For More Effective Implementation of Danang – Environment City Project

Counterpart Meeting

24 July, 2009

DOT, Danang City

Agenda

1. Implementation Measures for "Danang – Environment City" Project
2. Organization for the Implementation
3. Strengths of the Danang City Approach
4. Weaknesses of the Danang City Approach
5. Proposals

1. Implementation Measures (1)

1. **Educate and promote awareness and duties of environmental protection**
- Develop a movement to get the whole society into environmental protection and to achieve environment districts and communes.
- Maximize the use of mass media in educating the public to environmental protection
- Improve environmental issue education in schools

2. **Strengthen "Urban Environment Management System"**
- Establish/assign a team/individual for environmental management at district, commune and residential groups
- Establish a Environmental Police Department for regular patrol and prevent environmental crimes

3. **Establish mechanism for realization of "Environment City"**
- Complete a legal document system and enforcement measures

1. Implementation Measures (2)

4. **Encourage public participation in environmental protection citywide**
   - Promote maximum participation of the people in environmental protection
   - Develop mechanisms to encourage and sanction on a fair basis all state-owned entities as well as private sectors participating in environmental protection
   - Attach importance to role of the Farther Front, public unions in environmental protection and monitoring.
   - Issue the standards for the status of "green-clean-beautiful" communes and households, eco-families, and incorporate all these standards in environmental protection movements.
   - Individuals and organizations with special contribution to environment protection movements will be recognized and rewarded officially
5. **Conduct human resource development**
6. **Mobilize funds for implementation**
7. **Incorporate environmental issues into socioeconomic development plans**
8. **Strengthen inspection and supervision of the implementation**

2. Organization for the implementation （1）

1. **"Steering Committee" for implementation of the Plan**
   - Head: Chairman of the DPC
   - Deputy Director of DONRE
   - Members DPI, DOF, DPC, DOI, DOC, DOT, etc.
2. **Tasks of DONRE**
   - Coordinate budget and implementation with relevant agencies
   - Propose the promulgation of legal documents
   - Propose/approve functions, tasks and organizational structure for projects
   - Report timely to DPC issues emerged beyond power of DONRE
3. **Tasks of DPI, DOF**
   - Appraise projects and propose financial issues to the DPC
   - Mobilize fund sources in coordination with DONRE

2. Organization for the implementation （2）

4. **Tasks of District PC**
   - Manage decentralized lakes and ponds
   - Develop communes with "green-clean-beautiful" status, eco-communes, environment communes
   - Develop action plans for the district to turn into "environmental-friendly"
   - Conduct effectively the "green-clean-beautiful Sunday movement", make it a habit and everyday work in local communities
5. **Tasks of Father Front of Danang, and other public institutions**
   - Conduct environmental protection programs and events
   - Mobilize all of the people into environmental protection
6. **Tasks of DCST, Danang Radio and TV, Danang Newspaper**
   - Enhance public awareness
   - Make an "Environment City Program" for broadcasting daily on 17:00-19:00 and on the weekly newspaper of Danang

3. Strengths

1. Promote participation of all stakeholder in environment city movement
   - All state-owned entities and private sectors
   - Farther Front and other public unions, such as Youth Union and Women's Union
   - District, Communes, Households
   - Mass media
   - Schools, etc.
2. Issue the standards for the status of "green-clean-beautiful" communes and households, eco-families, and incorporate all these standards in environmental protection movements.
3. Establish a team for environmental management at district, commune, and residential group levels.
4. Recognize the importance of the monitoring, getting lessons learnt from experience, and of providing reward for the special contribution.

4. Weaknesses

1. Top-down approach to environmental protection
   - No participation of community organizations in decision making process
2. State-led environment city projects
   - No participation of private sector in the decision making process
   - No participation of public unions in the decision making process
3. Lack of active participation of all stakeholders in implementing the project
   - Lack of ownership of citizens and private sector
   - Overemphasis of the need for education and the lack of awareness of the people

5. Proposals

- Promote participation of all stakeholders in decision making process at all levels in order to:

✓ Develop a real movement to get the whole society into environmental protection

✓ Mobilize all energy and ideas from private sector, professionals and society for the "Danang – environment city" project

✓ Promote capacity development of whole Danang city

Proposal 1: Establish Cross-sectional Working Groups under the DSC

1. **Objectives:**
- Develop effective strategy for environmental protection,
- Promote participation of important stakeholders,
- Develop planning capacity of government officials who are likely to become the leaders in each department.

2. **Issue Areas:**
- The working groups are formed for each issue area, such as air, water, and land.

