

The Study on Integrated Development Strategy for Danang City and Its Neighboring Area in the Socialist Republic of Vietnam (DaCRISS)

FINAL REPORT / Part I

Summary

December 2010

ALMEC Corporation
International Development Center of Japan

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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
DANANG PEOPLE'S COMMITTEE

**THE STUDY ON INTEGRATED DEVELOPMENT STRATEGY FOR
DANANG CITY AND ITS NEIGHBORING AREA IN
THE SOCIALIST REPUBLIC OF VIETNAM
(DACRISS)**

**FINAL REPORT
PART I SUMMARY**

December 2010

ALMEC CORPORATION
INTERNATIONAL DEVELOPMENT CENTER OF JAPAN

The exchange rate used in the report is
J. Yen 110 = US\$1 = VND 17,000
(average in 2008)

PREFACE

In response to the request from the Government of the Socialist Republic of Vietnam, the Government of Japan decided to conduct The Study on the Integrated Development Strategy for Danang City and Its Neighboring Area (DaCRISS) and entrusted the program to the Japan International cooperation Agency (JICA)

JICA dispatched a team to Vietnam between June 2008 and December 2010, which was headed by Mr. IWATA Shizuo of ALMEC Corporation and consisted of ALMEC Corporation and International Development Center of Japan.

In the cooperation with the Vietnamese Counterpart Team, the JICA Study Team conducted the study. It also held a series of discussions with the relevant officials of the Government of Vietnam. Upon returning to Japan, the Team duly finalized the study and delivered this report.

I hope that this report will contribute to the sustainable development of Danang City and its neighboring areas as well as Vietnam and to the enhancement of friendly relations between the two countries.

Finally, I wish to express my sincere appreciation to the officials of the Government of Vietnam for their close cooperation.

December 2010

KIYOFUMI KONISHI

Director General, Economic Infrastructure Department
Japan International Cooperation Agency

December 2010

KIYOFUMI KONISHI

Director General, Economic Infrastructure Department
Japan International Cooperation Agency
Tokyo

Subject: Letter of Transmittal

Dear Sir,

We are pleased to formally submit herewith the final report of The Study on the Integrated Development Strategy for Danang City and Its Neighboring Area (DaCRISS).

This report compiles the results of the study which was undertaken both in Vietnam and Japan from June 2008 to December 2010 by the Team comprising ALMEC Corporation and International Development Center of Japan.

In the course of the study we have conducted various surveys including the Household Interview Survey which targeted at 5,000 households in Danang City, to grasp the situation of the city from various aspects. By considering these results as well as existing policies, and through thorough discussions with the counterpart team, we have proposed “Danang to be an Internationally Competitive Environmental City Beyond being Pollution-free” as the vision statement for Danang City.

We owe a lot to many people for the accomplishment of this report. First, we would like to express our sincere appreciation and deep gratitude to all those who extended their extensive assistance and cooperation to the Team, in particular the People’s Committee of Danang City.

We also acknowledge the officials of your agency and the Embassy of Japan in Vietnam for their support and valuable advice in the course of the Study.

We hope the report would contribute to the sustainable development of Danang City and its neighboring areas as well as Vietnam.

Very truly yours,

IWATA Shizuo

Team Leader

The Study on the Integrated Development Strategy
for Danang City and Its Neighboring Area (DaCRISS)

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ABBREVIATIONS

3R	Reuse, Reduce, Recycle
ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
BRT	Bus Rapid Transit
CBD	Central Business District
CDM	Clean Development Mechanism
CFEZ	Central Focal Economic Zone

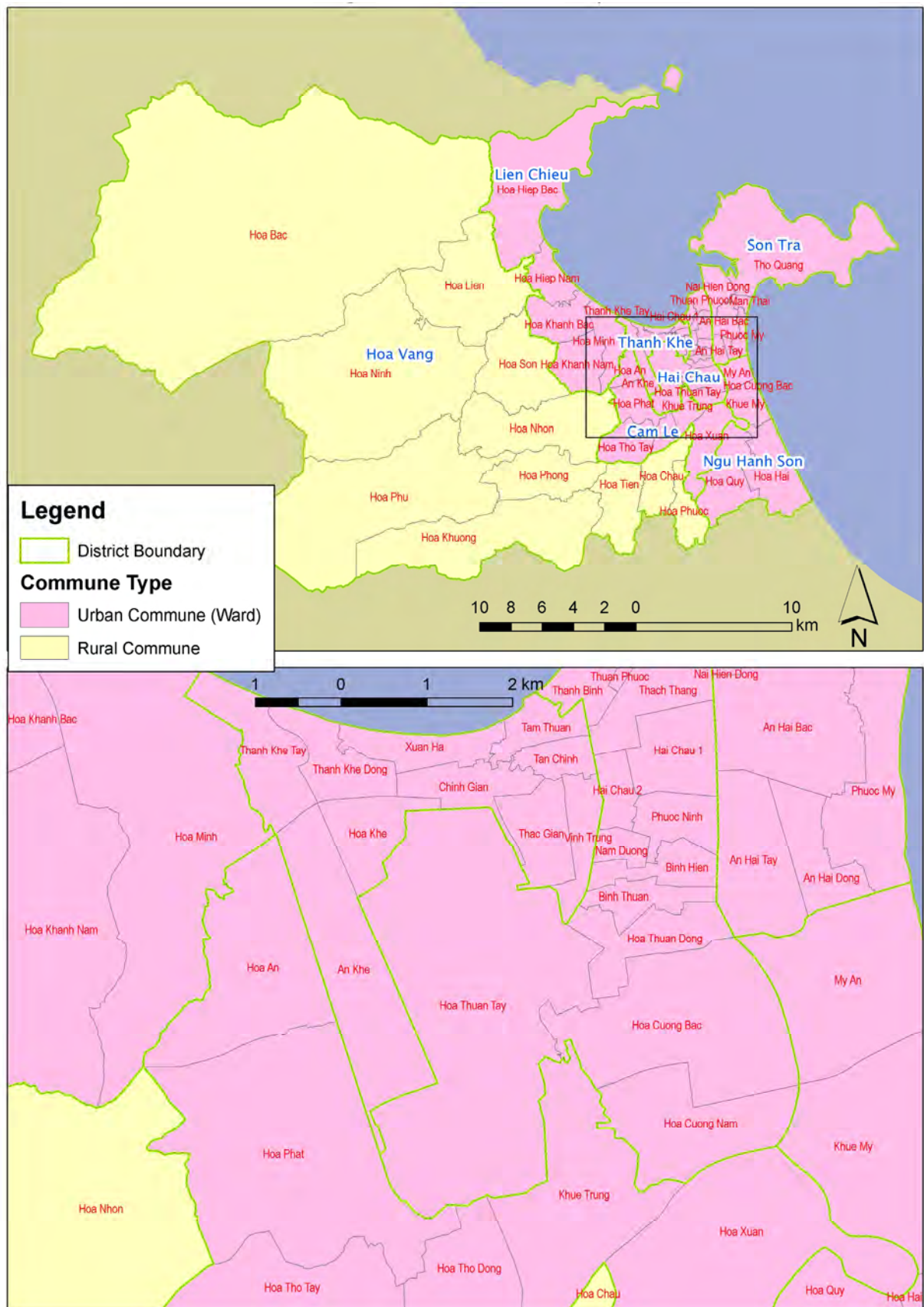
CG	Central Government
CIE	Capital Investment Expenditure
DaCRISS	The Study on Integrated Development Strategy for Da Nang City and Its Neighboring Area in the Socialist Republic of Vietnam
DARD	Department of Agriculture and Rural Development
DOCST	Department of Culture, Sport, and Tourism
DOC	Department of Construction
DOE	Department of Education
DOET	Department of Education and Training
DOF	Department of Finance
DOFA	Department of Foreign Affairs
DOH	Department of Health
DOI	Department of Industry
DOIA	Department of Internal Affairs
DOIC	Department of Information and Communications
DOIT	Department of Industry and Trading
DOJ	Department of Justice
DOLISA	Department of Labor, Invalids and Social Welfare
DONRE	Department of Natural Resources and Environment
DOST	Department of Science and Technology
DOT	Department of Transport
DPC	Danang People's Committee
DPI	Department of Planning and Investment
DUT	Danang University of Technology
DWT	Dead Weight Tons
EIA	Environment Impact Assessment
EWEC	East–West Economic Corridor
EZ	economic zone
FDI	Foreign Direct Investment
FEZ	Focal Economic Zone
FS	Feasibility Study
GDP	Gross Domestic Product
GMS	Greater Mekong Sub-regional
GOJ	Government of Japan
GOV	Government of Vietnam
GRDP	Gross Regional Domestic Product
GSO	General Statistics Office
GTZ	Gesellschaft für Technische Zusammenarbeit
HAIDEP	The Comprehensive Urban Development Programme in Hanoi Capital City
HCMC	Ho Chi Minh City
HH	household
HIS	household interview survey
HOUTRANS	The Study on the Urban Transport Master Plan and Feasibility Study in HCM Metropolitan Area
HRD	Human Resource Development
HSR	High Speed Railway
ICT	Information–Communication Technology
IEE	Initial Environmental Examination
IT	information technology
IZ	industrial zone
JICA	Japan International Cooperation Agency

