

dams, storm water drainage in urban areas, water quality control and management, and so on.

- To improve the living environment of urban areas by improving the urban infrastructure such as roads, water supply, drainage, sewerage, solid waste, housing, amenities, and so on so that urban areas can adequately support the economic activities made in and around the areas and attract the inflow of investment.
- To improve the public health and education services particularly in relation with the poverty elimination policy to boost the overall living standards of the people so that they can actively participate in building a sound and equitable social fabric in the entire Central Region.

3.2 SOCIO-ECONOMIC FRAMEWORK

3.2.1 Strategy Objectives

Within the framework of the national strategy as outlined in the Sector Report, the most basic strategy objective at the study area level, that is taking the four study area Provinces as one economic unit for planning and monitoring purposes, should be to increase absolute per capita income at an accelerated and strong pace. Focusing too much on closing income gaps in relation to other economic centers in the country may lead to misallocation of scarce resources. In order to achieve the above, efforts should be undertaken in the following directions :

- The urban and rural economies should be integrated so that the urban consumption centers may function properly as demand markets for rural supply structures resulting from accelerated rural development. This will require the step-by-step though systematic implementation of infrastructure measures (roads, electricity, water supply and sewerage systems) along a north-south and east-west axis. Along the north-south axis removal of the physical bottleneck of the Hai Van Pass is highest priority in order to properly connect the study area with the economic center in the north, thus allowing for easier and more economic movement of people and goods along the north-south axis. Along the east-west axis proper road development will have to connect the low-land urban areas with the rural mountainous areas. The Lao Bao - Dong Ha free trade corridor should be established before the year 2000 in combination with a general commercial port in Chan May
- In that context it is essential to establish an urban agglomeration center by integrating and amalgamating economically Hue with Da Nang City (twin city concept). This should establish a consumption center of some critical mass and achieve at the same time externalities needed for industrial development. The necessary legal and administrative arrangements should be finalized by the year 2000 at the latest
- A highly concentrated additional industrial growth pole shall be established in combination with specialized industrial use deep sea harbour facilities in the Dung Quat industrial estate project (DQIE). This additional industrial growth pole is necessary out of national strategic considerations.

Individual sector strategies and measures to support the above objectives would typically comprise :

- For the GOV to concentrate on putting in place the supporting infrastructure in all necessary areas. Such infrastructure projects should emphasize the use of labour intensive technologies in order to generate employment and create labour income

- As is the case at national level, rural and agricultural development will need strong promotion. This is needed not only to alleviate poverty and create income in rural areas, but also to flank development in the new urban agglomeration center. If demand generated in urban centers is to be met by supply from the urban agricultural and rural hinterlands, then supply structures to meet such demand will have to be put in place in the rural areas
- The tourism and construction sectors should be promoted vigorously, since they are labour intensive and generate benefits (employment and labour income) on a relatively short term basis. The target area has quite substantial resources in the tourism sector, which in addition to employment and income generation is also an important source of foreign exchange generation
- The GOV should, as one of the highest priorities, establish the needed access and surrounding infrastructure to support the DQIE. This would comprise : an appropriate access road connecting the DQIE with highway no.1; water supply outside the DQIE; an electricity line connection from the DQIE site to the 220 V north-south line and initial harbour facilities to support construction of the industrial site.

3.2.2 Operational and Numerical Targets at Study Area Level 1996 to 2010

The major assumptions underlying the identification of numerical targets have been presented and discussed in detail in the Sector Report. The methodology has followed a bottom-up approach, that is all target indicators have been calculated individually for each of the four Provinces. Hence, the numerical targets at the study area as a whole are the amalgamated results of the individual calculations. They are summarized in Table 3.2.1.

1) Real Per Capita Income

Real per capita GRDP in the study area as a whole is expected to almost quadruple over the planning period, that is from some 427,374 VND in 1995 to about 1,642,448 VND in the target year 2010 (Table 3.2.1 refers).

Table 3.2.2 Real Per Capita Income Development 1996 to 2010

Parameter	Past actual 1995	Projected		
		2000	2005	2010
(Unit : 1989 constant VND)				
Per capita income				
National level	589,833	793,733	1,106,670	1,583,542
Target area level	427,375	556,687	945,663	1,642,448
Indexed				
National	100	135	188	268
Target area level	72	70	85	104

Source : JICA study team computations.

Table 3.2.1 Socio-economic Planning Targets at Study Area Level 1996 to 2010

(Unit: As indicated)

Parameter	Unit	1995	1996	2000	2005	2010
Population						
Population Size	People	4,773,328	4,889,953	5,354,897	5,921,770	6,478,745
Population Growth Rate*1	%	2.39	2.44	2.33	2.03	1.81
Share of Urban Population	%	22.6	22.5	24.0	27.6	33.1
Urban Population Growth Rate*2	%	2.34	2.19	4.22	5.50	6.23
Share of Rural Population	%	77.4	77.5	76.0	72.4	66.9
Gross Domestic Product						
Structure						
Agriculture	Billion VND	544	555	601	687	796
	%	26.67	25.38	20.16	12.27	7.48
Industry	Billion VND	519	573	901	1,975	3,872
	%	25.44	26.20	30.22	35.27	36.39
Services	Billion VND	977	1,059	1,479	2,938	5,973
	%	47.89	48.42	49.61	52.46	56.13
GDP	Billion VND	2,040	2,187	2,981	5,600	10,641
Compound GDP Growth Rate*3	%	7.26	7.21	7.88	13.45	13.70
Per Capita GDP*4	VND	427,375	447,244	556,687	945,663	1,642,448
Employment						
Total Employment	People	1,961,483	2,009,771	2,200,927	2,434,103	2,662,829
Structure						
Agriculture	People	1,493,817	1,514,547	1,469,762	1,457,042	1,353,764
	%	76.16	75.36	66.78	59.86	50.84
Industry	People	188,885	198,144	242,170	301,338	370,170
	%	9.63	9.86	11.00	12.38	13.90
Services	People	278,781	297,080	488,995	675,723	938,895
	%	14.21	14.78	22.22	27.76	35.26

Note: *1 For 1995 as against 1994 and for 1996 as against 1995. The other are compound growth rates for the period.

*2 The same comment as for *1 applies.

*3 The same comment as for *1 applies.

*4 In constant 1989 VND.

Source: JICA study team computations.

Real per capita income in the study area as compared to national average was at a 70% level in 1995. Given projected economic development trends at national and study area levels, the gap between real per capita income levels will remain in the same order of magnitude in the years 1996 to 2000. This is mainly due to the higher than national average population growth rate, which, however, will be brought down in line with the national average.

The gap will start closing after 2000 and real per capita income will reach some 85% of national average in 2005. By the year 2010 real per capita income is expected to be 4% points above the national average.

2) GRDP Growth and Structure

Real growth of Gross Regional Domestic Product (GRDP) is expected to accelerate and pick up after the year 2000, when basic infrastructure has been put in place and other major project are scheduled to come on stream (Table 3.2.3 refers). Real growth of the agricultural sector will remain highly sensitive to the growth performance of the agricultural sectors in Quang Nam Da Nang and Quang Ngai Provinces. They combined accounted on average for some 74% of total gross value of agricultural output in the study area.

Real growth performance of the industrial sector in the target area will be very much influenced by the growth performance of the Quang Nam Da Nang and Thua Thien Hue Provinces. In the past the accounted on average for some 76% of total gross value of industrial output.

Table 3.2.3 Economic Sector Growth Rates at Study Area Level 1996 to 2010

Major Economic Sector	Past actual	Projected		
	1990 - 1994	1996-2000	2000>05	2005>10
Agriculture	0.05	2.03	2.72	2.97
Industry	6.60	6.29	9.58	9.77
Construction	21.43	20.67	23.80	16.98
Services	9.13	8.65	14.71	15.25
GDP	6.08	7.88	13.45	13.70

Source : JICA study team computations.

However, the interrelationship and structure will change significantly from this base case scenario after the year 2000 when large projects in the DQIE will come on stream.

The construction sector will play a strong role over the coming decade when basic infrastructure will have to be put in place, the DQIE will have to be physically established and the urbanization process will require continued attention and investment into urban infrastructure including housing.

The service sector, in particular in the urban centers of Thua Thien Hue and Quang Nam Da Nang will play an important role in the development of the service sector. The establishment of the urban twin city agglomeration center together with accelerated industrial development will boost demand for all types of supporting services in trade, tourism, banking and other professional services.

Given the anticipated sector growth performance at individual Province levels as outlined and discussed in the Sector Report, the structure of GRDP of the study area is anticipated to emerge as summarized in Table 3.2.4.

Table 3.2.4 Economic Structure and Sector Shares 1996 to 2010

Major Economic Sector	Past actual 1994	Projected		
		2000	2005	2010
Agriculture	28.2	20.2	12.2	7.5
Industry (incl. Construction)	24.4	30.2	35.3	36.4
Services	47.4	49.6	52.5	56.1
GRDP	100.0	100.0	100.0	100.0

Note : Based on figures in Table 4.3.1.

Source : JICA study team computations.

The share of the agricultural sector would gradually decline from some 28.2% of GRDP in 1994 to about 7.5% in 2010. The share of the industrial sector, including mining, building & construction and utilities, would increase from about 24.4% in 1994 to about 36.4% in 2010. The share of the service sector will also slightly increase, that is from about 47.4% in 1994 to about 56.1% in the target year 2010.

3) Employment and Employment Structure

It is anticipated that total employment in the study area will increase from some 1.962 million people in 1995 to about 2.663 million by the target year 2010 (Table 3.2.5 refers). Underlying this absolute increase would be the creation of some 701,000 new and additional jobs over the 15 years planning period, equivalent to some 46,750 new jobs per annum and on average.

Table 3.2.5 Projected Employment and Employment Structure 1996 to 2010

Parameter	[Unit]	(Unit : as indicated)				
		Actual 1995	1996	Projected 2000 2005 2010		
Total employment	[000 people]	1,962	2,010	2,201	2,434	2,663
STRUCTURE						
Agriculture	[%]	76.2	75.4	66.8	59.9	50.8
Industry	[%]	9.6	9.9	11.0	12.4	13.9
Services	[%]	14.2	14.8	22.2	27.8	35.3

Source : JICA study team computations.

Total employment in the agricultural sector will remain in the same range up to the year 2000 and then start declining in absolute numbers as the growing industrial and service sectors start absorbing increasingly agricultural surplus labor. The share of agricultural in total employment is estimated to decline from some 76.2% in 1995 to about 50.8% in 2010. The share of industrial in total employment will gradually increase from 9.6% in 1995 to about 13.9% in 2010. The service sector, while not the largest in terms of total employees, will however become an important labor absorbing sector. Its share in total employment is expected to increase from 14.2% in 1995 to about 35.3% in the target year 2010.

4) Demography and Urbanization

It is estimated that the population size of the study area as a whole will increase from some 4.8 million to about 6.5 million people by the year 2010 (Table 3.2.1 above refers). The share of

the urban population would double, that is from some 23% in 1995, equivalent to some 1.079 million urban dwellers, to about 33% in the target year in 2010, equivalent to about 2.145 million urban inhabitants. The urbanization rate would slowly accelerate as the twin city concept as well as accelerated economic development is being realized.

3.3 SPATIAL FRAMEWORK

3.3.1 Existing Regional Setting

The sizes of urban centers or regional cores, availability of the land for development and transport network are the basis to set up the spatial framework. The geographical characteristic of the study area is known as a long narrow strip of land lying between the two major strategic economic growth areas in the North and the South of Viet Nam. These strategic economic growth areas are Hanoi - Hai Phong - Quang Ninh so-called the "Northern Triangle" and Ho Chi Minh - Bien Hoa - Vung Tau form so called "South Triangle". A strategic economic growth area in the Central Region is designated in the vicinity of Da Nang so called "Central Corridor".

Due to the geographical conditions, population distribution is rather concentrated along the coast. National Highway No.1 and the north-south railway line are running along the coastal area. Hue and Da Nang Airports are located beside the Highway No.1. The Tien Sa port in Da Nang is a major sea port in the study area. Some other local ports are located along the coast or the river. Improvement of the Cua Viet port is being carried out as a local port.

National highway No.14 is another major road in the hill and mountain area running parallel to Highway No.1. It has quite an important roll to provide inter-district and provincial communications in the hill and mountain area. Highway No.1 and No.14 are connected by some of national and provincial roads. However, these roads are not in a good condition. Inter-district and commune roads are inadequate to ensure the reasonable accessibility to public services and market places which are essential to activate the regional socio-economic activities.

The following figure shows the existing regional setting and structure of the study area.

Major economic centers are located along Highway No.1. International Gateways are Lao Bao to Lao RPD, Da Nang port and Da Nang airport in the study area.

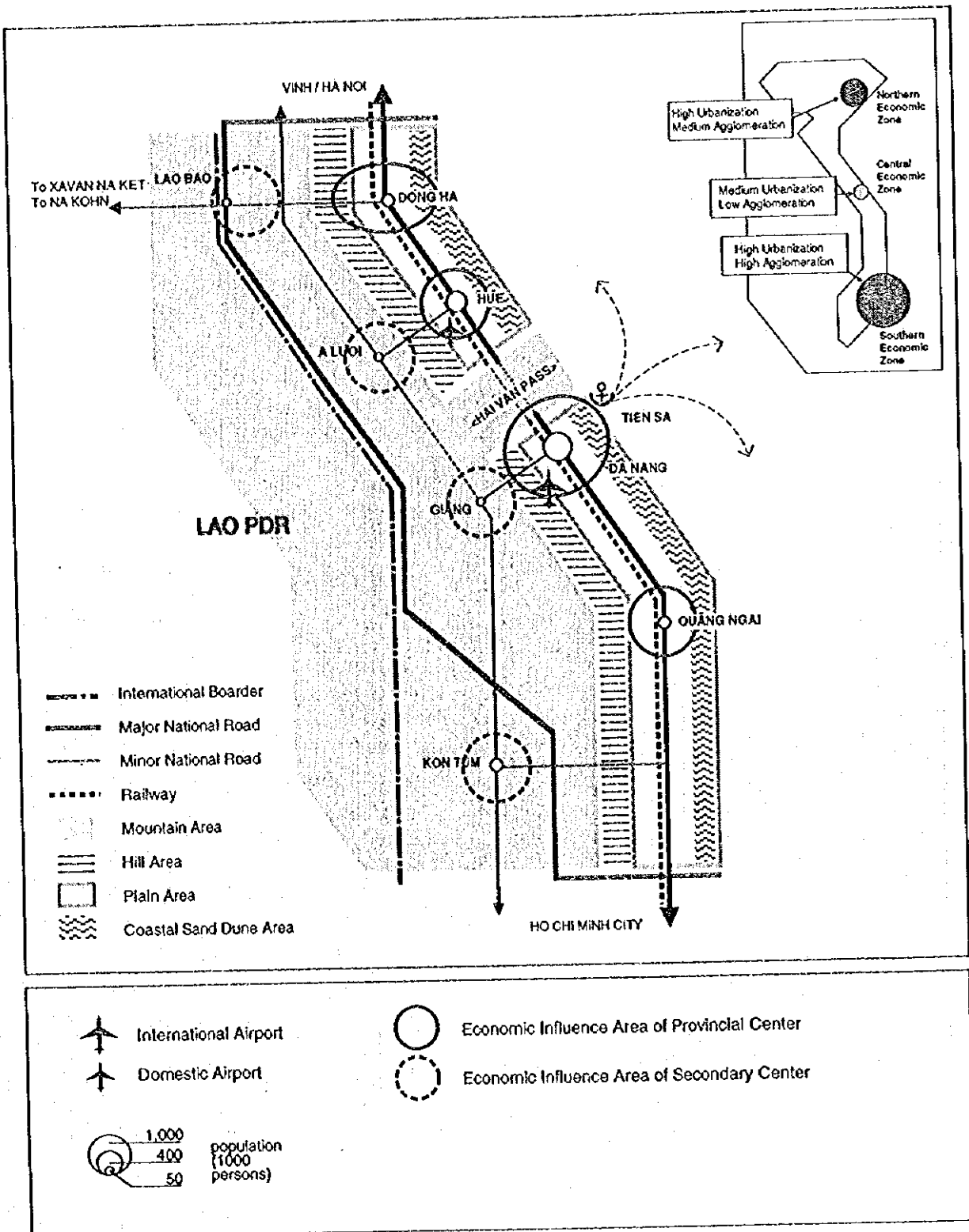
In order to achieve the accelerated economic growth in the Central Region, formation of an economic growth pole or corridor is essential in that it will expand the regional market functions, it will attract the inflow of FDI, and it will stimulate the growth of the service sector. And the provision of a major arterial road linking Hue and Da Nang is one of the key factors to realize the urban agglomeration by forming a development corridor in the study area.

3.3.2 Regional Integration of the Key Area of the Central Region

(1) Integration of Urban-rural Economy

Improvement of accessibility both to information and services are one of the most significant issue for integration of urban-rural economy. Improvement of rural roads, dissemination of market information, support for production and social services are necessary for the socio-economic development of the rural areas.

Figure 3.3.1 Existing Regional Setting



(2) Functional diversification and intensification

Strengthening the level of urban services by diversification and intensification of urban functions are necessary. Assignment of urban functions such as administrative, business and commerce, financial and distribution functions should be considered based on the characteristics and capacity of respective urban centers. Formulation of district centers are also important to provide better urban services, and trade processing and market functions to the people living in rural communes.

(3) Integration of urban functions

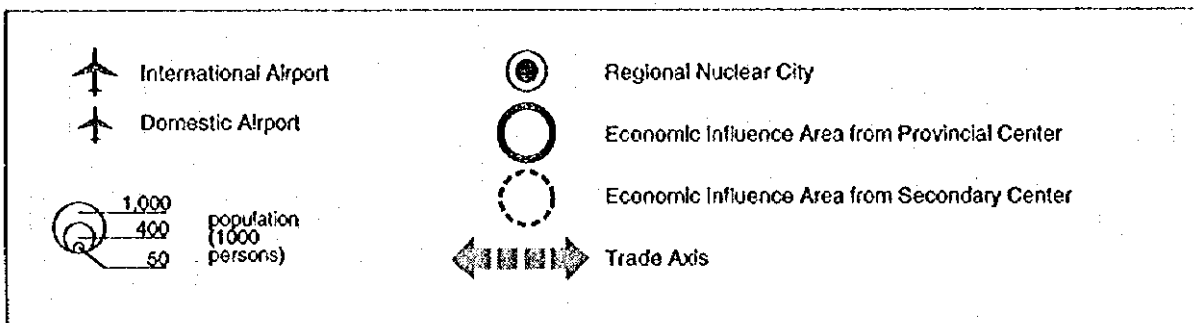
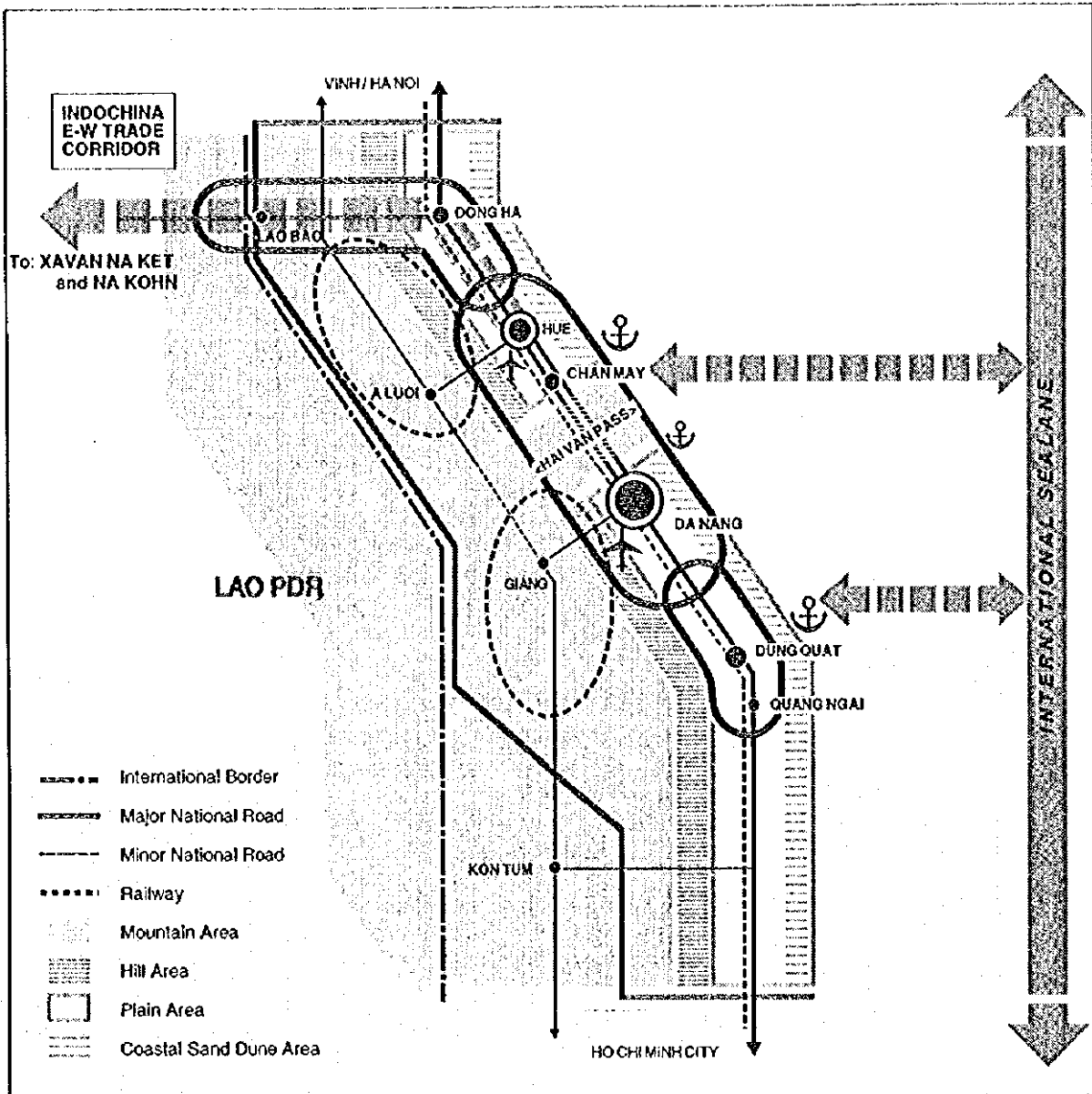
Integration of the urban functions in the form of the development corridor is required in the study area. No single urban center can sufficiently cater the required urban functions in terms of quality and quantity. There are two options to formulate the development corridor in the study area. One is Da Nang - Dung Quat development corridor, another is Hue - Da Nang development corridor. The latter option is preferred as it holds the existing urban agglomeration consisting of Hue and Da Nang cities which have mutually complementary characteristics. The former option has a lot of uncertainties dominated by the future external circumstances which are rather biased to the industrial sector development. The proposed spatial structure of the study area is illustrated in Figure 3.3.2. The Hue-Da Nang development corridor is designated as the focal economic development area in the Central Region; in other words, "Central (Development) Corridor".

3.3.3 Land Use Zoning of the "Central Corridor"

Land use zoning of the Central Corridor is formulated as shown in the Figure 3.3.3. Distinct land use designation with comprehensive regulation and inducement will be required. The type of development to be carried out in the designated areas as well as conservation areas are designated. The Corridor covers from Hue City to Hoi An in Da Nang Province. From the north, the following zones are designated in the corridor.

- **Lagoon Environment Conservation Zone:** Natural and social environment in this zone should be conserved. Socio-economic development in conjunction with lagoon environment such as fishery, agriculture and community development should be carried out.
- **Hue Cultural Conservation and Tourism Development Zone:** This zone will be developed as a center of cultural activities including educational functions. Conservation of natural and cultural environment together with urban amenity development is quite important.
- **Phu Bai Industrial Development Zone:** This zone will be the industrial development area for light industries in the future. This area has less environmental impact on both natural and social aspects, and has convenient access to the airport.
- **Chan May Trade and Distribution Center Zone:** This zone is characterized by the proposed Free Trade and Transit Zone (FTTZ) with international commercial port facilities. Environmental consideration and appropriate industrial location should be carefully considered for the creation of a new industrial city in this zone. The development concept is to create a new urban center between Hue and Da Nang for realization of the urban agglomeration in the "Central Corridor".

Figure 3.3.2 Proposed Spatial Structure



- **Lang Co - Bach Ma Natural Conservation and Tourism Development Zone:** This zone is recognized as the place for the potential tourism development at Lang Co Beach. The Bach Ma National Park is also located in this zone. Natural environmental conservation and pollution control are the key issues for the development of this zone. Introduction of TPZ (Tourism Promotion Zone) is proposed.
- **Da Nang Commercial, Industrial and Regional Center Development Zone:** Da Nang is the largest urban center and the gateway to the Central Region. Capacity increase of urban functions and amenities are indispensable for the regional development. Beautiful scenery with high level of urban services will attract investment to this area.
- **Hoi An Natural and Cultural Conservation and Tourism Development Zone:** Cultural tourism development with conservation of the historical and cultural environment of Hoi An city is proposed. Also, the Cham Island tourism development will attract tourists. The type of tourism introduced in the Cham Island should have the least negative impact on the culture and daily life of the people. Ecotourism or village tourism type development is recommended in the Cham Island.