3. **Members:**
- Competent middle-ranked officials from relevant departments,
- Researchers and university professors,
- Representatives of private sector
- Representatives of public unions and mass media

4. **Functions:**
- Formulate concrete strategy to achieve each goal
- Monitor the implementation of the projects
- Take lessons for the next year and replicate the best practice

Proposal 2: Establish Special Task Force for Environmental Protection in Each Department

1. **Objectives:**
- Develop effective strategy for environmental protection in each department
- Promote participation of important stakeholders,
- Develop planning capacity of government officials

2. **Issue Areas:**
- The task force is formed to formulate medium and long term concrete environmental plan and strategy for each department.

3. **Members:**
- Competent middle-ranked officials from relevant divisions,
- Researchers and university professors,
- Representatives of private sector
- Representatives of public unions

4. **Functions:**
- Formulate department plan and strategy for environmental protection
- Monitor the implementation
- Take lessons for the next year and replicate the best practice

Proposal 3: Establish Steering Committee at District and Commune levels for Environment City Project

1. **Objectives**
   - Introduce Bottom-up Approach
   - Promote active participation of local agencies and communities
   - Develop capacity of whole Danang City
2. **Issue Areas**
   - Formulate plan and strategy of their responsible areas for environment city project
3. **Members**
   - Chairman of district/commune People's Committee
   - Representatives of relevant government agencies
   - Representatives of private sector
   - Representatives of public unions
4. **Functions**
   - Formulate district/commune environmental plan and strategy
   - Monitor the implementation
   - Take lessons for the next year and replicate the best practice

Proposals 4: Promote More Contests and Events for Environmental Protection

1. Objectives:
   - Promote active participation of all stakeholders in the environment city movement
   - Mobilize energy and ideas of all stakeholders
   - Promote environmental education
   - Replicate the best practice
   - Reward individual and groups for special contribution
2. Examples
   - Eco Children Award
   - Award for Innovative Text for Environmental Protection
   - School Environmental Education Award
   - Fund for Youth (Women) Environmental Activities
   - Eco Company Award
   - etc.

Thank you...

Urban Infrastructure and Utility Development in Danang

Counterpart Meeting

31st ,July 2009

Danang City

Facilitated by JICA Study Team

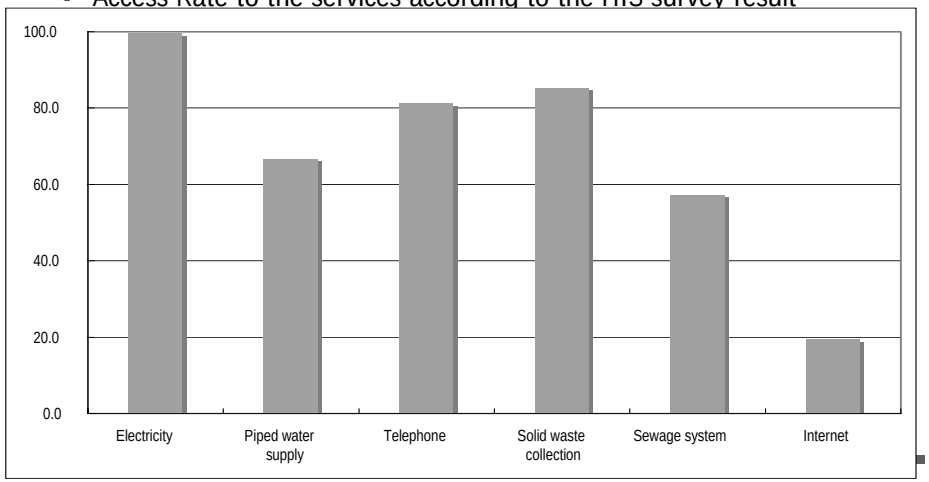
Agenda

1. Crosscut issues related to infrastructure and urban utilities
2. Power Supply
3. Water Supply
4. Solid Waste Management