JPY	Japanese Yen
KfW	Kreditanstalt für Wiederaufbau
LRT	Light Rail Transit
LUR	land-use rights
LURC	Land Use Right Certificates
LWR	Law on Water Resources
M/C	Motorcycle
MICE	Meeting, Incentives, Conference and Exhibition
MOA	Memorandum of Agreement
MOC	Ministry of Construction
MoCST	Ministry of Culture, Sports and Tourism
MOF	Ministry of Finance
MOFI	Ministry of Fisheries (now merged into MARD)
MOI	Ministry of Industry
MONRE	Ministry of Natural Resources and Environment
MOP	Ministry of Planning
MOPS	Ministry of Public Security
MoST	Ministry of Science and Technology
MOT	Ministry of Transport
MP	Master Plan
MPI	Ministry of Planning and Investment
NFEZ	North Focal Economic Zone
NH	National Highway
O&M	Operations and Maintenance
OD	Origin-Destination
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
PC	Peoples Committee
PCU	passenger car unit
PIIP	Priority Infrastructure Investment Program
PMU	Project Management Unit
R&D	Research and Development
SEA	Strategic Environmental Assessment
SEDP	Socio-Economic Development Plan
SFEZ	South Focal Economic Zone
STRADA	System for Traffic Demand Analysis
SWOT	Strengths, Weaknesses, Opportunities, and Threats
UMRT	Urban Mass Rapid Transit
UPI	Urban Planning Institute
URENCO	Urban Environmental Company
USD	US Dollar
VITRANSS 1	The Study on the National Transport Development Strategy in the Socialist Republic of Vietnam
VITRANSS2	The Comprehensive Study on the Sustainable Development of Transport System in Vietnam
VNAT	Vietnam National Administration of Tourism
VND	Vietnamese Dong
WB	World Bank

Map of Study Area



Administrative Map of Danang City



Photos of the CFEZ and Danang City



Danang City from the Sky



Old Imperial Capital of Hue



Handicraft in Hoi An



Dung Quat Oil Refinery



Household Interview Survey



Beach Resort in Danang

EXECUTIVE SUMMARY

STUDY OBJECTIVES AND SCOPE

1. The Study on Integrated Development Strategy for Danang City and Its Neighboring Area in the Socialist Republic of Vietnam, or DaCRISS, was conducted between June 2008 and November 2010 at the request of the Vietnamese government for the Danang People's Committee (DPC) in order to conduct a study on the comprehensive urban development of the city to ensure that it follows an appropriate and a sustainable urban development.
2. The objectives of the study are as follows:
 - (a) To formulate regional development strategies for the Central Focal Economic Zone;
 - (b) To formulate integrated development strategies and Master Plan for Danang City;
 - (c) To formulate a short-term action plan up to 2015, including prefeasibility studies for selected priority projects; and
 - (d) To transfer technology and know-how, focusing on urban planning and development, to the responsible organizations and staff.
3. The outputs of this project are expected to not only serve as practical tools functioning under an existing administrative and governmental framework, but also to work as invaluable models of urban development planning for medium-sized cities in Vietnam. At the same time, the entire study process provides a unique and major opportunity for Danang City and its neighboring provinces to build ownership of the resulting master plan and other study outputs, thereby ensuring their sustainability.

CFEZ DEVELOPMENT STRATEGY

4. CFEZ is much more at a disadvantage compared to NFEZ and SFEZ due to various factors including: (i) small population, (ii) lack of infrastructure, (iii) vulnerability to natural disasters, (iv) weak private sector, and (v) weak connectivity with the global market and growth hubs, a situation which is further aggravated by the (vi) lack of adequate coordination among the region's provinces. However, CFEZ has its strengths and opportunities which so far have not been fully tapped. These include: (i) diverse natural environment and rich cultural heritage, (ii) strategic location in Vietnam and the GMS region, and (iii) strong political commitment to growth.
5. In order to accelerate CFEZ growth in a competitive and balanced manner, the vision, goals, and basic development strategies for the region should be as follows:
 - (a) The vision for CFEZ is for the region to become an "Eco-Tech region," meaning CFEZ will promote economic development, ecological balance, and ethnological harmony based on the maximum use of modern technology;
 - (b) In order to enhance the capacity of CFEZ, regional integration should be strengthened at all levels, as explained below:
 - (i) Establish a complementary but competitive role of CFEZ in the national development strategy;
 - (ii) Strengthen connectivity with the international community;
 - (iii) Strengthen interprovincial coordination to attend to common issues among the provinces; and

(iv) Respond to existing internal demand and needs of communes and provinces.

6. The importance of integration and coordination among the city and provinces in CFEZ as a prerequisite to sustainable development has been commonly recognized and accepted among the provinces where a delineation of roles was presented by the Da-CRISS Study Team. The initial proposal was revised many times based on discussions and comments raised in Steering Committee meetings.

Table ES.1 Possible Role-sharing Among CFEZ Provinces

Main Agenda			T.T. Hue	Danang City	Quang Nam	Quang Ngai	Binh Dinh
Gateway Function			B	(A)	B	(A)	A
Strategic Development Themes	Tourism		(A)	(A)	(A)	A	A
	Industry	Conventional ¹⁾	B	B	B	(A)	B
		Environmental ²⁾	A	(A)	A	B	B
	Services ³⁾		(A)	(A)	B	A	A
	Human Resource Development		(A)	(A)	A	A	A
	Environmental Management		A	A	A	A	A
	Cultural Value Enhancement		(A)	A	(A)	A	A
Urban Development			A	(A)	A	A	(A)
Rural Development			A	B	A	A	A

Source: DaCRISS Study Team.

Note: (A) = Regional role, A = Main role, B = Secondary role.

1) Including heavy industry

2) Non-polluting and eco-business oriented type of industries

3) Including health, education, and others

MAIN DEVELOPMENT ISSUES

7. It has been observed that Danang City has been relatively well developed and managed, although the situation varies by area. The overall assessment of the people on the living conditions and service provision has also been positive.

8. The main issues facing the city pertain more to the future than the present due to the fact that urbanization is expected to accelerate and development investments and pressures will increase. These issues are briefly as follows:

- (a) Growth and expansion of urban areas which are already taking place. Current types of developments may create: (i) poor land use through low-density residential developments in peri-urban areas, (ii) congestion due to high-rise buildings in the city center, and (iii) adverse environmental impacts due to resort projects along the coast.
- (b) The environmental situation may further degrade due to the following:
 - (i) Urban effluents often mixed together with industrial effluents;
 - (ii) Observed poor quality of groundwater and lack of systematic data on the situation of aquifers;
 - (iii) Large number of construction projects, resulting in land reclamation which in turn has affected coastal forests and riverbank stability;
 - (iv) Solid wastes dumped in water bodies, such as urban rivers, lakes, and sea, and

- problems raised by the partial treatment of medical and industrial wastes; and
- (v) Illegal activities such as forest cutting, hunting, and fishing, which are not quantified but which remain a matter of concern.
 - (c) Traffic situation will quickly worsen due to the unavailability of competitive public transportation, shift from motorcycles to cars, further concentration of activities due to the accumulation of high-rise commercial / business facilities in the city center. The lack of traffic management measures will further amplify traffic problems all over the city.
 - (d) For sustainable economic growth, the city must be prepared to generate employment opportunities to match the population increase and the change in the industrial structure from agriculture to industries and services.
 - (e) As the urban area expands and development activities intensify, vulnerability to natural disasters may increase and ecosystems will be under pressure.