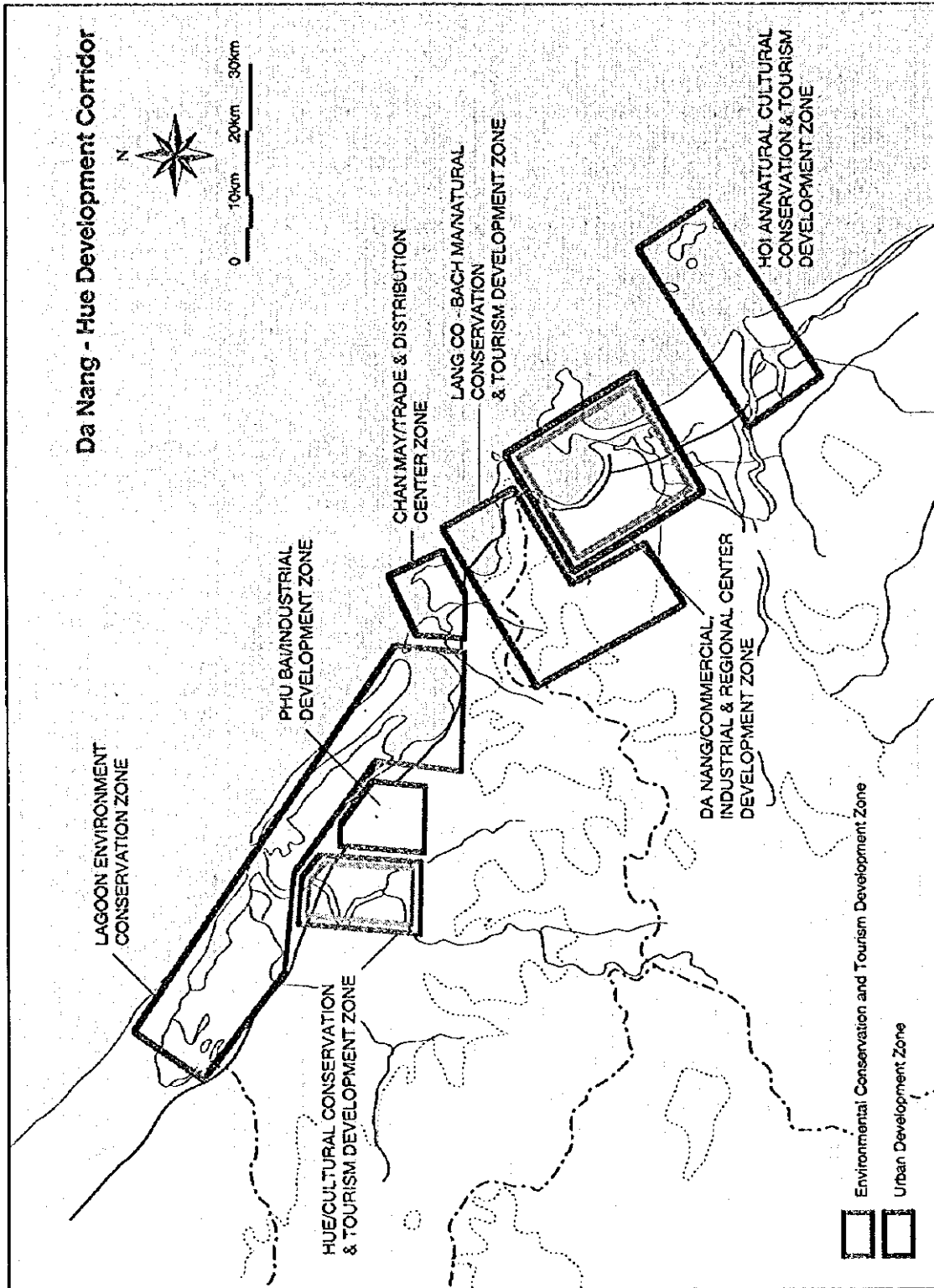
3.3.4 Targeted Land Use in the Study Area

As discussed in the previous chapter on development issues, utilisation of the unused waste land especially in the hill and mountain area is mandatory for the agricultural development. The target land use in the year 2010 in the study area is worked out as shown in Table 3.3.1.

Table 3.3.1 Land Use in 2010

Province	Quang Tri	Thua Thin - Hue	Quang Nam - Da Nang	Quang Ngai	Study Area
1 Agricultural Land	79.9 (17.4%)	62.6 (12.5%)	131.2 (10.9%)	132.5 (25.6%)	406.2 (15.2%)
2 Forestry Land	148.8 (32.4%)	228.7 (45.7%)	483.3 (40.3%)	132.1 (25.5%)	992.9 (37.1%)
3 Specified Land Use	12.8 (2.8%)	14.9 (3.0%)	62.1 (5.2%)	16.5 (3.2%)	106.3 (4.0%)
4 Inhabited Area	13.8 (3.0%)	29.6 (5.9%)	39.6 (3.3%)	17.2 (3.3%)	100.2 (3.7%)
5 Unused Waste Land	203.6 (44.4%)	165.1 (33.0%)	482.3 (40.2%)	219.4 (42.4%)	1070.4 (40.0%)
Total Land Area	458.9 (100.0%)	500.9 (100.0%)	1198.5 (100.0%)	517.7 (100.0%)	2676.0 (100.0%)
Source: Estimated by JICA study team					
Note: The total area of each provinces has been adjusted according to administrative boundaries changed in 1994					

Figure 3.3.3 Hue - Da Nang Development Corridor ("Central Corridor")



3.4 INSTITUTIONAL FRAMEWORK

Institutional development implies alternative organizational framework that facilitate innovation both at the national and local levels in order to achieve a country's developmental tasks. With weak institutions, development projects/programs cannot be effectively planned and managed because of a lack of adequate support from the existing institutional machinery. For successful implementation of sustainable projects/programs, therefore, Viet Nam need to improve the effectiveness of the existing institutional machinery and introduce organizational changes at multilevel of government and administration.

1) Promoting decentralization

The decentralization of governmental functions and financial resources towards regional and local levels may allow local governments to allocate resources for continuing the activities initiated through the project and provide them with opportunities to strengthen their planning and management capacity. In addition, where a project is identified and planned with active participation of local organizations, it is more likely to reflect the actual needs of the area. Decentralization would also provide a structure through which stakeholders can participate in mobilization of resources, identification of local needs and priorities. All of these factors will contribute to the sustainability of development projects.

Taking into account the constraints as identified the Chapter 2, the following are some general ideas on how to improve institutional and financial framework for regional development projects/programs.

- (1) Increasing the autonomy of local governments in terms of management and financial capability of development projects/programs by decentralizing authorities to lower levels of governments in appropriate area and by providing incentives to mobilize revenues of their own.
- (2) Ensuring correspondence between local expenditure responsibilities and financial resources (including transfers from the Central Government) so that the functions assigned to local governments can be carried out effectively.
- (3) Giving expenditure discretion to local governments in appropriate areas to increase the efficiency of public spending and to improve the accountability of local officials to their constituents in the provision of local services.
- (4) Establishing a system of intergovernmental transfers that is transparent, based on objective and predictable criteria, and not subject to negotiation and ad hoc bargaining.
- (5) Providing some equalizing transfers to offset differences in fiscal capacity among some localities and to ensure that poor localities can offer sufficient amounts of key public services.
- (6) Incorporating mechanisms to support public infrastructure development and its appropriate financing.
- (7) Establishing a multi-level management system for planning, implementing and coordinating regional development projects/programs.

2) Strengthening capabilities of implementing agencies

The capability of implementing agencies can be assessed based on their administrative capacities, financial viability and their potential to facilitate the distribution of project benefits. The project design should provide for the allocation of funds to improve skills of concerned agency staff and to strengthen capacity of relevant institutions to organize project-related management training courses. In addition to technical skills, adequate human relations skills should be possessed by the personnel of implementing agencies to be able to work effectively with the poor communities. Thus training programs should be designed to reorient government officials and to improve their skills to communicate effectively with the communities. In the process of project planning, implementation and operation, innovative leaders in the lead implementing agencies should be identified and should be provided with incentives and career rewards. Other measures needed to strengthen the capability of implementing agencies include:

- eliminating rigid personnel regulations that discourage innovation
- reducing political interventions in recruitment and promotion
- decentralizing financial authority to the regional and local levels of government and administration.

3) Improving inter-agency and inter-provincial coordination

The development projects/programs in the Central Region require a large number of organizations with different resources, skills, objectives and procedures. Thus their sustainability depends partly upon the effectiveness of inter-agency as well as inter-provincial coordination. The measures to improve coordination among different units include creating and maintaining open systems of communication and exchange of information, delineating agency responsibilities, standardizing of rules and procedures for implementation, and delegating adequate authority to the coordinating agency. Coordination among different units will also be improved through the use of informal channels, direct involvement of concerned political leaders, and the establishment of a coordinating committee consisting of representatives of each implementing unit.

4) Broadening the range of stakeholders

Stakeholders of a development project include project beneficiaries as well as project planners, implementors at multilevel and local leaders.

Rural areas in Viet Nam are still characterized by inequities in access to developmental assets such as capital in which the rural poor usually do not benefit significantly from development projects. The need, therefore, is to broaden the range of stakeholders and to elicit their active participation in the identification, implementation, and distribution of benefits of development projects. Furthermore, one of the main problems with the top-down and highly centralized process of development planning is that while services and facilities might be provided on schedule, stakeholders at regional and local levels do not identify with the project and are thus unlikely to provide the necessary cooperation for its sustainability. For projects to be sustained, stakeholders need to be involved in identification of local needs and priorities, planning, and evaluating the impact of these projects.

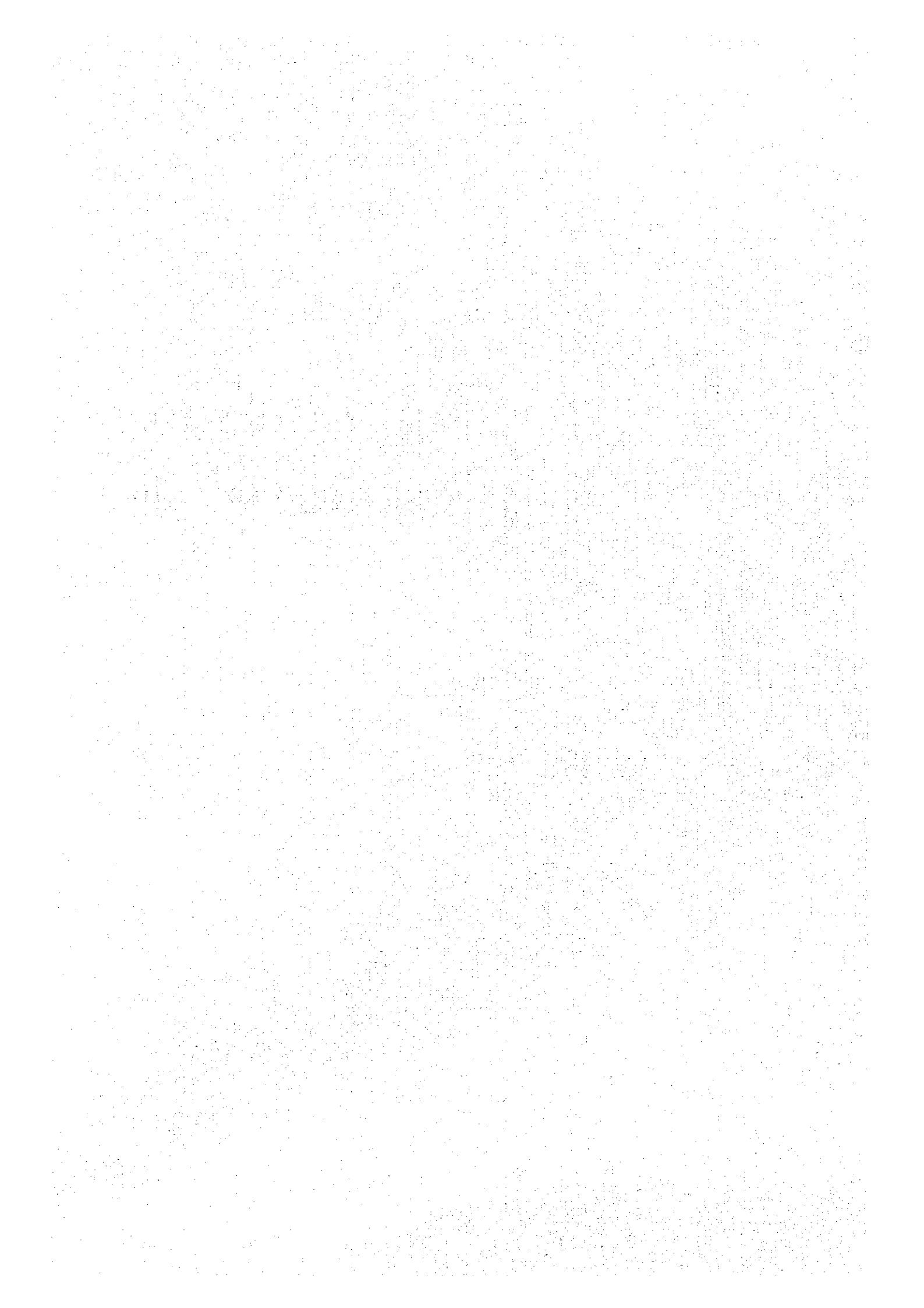
Thus, active involvement of all principal stakeholders at multilevel in the developmental process and their continued cooperation is a necessary condition for project sustainability and balanced regional development.

Implementation of participatory projects, however, requires provision of adequate resource for the preparation of training materials, development of operational procedures, and training of

community leaders. In addition, the effectiveness of community participation should be continuously monitored in the process of project implementation. These measures may overcome some of constraints on meaningful community participation, such as the lack of an adequate framework for community participation, weak local leadership, and rigidity of project planning and management procedures.

CHAPTER 4

DEVELOPMENT PLAN BY KEY SECTOR



CHAPTER 4 DEVELOPMENT PLAN BY KEY SECTOR

4.1 AGRICULTURE, FORESTRY AND FISHERY SECTOR

4.1.1 Agriculture

1) Zonal Development Plan

The core of the proposed policy consists of diversification in crop and livestock production, maximization of use in limited available resources including WID and VAC. The following are the three main stays to support the future agricultural development in the Central Region, which will be applied, in principle, to the designated following Zones.

Zone A: This zone covers paddy areas within flat coastal plains where irrigated paddy land has been developed for centuries. Currently, it is mainly cropped with double or triple paddy, accompanying some rotation with sugarcane, rush, and so on.

Zone B: It demarcates upland areas adjacent to Zone A with a higher altitude, where mostly hilly, undulated topography predominates.

Zone C: In steep mountainous area where slope gradient exceeds 10 degree, and thus countermeasures for preventing erosion are essential, or along the coastal sand areas where measures have been taken to stabilize the existing arable land against the sand intrusion.

(1) Zone A: Agricultural intensification

In the process of shifting to free market economy, precious capital investment should be focused on enough capital responsive areas. In this zone, as there is very few acreage remaining for reclaimable land, future efforts have to be oriented to vertical expansion, or yield improvement. Since paddy fields predominate, crop diversification is difficult. Major targets for improvement will be summarized in the following:

- Paddy yield is to be raised by more irrigation coverage, flood and pest control, use of high-yielding rice varieties (hybrid seed) and rational use of farm inputs.
- Sugarcane acreage is to be expanded around the area where sugar mill is created.

Sales channels for merchandising such rural industrial products will be secured at the provincial and district levels through marketing facility consolidation.

(2) Zone B: Crop diversification

Crop diversification has many implications, but its main role lies in avoiding or preventing or spreading risk, dissipating damages from floods, drought, pest attacks, sudden price drop by glut market supply of a crop, and also loss from overproduction. In Zone B where acreage allotment per household is larger, the following targets are proposed.

- Economic restoration in the existing new economic zones is to be realized by promoting industrial crops but monoculture with single crop should be rectified.

- A firm supporting system in charge of crop protection, input supply, farm financing and product marketing should be established for servicing producers.
- Environmental conservation is to be secured to make farming sustainable.

(3) Zone C: Conservation of environment

Zone C is mainly inhabited by ethnic minorities, where resettlement projects have been extended to permanently settle them so that they refrain from slash and burn habit but try to accustom modern way of farming and animal husbandry including agro-forestry.

2) Development Projection

A future blueprint of the agricultural development in the study area is summarized in tables shown below. Some areas under crop indicate double or triple cropping a year on the same geographical surface with the cropping intensity of more than 150 %.

Table 4.1.1 Projection of Future Crop Development

Unit : ha and TLU (tropical livestock unit)

year	Province / Item	Quang Tri	T. T. Hue	O.N.-D.N.	Quang Ngai	Study Area
1996 area	Rice Paddy	42.5	49.0	120.0	70.2	281.7
	Other Food Crops	17.2	22.2	57.0	39.1	135.5
	Industrial Crops	12.3	16.4	36.9	30.9	96.5
	Livestock Unit	96.1	77.7	239.5	251.4	664.6
2000 area	Rice Paddy	43.5	50.0	113.0	73.0	279.5
	Other Food Crops	20.0	17.7	55.4	38.5	131.6
	Industrial Crops	16.9	21.5	41.8	45.5	125.7
	Livestock Unit	207.9	56.1	285.3	241.3	790.5
2005 area	Rice Paddy	44.2	50.0	113.0	75.5	282.7
	Other Food Crops	21.9	18.3	57.7	37.4	135.3
	Industrial Crops	22.6	28.7	47.3	62.3	160.9
	Livestock Unit	228.4	94.1	330.5	254.7	907.7
2010 area	Rice Paddy	44.9	50.0	113.0	75.5	283.4
	Other Food Crops	25.0	19.3	60.0	36.5	140.8
	Industrial Crops	32.5	32.9	53.7	79.4	198.5
	Livestock Unit	191.4	102.0	412.0	269.5	974.9

Note : 1 TLU is equivalent to 250 kg live weight

Table 4.1.2 Agricultural Production Value

Unit : million VND

year	Province / Item	Quang Tri	T. T. Hue	Q.N.-D.N.	Quang Ngai	Study Area
1996 output	Rice Paddy	249.3	294.1	779.5	512.0	1,834.8
	Other Food Crops	139.7	249.5	539.8	404.3	1,333.3
	Industrial Crops	60.7	53.5	218.8	149.1	482.1
	Livestock Output	55.2	127.5	906.3	384.8	1,473.7
2000 output	Rice Paddy	287.0	379.2	807.7	676.0	2,149.9
	Other Food Crops	187.4	202.5	594.7	449.0	1,433.5
	Industrial Crops	131.8	100.5	322.9	130.9	686.1
	Livestock Output	22.3	159.5	1,073.0	276.5	1,531.3
2005 output	Rice Paddy	318.8	399.2	831.5	708.0	2,257.5
	Other Food Crops	194.9	230.5	647.6	390.1	1,463.0
	Industrial Crops	216.7	118.8	421.7	247.7	1,005.0
	Livestock Output	142.2	181.9	1,218.3	310.8	1,853.1
2010 output	Rice Paddy	350.4	419.2	855.3	737.1	2,361.9
	Other Food Crops	264.6	194.6	710.5	495.8	1,665.5
	Industrial Crops	334.6	189.5	554.2	318.3	1,396.6
	Livestock Output	158.8	205.5	1,619.5	496.3	2,480.0

Note : livestock products include milk and meat.

Source : Reports for 2000 or 2010 plan for agriculture provided by each province concerned

3) Measures to Realize the Above Listed Projection

(1) Major development projects for the intensification in Zone A

Up to 2010, the following major projects are to be implemented in Zone A so as to attain the above mentioned agricultural intensification:

- Water Resources and Agricultural Development Projects by Medium and Small Scale Reservoirs to expand double cropping of paddy or other crops such as sugarcane for diversifying crop culture,
- Sugar cane Expansion Projects for securing supply of cane to sugar mills,
- Soil Improvement for Coastal Sand Area, especially in New Economic Zones,
- Marketing System Improvement Projects to provide farmers easier market access, covering both purchase of farm inputs and procuring outlet of products, and
- Flood control, facility provision against salt water intrusion to protect existing farmland.

(2) Crop diversification projects in Zone B

New economic zones are the core of agricultural development in Zone B, where settlers have been engaged in land reclamation, reforestation and cultivation of industrial crops. Projects shown below are proposed as practical means to improve their farming:

- Highland Industrial Crop and Reforestation Promotion Program to facilitate the settlers to develop their base for expanding acreage under industrial crops as well as for improving quality and yield thereof,
- VAC projects to realize compound farming with livestock to maximize land use as well as to enrich soils and to provide a security for casual financial needs.
- Primary Processing Facilities to provide storable, value-added products, and

- Diffusing Agro-Forestry Techniques required to conserve slope land, to create wind breaker that prevents drought and excessive runoff while serving as cash earning source other than crop cultivation.

(3) Environmental conservation and rural farming support in Zone C

Ethnic minorities in resettlement areas or slash and burn areas consist of major population in Zone C, where a long term target has been set as permanent resettlement free from slash and burn system as well as exterminating narcotic cultivation. One of the effective measures to foster resettlement is to provide them capital to convert slashed and burnt fields into valuable industrial trees like cinnamon, coffee etc. so that they cannot help rearing what they have invested and they cannot burn the planted area so fast as it lasts for production. Agro-forestry helps them in sustaining their life during the gestation period until the planted industrial crops mature for harvesting, by providing them with feeds for their livestock and food from intercropping and alley-farming. The following adequate supporting service is essential to establish the farming for complete resettlement:

- Provision of loans for their initial investment to industrial crop production,
- Supply of seedlings for industrial crops, agro-forestry crops and tree saplings for reforestation and wind breaker or mother trees for plantation of industrial crops,
- Supply of construction materials for irrigation, collecting depots for harvested industrial crops, farm implements for industrial crop husbandry etc., and
- Fortified extension service in parallel with adult education for Vietnamese language to understand media of agricultural techniques and extension.

4) Proposed Sites for Implementing the Agricultural Projects

(1) Projects mainly in Zone A

The proposed sites and beneficiaries for developing irrigation by medium and small scale reservoirs mostly in zone A but partly in zone B are given in Table 4.1.3.

Table 4.1.3 Proposed Reservoirs in Zone A and B

Unit : ha for beneficiaries, MCM for capacity, million USD

Province	Quang Tri	TT - Hue	QN - Da Nang	Quang Ngai
Name of Dam	Bao Dai	Khe Hgang	Duy Thanh	Thach Nam
Irrigated Acreage	1,040	830	10,000	45,000
Effective Capacity	19.0	12.5	108.0	215.5
Estimated Cost	4.5	2.5	36.0	30.0
Name of Dam	Ai Tu	Thuy Can	Dong Tien	Nui Ngang
Irrigated Acreage	1,000	1,000	2,100	3,900
Effective Capacity	22.5	19.0	29.5	42.0
Estimated Cost	3.0	6.7	70.0	9.0
Name of Dam	Ben Da	Truoi	Cay Thong	Chop Vung
Irrigated Acreage	2,500	7,850	200	400
Effective Capacity	34.0	55.0	3.5	6.4
Estimated Cost	3.5	16.0	1.0	2.0
Name of Dam	Da Mai	Ta Trach	Loc Dai	Nuo Trong
Irrigated Acreage	570	26,500	250	9,800
Effective Capacity	2.3	390.0	3.5	180.0
Estimated Cost	1.7	-	1.0	-

The Areas for sugarcane promotion are distributed mainly in zone A, though some minor parts fall into zone B in all four provinces, but the key area lies in Quang Ngai province. Table 4.1.4 summarizes the project scale and sites:

Table 4.1.4 Sugarcane Projects

Unit : ha, ton / day, million USD

Province	Quang Tri	T.T.Hue	Q.N.Da Nang	Quang Ngai*
Production Area	3,000 - 3,700	7,500 - 10,000	6,000 - 7,500	3,000 - 6,000
Location of Mill	Khe Sanh	Phong Son	Ha Lam or Tam Ky	Pho Phong
Capacity of Mill	1,000 - 1,500	1,500 - 3,000	1,500 - 2,000	1,000 - 1,500
Estimated Cost	0.4	0.9	0.7	0.4
Cost of new Mill	4.3 honey sugar	11.4	9.0	8.7
Related Zone	Zone B - C	Zone A - B	Zone A - B	Zone A and Zone C
Major Producing Areas (Districts)	Xa-Thuan, -Thanh Tan-Thanh, -Long A Tuc, -Doi, Xa Xi	Phong Dien, Huong Tra Quang Dien	Thang Bing, Que Son, Tam Ky Dien Ban, Nui Thanh	Duc Pho, Mo Duc Ba To, in Zone C Tra Hong, Son Ha

Note : Except one state-owned sugar-mill already in operation in the suburbs of Quang Ngai City

(2) Projects mainly in Zone B

The proposed industrial crop promotion and reforestation program chiefly covers zone B, but it also does part of zone C (for example coffee) and of zone A (for example silk). The program aims at contributing to capital supplying and technical renovation, although it can hardly encompass the total requirement for the development of all the industrial crops as planned by the provinces concerned. Table 4.1.5 and Figure 4.1.1 show rough spectrums of the program coverage by province, but it should always be kept in mind that mono-culture of a speculative crop has a terrible risk like a car without any break, and every household that is engaged in industrial crop production should have other crops / livestock as a buffer stopper or emergency resort, so as to provide for recurrent catastrophic drop of international commodity market price. There have been too many forerunners producing industrial crops in the world, like eastern and western African, Latin American and Asian countries, and even if Viet Nam could succeed in overtaking some of them in quantity or in quality to become a leading producer, the larger producer is always destined to suffer the greater loss during the period of price depression. Such an experience implies that some insurance measures are acutely needed by industrial crop producers to prepare a safeguard for them, and a part of this program offers such measures for highland industrial crop producers who are still economically vulnerable.