1. Crosscut issues related to urban utility

1. Crosscut issues related to urban utility

☞ Access Rate to the services according to the HIS survey result

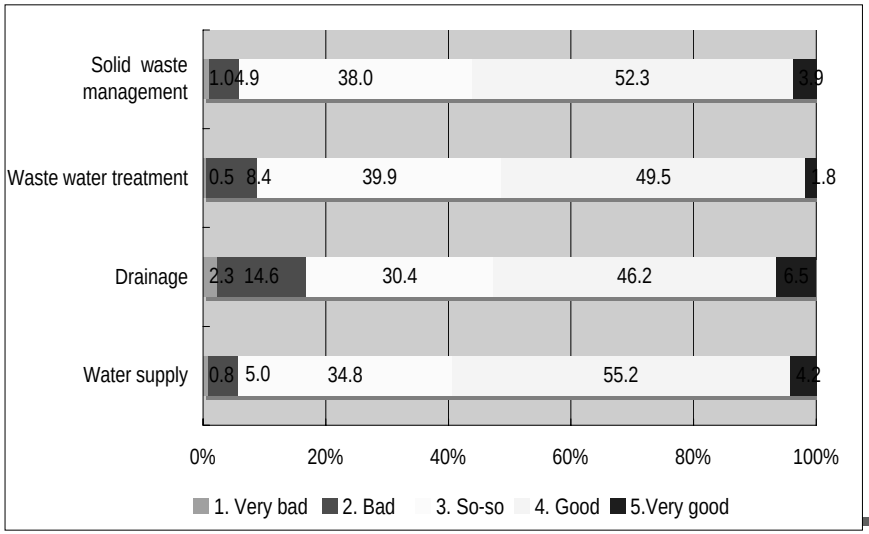


☞ Average expenditure for the services

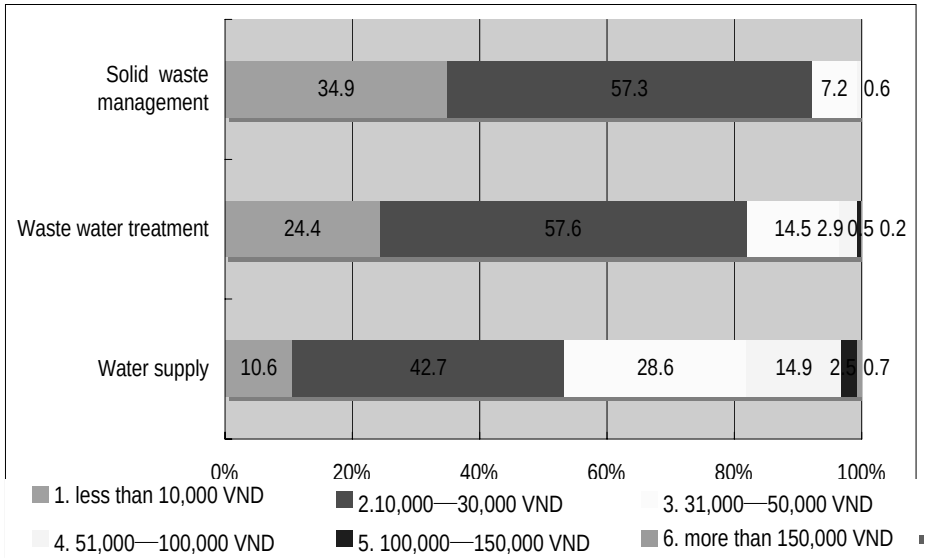
Unit Thousand VND

District	Transportation	Electricity	Water supply and sewerage	Solid waste collection	Total(A)	Average Income(B)	Rate =A/B
Hai Chau	552.9	267.8	66.8	13.8	901.3	4,956.5	18%
Thanh Khe	520.4	204.8	49.8	10.9	785.8	4,507.8	17%
Son Tra	515.3	161.8	46.8	10.1	734.0	4,198.7	17%
Ngu Hanh Son	607.5	133.7	36.8	9.6	787.6	4,133.6	19%
Cam Le	583.0	127.7	42.0	9.1	761.9	3,247.2	23%
Lien Chieu	429.2	173.2	62.4	13.0	677.8	3,885.5	17%
Hoa Vang	456.0	88.4	22.9	7.7	575.0	2,549.3	23%
Danang Average	521.1	183.1	55.1	11.5	770.8	4,097.9	19%

☞ Peoples satisfaction to the services



☞ Willingness to pay for improved services



☞ Population Projection

Unit: Thousand

Area		Scenario1 (Current Trend)		Scenario2 (Existing Construction Plan)			Scenario3 (DaCRISS)	
	2007	2015	2025	2015	2020	2025	2015	2025
Urban	695	877	1,101	865,	1,055	1,209	971	1,726
Rural	110	109	113	217	144	291	195	416
Total	806	987	1,215	1,082	1,200	1,500	1,167	2,143