VISION AND GOALS

9. Danang City has adopted the “Environmental City” concept as its vision for the city and objective of development. Based on this concept, the vision statement for Danang is proposed thus:

<p style="text-align: center;">“Danang to be an Internationally Competitive Environmental City Beyond being Pollution-free”</p>
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10. The above vision for Danang City, which is fully supported by the stakeholders of the city, connotes the following ideas and intentions; (i) for Danang City not only to become free from pollution, but also to ensure broader environmental sustainability by preserving ecosystems and cultural assets, (ii) for Danang City to develop a distinct identity and an appealing image as a significant urban core in the Asia-Pacific region with a key role of connecting CFEZ with the world, and (iii) for Danang City to become a national center for developing new industries. In order to realize this vision for the city, a set of goals is elaborated, as follows; (i) manage growth effectively, (ii) develop a competitive economy, (iii) ensure an inclusive social development, (iv) manage environment effectively, and (v) strengthen governance.

11. In order for Danang City to function as a competitive third national hub to lead the growth of CFEZ and Vietnam, it is assumed that the future population will be 2.1 million in 2025 and larger thereafter. It is also assumed that with the updated development strategies proposed by the study Danang will most likely attract even more migrants from various parts of the country.

SUBSECTOR DEVELOPMENT STRATEGIES

12. Under the vision of an environmental city, the environment should not merely be an appendage to development; rather, it should be the driving force to promote the city's sustainable development. To realize this, strategies for each urban subsector should have environment components in synergy with those in other subsectors. Subsector strategies have been formulated as shown follows:

- (a) **Economic Development:** (i) shift of industry structure to favor services such as tourism, education, health care, services, (ii) convert to clean and green industries, and (iii) develop eco-businesses and environment industries.
- (b) **Social Development:** (i) enhance public awareness on environment, (ii) provide effective measures to protect the society against natural disasters, and (iii) conduct campaign at city / community levels and expand environmental program at primary / secondary educations.
- (c) **Environmental Management:** (i) strengthen protection/preservation of ecosystems, (ii) strengthen disaster preparedness and prevention, (iii) remove air, water, soil pollution, and (iv) respond to the impact of climate changes.
- (d) **Spatial Development:** (i) promote public transport-based compact urban development, (ii) promote effective land use with sufficient open spaces, and (iii) create image of an environment city.
- (e) **Transportation Development:** (i) develop efficient and effective public transport system, (ii) promote use of eco-vehicles, and (iii) promote walking and use of non-motorized transport.
- (f) **Urban Infrastructure Development:** (i) develop and modernize utilities to reduce pollution and wastage, (ii) improve construction methods to minimize negative impacts, and (iii) improve O&M of urban utilities to prolong life, recover cost, and generate revenue.
- (g) **Housing and Living Conditions Development:** (i) develop ecological, energy-saving, and disaster-proof housing for low to medium income groups, (ii) improve living environment by attending specific problems / issues at community level, and (iii) enhance awareness and participation of households to improve environment at community level.
- (h) **Human Resource Development:** (i) develop human resource to keep up with changing needs at all levels, (ii) expand campaigns and public information dissemination, and (iii) expand environmental program in universities and training centres in cooperation with Central Government and tourism institutions.
- (i) **Urban Sector Management:** (i) reform city organization to strengthen coordination of activities, (ii) introduce user charges relating to environment, and (iii) strengthen inter-provincial coordination on environment management.

PROPOSED GENERAL PLAN

13. **Spatial Structure Concept:** The principle in developing an urban transportation network is to allow transportation infrastructure and services to satisfy different needs by performing various functions, such as: (i) inter-city freight transportation, (ii) inter-city passenger transportation, (iii) primary / secondary road network, and (iv) mass transit corridors.

14. **Proposed General Plan:** The main points to note in formulating the General Plan are as follows.

- (a) **Broad Environmental Zoning:** This provides primary environmental consideration before developments take place, broadly classifying areas into (i) Ecological Preservation Zone, (ii) Marine / River Zone, and (iii) Urban Development Zone.
- (b) **Development of a Compact City based on Mass Transit:** Promote mixed land use (commercial, business, and residential) with a population density of 100-250 persons / ha along urban mass rail transit (UMRT) lines; adopt the UMRT, composed of the MRT, light rail transit (LRT), and bus rapid transit (BRT), depending upon demand and physical conditions.
- (c) **Enhancement of Existing Urban Areas:** Develop and/or preserve the Hai Chau central business district (CBD); manage urban transportation and develop the UMRT; control urban design including building heights.
- (d) **Development of New Urban Area:** Develop Lien Chieu CBD (administrative center under integrated development with national transportation projects, i.e., expressway and high-speed railway), Ngu Hanh Son CBD (new commercial and business center, area for integrated education and new industrial technologies centering on Danang University). Strongly integrated with the UMRT.
- (e) **Upgrading of Danang Airport:** Keep it in its current location and work on an integrated development with the urban projects while developing the surrounding areas for airport-related businesses (new terminal building under construction is expected to be finished in 2011); expand and upgrade the airport.
- (f) **Strengthening of Connectivity with Regional Transportation Networks:** Strengthen the role of the city as a regional center through regional cooperation via expressways, high-speed railway, East–West Economic Corridor, etc.
- (g) **Development of Transportation Facilities:** Develop Tien Sa Port, Lien Chieu Port, and bus terminals; strengthen their function as transportation nodes.
- (h) **Establishment of Industrial Zones:** Shift to clean and green industries; remove polluting industries from existing urban areas; develop new industrial areas along expressways; and construct a competitive, high-tech park to accommodate new industries.
- (i) **Enhancement of Waterfront:** Improve the environment, preserve landscape, develop tourism and recreation opportunities along the waterfront including My Khe Beach, and Han River.
- (j) **Promotion of Green Areas and Open Spaces:** Manage the environment and protect forests and coastal areas; develop parks in urban areas; preserve open spaces in flood-prone areas (i.e., Hoa Xuan); and develop a green network.
- (k) **Development of Residential Areas:** Develop and expand flood-free urban lands including disaster-proof, energy-saving, low-cost apartment housing.

TRANSPORTATION DEVELOPMENT PLAN

15. At present, Danang City has a relatively good transportation infrastructure providing both urban and interprovincial services; consequently basic demands are met. However, the future will be different. To that end, the main considerations taken in the study are as follows: (i) effective interface with the national transportation network, (ii) development of an urban transportation network with clear functions and hierarchy, (iii) development of higher-quality public transportation system in integration with the development of compact urban areas, (iv) introduction of eco-vehicles, (v) expansion of space for nonmotorized vehicles, and (vi) development of transportation space for mixed activities and enhancement of urban landscape.

16. Priority transportation projects were packaged as “Feasibility Study on Integrated Mass Transit Development and Transport Environment Improvement in the City Centre and Main Urban Corridors.”

ENVIRONMENTAL MANAGEMENT PLAN

17. While the environmental quality in Danang City in the last 10 years has seen positive changes and improvements, rapid urbanization and expansion of industrial estates are seen as the causes of environmental degradation and their adverse impacts are predicted to worsen if efforts to manage such phenomena are not carried out successfully. In addition, the city population is expected to reach 2.1 million by 2025, and such rapid increase in population will apparently put a burden to the environment. Therefore, the main issue for the future of Danang City is environmental management. In this context, some vital institutional issues need to be addressed soon. These are: (i) more enforceable regulations, (ii) further people’s participation, (iii) encouragement of business entities’ contributions, (iv) aggressive introduction of and R&D on environment friendly technologies, (v) more cross-governmental and interprovincial coordination, and (vi) more monetary inputs and human resource development.

18. Priority environmental projects were packaged as “Hotspots Reduction and Establishment of a Sustainable Sanitation System for Danang to become an Environmental City.”

INVESTMENT PLAN

19. Candidate projects were evaluated comprehensively to facilitate prioritization and ensure compliance with overall city development strategies. The proposed projects were evaluated based on five categories, namely (i) overall policy, (ii) economic aspect, (iii) social aspect, (iv) environmental aspect, and (v) implementation and management. The DaCRISS estimate of the needed total capital investment is VND13,579 billion (USD799 million) for 2010–2015, equivalent to the total initial cost of the top 66 projects¹ prioritized according to their screening scores. In addition to city budget, compensations from the Central Government as well as ODA fund can be utilized to implement all priority projects needed.

20. The city’s vision of becoming a “Competitive Environmental City beyond being Pollution-free” was translated into five goals, namely: (i) economic development, (ii) urban development and infrastructure, (iii) environment management, (iv) livability, and (v) man

¹ All ongoing/committed transportation projects and projects listed in the Environmental City Plan were included.

