out a strategy in its annual and long-term plans to build schools and put up equipment where they are most needed.

Partnership schemes between DECS and NGOs for pre-school education should be encouraged. In order to promote this partnership, LGUs should initiate

organizational structures and other institutional arrangements that would encourage community participation, particularly with NGOs.

The functions of the present municipal and provincial school boards may be expanded to respond to a new mandate which includes educational policy making and educational planning. Its composition should, likewise, be increased to ensure community-wide participation and representation of all stakeholders. Community-based NGOs and parents should be represented in the board. A similarly-constituted body should be formed at the barangay level.

2) Improving the supply and quality of teachers and learning materials

While the average teacher-pupil/student ratio indicates no apparent lack of teachers in the DIDP Area, there is an uneven distribution of teachers across schools and districts. DECS should, therefore, rationalize the distribution of teachers with a view to translating, as closely as possible, into reality the teacher-pupil ratio of 1 : 40.

There are, at least, two approaches that DECS should take to increase the supply of teachers: (1) to provide strong incentive schemes to encourage qualified teachers to work in rural areas, especially IP communities, and (2) to pursue its para-teacher program in cooperation with SUC teacher-training schools, but with some modifications, if only to ensure quality and conformity with existing rules and regulations.

DECS should also strive to work closely with teacher-training institutions (TTI) so that only the best students enter the teaching profession. It should adopt an effective system of incentives to channel promising students to the teacher education program.

DECS should find a cost-effective way of increasing the supply and quality of teaching and learning materials. In this regard, DECS may tap LGUs and grant-aid agencies for help.

DECS has institutionalized programs and projects that only need strong political will to realize. It should intensify its efforts to pursue in earnest some of its programs which could bring in more resources for education. Some of these are "Adopt-a-School Program" and "School of the Future".

3) Curriculum and alternative delivery system development for IP and Muslim Communities

A curriculum should be designed that would fit the cultural requirements of IPs. In the same vein, a revised school calendar may be adopted which would somehow accommodate socioeconomic activities of IPs.

Before a special curriculum can be arrived at, however, a thorough study of the culture of IPs should be made to identify what aspects of their culture would make for a relevant curriculum. The organization of IP schools could be piloted in each province/city to a limited group of pupils, the scheme of which shall be patterned with some modifications. NGO participation may be solicited.

DECS should implement *Madrasah* as embodied in the Comprehensive Mindanao Education Plan and the Mindanao 2000 Plan. It should immediately

initiate steps to concretize plans with the support of OMA. Some gains have been made since the issuance of LOI 1221 but many things yet remain to be done, such as the recognition, accreditation and integration of the *Madaris* into the Philippine educational system not only in the DIDP Area but in the entire Mindanao. The sooner these problems are addressed, the better it would be for the attainment of lasting peace in Mindanao.

In the short-term, DECS should initiate moves to develop a curriculum after necessary consultations are made with pertinent entities. Corresponding textbooks and instructional materials could then be prepared.

A trust fund can also be established to ensure private and voluntary support for *Madaris*. An appropriate body to administer the fund should be formed.

4) Improvement of the quality of teacher training

Aside from improving the quality of teacher training institutions, there are at least two ways the quality of teachers can be enhanced. One is to strengthen pre-service education, and the other is to improve and expand in-service training programs for both public and private school teachers.

To ensure quality, teacher education programs should be accredited. Higher admission requirements for pre-service education programs should be adopted to ensure that only people with the right aptitude and motivation are into teaching.

As a response to a growing clientele of teachers, both public and private, another teacher training center, in addition to one already in the DIDP Area, should be set up to strengthen not only the science and mathematics content of teacher education courses but also that of English as well as educational management.

In addition to a periodic assessment of training needs, training materials should likewise be updated with emphasis on contents. The use of research outputs and local resources in training programs should be encouraged. A very important concern is to have competent supervisors who will assist teachers in the teaching-learning process.

Higher education

CHED has prepared a Long-Term Higher Education Development Plan (1996-2005) which outlines policies and strategies that HEIs are expected to adopt during the planning period. Correspondingly, the Mindanao Comprehensive Educational Plan (MCEP) has prepared a plan for the period 1997-2014 with goals and strategies patterned after the CHED's plan but with some initiatives to fit the requirements of Mindanao for development. Specific strategies are drawn from these two plans and consultative meetings with DECS, private schools and SUCs.

1) Promotion of complementation in research and academic programs

Research and academic programes of various HEIs should be made complementary to one another to maximize the use of scarce resources for quality education. Worthwhile undertaking is the establishment of common laboratory facilities in some HEIs in the DIDP Area. As regards access, the spatial distribution of HEIs in the Area is such that the project is feasible. Host HEIs will be identified each according to its academic strength and potential.

Such laboratories may include a basic sciences laboratory, engineering laboratory, agriculture laboratory, biotechnology laboratory, etc. Eventually, such laboratories shall operate as income-generating projects (IGPs) in order to sustain the projects.

Consortia may also be established to improve educational access, especially with reference to city and provincial locations. Such is the engineering consortium of DOSCST and USEP. Collaborative research projects may also be undertaken as a way of maximizing expertise across the DIDP HEIs.

A library network system among all HEIs in the DIDP Area may be established as a form of consortium in order to encourage research, and enrich instruction, especially for graduate education. This complementation scheme would maximize scarce library resources, improve the quality of research and instruction, and provide students and faculty with a rich resource base for learning.

2) Establishment of flagship programs by some qualified HEIs

The choice of programs should be based on manpower demand and the development needs of the DIDP Area. This would make programs responsive and relevant, and develop the facilities of the HEI concerned through CHED assistance for qualified programs. The scheme would provide a partial response to the clamor of private schools for government subsidies to private education.