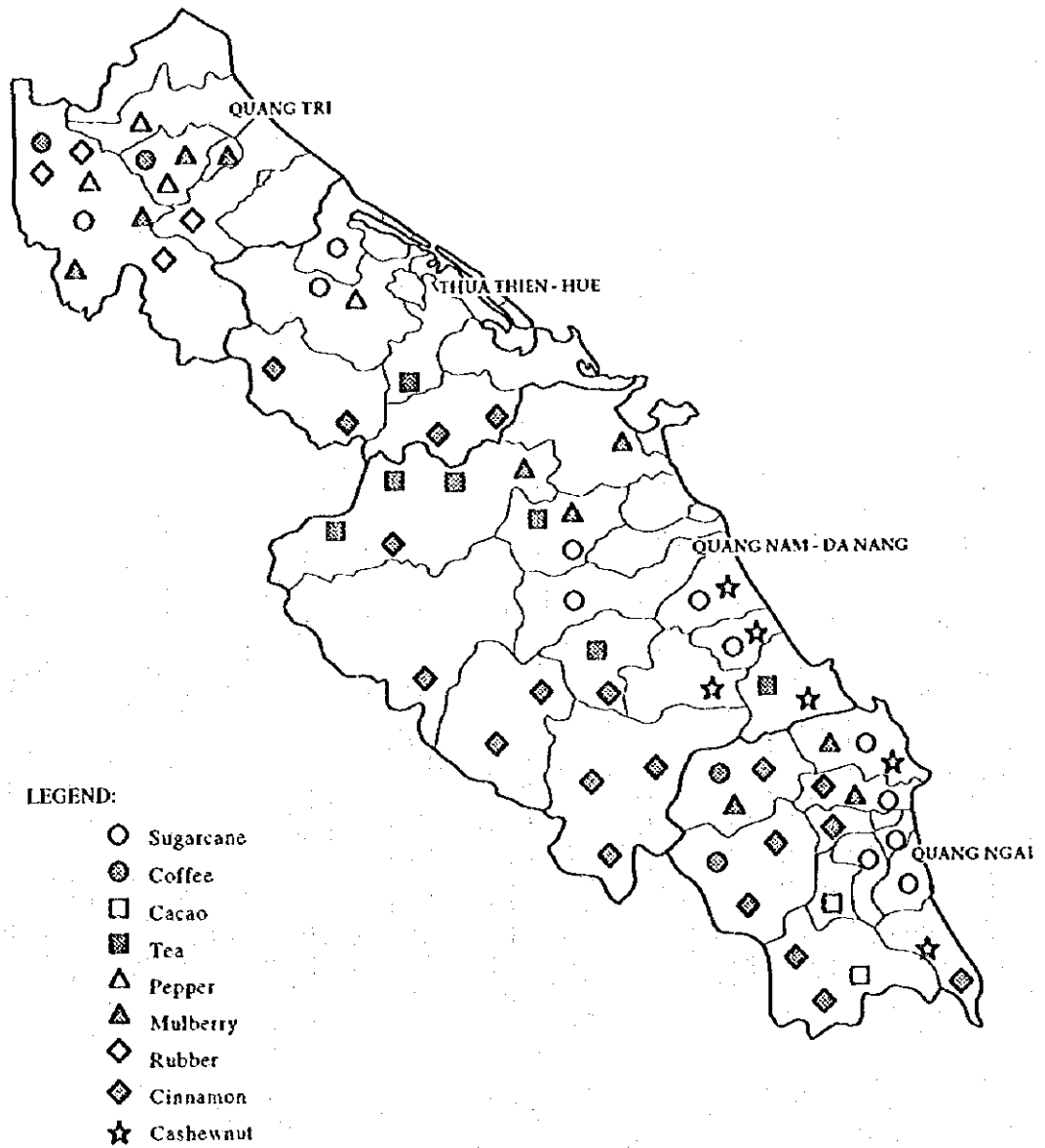
The content of the proposed program comprises two supporting media, i.e., promotion of technical transfer and loan supply, responding to the greatest issue, absolute shortage of modernized technology and of capital investment in this field. The former will be met with the streamlining of extension network and of supporting facilities like plant protection service, and the latter will be satisfied with low-interest loans both for field investment to plantation and for a price insurance fund as partial offsetting of loss suffered by producer farmers incurred by a sharp price fall.

Table 4.1.5 Industrial Crop Promotion in the Study Area

Province	Quang Tri	T.T.Hue	Q.N.Da Nang	Quang Ngai*	Study Area
1. Crop Specie and Expansion of Acreage by 2010 unit : ha					
Sugarcane	1,900	9,600	1,000	3,400	15,900
Mulberry Silk	3,900	-	1,800	600	6,300
Rubber	9,600	6,000	-	1,200	16,800
Pepper	100	0	0	-	100
Arabica Coffee	1,800	-	-	4,500	6,300
Robusta Coffee	- 200	-	-	-	- 200
Tea	600	0	1,400	- 100	1,900
Cocoa	-	-	-	4,400	4,400
Cinnamon	-	0	9,000	32,000	41,000
Cashewnut	-	-	3,800	1,500	5,300
Total Acreage	17,700	15,600	17,000	47,500	97,800
2. Extension Specialist Requirement by 2010 unit : person					
Diversification	1	2	1	2	6
Sericulture	2	0	2	1	5
Tree Protection	3	2	1	3	9
Spice Crop	0	0	2	2	4
Beverage Crop	2	0	1	2	5
Total Specialist	8	4	7	10	29
3. Loan Requirement to Develop the Above Shown Acreage unit : 1,000 US\$					
Sugarcane	1,761	8,897	927	3,151	14,736
Mulberry Silk	3,436	-	1,586	529	5,551
Rubber	3,514	2,196	-	439	6,149
Pepper	120	0	0	-	120
Arabica Coffee	4,091	-	-	10,229	14,320
Tea	435	0	1,015	0	1,450
Cocoa	-	-	-	5,500	5,500
Cinnamon	-	0	2,925	10,400	13,325
Cashewnut	-	-	1,045	413	1,458
Total Acreage	13,357	11,093	7,498	30,661	62,609

The content of the proposed program does not include processing mill construction, but as far as these industrial crops are concerned, the primary processing to semi-products has to be completed within the producing areas, otherwise transportation of raw materials incurs costs and quality is deteriorated during the time for carriage. Efficient utilization of rural labor force also calls for local processing, thus added value of the products can be converted into income source of producers' households. Some concrete plans proceed on to construct these processing units, such as one sugar mill in southern Quang Ngai province, with a capacity of 1,000 ton cane per day and supplying acreage of 2,500 ha now under construction. However, costs for most other mills for processing the products as estimated below have not earmarked yet by any financing sources. The following table shows a rough estimation of industrial raw materials likely harvested from the above tabulated acreage, and necessary processing units to deal them.

Figure 4.1.1 Current Distribution of the Industrial Crops in the Study Area



With regard to processing facility, it will not be absolutely necessary to provide from the initial stage of industrial crop development sophisticated, streamlined and up-dated mills or equipment that abuse investment resources, but can be replaced by a steady, step-by-step improvement of processing facility, starting from a size of cottage industry producing brown honey-sugar instead of breached white sugar, supplying it to higher grade factories like the existing mill in Quang Ngai city.

Table 4.1.6 Processing Sector of Industrial Crops

Province	Quang Tri	T.T.Hue	Q.N.Da Nang	Quang Ngai*	Study Area
1. Estimated	Production of	Raw Materials in 2010			
Sugarcane	105,000	528,000	60,000	238,000	931,000
Mulberry Cocoon	4,680	0	2,160	720	7,560
Rubber / Latex	6,480	4,050	0	810	11,340
Pepper / Fresh	720	0	0	0	720
Arabica Coffee	2,200	0	0	6,300	8,500
Tea / Fresh Leaf	5,400	0	12,600	0	18,000
Cocoa / Raw Bean	0	0	0	3,740	3,740
Cinnamon Leaf*	0	0	19,800	70,400	90,200
Cashew Raw Nut	0	0	4,180	1,650	6,300
2. Processing	Units, Capacity and Location for these materials				Unit : ton/day
Sugar Mill	Huong Hoa 1,000	Phong Son 1,500	market to Q.Ngai	EXQ.Ngai 2,000 Pho Phong 1,000	EX 1 mill 2,000 plus 4mills 2,500
Silk Reeling Mill	EXDong Ha 25		EXDaNang 20	EXQ Ngai 10	EX 3 mills 55
Textile Factory			EXDaNang 1.5		
Rubber Factory	EXLatex Proc.15	Phuong Dien 10		carry to Binh Dinh	EX 1 mill 15 plus 1 mill 10
Pepper Refining	EXDong Ha 5				EX 1 mill 5
Coffee Depot	Huong Hoa 20 Cam Lo 15			Tra Bong 55 Son Ha 45	4 mills 135
Tea Processing			EXA Vuong 20 EXTieng 15		EX 2 mills 35 plus expansion
Cinnamon Oil- Extracting Mill			Tra My 50 Phuoc Son 25	Ba To 150 Son Ha 100	4 mills 325
Cashew Packing Mill			EXTam Ky 15 Nui Thanh 20	Q.Ngai 15	EX 1 mill 15 plus 2 mills 35

Note : EX existing mills but expansion/upgrading of capacity is planned, * cinnamon bark is direct-exported.

5) Estimated Costs for Agricultural Development up to 2010

Apart from construction costs for additional processing units and annual farming inputs, that have been hitherto expensed, the cost requirement up to 2010 is roughly estimated at Table 4.1.7. Cumulative benefits expected up to 2020 are also estimated in Table 4.1.8, taking account of output delay due to a decade of gestation period after investment.

Table 4.1.7 Costs for Agricultural Development

		Unit : million USD				
Province	Zone	Quang Tri	T.T.Hue	Q.N.Da Nang	Quang Ngai	Study Area
Irrigation	Zone A	5	65	67	33	170
	Zone BC	8	15	40	32	95
Other Facility	All Zones	2	2	3	2	9
Extension	All Zones	1	1	2	1	5
Reclamation	Zone A	2	1	3	2	8
	Zone BC	1	1	34	98	134
Crop Plantation	Zone BC	6	5	8	15	34
Total Costs		25	90	157	183	455

Table 4.1.8 Benefits from the Development

Unit : million USD

Province	Major Area	Quang Tri	T.T.Hue	Q.N.DaNang	Quang Ngai	Study Area
Paddy	Zone A	42	42	83	88	255
Industrial Crop	Zone BC	51	42	43	124	260
Other Cashcrop	All Zones	12	0	17	9	38
Livestock	All Zones	73	55	134	77	339
Agroforestry	Zone BC	3	3	2	2	10
Loss Prevention	All Zones	16	13	9	23	61
Total Benefits		197	155	288	323	963

Note : estimated up to 2020, for the program of investment continues to 2010, and the peak production period will begin 10 years later.

4.1.2 Forestry (Mainly Corresponding to Zones B and C)

In the forestry sector development, priority consideration should be given to the reforestation in the bare land with a view to activating the forestry functions which serve for public use or for commercial use.

Bare land in the "Special Use Forest" should be planted to serve for tourism and amenity such as preserving natural landscape in the National Park,

Bare land in the "Protection Forest" should be planted as windbreak for controlling shifting sand in the coastal area as well as for preventing soils erosion and water conservation in the upland watershed area, and

Bare land in the "Production Forest" should be planted to produce forest resources, employment opportunities, development of wood processing industry, whilst giving due attention to the functions for environmental protection and preservation.

Reforestation is of the requirement tandem for preserving the Country's balanced eco-systems essential for water management and for producing commercial values essential for securing livelihoods of the people living in highland area. Pilot reforestation projects will be initiated in close coordination with comprehensive water resource management programs of major river basins and integrated rural community development programs in highland area. Table 4.1.9 gives an overall projection of afforestation and reforestation in the study area where windbreak forest is also included around the reclaimed industrial crop plantation in Zone B (mainly within new economic zone) and Zone C.

Table 4.1.9 Plan of Afforestation

Unit : ha

Province	Quang Tri	T.T.Hue	Q.N.DaNang	Quang Ngai	Study Area
Bare Land Area 1996	203.7	193.3	425.7	277.2	1,099.9
Annual Afforestation	4.0	4.0	2.4	2.0	12.4
Cumulative Planting	56.0	56.0	33.6	28.0	173.6
Total Tree Canopy	148.8	228.7	483.3	132.1	992.9
Bare Land Area 2010	140.4	129.3	387.6	245.2	902.5

Source: Based on FAO forestation data, estimation/projection by the Study Team

Forestry activities, especially afforestation in protection forest and reforestation in the felling area of production forest, as well as establishment of wind break stand around the reclaimed area for industrial crop plantation and housing area for resettlement are important for environmental conservation, flood prevention and fuel wood supply for the sake of settlers in new economic zones and resettlers of ethnic minorities.

Cost and benefit of afforestation is estimated in Table 4.1.10.

Table 4.1.10 Cost and Benefit of Afforestation

Province	unit : 1,000 USD				
	Quang Tri	T.T.Hue	Q.N.Da Nang	Quang Ngai	Study Area
Protection F.	1,089	1,089	652	545	3,375
Reforestation	228	228	136	114	706
Wind Break	114	43	115	318	590
Total Costs	1,431	1,360	903	977	4,671
Fuel Wood	371	371	223	186	1,151
Timber*	2,060	2,060	1,238	1,032	6,390
Chip/Resin	1,358	1,358	815	679	4,210
Total Benefits	3,789	3,789	2,276	1,897	11,751

Note : * log wood can be harvested 40 - 50 years after planted and 16 / 45 or 36% of the value should be counted though felling period will reach beyond 2030.

4.1.3 Fishery

The four provinces in the study area share in common most of the development potentials and constraints. The lack of adequate infrastructure and facilities for the fishery sector development is the one eminent position being shared by all the provinces, and the other is the geographical position where fishery production activities are subject to severe meteorological conditions in the Central Region. Nevertheless, each province has its own specific features and problems, and therefore, a fishery development plan in the Central Region should be worked out by incorporating i) projects and measures which are preferred to be implemented and managed jointly and severally among with concerted efforts of all the provinces to achieve common goals, and ii) projects and measures which will serve for development or improvement of certain areas or aspects that specifically require the efforts of respective provinces.

Fishery-related infrastructure particularly for marine fishery will be gradually improved, coupled with market and distribution systems. Whilst making continuous efforts to increase fishery products for export, attempts will be made to increase domestic consumption of fishery products taking into account its absolute low level at present. Sales channels for merchandising such fishery products will also be essential for urgent improvement.

4.2 INDUSTRY

4.2.1 Industrial Development Direction

Viet Nam's basic policy for industrial development stipulates the promotion of the following :

- Oil prospecting and exploitation
- Expansion of output for basic consumer goods
- Promotion of primary product processing industries and light industries
- Expansion of manufacturing export industries under joint ventures with foreign enterprises, and
- Development of petroleum refining and natural gas based industries.
- Lines of industry, for which future development is particularly expected are:
 - Petroleum refining (currently under negotiation with an international consortium). The project is to be located in the study area in the planned Dung Quat industrial estate (DQIE)
 - Petrochemicals. This project is to be included in the DQIE
 - Iron and steel products. This project is to be included in the DQIE. However, a feasibility study is currently under implementation, which investigates potential

factory site location in four Provinces, including the DQIE, for an integrated steel mill, and determines the most appropriate technology choice with the required capacity. The results of the study are expected to be finalized by 1998.

- Non-ferrous metallurgy
- Ceramic, stones and clay products
- Fabricated metal products
- Machinery
- Electrical and electronic products, and
- Foodstuffs.

The Central Region with the new Dung Quat industrial growth pole has been designated by the Government as the third national industrial growth center.

4.2.2 Selection Criteria for Industrial Key Sectors

The following set of selection criteria has been used for screening and determining the lines of manufacturing, which should be promoted in the study area, regardless of ownership (state-owned, private, joint venture and or wholly foreign owned) :

- High potential for the creation of employment opportunities
- Type of industry (labor intensive, urban or surface or air transportation oriented)
- Industries proposed by either the central or local Governments (such as coal, steel, fertilizer, plastic ware, detergents, insecticides, farm machinery and equipment, bicycle and motorbike tires and tubes, electrical and electronic appliances, consumer goods, textile and garments, paper, shoes and sandals, beer and soft drinks)
- Structure and status of existing industries (In Q.N. Da Nang : foodstuff industry, machine equipment industry, textile industry, wood processing and forestry industry. In Thua Thien Hue : foodstuff industry, textile industry, wood processing and forestry industry, construction materials industry and food industry. In Quang Ngai : foodstuff industry, construction materials industry, machine equipment industry, wood processing and forestry industry, textile industry. In Quang Tri : foodstuff industry, construction materials industry, wood processing and forestry industry, metal production industry)
- Lines of manufacturing, which have a high growth potential (such as refining, petrochemical products, machinery, electric and electronic products, textile products and foodstuffs)
- Lines of manufacturing, of which there is already some sort of established critical mass
- Lines of manufacturing for which there will be strong demand
- Suitability to regional characteristics
- Existing infrastructure in industrial estates (IEs)
- Introduction of high value added industries
- Impact on the environment, and
- Availability of human resources in terms of quantity and quality.

In addition, Da Nang and Hue City have been defined as regional core cities, while Quang Ngai and Dong Ha have been defined as local cities. High value-added light industrial and specialized research and development (R&D) lines of manufacturing should be reinforced in both, Da Nang and Hue City, while in Quang Ngai and Dong Ha high value-added light industry should be reinforced. In addition, all the four regions have to improve existing regional resources utilizing industries.

4.2.3 Priority Product Groups

The industries proposed by the Government for each Province are summarized in Table 4.2.1. The priority product groups to be promoted in future in each Province and industrial estate are summarized in Table 4.2.2 to Table 4.2.5.

Table 4.2.1 Main Industries in Each Province as Proposed by the Vietnamese Government

Sector No.	Name of Industrial Sectors	Proposed Industries by Central Government (#, Central government, *, Local government)	Quang Nam-Da Nang	Thua Thien-Hue	Quang Ngai	Quang Tri
01	Power	#Electricity (key element & important industry)	Electricity	Electricity	Electricity	Electricity
02	Fuel	#Coal, #crude oil, #natural gas	Coal	-	Petroleum oil	-
03	Ferrous metallurgy	#Steel	Steel	-	Steel	-
04	Non ferrous metallurgy	*Ceramics	Silica sand	Silica sand, kaolin, titan	Silica sand, kaolin	Silica sand, kaolin, titan
05	Machine equipment	Farm machinery and equipment, bicycle, #machine tool and engines, *farm hand tools	Transport machinery, automobile, mechanics	Automobile, mechanics, ship building and repair	Construction machine, marine machinery, ship building & maintenance	-
06	Electric and electronic	#Electrical & electronic appliances, *electric fan	Electric appliances	Electric appliances, electric fan	-	Electric appliances
07	Metal production	#Metal & metal components	Metal components	Metal components	Metal components	Metal components
08	Chemical	#Fertilizer, Detergents, tires & tubes for motorcycle, insecticide, plastics	Pharmaceuticals, insecticide, detergent	Pharmaceuticals	Plastics, fertilizer, pharmaceuticals	Pharmaceuticals
09	Construction material	#Cement	Cement, bricks, tiles, stones, lime, granite	Cement, bricks, tiles	Cement, tiles	Cement, bricks, tiles
10	Wood processing and forestry	-	Rattan, bamboo wares, sawn timber, cinnamon tree	Pine tree	Rattan, ginseng tree, fire tree, rubber tree	Rubber tree, black pepper
11	Cellulose and paper	#Paper	Paper	-	-	-
12	Glass and pottery	-	Glass, pottery	Glass, pottery	-	Pottery
13	Food	-	-	-	-	-
14	Food stuff	Beer & soft drinks, #cigarettes, *confectionery	Beer, salt, soft drink, frozen seafood	Beer, salt, soft drink, frozen seafood, cigarettes	Sugar, wine, alcohol, seafoods	Beer, alcohol, frozen seafoods, sugar, salt
15	Textile	#Textiles	Textiles	Textiles	Textiles	Textiles
16	Garment	Garments, *garments	Garments	Garments	(Garments)	Garments
17	Printing	-	Printing	Printing	Printing	Printing
18	Leather and artificial leather	Shoes & sandals	Shoes, leather	Shoes	Leather	-
19	Others	Consumer goods	Running water	Running water, handicraft	Running water	Running water

Source: Vietnam's Economic Renovation and Foreign Economic Policies

Table 4.2.2 Future Priority Industries in Thua Thien - Hue Province

Name of Province	Name of Industrial Estate	Name of Industrial Sector	Main Proposed Industries in Future	
Thua Thien Hue	Chan May Port FTZ (Assembler or processing by distributors are mainly applied.)	# Construction material	Cement and its products Clay refractories Aggregate and stone products Other ceramic stone and clay products	
		# Chemical	Petrochemicals products	
		# Wood processing and forestry	Plywood and prefab-wood products Furniture Miscellaneous furniture and fixtures	
		# Glass and pottery	Glass products	
		# Textile	Ropes and netting Lace and other textile goods Miscellaneous textile mills products	
		# Garment	Outer garment White shirts and underwear Miscellaneous fabricated textile products	
		# Electric and electronic	Household electric appliances Communication equipment and related products Computer equipment and accessories Electronic equipment Other electrical machinery Various electronic parts	
		# Foodstuff	Frozen seafood Beer, salt, softdrinks, cigarettes	
	# Other	Handicraft		
	Van Xa IE	Foodstuff	Seafood processing Seasonings Manufactured ice Miscellaneous food and related products	
			Textile	Ropes and netting Miscellaneous textile mills products
			Garment	Outer garment Miscellaneous fabricated textile products
			Leather and artificial leather	Leather tanning and finishing Mechanical leather products Leather boots and shoes making
	Phu Bai Airport Industrial Complex	Electric and electronic	Household electric appliances Electric bulbs Communication equipment and related products Computer equipment and accessories Electric equipment Electric measuring instruments Other electrical machinery	
			Machine equipment	Metal working machinery Textile machinery Miscellaneous machinery and machine parts Aircraft repair and parts Miscellaneous transportation equipment
			Chemical	Drugs and medicines Miscellaneous chemical and allied products Plastic plates, bars, tubes, etc. Plastic films, etc. Industrial plastic products Compounding plastic materials Miscellaneous plastic products
			Textile	Woven fabric mills Knitting mills Silk reeling plants Lace and other textile goods Miscellaneous textile mills products
			Garment	Outer garment White shirts and underwear Miscellaneous fabricated textile products

Note: # means assembling and/or processing by distributors.
Source: JICA Study Team

Table 4.2.3 Future Priority Industries in Q.N. - Da Nang Province

Name of Province	Name of Industrial Estate	Name of Industrial Sector	Main Proposed Industries in Future	
Quang Nam - Da Nang	Da Nang EPZ	Machine equipment	Mesuring instruments Surveying instruments Medical instruments and apparatus Physical and chemical instruments	
		Electric and electronic	Communication equipment Computer equipment and accessories Electronic equipment Electric measuring instruments Various electronic parts Other electrical machinery	
		Textile	Silk reeling plants Woven fabric mills Knitting mills Lace and other textile goods Miscellaneous textile mills products	
		Garment	Outer garment White shirts and underwear Miscellaneous fabricated textile products	
	Lien Chieu - Hoa Khanh IE	Lien Chieu - Hoa Khanh IE	Machine equipment	Motor vehicles, parts and accessories Agricultural machinery and equipment Construction and mining machine Metal working machinery Miscellaneous transportation equipment
			Metal production	Heating apparatus and Plumbing supplies Fabricated metal products Stamped and pressed products Powder metallurgy, plating and heat treating Bolts, nuts, rivets screws and wood screws Miscellaneous fabricated metal products
			Chemical	Plastic plates, bars, tubes Industrial plastic processing Foamed and reinforced plastic products Compounding plastic materials Miscellaneous plastic products
			Construction material	Cement and its products Structural clay products Clay refractories Abrasive products Aggregate and stone products
			Foodstuff	Frozen seafood processing Soft drinks and carbonated water Alcoholic beverage Manufactured ice and salt Miscellaneous food and related products
			Glass and pottery	Glass and its products Pottery and related products Other ceramic stone products
			Wood processing and forestry	Plywood and prefab-wood products Wooden container Miscellaneous wood products Furniture Sliding doors and screens Miscellaneous furniture and fixtures
			Gien Nam - Dien Ngoc IE	Gien Nam - Dien Ngoc IE
	Electric and electronic	Household electric appliances Electric bulbs and lighting fixtures Various electronic parts Other electrical machinery		
	Textile	Ropes and netting Miscellaneous textile mills products		
	Garment	Outer garment White shirts and underwear Miscellaneous fabricated Textile products Handicraft		