TOURISM DEVELOPMENT STRATEGY FOR HDQ REGION

21. The existence of three World Heritage sites, beautiful beaches, and quaint coastal areas, as well as preserved forests and mountain areas in a relatively compact area makes the three central provinces a unique tourist hub. However, further improvements are needed as follows: (i) enhancing interprovincial cooperation, (ii) creating a clear collective image of the region, (iii) strengthening environmental management, and (iv) strengthening transportation connectivity at all levels.

22. Priority tourism projects were packaged as “Inter-provincial Tourism Promotion and Human Resource Development” and “Community and Eco – Tourism Supporting Program.”

CONCLUSION AND RECOMMENDATIONS

23. A vision for CFEZ is for the region to become an “Eco-Tech region,” meaning, CFEZ will promote economic development, ecological balance, and ethnological harmony based on the maximum use of modern technology. The idea refers to achieving the vision through technology-oriented solutions, enhanced environmental management, cultural preservation, and human resource development, based on the provision of strategic infrastructure, and shall become the future development model of Vietnam.

24. Danang City shall develop together with the CFEZ, under the vision “Danang to be an Internationally Competitive Environmental City Beyond being Pollution-free.” This implies for Danang City not only to become free from pollution, but also to ensure broader environmental sustainability by preserving ecosystems and cultural assets, for Danang City to develop a distinct identity and an appealing image as a significant urban core in the Asia-Pacific region with a key role of connecting CFEZ with the world, and for Danang City to become a national center for developing new industries. In order to realize this, urban sprawl which has already begun in some places must be controlled, and transportation situation shall be improved from a long-term perspective. The reduction of environmental hot-spots is another urgent issue.

25. Hue – Danang – Quang Nam Region is one of the few examples to possess many tourism resources including 3 World Heritages and beautiful sea / mountains in such a compact area. Inter – provincial cooperation and complementary tourism development is significant for the future development of tourism industry in the region. Development of infrastructure in western mountainous areas will contribute to diversification of tourism, and development of high – qualified human resources will be inevitable to respond to the future needs of tourists. Simultaneously, adequate environmental measures shall be taken for the sustainable tourism development of the region.

SUMMARY

1 INTRODUCTION

Background of the Study

1.1 Since its designation as a Class I city in 1997, Danang, as with the rest of Vietnam, has seen rapid socio-economic changes. Economic liberalization has increased the opportunities for investment, promoted economic development, and brought about social changes. However, Danang City is located in central Vietnam, 764km and 964km far respectively from the capital Hanoi, which is in the north, and Ho Chi Minh City, the country's economic center of Ho Chi Minh City (HCMC). While this physical distance has been a handicap for growth, the progress of Danang City is crucial and decisively important for integration of the north and south as well as the entire country.

1.2 Socio-economic growth in Vietnam has been accompanied by rapid urbanization, which in 2009 stood at 30% and is forecasted to reach about 40% by 2030, further increasing long into the future. Policy commitment of the government towards Vietnam's industrialization and modernization will also contribute to accelerating urbanization.

1.3 Danang City has its own Socio-Economic Development Plan for 2010–2020 and other sector plans such as Construction Plan. These plans have been appropriately authorized by the respective authorities and organizations. After the authorization, however, several years have passed. During the years, there have been dynamic changes in Danang's economic environment in domestic and international.

1.4 It is in this context that the Government of Vietnam (GOV) requested the Government of Japan (GOJ) to conduct a study on the comprehensive urban development of the city to ensure that it follows an appropriate and a sustainable urban development. The Consultant Team, comprising ALMEC Corporation and the International Development Center of Japan, was selected and dispatched to carry out the study.

Objectives

1.5 The objectives of the study are as follows:

- (a) To formulate regional development strategies for the Central Focal Economic Zone;
- (b) To formulate integrated development strategies and Master Plan for Danang City;
- (c) To formulate a short-term action plan up to 2015, including prefeasibility studies for selected priority projects; and
- (d) To transfer technology and know-how, focusing on urban planning and development, to the responsible organizations and staff.

1.6 The study includes the following main specific outputs:

- (a) Development Strategy for the Focal Economic Area in Central Vietnam;
- (b) Urban Development Master Plan for Danang City up to 2025;
- (c) Urban Transportation Program for Danang City;
- (d) Sustainable and Comprehensive Environment Program for Danang City;
- (e) Implementation Plans up to 2015; and
- (f) Urban database, Atlas, and Urban Karte based on geographic information system (GIS), and capacity development plans for institutions and human resources.

1.7 The outputs of this project are expected to not only serve as practical tools functioning under an existing administrative and governmental framework, but also to work as invaluable models of urban development planning for medium-sized cities in Vietnam. At the same time, the entire study process provides a unique and major opportunity for Danang City and its neighboring provinces to build ownership of the resulting master plan and other study outputs, thereby ensuring their sustainability.

Study Process

1.8 Major meetings with relevant authorities and personalities that have been held since the study commenced in June 2008 are as follows:

- (a) **Steering Committee:** Steering Committee meetings were held periodically to discuss study progress and outputs. The 1st Steering Committee meeting introduced the study framework. The 2nd Steering Committee meeting discussed the initial concept for the Urban Development Master Plan up to 2025 for Danang City. Initial results of the surveys were also presented. The 3rd Steering Committee meeting discussed detailed development strategies for the Central Focal Economic Zone (CFEZ). The 4th Steering Committee meeting discussed the draft Master Plan of Danang City. The 5th Steering Committee meeting further discussed the developed Master Plan of Danang City. The 6th Steering Committee meeting discussed the final outputs of the study including the priority projects for the next steps.
- (b) **Counterpart Meetings:** Counterpart Team meetings were held weekly for detailed and up-to-date discussions, as well as for better coordination and immediate action on requests and needs.
- (c) **Outreach Seminars:** The first series of seminars was held in neighboring provinces covered by the study. The preliminary concept of the development strategies for CFEZ and Danang City were presented, while role-sharing among the provinces was discussed. The second round of seminars discussed the more elaborate development strategies for CFEZ and Danang City. The third round of seminars was held as sub-sector meetings with the Department of Construction (DOC), Department of Transport (DOT), and Department of Natural Resources and Environment (DONRE) of Danang City. The fourth round of seminars was conducted as follow-up subsector meetings.
- (d) **Supplemental Surveys:** Several surveys to collect people's opinions and assessments of various aspects of city governance were implemented to supplement statistical data. Those surveyed for this purpose include: city residents (Household Interview Survey), CFEZ commune leaders (Commune Survey), main enterprises in Danang City (Enterprise Survey), and leading tourist operators in Thua Thien Hue, Quang Nam, and Danang (Tourism Operator Survey). Other surveys include Traffic Surveys, Environmental Analysis Survey, and Flood Survey for Ketsana. Information from such surveys support available statistical data and provide not only a broader picture of actual conditions, but also concrete bases for decision makers to develop appropriate development policies for the city.
- (e) **Training:** Training sessions on GIS and STRADA were held to provide both general and detailed training to personnel from the government and related institutions.
- (f) **Public Involvement:** Stakeholder meetings were held to assess development scenarios with participation from the government, universities, unions, and private sectors.
- (g) **Exhibition:** An exhibition was held in Danang to present the results of the Study to the public and seek for their opinions.

2 SITUATION ANALYSIS AND DEVELOPMENT STRATEGIES FOR THE CENTRAL FOCAL ECONOMIC ZONE

Main Issues Facing the Central Focal Economic Zone

2.1 The Central Focal Economic Zone (CFEZ) covers some 400 kilometers from north to south with a land area of 27,953 square kilometers (km²). It has a 2009 population of 6.1 million, of which 2.0 million (33%) is urban population.

2.2 CFEZ is much more at a disadvantage compared to its counterparts, the Northern Focal Economic Zone (NFEZ) and Southern Focal Economic Zone (SFEZ) due to the following factors: (i) small domestic market, (ii) lack of infrastructure, (iii) vulnerability to natural disasters, (iv) weak private sector, and (v) weak connectivity with global markets and growth hubs. While CFEZ has various constraints to further growth, it has strengths and opportunities which must be fully tapped, as follows: (i) rich cultural and natural resources; (ii) gateway of east–west corridor; (iii) strategic location in Vietnam; (iv) government commitment to accelerate growth and development of CFEZ; and (v) relatively low cost of labor, suppliers, and services.

Development Strategies

2.3 **Proposed Vision:** CFEZ can and must play a significantly different role from that of the NFEZ and SFEZ where ill effects on socio-economy and environment are coming to fore due to a mismanagement of investments. Hanoi and HCMC have been suffering from worsening traffic congestion and air pollution, increasing traffic accidents, lack of affordable housing, inadequate solid waste management, vanishing greeneries, increasing crimes, and widening inequality between the poor and the rich, among others. Although both NFEZ and SFEZ are expected to grow economically, their future sustainability will be uncertain if the current trend continues.