At present, each public HEI in the Area has a flagship program based on perceived needs such as geology and marine sciences of DOSCST, engineering and IT of USEP, and agribusiness and fishery technology of SPAMAST. Private HEIs with "center of excellence" programs may also adopt them as flagship programs in order to merit CHED/government support.

3) Institutionalization of industry-academe linkages

Closer industry-academe linkages would encourage programs that are not only dynamic but also responsive to the needs of industry and produce employable graduates. The scheme would also operationalize "dual technology". An important component activity would be a study of skills needed by the government, industry and other employer sectors. Manpower supply and demand studies are also in order.

An employment management information system (EMIS) for the DIDP Area should also be established. It can be useful to predict future manpower demand by industry sector and help in job recruitment and placement.

4) Alternative learning and delivery schemes for special groups

SUCs are encouraged to develop alternative learning and delivery schemes for college leavers, disabled, drop-outs, those with limited geographical access to schools, and workers who need to upgrade their qualifications. The adoption of the distance education mode should be taken seriously as an alternative mode to reach out to these groups thus improving access to higher education. A center, which may be called the Continuing Education Center (CEC) may be established as a consortium of some HEIs in the DIDP Area and managed by a duly

designated body. The center will make use of existing facilities of one or two institutions except for the equipment needed to run the program which will be sourced from funding agencies.

5) Organizing a consultative body

A consultative body should be organized as a forum wherein public and private HEIs can share and discuss among themselves matters that concern higher education as it affects them. It can also be a planning body, in a limited sense, as well as assume other roles as may be agreed upon by the members. It can also assume a legal personality to represent the common interests of HEIs, as expected by line agencies and funding institutions.

6) Innovative teacher education/training program for IP students

In view of the flexibility of SUCs, the initiative for this innovation should come from that sector. The existing teacher education curriculum for both elementary and high school teachers may be reviewed and modified in order to give way to some courses whose content mirrors the unique culture of IPs. Pedagogy should be reviewed and modified to fit the ways of the group.

The first two years of the teacher education curriculum may be considered "common" to all students. There will be two streams of students – the regular and the special curriculum for IP student teachers. The program actually is an improvement on the para-teacher program of a few decades ago.

In order to attract students, a special package of incentives should be designed for them, such as scholarships, a reasonable return-service requirement, and an incentive scheme to motivate them to serve their own communities.

7) Establishing a training center for teachers

There is one teacher training center in the DIDP Area – the Regional Science Training Center (RSTC) of DOST based at the Ateneo de Davao University for science and mathematics. Considering the number of teachers in the Area and the limited mandate of RSTC, there is a need for another center to serve other training needs not only of teachers but of school managers as well.

Because knowledge and pedagogy are dynamic, the center should have a research arm as well as a curriculum laboratory. A publication arm is indispensable. Like RSTC, the center should be attached to a university offering teacher education and with a ready Internet system supported by CHED. The latter is necessary because an internet support system for teachers can become an important component of the teacher training center. Wherever they are, teachers can easily access the information they want.

8) Organizing of a graduate consortium among HEIs

Graduate education in the Country, as articulated in the EDCOM report, is underdeveloped. Particularly in the DIDP Area, along with a limited range of graduate programs being offered, the products of social research are often wanting in quality. More often descriptive, they have very little use for policy making and are often done as a form of compliance to the thesis requirement. The consortium would demonstrate that with complementation, HEIs in the

DIDP Area can offer programs as well as produce research which are supportive of the development needs of the Area.

Non-formal education

1) Letting LGUs assume greater responsibility for literacy

Literacy is a basic need and ideally, should be the responsibility of the local level. LGUs should be included in the membership of the local literacy coordinating council. With the direct involvement of LGUs, it is expected that appropriate legislation can be formulated to support and sustain literacy efforts.

Existing partnership/collaboration in literacy program delivery, such as the local Literacy Coordinating Council (LCC), should be strengthened and reinforced by the membership of other participants.

2) Systematic monitoring and evaluation of NFE projects

Most programs/projects eventually fail because this component of the plan is often neglected. An effective monitoring and evaluation scheme would be useful as a guide to future action. It would also give an overall picture of the impact of the NFE interventions on the lives of the clientele. A working group should be assigned by the local coordinating council to conduct this important activity periodically as a basis for the periodic review of NFE activities.

3) Involving SUCs towards an integrated approach to NFE

SUCs all over the Country are expected to actively pursue extension activities and service functions in their service area; in fact, they have an allocation in their annual budget for such activities. They also possess the expertise to do it.

They can be tapped to offer capability-building trainings for NFE teachers, service providers and others involved in the program. They can also design instructional materials fitted to the needs of the clients and participate actively in actual extension activities through their faculty and students. They can also provide research, planning and evaluation services supportive of NFE.

Where there are SUCs in the province/municipality, a representative of any SUC, or the president himself/herself should sit in the local LCC.

4) Wider participation of the target clientele

LCC may tap media, local officials and organizations, and devise other means to generate awareness and interest in the NFE program. A deliberate public information campaign should be systematically planned and implemented by LCC. Unless this is done, it is very likely that those who should really benefit from it are left out.

5) Conducting a systematic training needs assessment (TNA)

To be done on a periodic basis, the TNA will identify the training needs of the would-be clientele. This would therefore guide project inceptors to plan effectively activities that would be responsive to the needs of a specific clientele. This could also be the basis for the formulation of a short- to long-term plan for use in the conduct of trainings.

Efforts should be made to identify the training needs of IPs so that interventions