Source: JICA Study Team

Table 4.2.4 Future Priority Industries in Quang Ngai Province

Name of Province	Name of Industrial Estate	Name of Industrial Sector	Main Proposed Industries in Future
Quang Ngai	Dung Quat Port IE	Power	Thermal electric power station
		Fuel	Petroleum refinery Lubricating oils and greases
		# Ferrous metallurgy	Iron smelting without blast furnaces Steel with rolling fabricates Coated steel Steel forgings and casting Iron castings Miscellaneous iron and steel
		Chemical	Petrochemicals Industrial plastic products Miscellaneous plastic products Industrial organic chemicals Chemical fibres Miscellaneous chemical and allied products
		# Machine equipment	Ship breaking and repair
	Tinh Phong IE	Construction material	Structural clay products Clay refractories Abrasive products Aggregate and stone products Other ceramic stone and clay products
	Quang Ngai Town IE	Foodstuff	Sugar and sugar syrups Bakery and confectionery products Miscellaneous food and related products
		Leather and artificial leather	Leather tanning and finishing Mechanical leather products Boot and shoe cut stock and findings Leather footwear Leather gloves and mittens Luggage Handbags and small leather goods
	Pho Phong IE	Foodstuff	Sugar and sugar syrups Bakery and confectionery products Alcohol beverage
		Wood processing and forestry	Furniture Miscellaneous furniture and fixtures Sawing and planing mills and wood product Wooden containers Rubber products Plywood and prefab-wood products Miscellaneous wood products

Note: # Second stage

Source: JICA Study Team

Table 4.2.5 Future Priority Industries in Quang Tri Province

Name of Province	Name of Industrial Estate	Name of Industrial Sector	Main Proposed Industries in Future
Quang Tri	South Dong Ha IE	Electric and electronic	Household electric appliances Electric bulbs and lighting fixtures Communication equipment and related products Various electronic parts
		Machine equipment	Metal working machinery Miscellaneous machinery and machine parts Various machine and parts manufacturing and repair
		Foodstuff	Seafood processing
	Cua Viet Port IE	Glass and pottery	Glass products
		Machine equipment	Ship building and repair
	Lao Bao - Ban Den FTZ	# Electric and electronic	Various electronic parts Other electrical machinery
		# Textile	Woven fabric mills Miscellaneous textile mills products
		# Garments	Outer garment Miscellaneous fabricated textile products

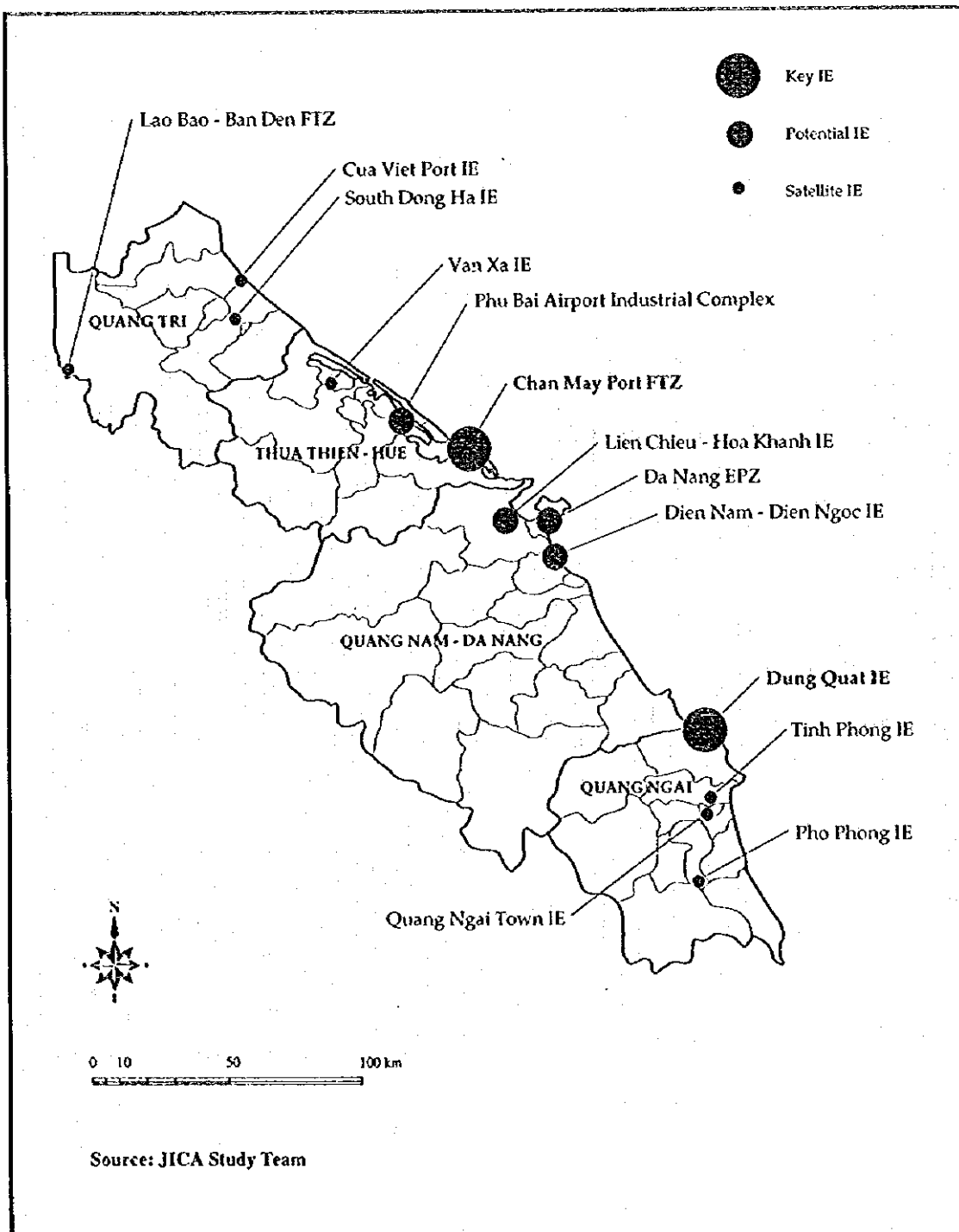
Note: # means assembling and/or processing by distributors.

Source: JICA Study Team

4.2.4 Industrial Estate Development

The location of the industrial estates, which either exist, are under construction or planned as well as the EPZ and the proposed free trade zones are identified in Figure 4.2.1.

Figure 4.2.1 Location of Industrial Estates, Export Processing Zones and Free Trade Zones



The characteristics of the industrial region and industrial estates are summarized in Table 4.2.6.

Table 4.2.6 Characteristics of Industrial Region and Industrial Estate

Name of Province	Name of IE	Major Special Feature of Industrial Region				Major Special Feature of IE		Major Market of IE		Major reciprocal relation of IE	
		Urban	Outskirts of Urban	Farm and Mountain Village	Fishing Village	Regional Resources Utilized Type	Value Added Type	Domestic Market	International Market	Existence	Non-Existence
Quang Tri	Cua Viet Port IE				#	#		#		#	
	Lao Bao - Ban Den FTZ			#			•	#	•		•
	South Dong Ha IE		#				•	#		#	
Thua Thien-Hue	Chan May Port FTZ				#		#	#	•	#	
	Van Xa IE		#			•	#	•	#	#	
	Phu Bai Airport Industrial Complex		#				#	#	•	#	
Quang Nam-Da Nang	Da Nang EPZ	#					•	#	•		•
	Lien Chieu - Hoa Khanh IE	#				#		•	#	#	
	Dien Nam - Dien Ngoc IE		#				•	•	#	#	
Quang Ngai	Dung Quat Port IE				#	#	•	•	#	#	
	Tinh Phong IE		#			#		#		#	
	Quang Ngai Town IE		#			#		#		#	
	Pho Phong IE			#		#		#		#	

Note: # means normal situation and • means major situation.
Source: JICA Study Team

If all industrial estates are implemented in the planned manner, some 5,941 ha (gross) of industrial land will be available in the study area equivalent to some 3,787 ha net industrial land. It is estimated that some 1,136 manufacturing enterprises will be located in the industrial estates providing employment for about 207,200 people (Table 4.2.7 refers).

It is recommended to characterize and prioritize the industrial estates for development purposes into three distinct and principal categories :

- Key industrial estates, that is they are either of supraregional and therefore national importance and/or they are strategic. The industrial estates falling into this category are :
 - Dung Quat Industrial Estate, and
 - Chan May Port Free Trade and Transit Zone (FTTZ)
- High potential industrial estates. Those are from north to south :
 - Phu Bai Airport Industrial Complex
 - Lien Chieu - Hoa Khanh Industrial Estate
 - Da Nang EPZ, and
 - Dien Nam - Dien Ngoc Industrial Estate
- Satellite industrial estates. Those are from north to south :
 - Lao Bao - Ban Den Free Trade Zone
 - Cua Viet Port Industrial Estate

- South Dong Ha Industrial Estate
- Van Xa Industrial Estate
- Tinh Phong Industrial Estate
- Quang Ngai Town Industrial Estate, and
- Pho Phong Industrial Estate.

It is estimated that, in line with the different characteristics of each industrial estate, some 43% of net industrial estate land will be absorbed by key industrial estates, which will host 28% of all industrial estate establishments and about 28% of the total industrial estates labor force (Table 4.2.8 refers).

High potential industrial estates will account for 33% of total industrial estate land (net), 46% of all estate industrial enterprises and 49% of all industrial estate workers. The balance of 24% of industrial estate land, 26% of enterprises and 23% of the total industrial work force will be accumulated in satellite industrial estates. The lines of manufacturing to be introduced in each category of industrial estate has been identified the preceding Section in Table 4.2.2 to Table 4.2.5.

Table 4.2.7 Industrial Development Scale of IE, EPZ and FTZ

Province	Name of IE, EPZ and FTZ	Land Area			Number of Enterprise (company)	Number of Employee (person)	Industrial Water Consumption (cubic m./day)	Industrial Output (Mil. US\$)
		Gross (ha)	Net (ha)	(%)				
Quang Tri	South Dong Ha IE	200	150	75	60	10,000	18,000	3,100
	Cua Viet Port IE	150	113	75	30	4,700	35,000	1,500
	Lao Bao - Ban Den FTZ	110	83	75	25	5,200	32,000	390
Thua Thien - Hue	Chan May Port FTZ	1,200	200	75	87	17,400	20,000	3,000
			•700		•200	•30,000	•16,000	
	Phu Bai Airport Industrial Complex	400	300	75	150	25,000	91,000	5,000
	Van Xa IE	200	150	75	60	7,600	30,000	1,900
Quang Nam - Da Nang	Da Nang EPZ	63	47	75	25	6,000	22,900	1,800
	Lien Chieu - Hoa Khanh IE	800	600	75	170	40,000	144,000	7,000
	Dien Nam - Dien Ngoc IE	418	314	75	180	30,000	180,000	2,300
Quang Ngai	Dung Quat Port IE	1,800	735	41	29	9,700	157,780	15,000
	Tinh Phong IE	200	140	70	40	6,000	12,000	580
	Quang Ngai Town IE	100	75	75	20	3,600	61,000	970
	Pho Phong IE	300	180	60	60	12,000	116,000	3,500

Note: • means distributor and other relating persons.

Source: JICA Study Team

Table 4.2.8 Key Characteristics of Main Industrial Estate Categories

Industrial Estate Category	Number	Provl.	Land Area		Number of Enterprises	Number of Employees
			Gross ha	Net ha		
Key IE	2	Q.N. T.T.H.	3,000	1,635	316	57,100
High Potential IE	4	T.T.H. Q.N.D.N.	1,681	1,261	525	101,000
Satellites IE	7	Q.T. T.T.H. Q.N.	1,260	891	295	49,100
TOTAL	13	Target Area	5,941	3,787	1,136	207,200

Source: JICA study team.

4.2.5 Development Framework

The magnitude of the maximum industrial development scale of the study area is worked out as shown in Table 4.2.9.

Table 4.2.9 Maximum Development Framework

Year	2000	2005	2010
Industrial GDP (US\$ 1,000)	86,974	153,360	256,203
Industrial land (hectare)	45,223	47,526	49,326
Number of enterprises	52,065	61,046	70,530
Number of employee	423,488	515,741	602,957
Industrial water consumption (m ³ /day)	624,780	732,552	846,360

Source: JICA study team

The factors between the figures in 1993 and 2010 are, 8.63 for the industrial GDP, 1.72 for the industrial land use, 2.45 for the number of enterprises, 2.49 for the number of employee in the industrial sector, 2.45 for the industrial water consumption.

4.2.6 Key Industrial Estates and Chan May Free Trade and Transit Zone

The two key industrial estates proposed for the Central Region are Dung Quat Industrial Estate and Chan May Port Free Trade and Transit Zone. The Dung Quat Industrial Estate has been the subject of a pre feasibility study, the results of which are summarized in Chapter 7.3. Hence, the master plan focuses on describing the concept for the Chan May Port Free Trade and Transit Zone.

The free trade and transit zone concept comprises the Provinces of Quang Tri and Thua Thien Hue. The concept should be implemented in two phases as indicated in Figure 4.2.2.

During phase 1 the following targets should be achieved and the following functions attached :

- The international boarder crossing point at Lao Bao should be converted into the Lao Bao - Ban Den free trade zone (FTZ). The main function of the FTZ would be the transshipment of commodities with delivery services. Supply would initially mainly be for the local and domestic market with a smaller portion of transshipments geared for Cua Viet Port. Cua Viet Port will be finalized by 1998 with a capacity to handle ships of up to 2,000 DWT. During this phase upgrading of road No. 9 would have to be finalized
- During phase 2, Quang Tri Province would be converted into the Quang Tri Trade and Transit Zone with the establishment a free international mart in the corridor. In that phase the main transshipment and trade function would be transferred to the Chan May free trade zone. The Chan May free trade zone is planned as the international distribution hub port linking east and west. It shall consist of a general port, general industrial estate and free trade zone. The free trade zone shall comprise part of the port, an industrial estate and bonded warehouses. The activities in the free trade zone shall concentrate on assembling, processing activities and distribution activities.

4.2.7 Introduction of FDI Promotion Agency

The Ministry of Planning and Investment (MPI) and the Chamber of Commerce and Industry of Viet Nam (VCCI) are actively working to induce foreign direct investment (FDI) into Viet Nam. However, in order to be more effective, investment promotion activities need to be unified as much as possible. To that end it is proposed to establish an foreign direct investment supporting agency system.

The functions of the system would typically be :

- Provision of consultancy services (for example, provision of investment advisors)
- Facilitation of infrastructure development and capital procurement (for example, low interest rate loans by financial institutions), and
- Reduction of the initial investment cost.

Such a system, which is financed by the Government together with the private sector, is in successful operation in Japan under the "Foreign Investment in Japan Development Corporation (FIND)" The structure of this corporation and the system features are depicted in Figure 4.2.3 and Figure 4.2.4, respectively.

Figure 4.2.2 Free Trade and Transit Concept

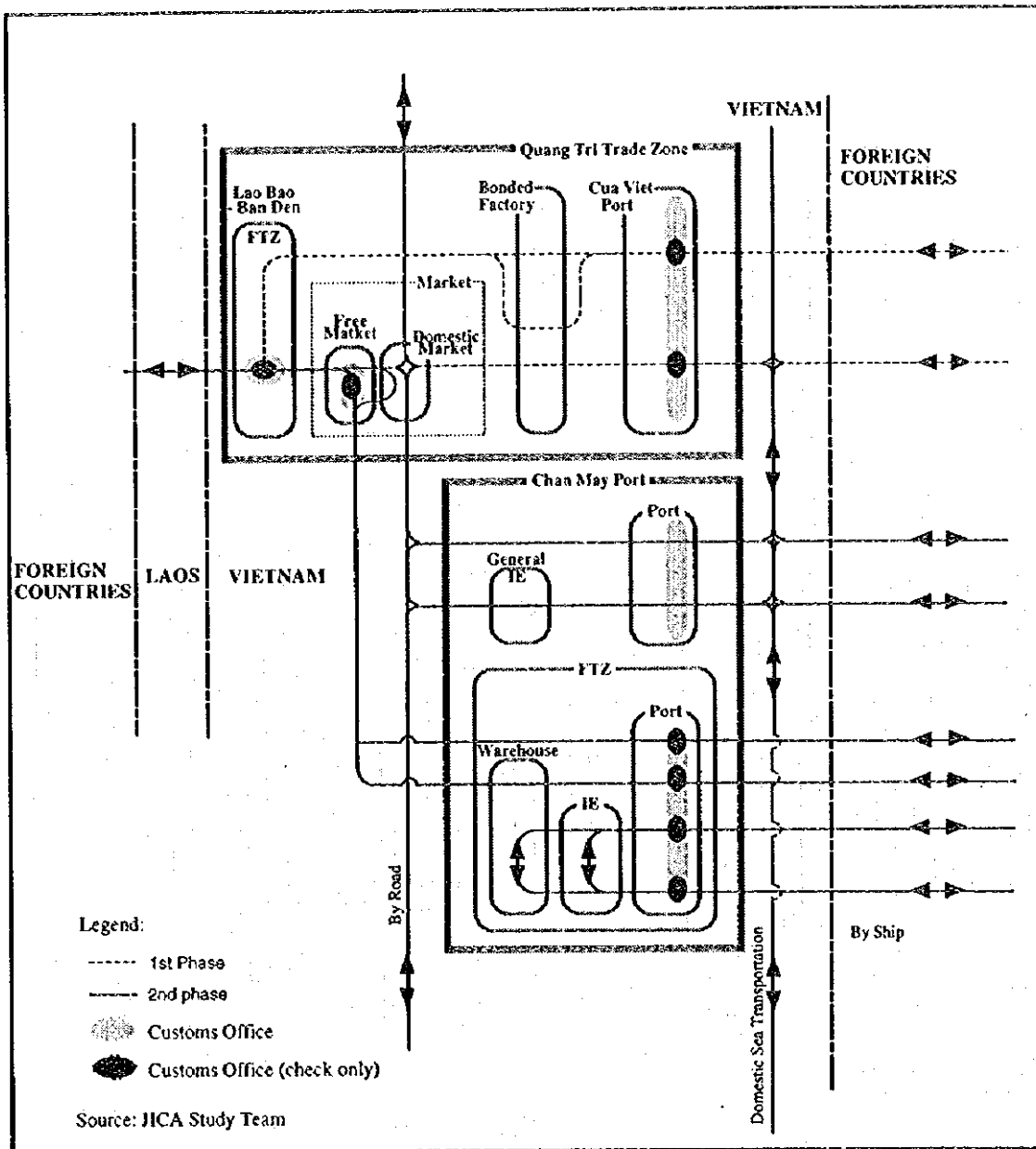
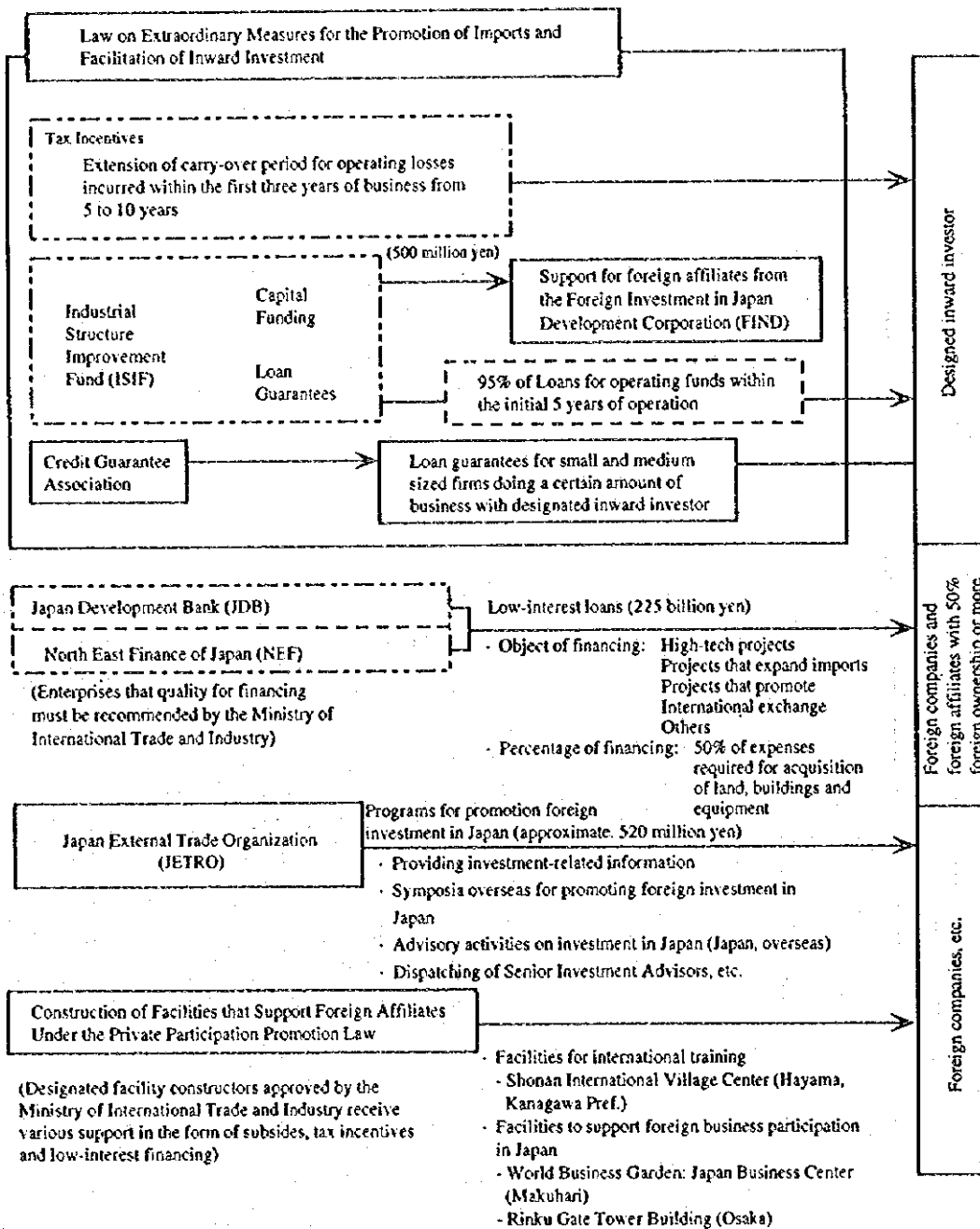


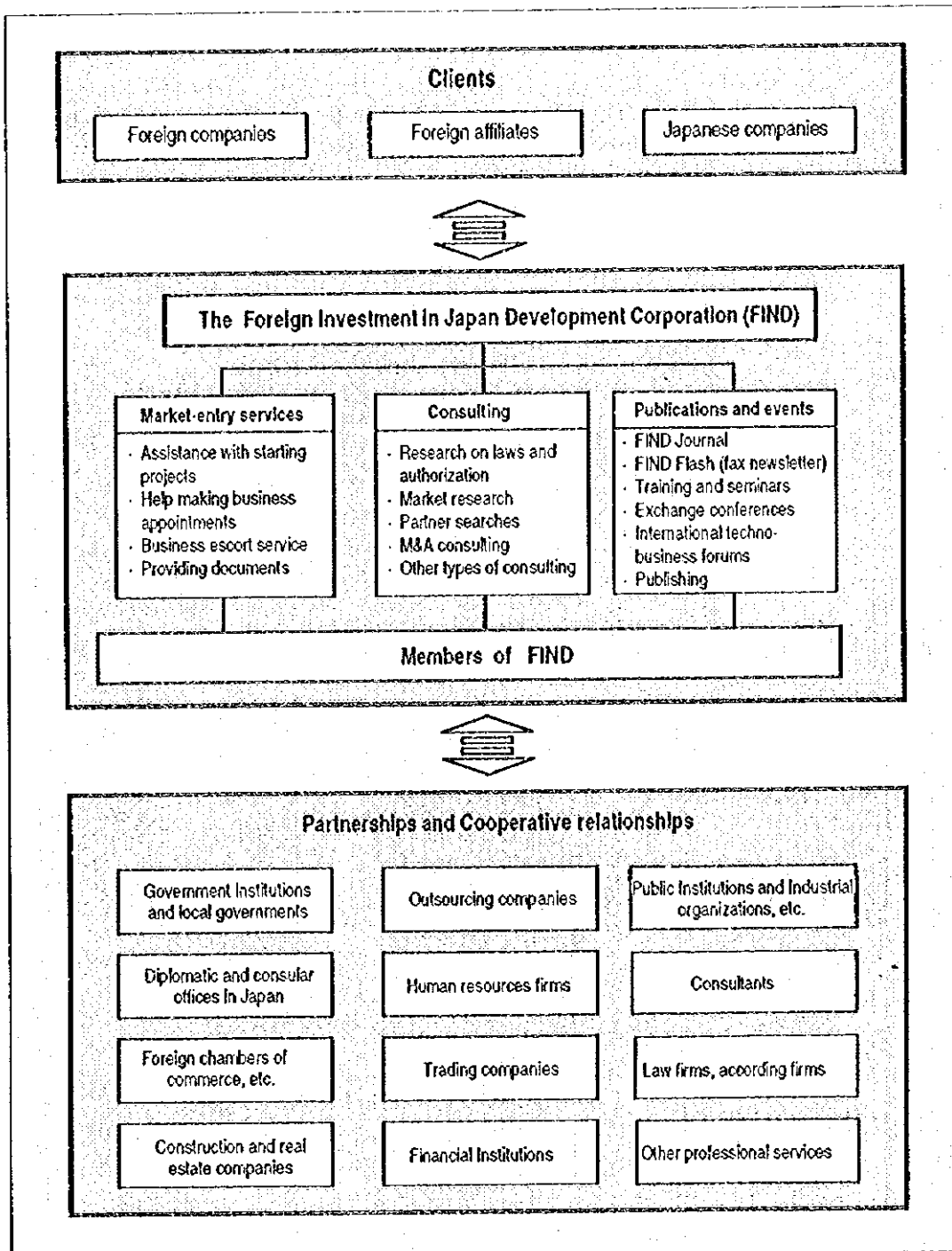
Figure 4.2.3 Structure of the Foreign Investment in Japan Development Corporation



- * Designated inward investors are those investors that satisfy the following conditions and are approved by the Ministry of International Trade and Industry:
1. To be a branch or a subsidiary (with a foreign capitalization ratio exceeding one-third), established in Japan by a foreign company
 2. To be a company which has been operating for less than 5 years since its establishment
 3. To be a company engaged in the manufacturing, wholesaling, retailing, or servicing sector in Japan

Source: JICA Study Team

Figure 4.2.4 Measures for Promoting Foreign Direct Investment in Japan



Source: JICA Study Team

4.2.8 Strengthening of VCCI

The Chamber of Commerce and Industry of Viet Nam (VCCI) is the main organization, which provides potential investors with regional data, economic information, finance information and information on industrial estates and export processing zones.