2.4 A vision for CFEZ is for the region to become an “Eco-Tech region,” meaning, CFEZ will promote economic development, ecological balance, and ethnological harmony based on the maximum use of modern technology. The idea refers to achieving the vision through technology-oriented solutions, enhanced environmental management, cultural preservation, and human resource development, based on a provision of strategic infrastructure.

2.5 **Proposed Spatial Orientation:** The existing spatial structure which shows CFEZ as comprising four urban clusters in the study area and a network of north–south and east–west transportation corridors has basically been adopted in this study, with revisions to the following points: (i) three urban clusters, regrouped as Hue – Danang – Hoi An (linkage through tourism and urban development), Tam Ky – Dung Quat – Quang Ngai (heavy industry development), Quy Nhon – Xuan Hai (connect CFEZ and Central Highlands), (ii) North–South development corridor, composed of coastal corridor (NR1 railway, coastal shipping, aviation, planned expressway and high-speed railway, as well as other improved transportation infrastructure), and upland corridor (Ho Chi Minh Highway), and (iii) East–West development corridor, composed of an international east-west development corridor (comprising NR9, NR19, and NR14B, to strengthen international connectivity) and a local east-west development corridor (comprising NR24, NR49, and others, to improve urban–rural linkages within the region) (see Figure 2.1).

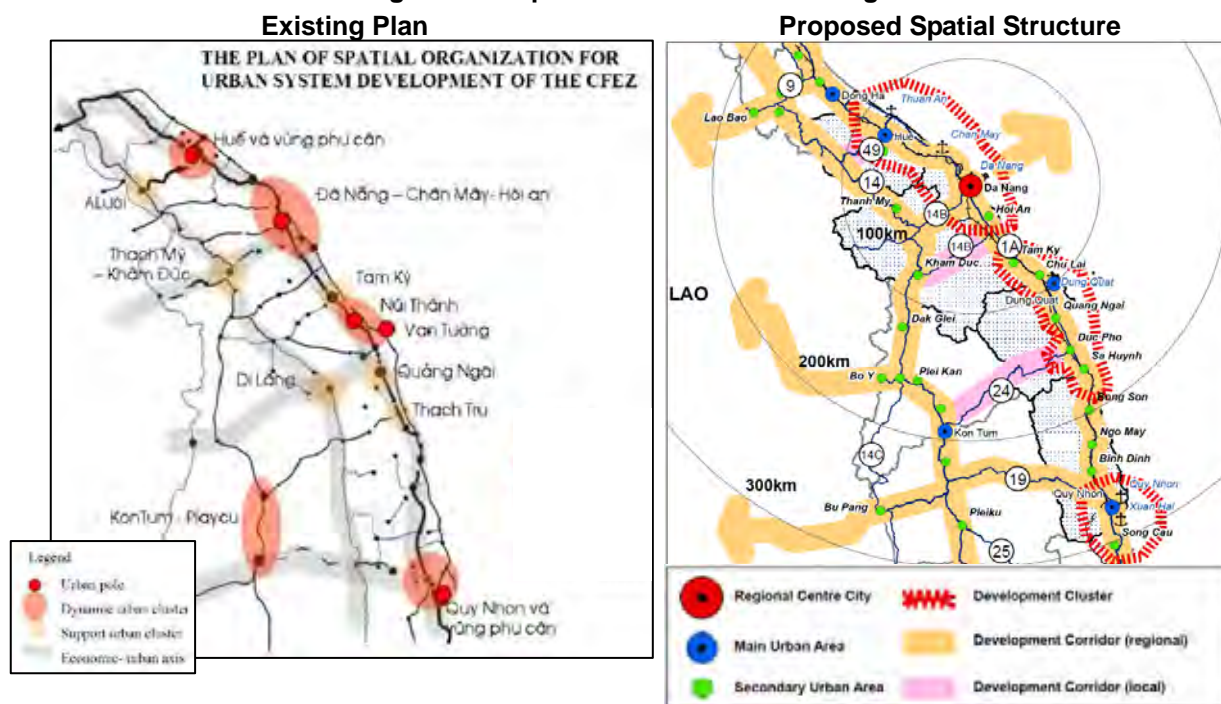
2.6 Based on the analysis made and discussions held in the provinces, the proposed

basic development directions for CFEZ are briefly described as follows: (i) establish a complementary but competitive role of the CFEZ in the National Development Strategy which is different from those of NFEZ and SFEZ, (ii) strengthen connectivity with international community, (iii) strengthen interprovincial coordination to attend to common issues among the provinces, and (iv) respond to existing internal demand and needs of communes and provinces.

Need for Enhanced Inter-provincial Coordination

2.7 The importance of integration and coordination among the city and provinces in the CFEZ region is a prerequisite to sustainable development. Though various developments are taking place simultaneously in each province, investments should be carefully chosen with utmost regards to priorities. Identification of roles among provinces is crucial for a more effective development for the region as a whole, as the region should develop farther in order to keep up with the development of the NFEZ and SFEZ. This has been commonly recognized and accepted among the provinces where a delineation of roles was presented by the Study Team. The initial proposal was revised many times based on discussions and comments raised in Steering Committee meetings (see Table 2.1).

Figure 2.1 Spatial Plan of the CFEZ Region



Source: Construction Plan, MOC

Source: DaCRISS Study Team.

Table 2.1 Possible Role-sharing Among CFEZ Provinces

Main Agenda			T.T. Hue	Danang City	Quang Nam	Quang Ngai	Binh Dinh
Gateway Function			B	(A)	B	(A)	A
Strategic Development Themes	Tourism		(A)	(A)	(A)	A	A
	Industry	Conventional ¹⁾	B	B	B	(A)	B
		Environmental ²⁾	A	(A)	A	B	B
	Services ³⁾		(A)	(A)	B	A	A
	Human Resource Development		(A)	(A)	A	A	A
	Environmental Management		A	A	A	A	A
Cultural Value Enhancement		(A)	A	(A)	A	A	
Urban Development			A	(A)	A	A	(A)
Rural Development			A	B	A	A	A

Source: DaCRISS Study Team Note: (A) = Regional role, A = Main role, B = Secondary role.

1) Including heavy industry, 2) Non-polluting and eco-business oriented type of industries, 3) Including health, education, and others

3 SITUATION ANALYSIS OF DANANG CITY

Danang City in the Region

3.1 Danang City is one of the 5 centrally-controlled municipalities¹ in Vietnam, and is the economic and cultural center of Central Vietnam. It is strategically located in Asia, as the distance between Danang City and major growth centers are within a radius of 1,000 - 2,000km including Bangkok, Kuala Lumpur, Singapore, Manila, Taiwan, Guang Zhou / Hong Kong, Nanning, Kunmin, among others. Danang's role in the Greater Mekong Subregion (GMS) is also expected to be significant (with the development of the east-west corridor between Vietnam and Thailand via Laos, there is an increasing attention on tourism traffic and logistics services). Situated 764 km south of Hanoi, 964 km north of HCMC is the pivot of integrating the north and south of Vietnam, because Danang is the largest urban center in between the two major growth centers of the country.

3.2 While Danang City is the core city of the CFEZ, its position as a regional stronghold is still weak in terms of population and economy compared to the NFEZ and SFEZ. While the NFEZ and SFEZ accounts for 20% and 30% of the urban population of the nation respectively, the share of CFEZ is merely 8%. This is the same case for GRDP, at 21%, 43%, and 5% respectively, with the CFEZ posting low figures here as well. Danang City accounts for 38% of the urban population and 25% of the GRDP in the CFEZ, and has the potential to become the stronghold of the region. In this context, Danang City shall become the core city of the region, and development strategies positioning Danang City as a growth center is inevitable for the future sustainable growth of the whole region.

Table 3.1 Profile of Danang City in Vietnam (2009)

Item		Focal Economic Zone			Vietnam	Danang City
		North	Central	South		
Area	km ²	15,594	27,976	28,099	331,051	1,283
	% to Vietnam	5	9	9	100	0.4 (4.6) ²⁾
Population	000	14,328	6,109	15,535	86,025	890
	% to Vietnam	17	7	18	100	1.0 (14.6) ²⁾
	Growth (% / year): 00-09	1.35	0.58	2.98	1.15	2.7
Urban Population	000	5,000	2,024	8,304	25,466	773
	% to Vietnam	20	8	33	100	3.0 (38.2) ²⁾
	Growth (% / year): 00-09	4.33	2.80	3.58	3.48	2.8
GRDP ¹⁾	VND billion	239,241	62,585	486,366	1,144,015	15,474
	% to Vietnam	21	5	43	100	1.4 (24.7) ²⁾
	Growth (% / year): 00-07	11.9	11.0	11.8	11.3	12.3
Per Capita GRDP ¹⁾ : VND million		10.2	17.7	36.1	13.8	19.1
FDI	Number of Projects: 88-09	3,106	416	7,665	12,575	164
	USD Mil.: 88-09	36,626	15,755	92,683	194,430	2,640

Note: Most are 2009 data from provincial statistical yearbooks, unless otherwise noted.