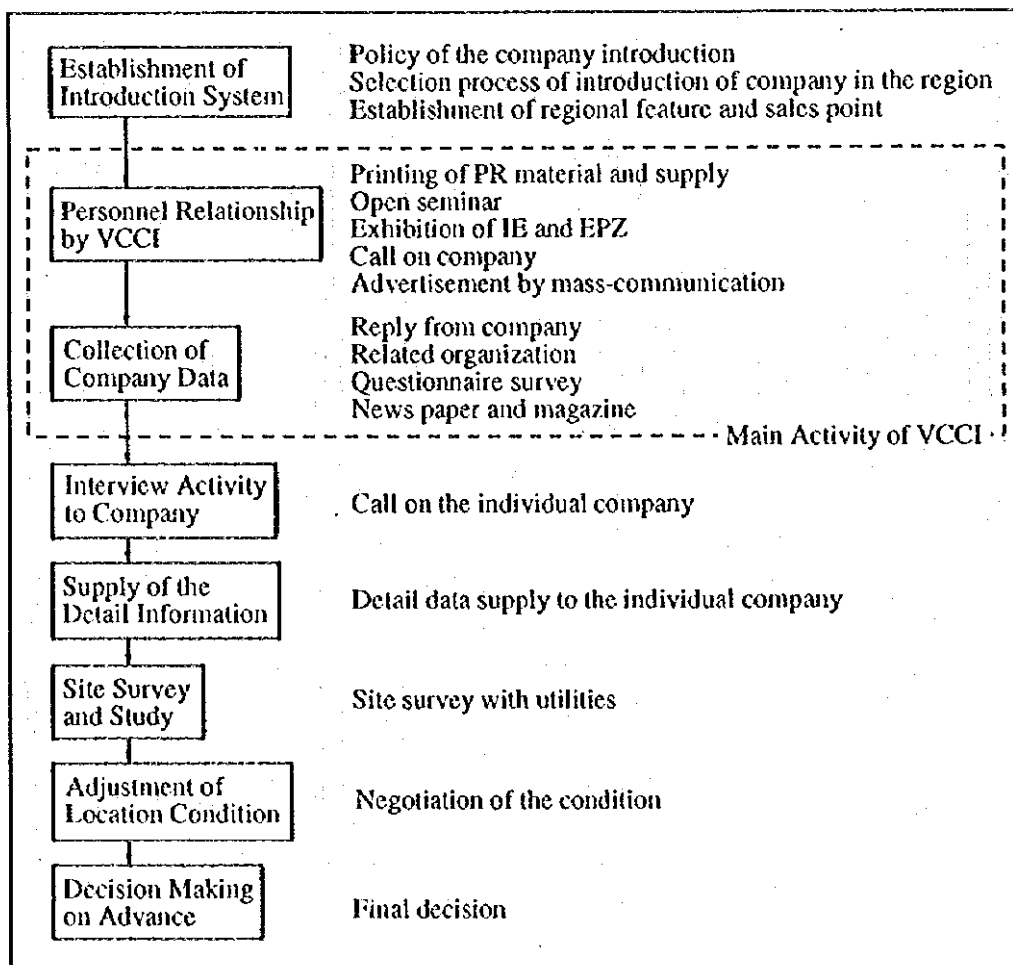
VCCI has a head office in Ha Noi and six branches in Da Nang, Vinh, Hai Phong, Ho Chi Minh, Can Tho and Vung Tau. The activities of VCCI in the Central Region are insufficient. It is therefore recommended to strengthen VCCI's activities and to establish a formal relationship between the provincial governments and VCCI.

Functions that need to be strengthened in VCCI are:

- Collection of industrial data in the province
- Identification of requirements in the industries
- Establishment of industrial sector sub-committees
- Advisory services on management, financing and technology, and
- Information service covering industrial data.

A flow chart describing such support activities by VCCI is shown in Figure 4.2.5.

Figure 4.2.5 Flow Chart for Introduction Activities by VCCI



4.3 TOURISM DEVELOPMENT

4.3.1 Tourism Market Promotion

1) Effective Marketing in the Target Segment

The first priority in marketing target segments should be given to the origin nationality of foreign visitors. The three big target markets by nationality for the Central Region are France, U.S.A. and Japan. For promotion of those markets, the followings are recommended:

(1) Activation of international exchange between local tourism-related bodies and travel agencies abroad

Promotion at travel agencies in the market place is very important. In general, understanding of the actual conditions of both countries and people especially working in the tourism sector will create good business chances.

(2) Establishment of a promotional body for travel to Viet Nam based on governmental policies

It is proposed to set up branch offices of VNAT abroad in the major origin countries, such as France, U.S.A. and Japan. The principal role of the body is to promote inbound tourists to Viet Nam through various tourist promotion activities, including a travel information service, media assistance, showing of travelogue films, participation in fairs and exhibitions, and advertising in leading newspapers, magazines and travel trade publications within the major travel markets.

2) Implementation of Tourism Sales Promotion Activities

Promotion activities are particularly essential for the tourism industry. Promotion of tourism is usually divided into five activities, such as preparation of promoting tools, advertising, publicity, public relations, and incentives. The following are the items essential for tourism promotion.

- Prepare modernized tourism promoting tools that include brochure, pamphlet, tariff, arrangement map of accommodation/tourist-site facilities, videotape, film, small incentive tool (ball-point pen, cigarette lighter and so on),
- Share reasonably the roles of promoting activities between the public and private sectors, and
- Provide various tourism incentives.

4.3.2 Tourism Products Development Plan

1) Development Strategy and Framework

Product development within the study area should be made effectively and from a strategic point of view, taking fully into account tourists' needs, product potentials and necessary environmental protection measures.

The future development direction of the tourism products are defined as outlined below. The development direction is in line with the tourist target frame for the year 2000 upto 2010 as well as the policies outlined in the tourism master plan.

(1) Target market and product development images

Efforts should be made to enhance and diversify tourism products to be more competitive with other tourist destinations in ASEAN, taking into consideration the growing international tendency towards a cultural tourism often referred to as "Heritage Tourism".

The cultural tourism in the study area will continue to constitute a predominant tourism attraction. However, a lot of beach and other natural resources would also attract beach resort tourism and other various forms of tourism, preferably in the combination of culture and nature or other resort tourism.

The following are general directions for formulating tourism product images and their major market sources.

For foreign tourists :

- Historical and natural heritage tourism and products, such as Hue historical city, My Son ruins and Hoi An historic town. Potential tourism source markets would cover all over the world, especially Europe, North America and East Asia.
- Beach resort tourism and products at each provincial coast. Source markets would be rather distant markets, especially Europe and North America. However, some distinct attractions would be needed to attract more tourists.
- Traditional life style and ethnic culture tourism. The major source market would be Europe.
- Memorial tourism of the wartime and other historic eras. Source markets would be from France and North America and other related countries.
- Eco-tourism from Europe, North America and Japan.
- Asian green tourism such as agriculture lifestyle, fruits and landscape. Source markets would be from Europe and North America.
- Business and convention tourism for the ASEAN business communities and other countries¹ business activities
- Health and beauty tourism using spa and hot springs. Source markets would be Europe, North America and Japan.

For domestic tourists :

- Recreation and leisure, pilgrimage tourism of domestic tourists and foreign residents, and
- Education and enlightenment tourism for school students and other interested groups.

In summary, the principal image of the study area can be identified as follows, together with their color images:

- Historical treasure (purple) and tropical sea sand (white in blue), and
- Cultural life and enjoyment (colors) and abundant nature (green).

Table 4.3.1 summarizes the image of tourism products of the study area by the characteristics of each province and Table 4.3.2 presents the image of tourism products by major originating markets.

Table 4.3.1 Image of Tourism Products by Characteristics of Province

Tourism Product Image	Quang Tri	TT Hue	QN Da Nang	Quang Ngai
Historical and Natural Heritage Tourism	▲	☆	☆	◆
Beach Resort Tourism	▲	☆	☆	◆
Traditional Lifestyle and Ethnic Culture Tourism	☆	★	☆	◆
Eco-Tourism	▲	☆	★	▲
Asian Green Tourism	▲	☆	☆	◆
Memorial Tourism	☆	★	★	☆
Business and Conservation Tourism	▲	★	☆	◆
Spas and Health Resort Tourism	◆	☆	★	◆
Recreation and Leisure Tourism	◆	☆	☆	◆
Education and Enlightenment Tourism	★	☆	★	★

Note: ☆=highpotential, ★=favourable, ◆=possible, ▲=difficult

Source: JICA Study Team

Table 4.3.2 Image of Tourism Products by Major Origin Market

Tourism Product Image	EUROPE	AMERICA	ASEAN	EAST ASIA	DOMESTIC
Historical and Natural Heritage Tourism	☆	☆	◆	☆	☆
Beach Resort Tourism	☆	☆	◆	☆	◆
Traditional Lifestyle and Ethnic Culture Tourism	☆	☆	◆	★	◆
Eco-Tourism	☆	☆	◆	★	◆
Asian Green Tourism	☆	☆	▲	◆	▲
Memorial Tourism	★	☆	◆	◆	◆
Business and Conservation Tourism	★	★	☆	☆	★
Spas and Health Resort Tourism	☆	☆	◆	☆	◆
Recreation and Leisure Tourism	◆	◆	◆	◆	☆
Education and Enlightenment Tourism	▲	▲	★	◆	☆

Note: ☆=primary motivation, ★=secondary, ◆=possible, ▲=difficult

Source: JICA Study Team

(2) Numerical framework for products development

Accommodation development, which is the most important and basic tourism product in the study area, is estimated as a regional development framework taking into account the following considerations and premises.

a) Consideration and Premise for Regional Accommodation Framework

The target frame numbers of the regional master plan, which is based on the previous tourism plans prepared by the regional local governments, is reviewed with minor revisions in the target arrivals (short-term and mid-term) in relation with the accommodation capacity as follows :

- A gradual growth in the length of stay reflecting the changing diversification and development of new tourism products
- Consideration of gradual growth of the length of stay, owing to the national and regional tourist flow tendency that transits the Central Region as a part of national tour programs, and
- In addition, consideration of the capacity caused by domestic travel demand.

As a target, domestic visitors are expected to exceed international visitors although their overall number remains in the same order of magnitude. The demand of domestic guests for international standard accommodations is expected to gradually increase in future due to:

- Domestic guests have a tendency to stay mainly in economic hotels. They do not tend to stay with their friends and relatives, because of the capacity problems at home. In future, however, a gradual increase in demand is assumed, resulting from growth in income, and
- It is likewise assumed that there is a proportional distribution of domestic tourist arrivals over the four provinces.

International standard accommodations are in short supply in the study area, and they should be provided in both terms of quantity and quality, keeping pace with increasing tourist arrivals. There is already a classification system regulated by the government called the "star class system" which meets the various needs of international tourists.

b) Target Framework for Tourist Accommodation

Total visitor arrivals in the study area, specifically in the two provinces Thua Thien Hue and Quang Nam Da Nang, have recorded enormous growth rates, such as 63% (average 1991 - 94) in Thua Thien Hue and 68% (average 1991 - 94) in Quang Nam Da Nang. The targeted visitor arrivals to the Region up to the year 2010 are indicated in Table 4.3.3.

Table 4.3.3 Foreign Visitor Forecast 2000 to 2010

Province	Item	2000	2005	2010
Country	Visitor Arrivals	3,800,000	6,200,000	8,700,000
	Average Growth Rate	25%	10%	7%
	Average Length of Stay (day)	5.5 days	6.0 days	7.0 days
Quang Tri	Visitor Arrivals	35,000	87,000	217,000
	Average Growth Rate	28%	20%	20%
	Average Length of Stay (day)	1.1 days	1.1 days	1.3 days
T.T - Hue	Visitor Arrivals	560,000	750,000	1,000,000
	Average Growth Rate	28%	6%	6%
	Average Length of Stay (day)	2.3 days	2.7 days	3.2 days
Q.N. Da Nang	Visitor Arrivals	380,000	620,000	870,000
	Average Growth Rate	33%	10%	7%
	Average Length of Stay (day)	1.9 days	2.3 days	2.7 days
Quang Ngai	Visitor Arrivals	20,000	61,000	274,000
	Average Growth Rate	25%	25%	35%
	Average Length of Stay (day)	1.1 days	1.1 days	1.3 days

Source: JICA Study Team

The room requirements in the Central Region are estimated as shown in Table 4.3.4., by using the correlation ratios as shown in Table 4.3.5.

Table 4.3.4 Room Requirements (International Standard Hotel) in the Study Area

Province	Hotel Class	Number of room requirement				Total Additions
		1995	2000	2005	2010	
Study Area	H	0	1,310	1,890	3,320	3,320
	M	325	2,860	6,010	10,880	10,555
	L	1,682	1,781	2,660	4,950	3,268
	Total	2,007	5,951	10,560	19,150	17,143
Quang Tri	H	0	40	70	190	190
	M	0	80	210	610	610
	L	54	54	80	190	136
	Total	54	174	360	990	936
TT Hue	H	0	820	1,050	1,670	1,670
	M	297	1,790	3,370	5,480	5,183
	L	701	770	1,190	2,110	1,409
	Total	998	3,380	5,610	9,260	8,262
QN Danang	H	0	430	720	1,220	1,220
	M	28	950	2,280	4,020	3,992
	L	927	927	1,340	2,430	1,503
	Total	955	2,307	4,340	7,670	6,715
Quang Ngai	H	0	20	50	240	240
	M	0	40	150	770	770
	L	0	30	50	220	220
	Total	0	90	250	1,230	1,230

Note: H = 5&4 star class hotel, M=3 star class hotel, and L=2&1 star class hotel

Source: JICA Study Team

Table 4.3.5 Correlation Ratios for Room Requirement Estimation

		stay at int'l standard hotel			length of stay			occupancy	guests/
		2000	2005	2010	2000	2005	2010	rate	room
Quang Tri	Foreign	1.00	1.00	1.00	1.1	1.1	1.3	0.60	1.40
	Domestic	0.20	0.30	0.40	1.1	1.1	1.3	0.60	3.00
TT Hue	Foreign	0.90	0.90	0.90	2.3	2.7	3.2	0.70	1.40
	Domestic	0.10	0.20	0.30	1.9	2.3	2.7	0.70	3.00
QN Danang	Foreign	0.90	0.90	0.90	1.9	2.3	2.7	0.75	1.40
	Domestic	0.20	0.30	0.40	1.9	2.3	2.7	0.75	3.00
Quang Tri	Foreign	1.00	1.00	1.00	1.1	1.1	1.3	0.60	1.40
	Domestic	0.20	0.30	0.40	1.1	1.1	1.3	0.60	3.00
Foreign	High standard	0.25	0.20	0.20					
	Medium standard	0.55	0.65	0.65					
	Low standard	0.20	0.15	0.15					
Domestic	High standard	0.01	0.05	0.05					
	Medium standard	0.04	0.10	0.20					
	Low standard	0.95	0.85	0.75					

Note: Assumption of hotel guests composition, who stay at international standard hotel

Source: JICA Study Team

The assumptions in formulating the correlations are as follows :

- Assumption of different possibilities of staying at international standard hotels between foreign guests and domestic guests (foreign is assumed with higher possibilities in comparison with domestic ones) taking into consideration the present tendency, and
- Assumption of different or same possibilities depending upon the length of stay between foreign guests and domestic guests. Quang Tri, Quang Ngai and Q.N. Da Nang Provinces have the same possibilities. T.T. Hue has different possibilities of in terms of length of stay due to its characters being of the resort type.

Assumptions for estimating the demand derived from foreign guests are :

- Different potentials of the occupancy rate between multiple guest demand such as tourists/business demand in Q.N. Da Nang and single guest demand in Quang Tri and Quang Ngai Provinces (which will be changed depending upon the future industrial development), and
- Different potentials between foreign and domestic guests reflected by the present tendency.

c) Regional Distribution

Based on the preceding regional framework, the targets for accommodation supply for Q.N. Da Nang and Hue Provinces are indicated in Table 4.3.6 by priority development area.

Table 4.3.6 Regional Accommodation Distribution in Q.N. Da Nang Province and T.T. Hue Province

Tourism Development Zone	Hotel Class	Number of additional rooms				Total	Total Rooms
		1995	2000	2005	2010		
Hue City Zone	H	0	600	100	100	800	800
	M	297	1,263	920	350	2,533	2,830
	L	687	69	220	550	839	1,526
	sub-total	984	1,932	1,240	1,000	4,172	5,156
Hue Palace and Historic City Zone	H	0	0	0	70	70	70
	M	0	30	60	100	190	190
	L	14	0	50	150	200	214
	sub-total	14	30	110	320	460	474
Thuan An Resort Zone	H	0	220	130	100	450	450
	M	0	200	550	350	1,100	1,100
	L	0	0	120	220	340	340
	sub-total	0	420	800	670	1,890	1,890
Bach Ma National Park Zone	H	0	0	0	0	0	0
	M	0	0	0	40	40	40
	L	0	0	30	0	30	30
	sub-total	0	0	30	40	70	70
Lang Co Tourism Promotion Zone	H	0	0	0	300	300	300
	M	0	0	50	1,200	1,250	1,250
	L	0	0	0	0	0	0
	sub-total	0	0	50	1,500	1,550	1,550
Chan May Resort Zone	H	0	0	0	50	50	50
	M	0	0	0	70	70	70
	L	0	0	0	0	0	0
	sub-total	0	0	0	120	120	120
T.T Hue Total	H	0	820	230	620	1,670	1,670
	M	297	1,493	1,580	2,110	5,183	5,480
	L	701	69	420	920	1,409	2,110
	Total	998	2,382	2,230	3,650	8,262	9,260
Danang Gateway City Zone	H	0	0	80	230	310	310
	M	28	422	450	670	1,542	1,570
	L	738	0	313	640	953	1,691
	sub-total	766	422	843	1,540	2,805	3,571
Danang Coast Resort Zone	H	0	430	210	200	840	840
	M	0	360	500	560	1,420	1,420
	L	124	0	0	250	250	374
	sub-total	124	790	710	1,010	2,510	2,634
Hoi An Tourism Promotion Zone (Town)	H	0	0	0	0	0	0
	M	0	20	80	250	350	350
	L	65	0	100	200	300	365
	sub-total	65	20	180	450	650	715
Hoi An Tourism Promotion Zone (Coast Resort)	H	0	0	0	70	70	70
	M	0	120	300	210	630	630
	L	0	0	0	0	0	0
	sub-total	0	120	300	280	700	700
Hai Van Zone (Beach Resort)	H	0	0	0	0	0	0
	M	0	0	0	50	50	50
	L	0	0	0	0	0	0
	sub-total	0	0	0	50	50	50
Q.N. Da Nang Total	H	0	430	290	500	1,220	1,220
	M	28	922	1,330	1,740	3,992	4,020
	L	927	0	413	1,090	1,503	2,430
	Total	955	1,352	2,033	3,330	6,715	7,670
Total (T.T Hue+ Q.N Da Nang)	H	0	1,250	520	1,120	2,890	2,890
	M	325	2,415	2,910	3,850	9,175	9,500
	L	1,628	69	833	2,010	2,912	4,540
	Grand-total	1,953	3,734	4,263	6,980	14,977	16,930

Source: JICA Study Team

The targets are based on the development strategy as described hereafter.

- Tourism products will be diversified through the implementation of resort type tourism, and
- The carrying capacity of each development zone, such as Hue City and Hoi An Town, will be taken fully into account.

2) Tourism Products Development Strategy

(1) Priority area development

The criteria for the selection of priority development areas are assumed as follows:

- Significance of tourism destination (arrivals, resources, facilities)
- Development opportunities (regional setting, plans & projects authorised, accessibility by air access / road / water transportation)
- Necessity of solving constraints (infrastructure, products capacity), and
- Environmental conservation (environmental planning and regulation).

The results of the evaluation and selection of priority development areas are summarized in Table 4.3.7.

Table 4.3.7 Evaluation and Selection of Priority Development Areas

Tourism Development Area	Priority Development grade by each Province Plan	Significance of Products			Urgent Accessibility Improvement and Action	Overall Assessment
		Tourists Arrivals	Potential of Resources			
QUANG TRI						
Wartime Tourism area	◆	◆	◆	◆	◆	◆
Lay-Cua Tung Beach area	◆	▲	★	◆	◆	◆
THUA THIEN - HUE						
Hue Citadel and Old City area	☆	☆	☆	☆	☆	☆
Mausoleums, tombs, pagodas	☆	☆	☆	☆	☆	☆
Thuan An coast area	☆	◆	◆	☆	☆	☆
A Luoi Village area	◆	◆	★	▲	◆	◆
Chan May beach area	◆	◆	☆	★	◆	★
Bach Ma National Park area	★	▲	☆	▲	★	★
QUANG NAM - DA NANG						
Da Nang City coast area	☆	☆	★	☆	☆	☆
Hoi An Historical Town area	☆	☆	☆	◆	☆	☆
My Son Cham Archeological area	☆	★	★	★	☆	☆
Ba Na National Park area(proposed)	★	▲	★	▲	★	★
Phu Ninh Lake area	◆	▲	★	▲	★	◆
Khe Tan Lake area	★	▲	◆	▲	◆	◆
Hien Village area	◆	▲	◆	▲	◆	◆
QUANG TRI						
My Khe beach area	★	▲	◆	▲	◆	◆
My Lai War memorial area	★	▲	◆	▲	◆	◆
Ly Son Island area	▲	▲	◆	▲	◆	◆
Sa Huynh beach area	★	▲	◆	▲	◆	◆

Note: ☆=high, ★=secondary, ◆=tertiary, ▲=low

:priority development area is necessary to score the mark of ☆ and ★ in all over assessment

Source: JICA Study Team

(2) Strategic tour route development

The principles for strategic tour route development in priority development areas are as follows:

- Gradual route development with strategic reinforcement of tourism products
- Optimization and enhancement of potentials of existing tourism products
- Diversification of tourism products network by gradual exploitation and integration of attractions, and
- Development of selected tour routes.

a) Selection Criteria

- To link each tourism development zone, taking into account the priority areas for tourism development of each province as identified in their plans
- To utilize existing tour route programs offered by major tour agents in order to support their activities in the Central Region, and
- To formulate an adequate tour route network in consideration of time factors as well as sight-seeing objectives.

b) Assessment of Tour Route

Tourism development priority areas selected by each provincial plan are indicated in the preceding Table 4.3.7. According to the tour programs offered by four major tour agents in Viet Nam, almost all tour routes concentrate in T.T. Hue Province and Q.N. Da Nang Province. Table 4.3.8 shows the tendency by each tourist destination in detail.

Table 4.3.8. Number of Tourist Destinations Selected in the Programs of Four Major Tour Agents

Province	Major Destination	Agent 1		Agent 2		Agent 3		Agent 4		Total		
		Tra	Des	Tra	Des	Tra	Des	Tra	Des	Tra	Des	
Quang Tri	- Ho Chi Minh Trail			2				1		3	0	
	- Khe Sanh Base	1		1						2	0	
	- DMZ/Ben Hari River	1								1	0	
	- Ethnic Village							1		1	0	
T.T. Hue	- Imperial Citadel	5		9		6		10	1	30	1	
	- Pagodas/Temples	5		5		6		9	1	25	1	
	- Dong Ba Market									0	0	
	- Thuan An Beach									0	0	
	- Lang Co Beach									0	0	
	- Bach Ma Nat'l Park									0	0	
QN-DN	- Hai Van Pass	4		5		5		4		18	0	
	- Cham Museum	4		4		6		4		18	0	
	- Marble Mountain	3		3		6		2	1	14	1	
	- City Baches	2		4		6		1		13	0	
	- Hoi An Town	3		8		6		2	1	19	1	
	- My Sib Ruin	1		1						2	0	
Quang Ngai	- Cham Ruins	1								1	0	
	- My Lai (Son My)									0	0	
	- Sa Huynh Beach									0	0	
Total			30	0	42	0	41	0	34	4	147	4

Note: Tra = Transit Destination, one night over-stay in the gateway city (HCMC or Ha Noi)
Des = Main Destination, one night stay only in the gateway city (HCMC or Ha Noi)

Source: JICA Study Team

(3) Strategic tour route development

Based on the preceding sections, Figure 4.3.2 shows the proposed strategic tour route development. The essential components for tour route formulation are identified as follows :

- a) Major Tourist Corridor Development As Natural-Cultural Tourism Spine
 - Da Nang Coast - Hoi An - My Son
 - Hue Historical Center and surroundings - Thuan An, and
 - Lang Co Coast - Chan May coast - Bach Ma National Park.
- b) Ladder Route Development As Rural Cultural Tourism Spine
 - QL 9 Wartime Corridor (Dong Ha - Dakrong Bridge - Khe San), and
 - Ethnic Corridor (Vankieu Minority - A Loi -Hien).
- c) Other Route Development As Natural Recreation Spine
 - Quang Ngai and its surroundings (My Khe - My Lai - Ly Son)
 - Sa Huynh.

Figure 4.3.2 summarizes the major features of the strategic tour route development plan.

3) Structure Plan for Tourism Products Development

The physical structure plan for the Region aims at showing the details of site locations and requirements for the main areas of tourist interests, which should identify the main products to be provided, the basic tourism infrastructure to be consolidated and the areas to be protected.

The following parameters have been used to formulate the tourism development structure of the Region.

(1) Development area hierarchy

a) Tourist Destination

Regional assignment aims at identifying and encompassing tourism resources and at integrating development areas as a group. Such groups will be a combination of characteristic destinations.

Tourist destinations should have a key tourism components such as the proximity to gateways and/or a tourist base town. In other words, tourism development areas should be designated to have such key functions to enhance the quality as a tourist destination.

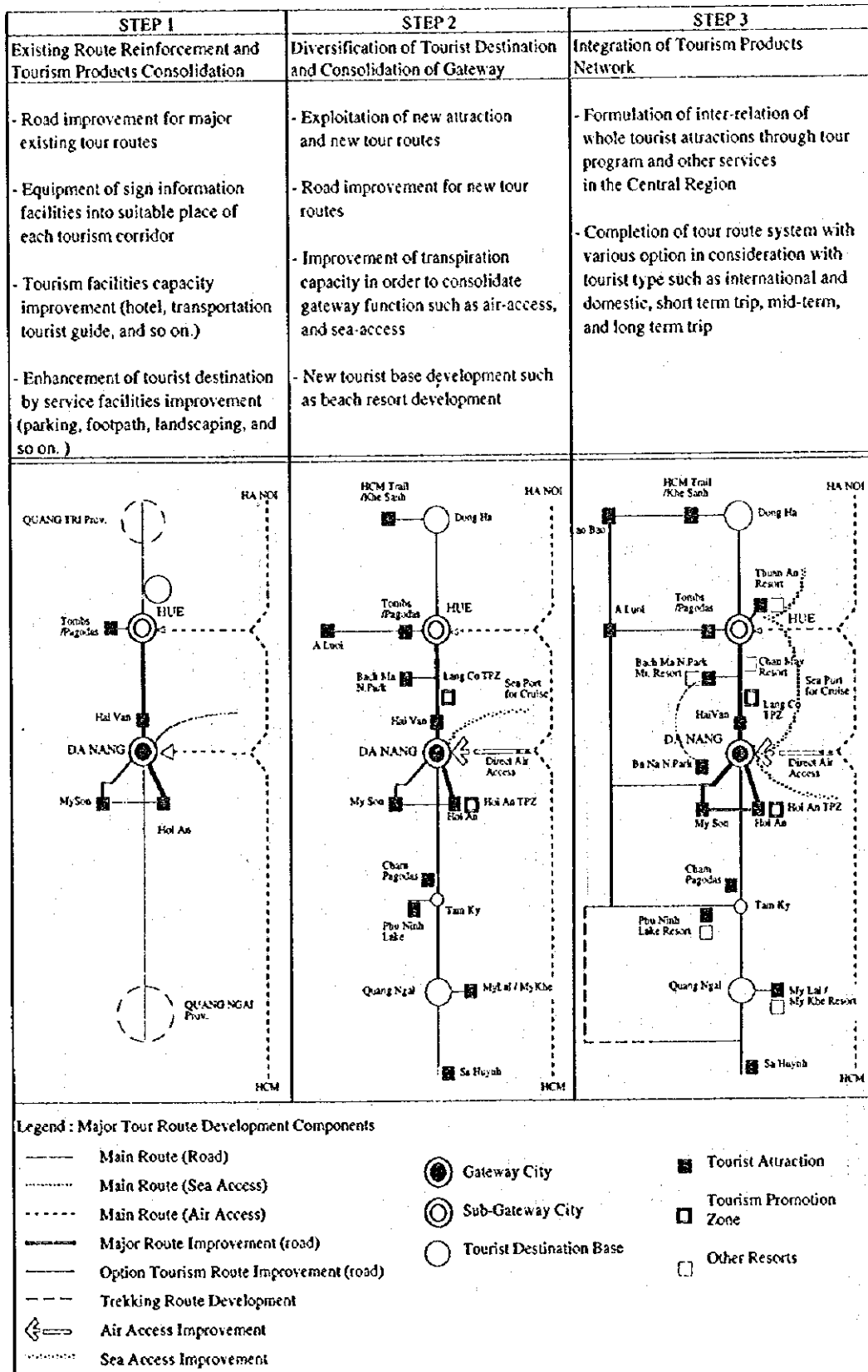
b) Tourism Development Zone

Tourism development zoning aims at identifying the areas in each tourist destination having tourism development potentials to be exploited. They should play an important role of increasing the capacity products and attracting tourists.

c) Priority Development Area

Selection of a priority development area aims at identifying strategic priority destinations among potential tourist destinations in terms of effective and attractive tourism products development.

Figure 4.3.1 The Proposed Strategic Tour Route Development



Source: JICA Study

d) Environmental Consideration Area

Care should be invited in the selection to designate the valuable environmental areas for tourism products in terms of conservation and protection of important resources and their environment, including already nominated areas such as national parks.

(2) Tourist hub and network development

a) Gateway City

Da Nang City has the function of receiving tourists through its international airport and seaport which serve as the principal means of mass transportation as well as the function as the primary base with various type of accommodations. Also, it should have tourist service centers, such as a tourist information center, transportation services, agents services and other fundamental urban facilities such as hospitals and police.

b) Sub-Gateway City

Hue City has supplemental functions of receiving tourists in the Region with a domestic airport and a sub-base to cater various types of accommodations. Also, it should have tourist service centers, such as a tourist information center, transportation services, agency services and other important urban facilities, such as hospitals and police.

c) Tourist Destination Base

Other major cities or towns provide supplemental functions of receiving tourists in each destination with accommodations, and other tourist services such as a tourist information office, transportation services, agency services and other fundamental urban facilities such as hospitals and police in each province.

They also include some large-scale resort development areas such as a Tourism Promotion Zone with a large-scale accommodation, providing tourist services, such as tourist information, transportation services, agency services and other supplemental facilities, such as health clinics.

d) Transportation network for tourism

(a) Air access

Da Nang functions as the gateway city with its international airport. Real needs exist to develop the airport capacity with direct access from originating markets (under negotiation with several airlines at present), while Phu Bai airport will continue to function as a domestic airport. Phu Bai also needs to develop its capacity.

(b) Land access

The tourism road network gives convenient, safe and comfortable access to tourist destinations. It is very much essential for tourism development zones. Road network should be improved or developed as main tourism infrastructure in consideration of not only accessibility but also providing tourists with attractive views with suitable landscaping along tour routes.

(c) Sea access

The sea network with seaport facilities also gives a good access to tourist destinations. It should be improved or developed as a supplemental means of transport in consideration of not only access by cruise ships but also attracting tourists with marine views. Suitable water transportation facilities such as speed boats will be required to haul tourists to remote islands and sight-seeing if such are designated as a tour route development.

- e) **Strategic Tourism Product Development**
 - **Tourism Promotion Zone development**
 - **Tourism infrastructure development**

(3) Structure plan for tourism development in the Central Region

The proposed spatial development plan for tourism development in the study area is described in the following Table 4.3.9 and Figure 4.3.2.

4.3.3 Service Improvement

People's hospitality plays an important role in tourism. Since tourism services are provided from people to people, personnel working in the tourism industry should be properly trained and educated. However, the service standards of the tourism sector in Viet Nam is still below the satisfactory level (with some exceptions), and only few people seem to realize the importance of "service."

In this context, human resources development in the tourism sector should be one of the key issues for the future tourism development in Viet Nam. It is vital to provide an adequate training system for the personnel engaged in the tourism industry to meet the demand for tourism-related establishments.

It should also be noted that conservation of natural, historical and cultural resources to a large extent depends on the personnel engaged in tourism, such as wardens and attendants of relics and heritage, tourist guides, car drivers and boatmen. Education and training to learn right knowledge of environmental, historical and cultural science for conservation of tourism resources is important. The services provided by well-trained tourist guides and tourist resource-related staff having cultural and environmental consciousness will surely promote the image of Viet Nam. The demand for well-trained personnel would definitely increase in various tourism-related establishments, such as hotels, tour operators and transportation companies.

In addition, education campaigns for local residents in tourist zones in the study area should also be encouraged.

1) Expansion of Training Institutes for Tourism Education

Development of the tourism sector requires the expansion of training capacity at various levels. The following are recommended programs:

(1) Authorization of Ha Noi Tourism School

As the highest qualified training institute in tourism education in Viet Nam, the existing Ha Noi Tourism School should be authorized as an official training institute.

- The full-time training courses should be expanded from the present three months to 1-4 years, depending on the area of education.
- The course of tourism sales and promotion should be added to the existing courses with a duration of two years.
- Experts should be invited from tourism advanced countries, specifically from Vietnamese tourism origin countries such as France, U.S.A. and Japan to join its teaching staff on a regular basis.
- Financial shortages of the school could be partly subsidized by using tourism tax revenues, which could be newly levied on the use of tourism-related facilities.

Table 4.3.9 Formulation of Structure Plan for Tourism Product Development

Tourist Destination and Priority Development Area	Tourism Development Zone	Tourist Hub Enhancement	Transportation Network Improvement
DA NANG CENTER	Da Nang Gateway City Zone Da Nang Coast Resort Zone Hai Van Zone	Da Nang City ◆	-International airport -Tourism road and transportation facilities -Seaport for cruise
HOI AN - CHAM	Hoi An Tourism Promotion Zone My Son Archeological Park Zone	Hoi An / Tam Ky ★	-Tourism road and transportation facilities -Island sea-transportation
HU NINH - KHE TAN	Phu Ninh Lake Recreation Zone Khe Tan Lake Recreation Zone	Tam Ky (Hiep Duc) ★	-Tourism road
LANG CO - CHAN MAY	Lang Co Tourism Promotion Zone Chan May Resort Zone	(Chan May New Town) ★	-Tourism road and transportation facilities
BACH MA - BA NA	Bach Ma National Park Zone Ba Na National Park Zone	(Chan May New Town) Da Nang City ◆	-Tourism road
HUE HISTORICAL CENTER	Hue City Zone Hue Palace, Historic City Zone Historical Holly Garden Zone Thuan An Resort Zone	Hue City ☆	-Phu Bai airport -Tourism road and transportation facilities -Seaport for cruise
ETHNIC CORRIDOR	A Luoi Tourism Village Zone Hien Tourism Village Zone	A Luoi / Hien ★	-Regional road
WARTIME CORRIDOR	Dakrong Bridge Tourism Zone Lay-Cua Tung Recreation Zone	Huong Hoa ★ Dong Ha ★	-Regional road
QUANG NGAI - MY KHE LY SON	My Khe - My Lai Resort Zone Ly Son Island Tourism Zone	Quang Ngai ★	-Regional road -Island sea-transportation
SA HUYNH	Sa Huynh Recreation Zone	Duc Pho ★	-Regional road

Note: ◆=Gateway City, ☆=Sub-Gateway City, ★=Tourist Destination Base Town

Source: JICA Study Team

Figure 4.3.2 Structure Plan for Tourism Product Development
in the Study Area

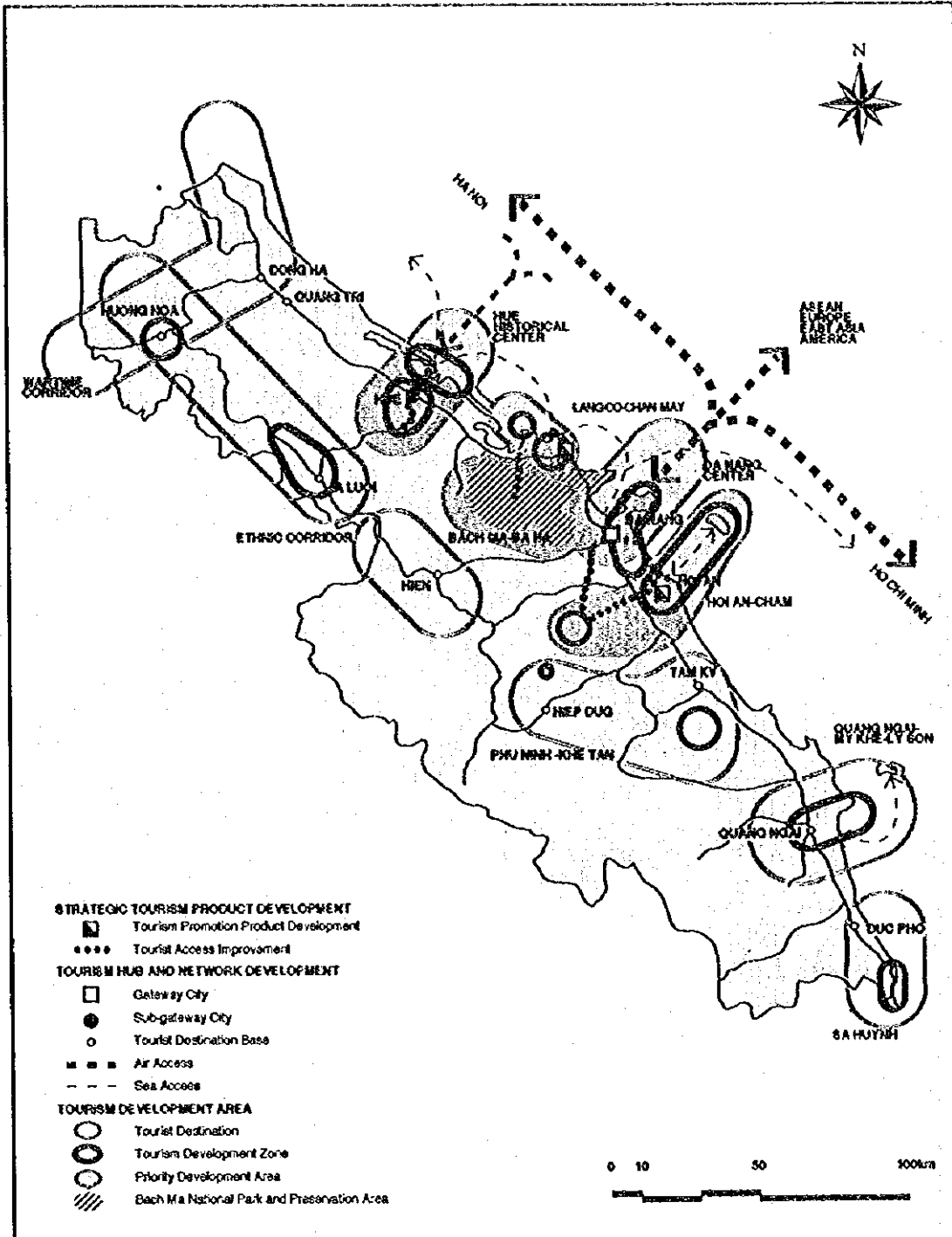
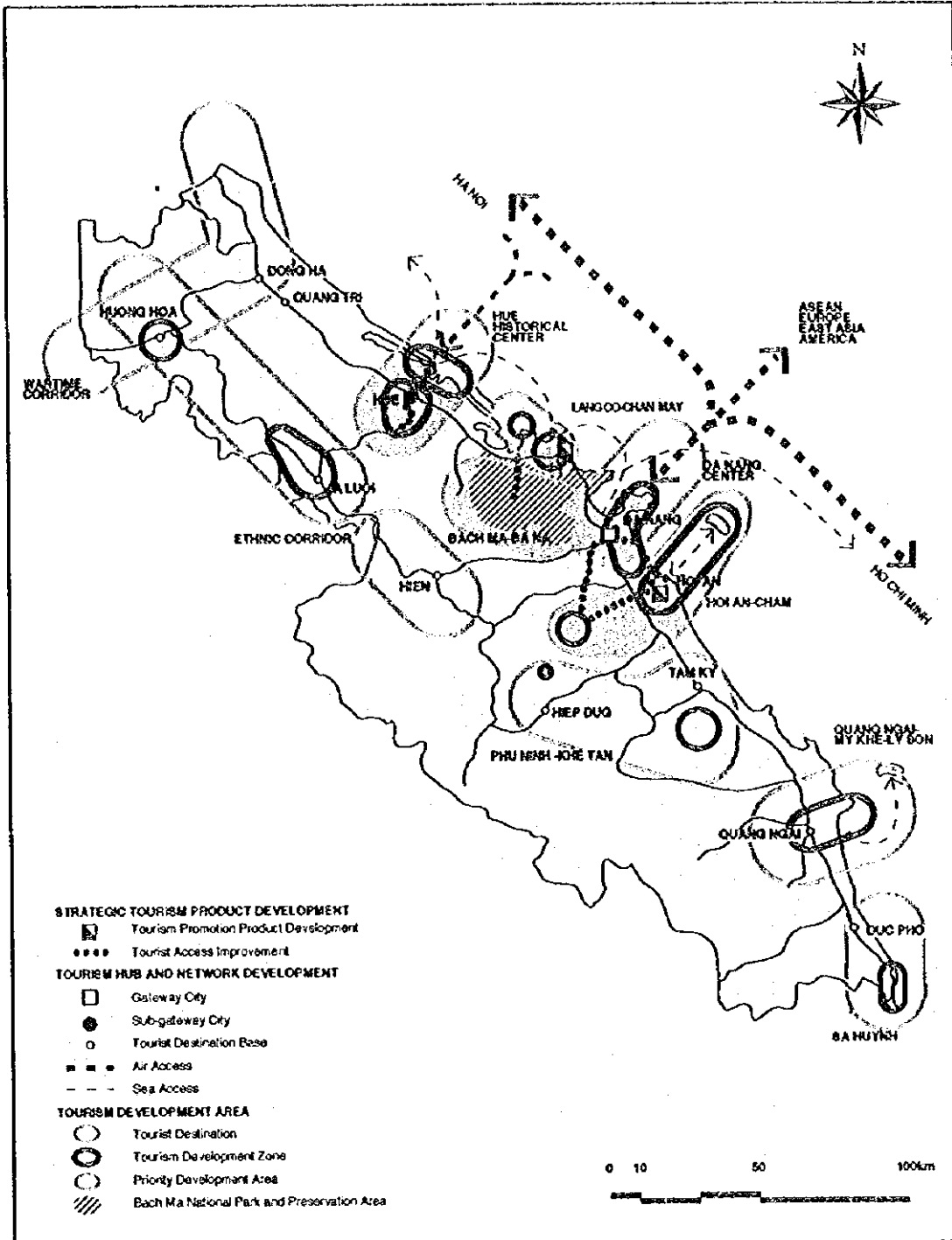


Figure 4.3.2 Structure Plan for Tourism Product Development in the Study Area



(2) Opening the Central Region Tourism School as a branch of Ha Noi Tourism School

The management mechanism and the contents of curricula at this school can remain the same as those of the main campus, but tour guide courses should be emphasized at this school in response to the strong demand of tourism business circles.

2) Adoption of International Cooperation on Tourism Training

The system of international cooperation in tourism training should be adopted and promoted on a multilateral as well as bilateral basis.

3) Implementation of Educational Campaigns for Local Residents in Tourism Promotion Zone

(1) Implementation of routine enlightenment campaign for tourism promotion

Tourism promotion should be implemented successfully by cooperation with all tourism-related people. Because of principle of participatory approach, educational campaigns should be simple, routine and practical.

(2) Implementation of civil enlightenment campaign for tourism promotion

The tourism industry makes a good progress by the cooperation with local residents living in the tourism promotion zone. Therefore, it is proposed to implement civil educational campaigns in the tourism promotion zone such as Hue and Hoi An.

4.4 URBAN DEVELOPMENT

4.4.1 Human Settlement System

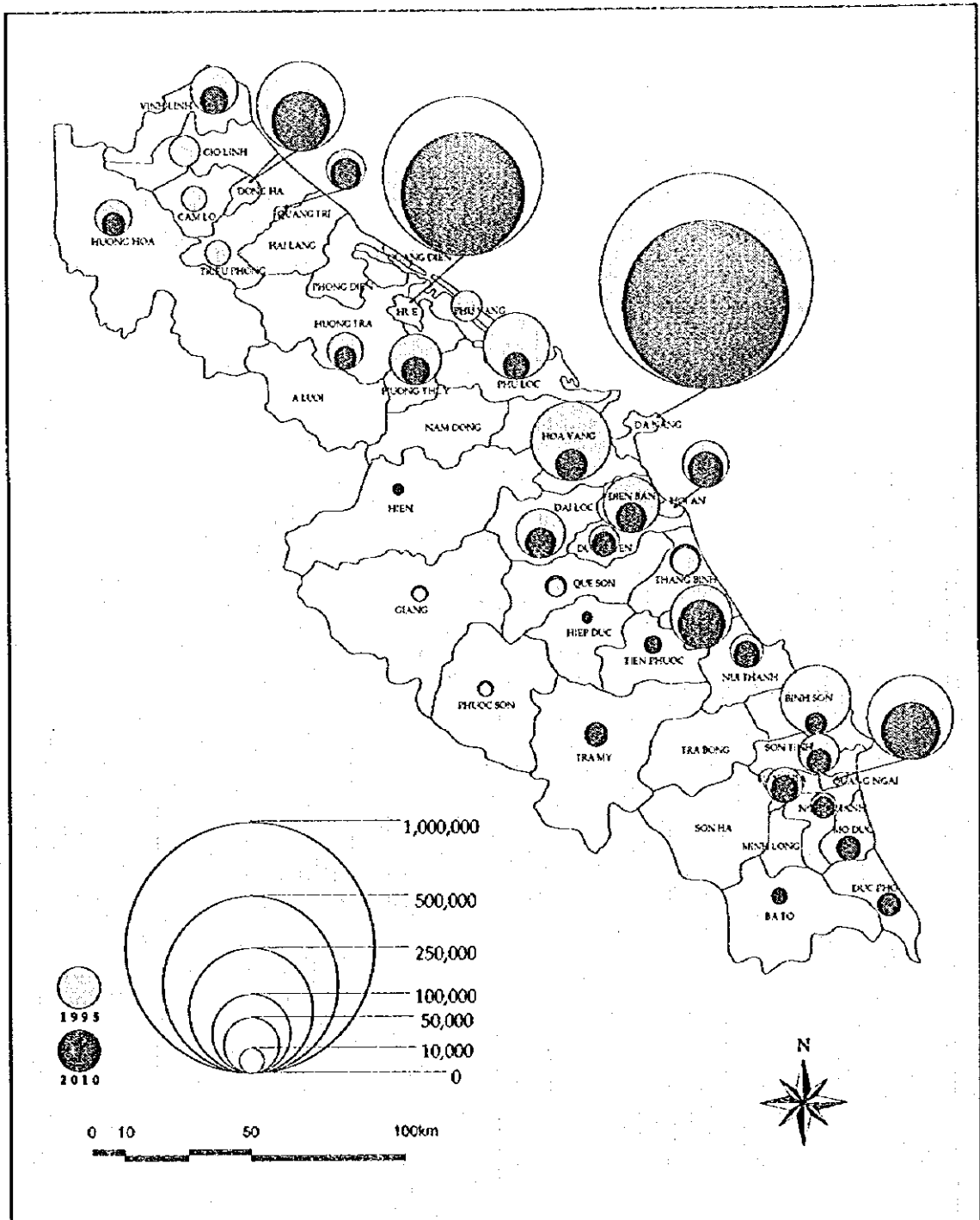
1) Urbanization

The projected population of the study area in 2010 will be 6.5 million, compared to 4.8 million in 1995, while the urban population will be 2.1 million in 2010 compared to 1.1 million in 1995. Figure 4.4.1 shows the future urban population distribution.