1) 2007 figures, 2007 constant price, Real growth (calculated based on 1994 constant price).

2) The figure in the parenthesis shows the share of Danang to the CFEZ.

¹ Hanoi, HCMC, Danang, Hai Phong, and Can Tho.

City Profile

3.3 In the mid 16th century, Danang was only a small port for goods in transit and ship repair, but by the early 20th century, the city had developed as the main trading center of the region. The city became one of the main battlefields during the Vietnam War (1960 – 1975), however it regained complete independence in 1975. The renovation of the city began in 1986, and since then the city has shown rapid growth. It was officially separated from Quang Nam in 1996, and during the course of time, the city has grown into the central city of the CFEZ. Table 3.2 summarizes the historical development of the city.

Table 3.2 Historical Development of Danang City

Time	Event
Mid 16 th century	Small port for goods in transit , ship repair
Early 18 th century	Development into a commercial port replacing Hoi An
1835	Designation of Han Port as the sole harbor for trading (largest commercial port in central region)
1889	Establishment of domination by French colonists of whole Vietnam Separation of Danang from Quang Nam (renamed Tourane)
Early 20 th century	Development into a main trading center
1950	City authority handed from the French to the Bao Dai Government
1965	Construction of American military complex
1967	Definition as a centrally governed city
1975	Complete independence
1986	Development renovation of Danang
1996	10th session of the 9th National Assembly (separation of Quang Nam – Danang Province)

Source: Summarized from Danang City Website (<http://www.danang.gov.vn>).

3.4 Danang City has 1,256 km² of administrative area, or 950 km² excluding the islands. The city's urbanized area has developed on the eastern side along the coast of the South China Sea, while the city's western territory is mostly mountainous rural areas. Its potential area for development is 341 km², excluding the rivers, lakes, forests, the Danang International Airport, seaports, military zone, and cemeteries. Danang City has eight districts and 56 communes.

3.5 As of 2009, Danang City had a population of 890,490, about 87% of whom resided in urban areas. During the 2005 - 2009 period, the population in Danang City increased at a rather high growth rate of nearly 2.7% per year. Population growth was low in the central districts such as Hai Chau and Thanh Khe, but high in outlying urban areas such as Lien Chieu District. Nevertheless, the population density in the central areas was high and elsewhere it was low. The urban areas have been gradually expanding to outer areas. These population figures exclude unregistered migrants, and preceding studies from the World Bank suggest that around 20% of such unenumerated migrants exist.

3.6 It is expected that population growth will accelerate due mainly to in-migration to the city. Continued in-migration to the city will translate to higher demand for affordable housing, increased natural population growth rates, and, possibly, higher unemployed or underemployed rate in case of an economic downturn. Household sizes will decline with increasing in-migration and changing social conventions. On the contrary, a shortage of skilled labor in the city is also expected as a result of out-migration to other destinations like HMC which may appear as a more attractive destination than Danang. These aspects will largely depend on the economic growth in CFEZ in both absolute terms and relative to the growth in NFEZ and SFEZ

3.7 The socio-economic profile of the city has been worked out based on selected indicators (see Table 3.3) which show the following characteristics:

- (i) High economic growth in continuous in the city, at an annual rate of 16% in 2005 – 2009. As a result, per capita GRDP has also increased from USD 883 in 2005 to USD 1,629 in 2009. Economic growth is supported by the steady increase in the secondary sector as well as the growth of the tertiary sector centering tourism. FDI makes a contribution to this as well.
- (ii) Poverty rate is 3.5% and unemployment rate is 5.0%, lower than other cities in Vietnam².
- (iii) Public services need improvement. Access to piped water supply, telecommunications, solid waste, and sewerage are low, especially in suburban and rural areas.
- (iv) The health sector is in relatively good condition, however education needs improvement, as there are currently high numbers of students per class³.

Table 3.3 Socio-economic Profile of Danang City, 2005, 2007 and 2009

				2005	2007	2009	Growth 05 - 09 (%)	
1. Social	Population	Total		779,019	806,744	890,490	2.7	
		Urban (%)		86	87	87	0.1	
		Rural (%)		14	13	13	-0.8	
	Labour Force	Total Labour Force		386,487	399,550	442,818	2.8	
		Stable Employment		367,356	379,493	420,475	2.7	
		Unemployed Rate (%)		4.95	5.02	5.05	0.4	
2. Economic	GRDP		VND billion (current price)		11,691	15,474	24,663	16.1
	Per Capita GRDP	VND thousand (current price)		15,007	19,181	27,696	13.0	
		US\$ (1 US\$=17,000 VND)		883	1,128	1,629	13.0	
	Sector Composition (%)	Primary		5.1	4.3	3.9	-5.3	
		Secondary		50.2	45.6	44.6	-2.3	
		Tertiary		44.7	50.2	51.5	2.9	
	Output/Capita (VND000) (current price)	Agricultural		1,152	1,292	1,783	9.1	
		Industrial		21,532	26,062	34,868	10.1	
		Services		10,498	15,065	21,904	15.8	
	FDI (95-09)	No. of Projects		-	-	164	-	
		Registered Capital (US\$ mil.)		-	-	2,640	-	
		Implemented Capital (US\$ mil.)		-	-	589	-	
	Trade	Export Turnover (US\$ mil)		349	470	476	6.4	
		Import Turnover (US\$ mil)		438	522	532	3.9	
	Tourism	No. (000) ²⁾	Domestic	432	1,000	-	-	
			Foreign	228	350	-	-	
Receipt (US\$ mil)		22	30	42	-			
3. Public Services	Coverage ¹⁾	Electricity		-	100.0	-	-	
		Piped Water		-	63.4	-	-	
		Telecommunication		-	66.8	-	-	
	Health	Hospital Beds	No.	3,270	3,587	3,819	3.2	
			No./000 pop.	4.20	4.45	4.29	0.4	
	Education	Primary	No. of Students	63,871	59,317	63,217	-0.2	
			No. of Schools	96	100	101	1.0	
		Secondary	No. of Students	93,604	93,473	86,176	-1.6	
			No. of Schools	67	70	71	1.2	
		Tertiary	No. of Students	131,840	122,502	138,491	1.0	
			No. of Schools	22	20	23	0.9	

Source: Statistical Yearbooks, except the following data:

1) DaCRISS Commune Survey, 2008

2) Department of Science, Culture, and Tourism

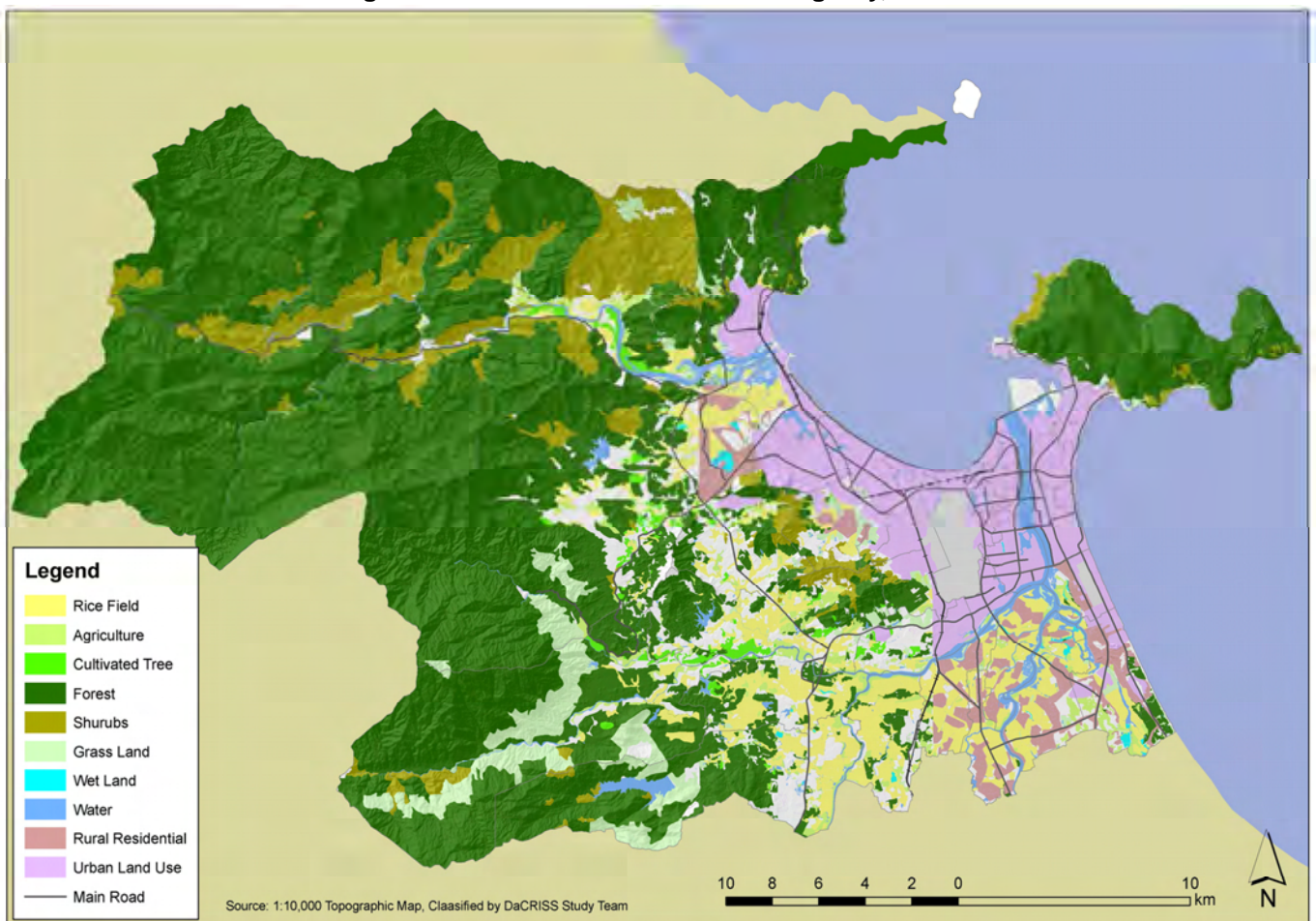
² National average of poverty rate is 13.4%, unemployment rate is 6.5% (2009).

³ National average of hospital beds per thousand population is 2.7, and students per school in primary, secondary, and tertiary education is 455, 605, and 4,457, respectively, each 0.73, 0.50, 0.74 times the figure of Danang City.

3.8 Current spatial development pattern of Danang City is characterized as follows:

- (i) The city is basically composed of a compact urban areas with high population density, relatively small rural areas with scattered settlements and vast hilly and mountain areas. Approximately 60% of the total city area is covered by forest while 28% by green and open space. The area for urban use (residential, commercial/business, industries, institutions, etc.) share only 10% of the total land.
- (ii) However, the urban areas have been quickly expanding to outer areas, especially in south and south west directions. Though much of those areas are still vacant or thinly populated, development of high – end resorts has also started along the coast toward the south.
- (iii) It is apprehended that the current progress in spatial development may result in the form of sprawl as is experienced in many cities in Vietnam including HCMC, Hanoi and other medium-sized cities. Most of the developments do not show explicit figures on the settlement functions but most of them are targeted for medium to high-income groups with low density of population without needed socio-economic functions. When this type of development continues, it is hard to create a compact and public transport oriented urban areas.

Figure 3.1 Land Use Pattern in Danang City, 2006



Source: Worked out by DaCRISS Study Team based on MONRE data.

Environment and Transportation

3.9 The main concern for the future is environmental management. With a population estimated to reach 2.1 million by 2025, the promotion of sectors such as tourism, effects of further land reclamation, infrastructure construction, air pollution from handicraft villages, among others, the potential major environmental issues that will surface are as follows:

- (i) Water resource conservation and management to meet future demand and requirements for a sustainable development;
- (ii) Impact of future hydropower projects such as Song Nam Song Bac Dam and Tuy Lan Dam in Hoa Vang district;
- (iii) Solid waste management due to the fragile institutional arrangement opted for by URENCO due to the uncertainty of its financial resources;
- (iv) Effects of land reclamation on the natural environment due to the development of infrastructure, tourism and service facilities, and housing; and
- (v) Management of risks, particularly floods, and possibly the transportation of hazardous matters as well as noise pollution due to the expected increase in air traffic.

3.10 The system to manage a rich environment is not effectively provided. The city needs to: (i) reduce, if not eliminate, pollution based on the existing Environmental City Plan, (ii) strengthen preparedness and countermeasures against natural disasters, and (iii) integrate available environmental resources to establish a foundation for urban development and activities.

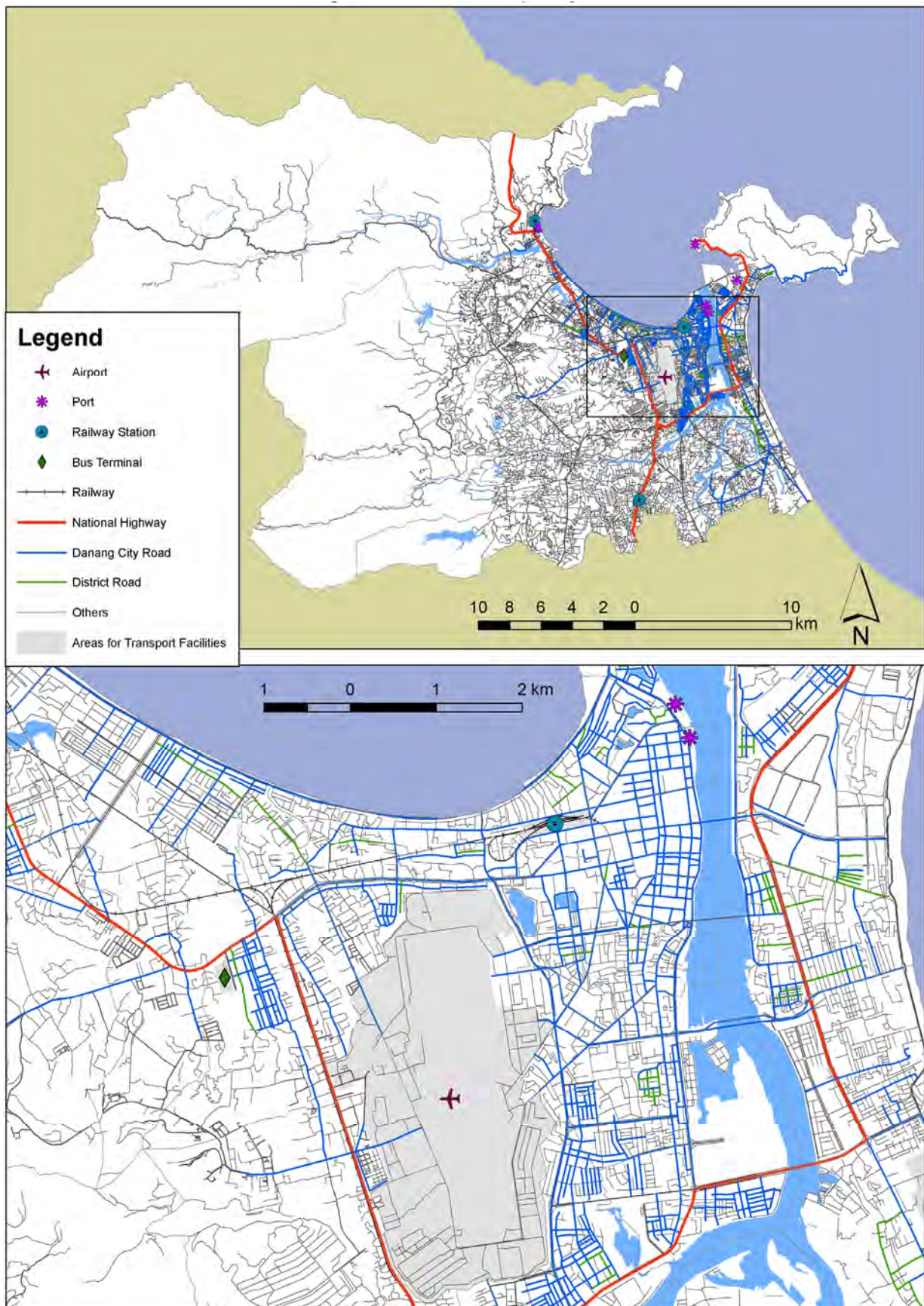
3.11 The transportation system in Danang City is shown in Table 3.4. Although there are no serious problems confronting the city today, the future is uncertain. The city thus needs to: (i) establish a firm policy on developing efficient public transportation in integration with growth management strategies, (ii) provide effective interface with interprovincial transport, and (iii) enhance public awareness of safety, traffic rules, and NMV (non-motorized vehicles) and pedestrians.

Table 3.4 Transportation System in Danang City

Mode		Infrastructure	Services	Traffic Level
Roads	Urban	<ul style="list-style-type: none"> Urban roads (311 km) Traffic signal/roundabout Bridges and flyovers 	<ul style="list-style-type: none"> Private Transportation: bicycle, motorcycle and car Public Transportation: bus, taxi, xe om 	<ul style="list-style-type: none"> Mixed and unsafe situation Congested in peak hours
	Inter-city	<ul style="list-style-type: none"> National Highway 1A (37 km) and 14B (32km), Provincial roads (100 km) 	<ul style="list-style-type: none"> Private: motorcycle, car Provincial bus: various destinations 	<ul style="list-style-type: none"> Mixed and unsafe situation Congested at built-up area
Rail		<ul style="list-style-type: none"> North South Line (42 km length in the city) connecting Hanoi and HCMC 5 stations including Danang Station 	<ul style="list-style-type: none"> No. of daily operations (departures): 18 passenger trains 12 cargo trains 	<ul style="list-style-type: none"> Traffic volume in 2006: Departure: 364,755 pax Arrival: 377,030 pax
Air		<ul style="list-style-type: none"> Danang International Airport (2 runways of 3,048 m x 45 m, Maximum operating aircraft is A320. Capacity of terminal building is 1 million pax/year) 	<ul style="list-style-type: none"> No. of weekly operations (departures): 7 international flights 120 domestic flights 	<ul style="list-style-type: none"> Traffic volume in 2007: International: 27,000 pax and 100 ton Domestic: 1.41 million pax and 8,800 ton
Ports & Shipping		<ul style="list-style-type: none"> Danang Port composed of : <ul style="list-style-type: none"> Tien Sa Terminal depth (berth length: 965m, channel depth: 10-17 m) Song Han Terminal (berth length: 528m, channel depth: 6-7 m) 	<ul style="list-style-type: none"> Tien Sa Terminal: accommodates maximum 45,000 DWT cargo ships, 200 TEU container ships and 75,000 GRT passenger ships. Capacity: 4.5 million MT/year Song Han Terminal: accommodates maximum 500DWT cargo ships. Capacity: 1 million MT/year 	<ul style="list-style-type: none"> Port throughput in 2008: Total cargo: 2.7 million MT <ul style="list-style-type: none"> - Import: 526,000 MT - Export: 1,231,000 MT - Domestic: 985,000 MT Container: 61,881 TEU Total Passenger: 29,642 pax
Inland Waterway		<ul style="list-style-type: none"> 13 waterway routes (162.7km) and 18 passenger stations 	<ul style="list-style-type: none"> Mainly used for goods transportation and no regular passenger services 	<ul style="list-style-type: none"> N.A.

Source: DaCRISS Study Team.

Figure 3.2 Transportation Network in Danang City, 2008



Source: DaCRISS Study Team.

Summary of Issues

3.12 Sustainability: Current conditions in Danang City have been analyzed from the standpoint of sustainable development of the city. “Sustainable” refers to 3 aspects, namely economic sustainability, social sustainability, and environmental sustainability. Issues in which threaten such growth are raised below and solutions are proposed by sector.

3.13 Growth Management: There are potential threats of urban sprawl in the city. The key issues facing Danang are: (i) how to respond to constant increases in urban population, (ii) how to expand its role in CFEZ and Vietnam, and (iii) how to effectively use available land and space without damaging the environment.

3.14 Economic Development: The city is still too weak to function as a growth engine for CFEZ. Meanwhile, the issues and challenges that the city faces are the following:

- (i) Unless the city expands its export-oriented industries to a considerable extent after 2008, it is unlikely that the SEDP 2006–2010 targets will be achieved by 2010;
- (ii) Based on HIS data and the migration rate projected in the SEDP, over 40,000 new jobs a year would be required for the next five years. With increasing migration to the city and declining numbers of city dwellers entering the workforce, over 50,000 new jobs a year should be generated till 2020;
- (iii) Unemployment rates have shown a slow but steady decline in recent years, and the size of the workforce employed in regular, stable jobs has also increased in absolute terms, although this does not fully present a clear picture of the employment situation;
- (iv) Creating higher-value-added employment is another challenge that the city will face, as it has to compete with the industrial areas of the north and southeast for a relatively small pool of trained workers; and
- (v) There is a need to promote domestic private and foreign investments, especially in the secondary sector, not only to generate more employment but to promote a dynamic business climate. The issues to address in are: use of ICT; high shipping costs, infrequent ship calls, poor transportation, and rising transportation costs; inadequate, unskilled, and rising costs of manpower; poor infrastructure; inadequate electricity supply; weak institutions; limited access to financing and land; high taxes; and low security.

3.15 Therefore, the city first needs to: (i) identify economic development strategies unique from those of NFEZ and SFEZ, and (ii) establish a competitive investment environment (in terms of hardware, software, and humanware) for all.

3.16 Social Development: The foundation for social development is not strong enough. Based on the trends in the demographic makeup of Danang, the following issues are expected:

- (i) Population growth will accelerate due mainly to migration to the city. Immigration growth rate will be 2.6% up to 2015, accelerating to nearly 3.8% between 2015 and 2020;
- (ii) Continued migration to the city will translate to higher demand for affordable housing, increased natural population growth rates, and, possibly, higher unemployed or underemployed rate in case of an economic downturn;
- (iii) Household sizes will decline with increasing emigration and changing social conventions;

- (iv) A shortage of skilled labor in the city is also expected as other destinations like HMC may appear as a more attractive destination than Danang; and
- (v) Immigration will largely depend on the economic growth in CFEZ in both absolute terms and relative to the growth in NFEZ and SFEZ.

3.17 Therefore, the city needs to: (i) improve living conditions and urban services comprehensively, (ii) set a sustainable mechanism to supply adequate shelter / housing for low income groups, and (iii) further enhance public awareness of urban development and management.

3.18 **Urban Utilities:** In general, the situation has been constantly improving, although it varies by area. The issues and concerns in urban utilities and services are as follows:

- (i) Power Supply: Providing adequate power supply and reliable service to keep up with the rapid increase in demand, developing generation plants and alternative power sources, and controlling demand to keep pace with development.
- (ii) Water Supply: Improving the centralized system, developing independent suburban systems, reducing water loss, integrating resource management, developing ground-water resources, and building manpower capacity.
- (iii) Wastewater Treatment: Need for a wastewater treatment master plan, control of industrial wastewater, and harmonization of water supply plans.
- (iv) Solid Waste Management: Need for measures for treating industrial and hazardous wastes, as well as reducing landfill waste.

3.19 Therefore, The city needs to: (i) continue improving facilities and services for power supply, water supply, wastewater treatment, and solid waste management, and (ii) address the particular needs of the people to improve water quality, provide more public toilets in parks and areas near water bodies as well as along main roads, and to improve drainage conditions.

3.20 **Transportation Development:** To strengthen transportation infrastructure and services are extremely significant for CFEZ as well as Danang City. This will not only serve to connect growth hubs and development resources and strengthen the competitiveness in the region, but will increase the role of Danang as a stronghold of the region. In Danang City, this is highly important not only as a method to induce effective spatial expansion, but to support urban activities and improve investment environments. Therefore, transportation is a significant strategic method for the city to achieve a sustainable development in the future.

3.21 **Environment Management:** Environment will play a decisive role in the future sustainable development of the city. Therefore though removal of pollution is important, the environment shall be improved in the context of all socio-economic activities, considering ecological preservation, disaster risk management, and measures for climate change.

3.22 **Municipal Finance:** The total municipal budget in 2007 was 7,954 VND billion, and capital investment accounted for 27% of the budget. The city raises a lot of funds from land conversion; however, the sustainability of this undertaking is questionable. There are three issues in public financial management for urban development in Danang as follows: (i) Securing needed municipal revenue; (ii) Balancing capital investments and recurrent expenditures; and (iii) Managing O&M works.

3.23 Therefore, the city needs to: (i) manage lands more effectively, (ii) expand sources of city revenue, and (iii) encourage private sector involvement in providing facilities and services.