2) Human Settlement Centers

Deliberate growth management measures are necessary under a decentralization policy. To this end, a structured hierarchical human settlement center system at the regional level should be developed in combination with hinterland development. Higher ordered centers shall be developed with higher levels of urban functions. These centers should be developed as development strategic centers for the decentralization policy in order to accommodate the spill-over of urban population, urban economies and industrial activities.

Figure 4.4.1 Distribution Future Urban Population



Source: JICA Study Team

The proposed human settlement center system is shown in Table 4.4.1, and its spatial structure, in Figure 4.4.2. The following should be noted as important feature of the spatial structure of the human settlement system.

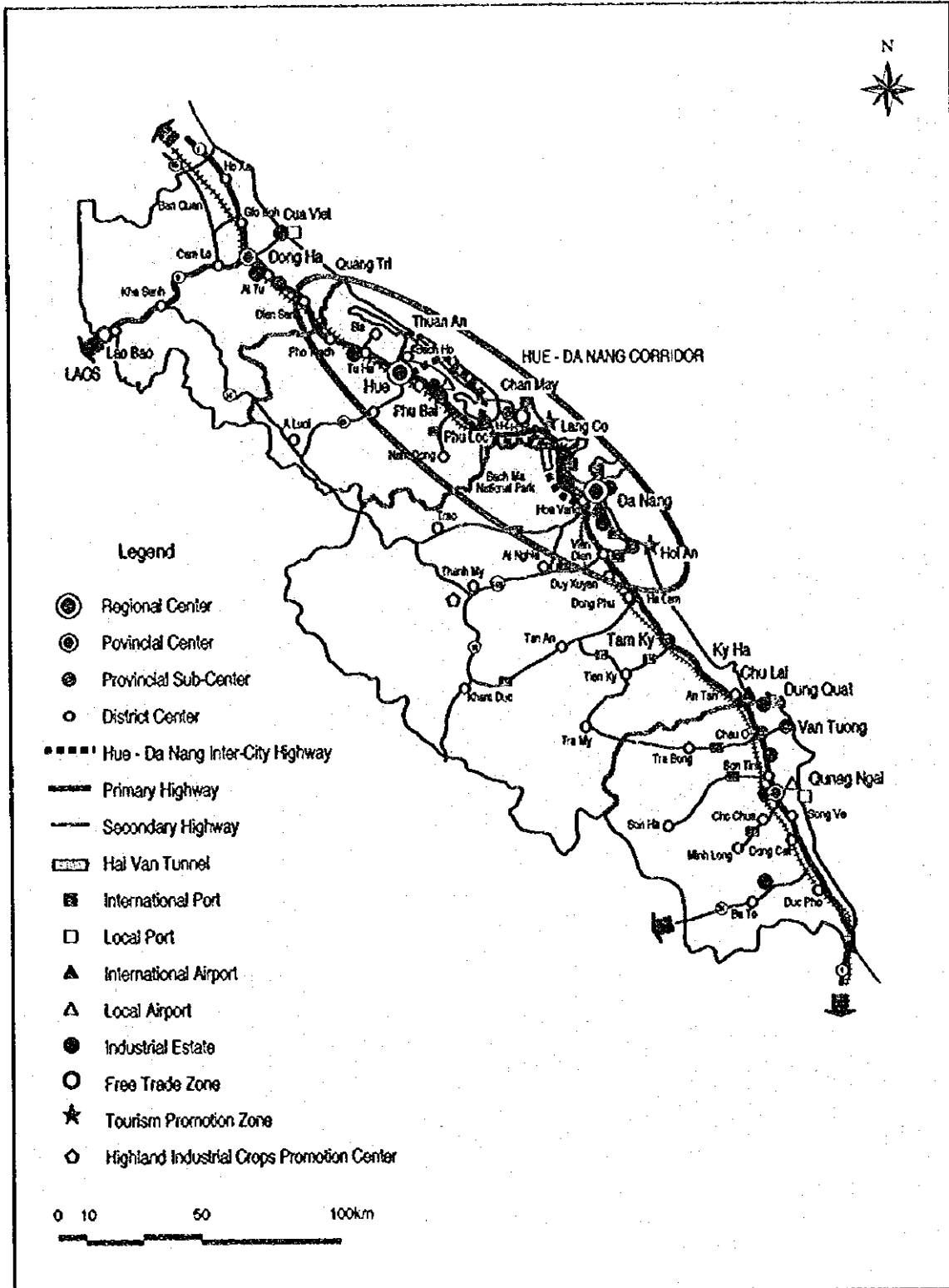
- The core development area is the "Hue-Da Nang Corridor" covering Hue - Chan May - Da Nang - Hoi An. This development corridor is the spine of development in the study area. The corridor contains industrial and commercial centers, a physical distribution center with the international deep seaport at Chan May to handle domestic and international cargoes and tourism promotion zones. Lao Bao shall be part of the Quang Tri border free trade zone.
- Da Nang is the primary order urban center, supplemented by Hue. Both will form a large development strip along QL 1, including Chan May Free Trade Zone. Dong Ha and Quang Ngai - Van Tuong - Dung Quat are the other urban centers.
- Chan May and Dung Quat are strategic industrial development cities with new town development.
- Industrial estate developments are proposed at Cua Viet port, Dong Ha south, Van Xa, Phu Bai, Lien Chieu, Hoa Khan, Dien Ngoc - Dien Nam, Dung Quat, Think Thong, Quang Ngai town, and Nghi Hanh.
- The spine of the road network shall be formed with a New Hue - Da Nang Highway and the Hai Van tunnels.

Table 4.4.1 Urban Center Hierarchy in the Study Area

	I Regional Center	II Provincial Center	III Provincial Sub Urban Center	IV District Center	V Strategic Urban Center
Province	Highly functioning urban center to support regional economy	Functions as provincial economic center	Functions as supporting provincial economic center	District center to support agriculture and rural development at district level	Special functions for industrial and commercial development
Quang Tri		Dong Ha	Quang Tri Ai Tu	Ho Xa Gio Linh Dien Sanh Cam Lo Khe Sanh Ben Quan	(Lao Bao)
TF-Hue		Hue	Phu Bai Phu Loc Tu Ha	Sia Phu Tuong Nam Dong A Luoi	Chan May
QN- Da Nang	Da Nang		Hoi An Tam Ky Hoa Yang Vinh Dien Duy Xuyen	Tien Ky An Tan Ai Ngia Dong Phu Tan An Tra My Trao Kham Cuc Thanh My	
Quang Ngai		Quang Ngai	Chau O Son Tinh	La Ha Dong Cat Duc Pho Ba To Tra Xuan Son Ve	Dung Quat Van Tuong

Source: JICA Study Team

Figure 4.4.2 Spatial Structure of Human Settlement Center



4.4.2 Development Plans for Major Urban Areas

The aforementioned development strategies are interpreted within the local settings of each urban area. In the study area, there are three unified urban areas for planning, namely, Dong Ha area, Hue - Chan May - Da Nang - Hoi An Corridor, and Dung Quat - Quang Ngai area.

The following are urban development concepts of the respective areas:

1) Dong Ha Area

(1) Development direction

Dong Ha is a small urban area, which has only limited urban functions and economic size compared with the three other provincial capitals. The key development idea for Dong Ha is industrialization through agro-based economic development.

First of all, the area needs to expand and grow its own economic base to expand the urban area and accumulate urban functions. To this end, industrialization, which is accompanied by urbanization should be realized as stated in the industrial development section of this volume. Industrial developments are proposed at Dong Ha south and Cua Viet port. At the same time, the Lao Bao Border Free Trade Zone development project is proposed to tap the Greater Mekong Sub-Region's trade activities. Economic growth by these projects is the key to the Province's growth. Otherwise, Dong Ha area will not be modernized and urbanized as expected.

Furthermore it is proposed to establish a border Free Trade Zone at Lao Bao on the Lao border to institutionalize and accelerate the trade with Laos and Thailand. Quang Tri and QL 9 is expected to be a free trade corridor.

(2) Development plan

The expansion of the human settlement area must be just adjacent to the existing urban inhabited land in Dong Ha area because infrastructure development cannot catch up with the pace of the expansion, if development takes place in a disorderly manner.

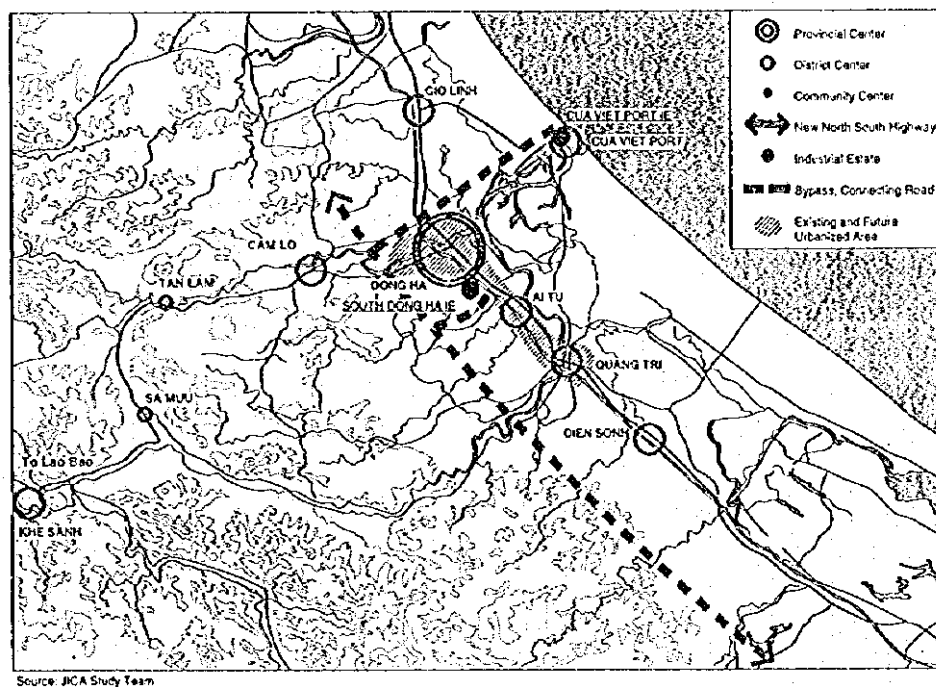
Human settlements are planned to be mainly along QL 1, between Dong Ha, Ai Tu and Quang Tri. The other district towns along QL 9 are expected to grow as the Quang Tri Free Trade Zone Corridor plays the expected role of economic activities. The Lao Bao Boarder FTZ is also proposed to include light industries such as electric and electronic, textile and garment.

Development components around the Dong Ha area are as follows:

- **Urbanized area:** The direction of expansion of the urban area is, in the first place, southward along QL 1 towards Quang Tri town through Ai Tu. In the urbanized area, water, sewerage, road development should be the first priority for improving the service level of existing infrastructure.
- **Industrial zone development:** Two industrial estates development are proposed at Cua Viet port and Dong Ha south areas.
 - Dong Ha South IE: Electric and electronics, and machine equipment.
 - Cua Viet Port: Foodstuff, glass and pottery, and machine equipment.
- **Improvement of Cua Viet port:** Cua Viet port is proposed to be improved for domestic transportation.
- **Construction of access road to Cua Viet port:** A road connecting Dong Ha and Cua Viet port is now under construction.

- **Construction of bypass:** A bypass between QL 1 and 9 on the northern ring of the town area (as proposed as by TEDI) is necessary in order to avoid the traffic from Lao Bao going through downtown of Dong Ha.
- **Utilities Development:** The following utility projects are proposed:
 - Expansion of piped water supply system in Dong Ha and Quang Tri towns
 - Expansion of storm water drainage in Dong Ha and Quang Tri towns
 - Reinforcement of solid waste disposal facilities in Dong Ha and Quang Tri towns
 - Development of water supply facilities and sewerage and solid waste disposal in the proposed industrial zones.

Figure 4.4.3 Development Plan of Dong Ha Area



2) Hue - Chan May - Da Nang - Hoi An Development Corridor

(1) Development direction

This corridor is the main urban high potential development area in the study area. This area is to be the engine for the growth of the study area. Therefore, most of the development efforts will concentrate along the corridor thus to form an urban agglomeration.

QL 1 and New Hue - Da Nang Highway form a spine of the corridor together with its supporting communication systems, such as Phu Bai and Da Nang airports, Tien Sa and Chan May ports. The corridor will be connected to the hilly and mountainous areas with a ladder patterned road network system to integrate the rural and urban areas.

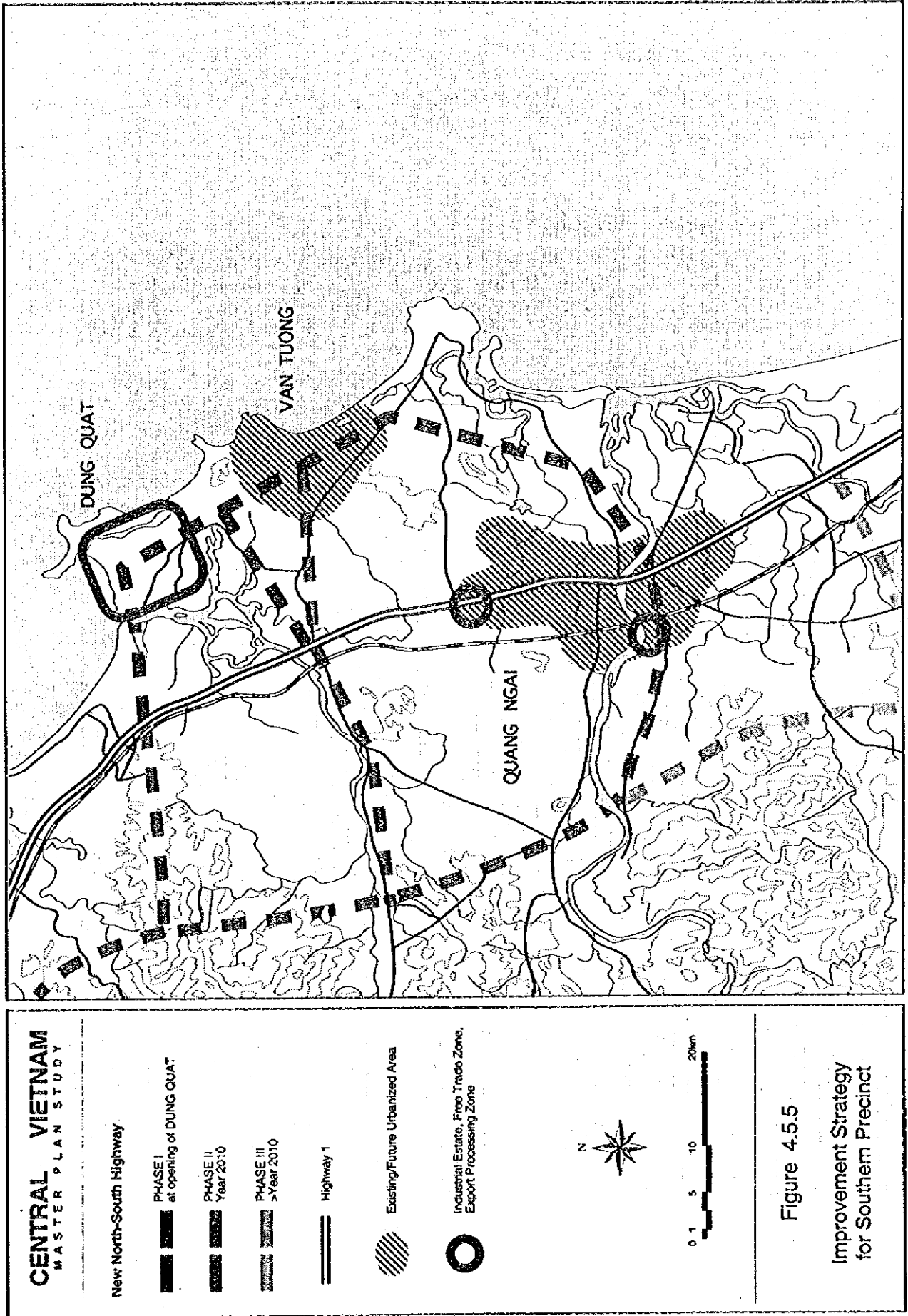
(2) Development plan

Figure 4.4.2 shows the land development concept. The spatial structure is formed with the New Da Nang - Hue Highway and the following developments:

The Corridor contains:

- Hue Cultural Conservation & Tourism Development Zone: This zone is to be developed as a center of cultural and educational activities. Conservation of the natural and cultural environment together with urban amenity development should be carried out.
- Phu Bai Industrial Development Zone: Phu Bai area is proposed to be developed as an industrial area in the future. This zone has less impact on both natural and social environments. This industrial complex is proposed to include electric and electronic, machine equipment, chemical, textile and garment industries.
- Van Xa Industrial Zone: Although this zone is just out of the Hue - Da Nang Development Corridor, this industrial zone is a development core to the northern area of T.T. Hue. This industrial estate is proposed to have light-industries, such as foodstuff, textile, garment, leather and artificial leather.
- Lagoon Environment Conservation Zone: The natural and social environment in this zone should be conserved. In conjunction with this zone, socio-economic development such as agricultural, fishery and community development is essential.
- Chan May Free Trade Zone: This zone is proposed as a Free Trade Zone with a commercial port. Environmental consideration and types of industries location should be considered for development. The development concept is to create a new urban center to form urban agglomeration in the Central Corridor.
- Lang Co Tourism Promotion Zone: This area is proposed to be developed as a tourism promotion zone for a beach resort. Natural conservation and preservation, and prevention of pollution are keys to the development of the zone.
- Hai Van- Bach Ma National Park Area: The natural environment should be preserved in the zone.
- Da Nang Regional Center Development Zone: Da Nang is the largest urban center and a gateway of the Central Region. Urban functions and amenities should be enhanced from the regional development point of view. High level of urban functions with its beautiful scenery (river, sea and mountains) will attract investment to this area. Da Nang EPZ is located in this area.
- Da Nang Coastal Tourism Development Zone: Da Nang has a potential coastal line for a beach resort development. This is expected to add more value to Da Nang's urban amenity.
- Lien Chieu - Hoa Khan Industrial Development Zone: Industrial estates are planned along QL 1 on the west of Da Nang City, in which Coca Cola and Nissan are supposed to establish factories.
- Dien Ngoc - Dien Nam Industrial Development Zone: This industrial estate is proposed on a low productive barren land but out of flood prone area.
- Hoi An Tourism Promotion Zone: Hoi An is a candidate of the UNESCO's World Heritage. Hoi An is a proposed tourism promotion zone. Its historical and cultural environment has a potential to attract tourists. Key issue of the development is conservation of the heritage and flood mitigation measures.

Figure 4.4.4 Development Concept of Hue-Chan May- Da Nang-Hoi An Corridor



- **My Son Tourism Development Zone:** My Son is also a candidate of the UNESCO's World Heritage. This zone is proposed to be a 'National Archaeological Park' development area which requires better access and programs to preserve Cham ruins including the surrounding holy mountains.

3) Hue Area

(1) Development direction

As it is the World Heritage city, Hue shall be protected and developed as a historic, cultural and tourism core. Hue City's image is clearly related to its historic and cultural heritage as well as the Huong River. Its landscape is a great asset for the city's identity. To maintain and improve its image, Hue should be totally planned and controlled in its urban development process.

Although Hue will be developed as a cultural and historical city, the urban area will also be developed along QL 1, together with industrial development at Phu Bai and Van Xa. To form a larger unified urban area, a new Hue-Da Nang Inter-city Highway is proposed to bypass the north of the Hue Royal Citadel.

Furthermore, Thuan An is proposed to be developed as a beach resort paying due attention to lagoon conservation. Accordingly, a road connection between Thuan An and Hue will be needed.

(2) Development plan

Development elements for Hue are as follows:

- **Cultural landscape and zoning:** Hue is proposed to be zoned as follows:
 - **Historic Preservation Zone:** This zone aims at preserving the assets with a restoration program, which covers most of the Hue historic heritage, the pagodas, temples and the Royal Palace.
 - **Historic Conservation Zone:** This zone aims at conserving the environment of the assets, covering Hue Royal Citadel, and the southern bank of the Huong River surrounding the pagodas and temples.
 - **Historic-scape Safeguarding Zone:** This zone aims at forming and retaining the unique historic and cultural atmosphere, conserving 'cultural landscape' consisting of traditional vernacular villages, rural temples and the natural environment. In this zone, strict zoning and land use regulations should be formulated to preserve the traditional environmental context of the historical monuments and sites with buffer zones.
 - **Riverside Control Zone:** This zone aims at preserving the environment of the Huong River Basin. In addition, the Huong River has a potential to develop a waterfront park and promenade to enhance its urban amenity together with the historical and cultural atmosphere, especially in front of the business district and the Royal Citadel. At the same time, rehabilitation of Phu Xuan Bridge is proposed.

Table 4.4.2 Proposed Zoning System and Control Items in Hue

Proposed zones	Items to control						
	Bldg Height	Bldg Use	Land	Deve-lopmt facility	Advert-izement signs	Sanita-tion	Land use
Historic Preservation	-	-	-	-	-	▲	▲
Historic Conservation	□	-	□	□	-	▲	★
Historic-scape Safeguarding	○	□	□	○	□	★	★
Riverside Control	□	-	□	□	-	★	★
Roadside Control	□	-	□	□	□	▲	★

Note: ★: necessary; ○: allowable; □: conditionally allowable; ▲: not applicable ✖: not allowable
Source: JICA Study Team

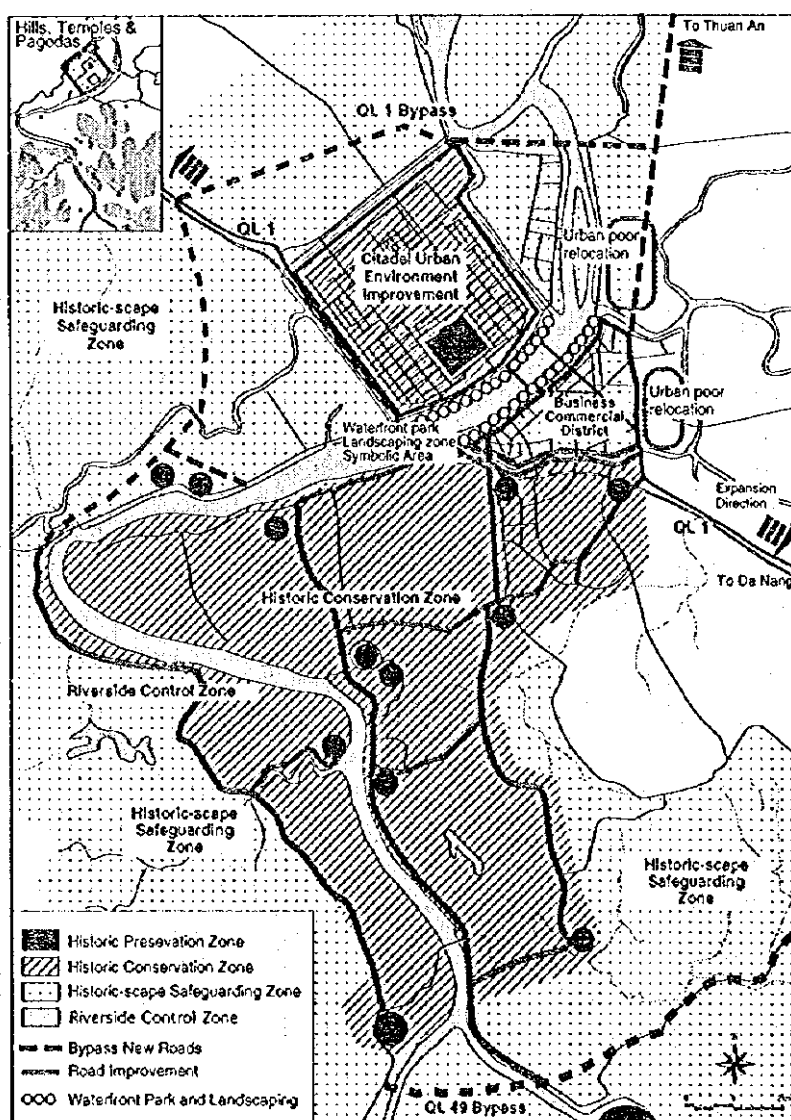
- **Hue Royal Citadel Urban Environment Improvement:** The Royal Citadel is a special asset. In this area, an urban environment improvement program is proposed to be carried out. The program includes the total urban environment, such as urban sanitation, street development, flood control, sewerage management, and building control.
- **Business District:** The business district is confined on the existing business district and a strip of land along QL 1.
- **Urban poor resettlement:** There live some ten thousand people on the wall of the Citadel and on river boats. The former is causing squatters and the latter have an adverse impact on the river environment. It is planned to resettle them to the new residential areas on the east part of Hue City.
- **New Hue-Da Nang Highway:** The new Hue-Da Nang inter-city Highway is proposed to run east to west in the northern part of Hue.
- **Bypasses construction:** The following bypasses need to be constructed to avoid through traffic. They also help the traffic congestion in the downtown and mitigate air pollution.
 - QL 49 bypass: To avoid the traffic passing through the safeguard area, and proposed scenic and cultural preservation area.
- **Tourism related road improvement:** The following roads are proposed to be improved for tourism development purpose.
 - Ho Quyen - Le Loi Street. - Nam Giao
 - Mauseleums and Pagodas access roads
 - Tu Duc, Duc Duc, Hon Chen access roads
 - Provincial Highway 5 - Thuan An access road
 - Thuan An beach roads
 - Thien Mu Pagoda bypass road: A local road running between Thien Mu pagoda and Huong river, disturbing tourism environment from the jetty on Huong river to the pagoda. A bypass road is proposed behind the Thien Mu pagoda.
 - Provincial Highways 3 and 5
- **Utilities development:** The following utilites development is proposed:
In Hue city:
 - Sewerage improvement project in the Citadel,

- Expansion and rehabilitation of water supply facilities,
- Expansion of sewerage system, and
- Reinforcement of solid waste treatment capability.

Other areas:

- Development of piped-water supply facilities in Huong Thuy and Phu Loc,
- Development of water supply facilities, sewerage and solid waste disposal facilities in Lang Co, and
- Development of water supply facilities, sewerage and solid waste disposal facilities in the proposed industrial zones in Phu Bai and Chan May.

Figure 4.4.5 Hue Area Development



4) Chan May Area

(1) Development direction

It is proposed that the Chan May area forms a logistic base with a free trade zone and international commercial port facility in order to serve as a marine gateway in the New East-West Trade Corridor of the Greater Mekong Sub-Region (GMSR). This also aims at creating an attractive environment for FDI, and a comparatively advantageous international trade and processing base.

The Chan May development is considered to be the most important stimulator to form the proposed "Hue-Da Nang Development Corridor."

(2) Development plan

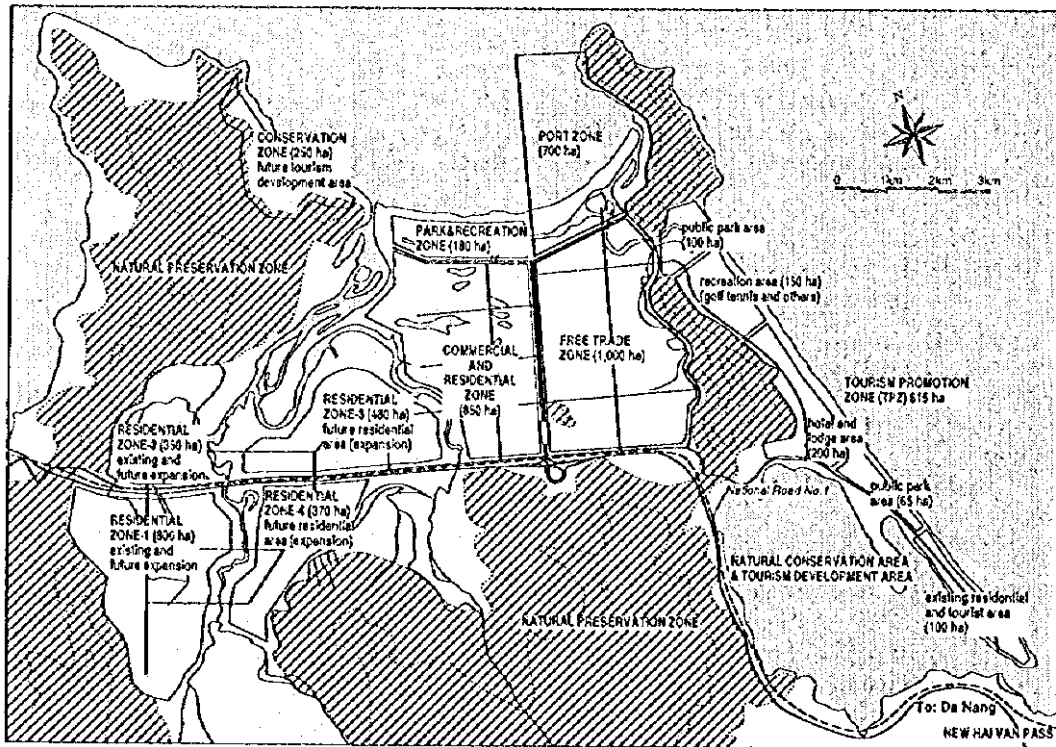
Figure 4.4.6 shows the preliminary development plan of the Chan May Area including Lang Co Area. Chan May is naturally suitable as port area with beautiful beach. Although the detailed development plan needs further study, the preliminary development plan for the Chan May consists of the following zones:

- Port zone,
- Free trade and transit zone: the FTTZ will include storing, assembling, and/or processing mainly for the trade and distribution purposes, which deals construction materials, chemicals, wood processing, textile, garment, foodstuff, electric and electronics, and handicrafts,
- Commercial and business zone,
- Park and recreation zone,
- Residential zone,
- Conservation zone,
- Natural preservation zone,
- Natural conservation and tourism development area, and
- Tourism promotion zone.

The road network should be linked with the Hue-Da Nang New Inter-city Highway, arterial roads and grid feeders in the project area.

Some 50,000 people are estimated to live in 2010 in the area including the existing population.

Figure 4.4.6 Chan May Development Plan



Source: JICA Study Team

5) Da Nang Area

(1) Development direction

Da Nang is a "Gateway City" of the Region. Creation of the "Gateway City of Da Nang" with high urban functions and amenity with its beautiful scenery is the key development concept. Da Nang's asset in urban design is its sea and mountains, which neither Ha Noi nor HCMC has. In design of the city, it is vital to make the best use of the natural settings by ameliorating the degrading urban environment.

As one of the national economic center, emphasis should be put on the following developments:

- Business and Commercial Area Development
- Industrial Development
- Tourism Development

Furthermore, structural decentralization of Da Nang city is a big issue. A well planned development is needed to accommodate the over-spill population. Such urban developments should use the land which is not highly productive and prone to floods. Therefore, the direction of the expansion of urban area of Da Nang City is towards the west part of the City, adjacent area of Hoa Vang, and southeast area on the way to Hoi An.

(2) Development plan

Figure 4.4.7 illustrates the development concepts for the Da Nang area. The following are the key development components:

- **Business district with urban amenity:** The central business district of Da Nang is proposed to be developed with good landscaping, placing emphasis on waterfront development of the Bach Dang Street and the Han River. In the far future, a new CBD concept of the twin CBDs comprising the Bach Dang street and Tien Sa across the Han River is proposed with a view to create a new Da Nang central business zone. In the long run, a new bridge catering for the business use of connecting these two CBDs is also proposed. The CBD on Tien Sa is to have resort atmosphere with the beaches on the eastern sea side.
- **Industrial zones development:** The existing Da Nang EPZ located on the east bank of the Han River is given the first priority for development. The industrial location zones are planned on the low productive land 10-15km away from the downtown Da Nang, namely, Lien Chieu, Hoa Khan, and Dien Ngoc-Dien Nam. Accompanied with these industrial developments, an appropriate transportation network should be ensured to avoid a traffic bottleneck between the Tien Sa port. The following types of industries are proposed for the industrial zones.
 - Da Nang EPZ: Machine equipment, electric and electronic, textile, and garment,
 - Lien Chieu and Hoa Khan: Machine equipment, metal production, chemical, construction material, foodstuff, glass and pottery, and wood processing and forestry, and
 - Dien Ngoc - Dien Nam: Chemical, electric and electronic, textile and garment.
- **Residential area:** To mitigate the overpopulated inner area and accommodate the future population, residential area development is indispensable. The development direction would be towards west, south-east, and south. The new residential areas should be developed on low-productive land.
- **Natural preservation area:** Son Tra peninsular and mountain area on the west to the City should be preserved for environmental and landscape purposes.
- **Tourism development and urban amenity:** Da Nang's important asset is tourism resources, which are available near the downtown, including beaches, mountains, and historical spots. Urban design and tourism development should be planned in a unified manner to create urban amenity. To enhance the urban amenity of the gateway city, Bach Dang Street should be improved with waterfront landscaping.
- **Road network development:** The new Hue-Da Nang Highway, bypasses, city transportation and river crossings are proposed to structure the greater Da Nang area. The urban road network, including crossings over the Han River, will serve as a smooth connection between the Tien Sa port with the other areas of the City. Also, the roads connecting suburban areas with Da Nang are proposed for the purposes of tourism and industrial development.
- **Bridge construction:** A new bridge over the Han River located south of the existing bridge (Ngen Van Troi Bridge) is necessary to accommodate the increasing volume of cargoes generated at the planned industrial estates and tourist traffic as well. Also the existing bridge needs to be upgraded to accommodate growing volume of cargoes. Furthermore, a river-crossing on CBD area will be proposed in the long run, and its location and alignment need further in-depth study.
- **Improvement of Da Nang Airport:** As the main gate to the Gateway City, Da Nang Airport needs to be improved in passenger and cargo handling capabilities.

- **Road improvement:** The following roads are proposed to be improved for both industrial and tourism purposes:
 - Da Nang City - QL 1 - TL 608 (Hoi An access),
 - Da Nang City - TL 603 - TL 607 (Hoi An access),
 - Da Nang City - TL 603 - Local coastal road (DL),
 - Han river - Marble Mountain, and
 - Kiem Lien village - Southside of Lang Co.
- **Public park:** A public park is proposed on the river-front of the Han River, south of Nguyen Van Troi bridge. This will be a recreational space for both Da Nang people and tourists.
- **Mitigation of pollution in the city:** The city needs the following measures to mitigate pollution:
 - Traffic control,
 - Dust cleaning,
 - Clean port area,
 - Waste treatment system construction, and
 - Drainage system construction.
- **Utilities development:** The following utilities are proposed in the Da Nang area:

Da Nang:

 - Rehabilitation of water supply facilities,
 - Development of a sewerage system, and
 - Reinforcement of solid waste disposal facility.

Other areas:

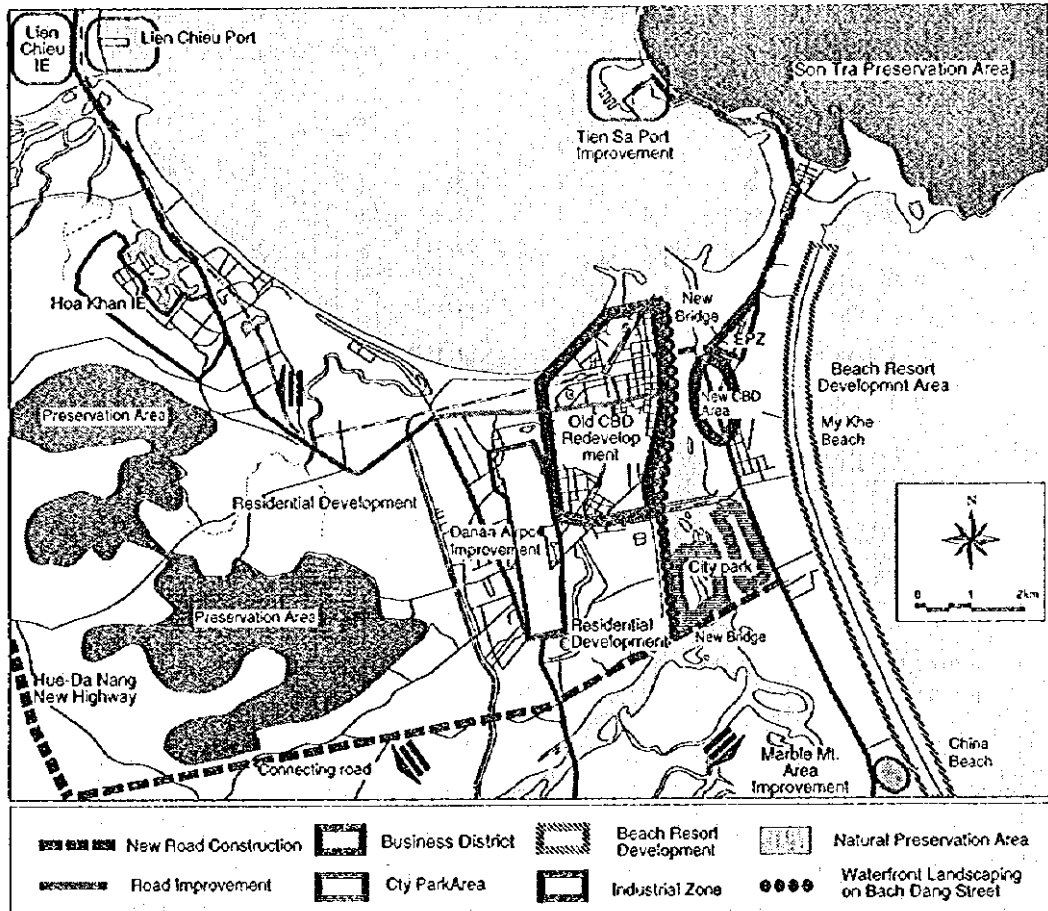
 - Development of piped water supply facilities in Hoa Vang and Duy Xuyen, and
 - Development of water supply facilities, sewerage and solid waste disposal facilities in the new residential areas near Hoa Khanh and Dien Ngoc - Dien Nam.

6) Hoi An Area

(1) Development direction

As Hoi An is a historical tourism town which is nominated as a UNESCO World Heritage site, tourism is the leading sector of the town. Therefore, it is proposed that Hoi An town be developed under a tourism promotion zone scheme. Key development components of Hoi An are mainly twofold: flood control and tourism facilities development.

Figure 4.4.7 Da Nang Development Plan



Source: JICA Study Team

(2) Development plan

The proposed urban development of Hoi An is as follows:

- Development Zoning:** It is proposed that Hoi An be zoned as shown in Figure 4.4.8. Broadly, the town is zoned into urban, surrounding rural, and coastal areas.
 - **Urban development control area:** This area shall be developed for human settlement and be protected from floods. It is proposed to construct an embankment road surrounding the urban area.
 - **Coastal resort development area:** Hotel development is proposed in this area.
 - **Local landscape safeguarding area:** Unique historic and rural atmosphere shall be maintained in this area.
 - **Buffer (green) area:** This zone is to limit urbanization against the urbanization pressure arising from the Dien Ngoc - Dien Nam industrial estate.

Table 4.4.3 Proposed Zoning System and Control Items

Proposed zones	Items to control						
	Bldg Height	Bldg Use	Land reclaim	Development facility	Advertisement signs	Sanitation	Land use
Sanctuary zone	-	-	-	-	□	★	★
Development control zone	□	-	□	□	□	★	★
Landscape control zone	□	□	□	□	□	★	★
Urban development area	□	□	□	□	□	★	★
Coastal resort area	□	□	□	○	□	★	★
Local landscape safeguarding	□	○	□	○	□	▲	★
Buffer area	□	□	-	-	□	▲	★
Riverside control area	-	□	-	-	-	★	★
Roadside control area	□	○	□	□	□	▲	★

Note: ★: necessary; ○: allowable; □: conditionally allowable; ▲: not applicable ✖: not allowable
Source: JICA Study Team

- **Flood control embankment road:** An embankment road is proposed for the following purposes:
 - To protect "Hoi An Historical Town" from Thu Ban river flood,
 - To enclose the urban area including future expansion, and
 - To use the embankment road as ring road of the urban area.

Careful attention must be paid to the road design for the embankment road not to ruin the landscape.

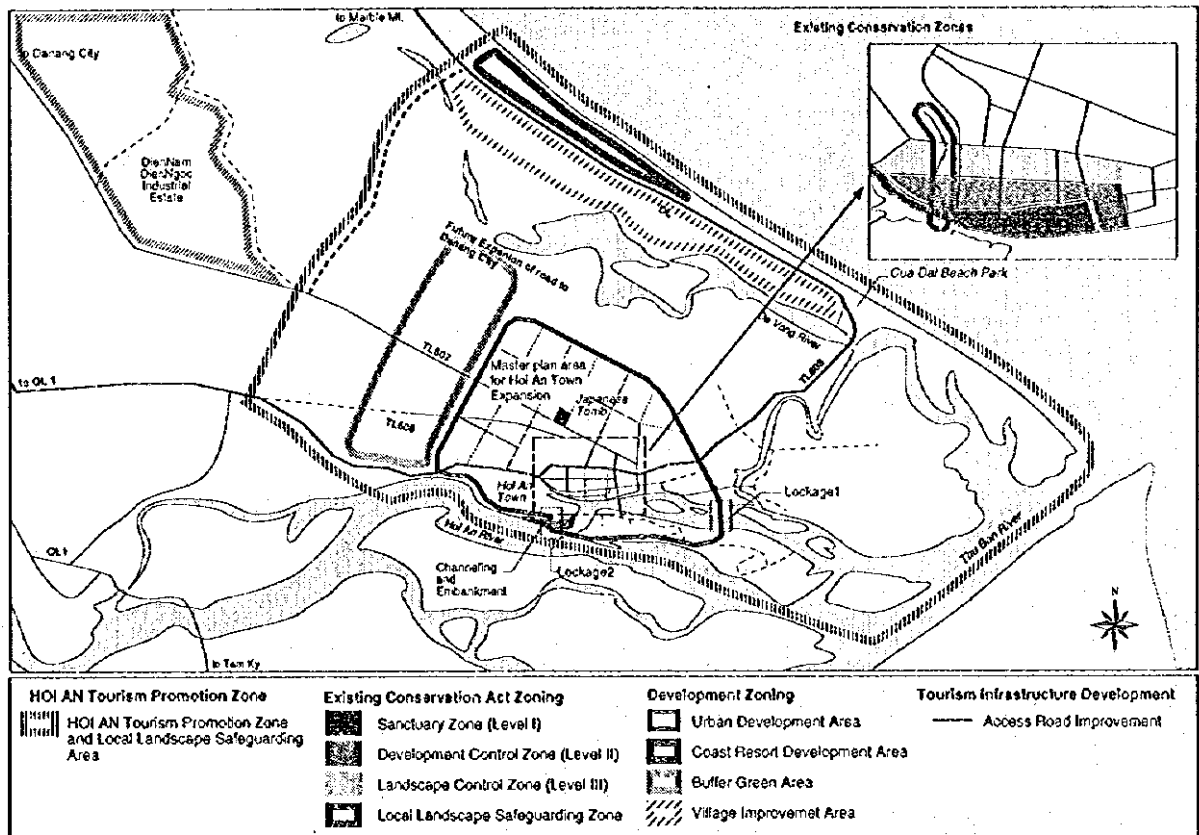
- **Traffic control:** To protect the historic heritage and mitigate air pollution in the old quarters, traffic control is also needed.
- **Utilities development:** Improvement of water supply facilities and a sewerage system in the urbanized area are needed.

7) Dung Quat - Quang Ngai Area

(1) Development direction

Quang Ngai aims at achieving the industrial sector led development to boost the province's economy. To that end, it is proposed to set up the four industrial estates, namely, Dung Quat port, Tinh Phong, Quang Ngai Town, and Pho Phong Industrial Estates. Human settlements in Quang Ngai shall be influenced much by the performance of the industrial estates, with Dung Quat - Quang Ngai as main development area in the province. Quang Ngai shall be the commercial and services center for the province economy.

Figure 4.4.8 Hoi An Development Plan



Source: JICA Study Team

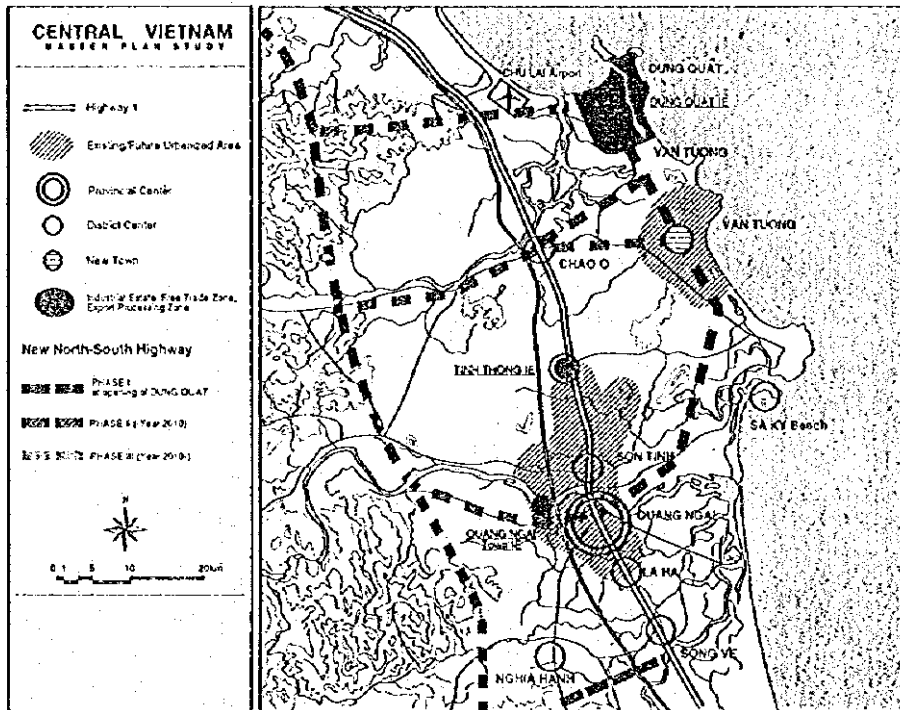
(2) Development plan

The major development components of Quang Ngai are as follows:

- **Dung Quat development:** This is the key development to form a heavy industrial complex. This development contains:
 - Dung Quat port
 - Industrial estates: The industrial estates will have: power, ferrous metallurgy, chemical, and machine equipment industries
 - New town: A new town is proposed to be constructed in the Van Tuong Area. Some 50,000 people are estimated to reside there in 2010, the viability of which requires further study.
- **Industrial development:** Three industrial developments other than Dung Quat industrial development are proposed to be established for the following types of industries:
 - Tinh Phong IE: Construction material,
 - Quang Ngai IE: Food stuff, leather and artificial leather, and
 - Pho Phong IE: Food stuff, and wood processing and forestry.

- **Utilities development:** The following utility development is proposed:
 - Expansion of piped-water supply system in Quang Ngai,
 - Development of piped-water supply facilities in Son Tin and Tu Nghia,
 - Expansion of storm water drainage in Quang Ngai,
 - Reinforcement of solid waste disposal facilities in Quang Ngai, and
 - Development of water supply facilities, sewerage and solid waste disposal facilities in the Van Tuong new town area.

Figure 4.4.9 Dung Quat - Quang Ngai Development Plan



Source: JICA Study Team

4.4.3 Telecommunications Development

The proposed socio-economic development in the study area would create rapidly increasing traffic demand for telecommunications, and therefore, a system improvement program to meet the requirement for at least 15 sets per 100 people by the year 2000 will become necessary. Also, associated with the new development projects that may come in the study area, such as the Dung Quat industrial development, Chan May port and city development, and the development of a new East-West Trade Corridor along Highway No. 9, due consideration should be given to the telecommunications sector that can effectively support such developments.

One factor contributing to the rapid growth of Viet Nam's telecommunications sector is the joint venture cooperation of Vietnamese enterprises with foreign telecom companies through business cooperation contracts (BCC). Under the BCC arrangement, the country's north-south telecommunications spine with a high speed Synchronous Digital Hierarchy Ring Network (SDH) is under construction, and its first section that runs parallel to Highway No. 1 and targets populations areas, was completed in March 1996. Eventually a 3,000 km, high-speed, high-capacity fibre optic telecommunications network that runs the full length of the country will be constructed.