2. Approach to power supply development

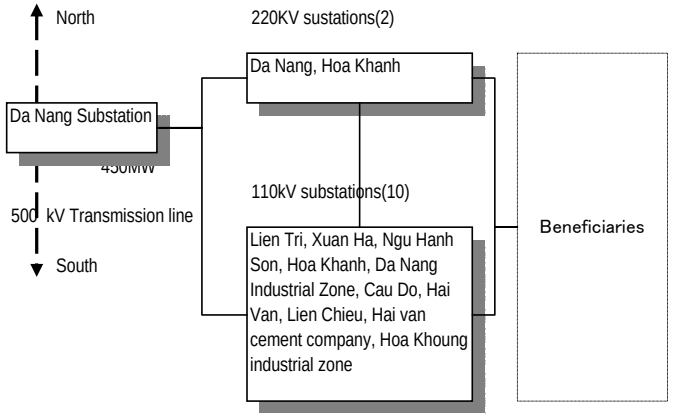
2 Approach to power supply development

- Current status
  - Beneficiaries
    - More than 99% of population has an access to electricity
    - Number of customer:: 181,676(2007)
  - Power consumption
    - Annual Growth Rate : 7-8%
    - Scheduled cut off might happen during dry season
    - unstable operation(voltage fluctuation and power cut)
  - Financial Status
    - Average selling price: 912.05VND/KWh(2007)
    - profits exceeding 97% more than planned according to high consumption
  - Development issues
    - Upgrading facilities with rapid pace
    - Alternative power source(Solar,Wind)

2. Approach to power supply development

- Current System
  - Generation
    Only some IPPs generated power and sell to EVN
  - Transmission
    500kV Danang substation450MW connected National Grid(500kV backbone system)
    220kV Substations, Danang Hoa Khanh
    110kV substations, LienTri, Xuan Ha,Nguhanh Son,Hoa Khanh, Danang industrial zone,Cau Do, HaiVan cement company, Hoa Khoung
  - Distribution
    Cover all the area in Danang city

2. Approach to power supply development



2. Approach to power supply development

- Current Challenge for the power supply service(2008 -2010)
  - Promoting Independent power plants(IPPs) and constructing hydropower plants
  - Upgrading substations and distribution network

2. Approach to power supply development

- Future Demand Projection(Tentative)

Item	Unit	2007	Scenario1		Scenario2			Scenario3	
			2015	2025	2015	2020	2025	2015	2025
Total Consumption	GWh	906	2,129	5,261	2,329	3,514	5,954	2,517	11,256
Multiplicity	Times	1.0	2.3	5.8	2.6	3.9	6.6	2.8	12.4
Peak Load Factor	-	0.59	0.68	0.74	0.68	0.72	0.74	0.68	0.74
Peak Demand	MW	175.5	358.7	814.5	393.4	553.3	921.8	424.2	1,736.5
Multiplicity	Times	1.0	2.0	4.6	2.2	3.2	5.3	2.4	9.9

2. Approach to power supply development

- Future Development according to the DaCRISS Scenario

Power Generation

- Introduction of solar power generation by private companies (not main source of generation)
- Study alternative energy source (wind, Biomass).
- Construction of additional power plant (hydropower)

Transmission and Distribution

- Expand power distribution network to newly developing area.
- Introduction of integrated power control system(Smart Grid)

Others

- Promote energy saving by low power consumption equipment and people awareness to saving power through environmental education

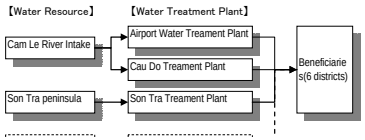
3. Approach to water supply development

3 Approach to water supply development

- Current status
  - City Area
    - 65% of the population has an access to centralized water supply system(460,000 beneficiaries)
    - Hai Chau 89%, Thanh Khe 81%, Son Tra, 59%, Ngu Hanh Son 32%, Lien Chieu 42%, Cam Le 37%
    - Rest of them have an access to ground water well(mostly substandard water)
  - Rural Area(Hoa Vang)
    - 5 communes receive centralized water supply service(10%)
    - 18% has access by the Rural clean water programme
    - Others might be an access to ground well

3. Approach to water supply development

- Current System
  - Supply System(Centralized System)
    - Water Resource
      - Cam Le River
        - Cau Do plant120,000m3/day
        - San Bay Plant :30,000m3 day
      - Son Tra
        - 5,000m3/day
    - Supply Network
      - Class I pipeline 262km (ϕ200mm)
      - Class II pipeline 263km
      - Class III Pipeline 3086km



3. Approach to water supply development

- Current Challenge for the water supply service (2008 -2010)
  - Expand service to the whole urban area
  - Decrease water loss from transmission network
    Succeeded to decrease from 40% to 36%
  - Improve customer relation through USP programme
  - Capacity Development to DWSC through USP

3 Approach to water supply development

- Future Demand Projection

Item		Scenario1	Scenario2			Scenario3	
	2008	2025	2015	2020	2025	2015	2025
Unit Rate (lit/person/day)	124	200	180	200	200	180	200
Coverage(%)	65	90	80	90	95	80	99
Loss Rate(%)	36	20	25	20	20	25	20
Consumed (1000m3/day)	113	252	166	243	294	194	448
Multiplicity (Times)	1.0	2.3	1.5	2.3	2.7	1.8	4.2

3 Approach to water supply development

- Future Development according to the DaCRISS Scenario
  - New water resource development at Cu De River 180,000m3/day (ADB project)
  - Additional Water Resource Development
  - Integrated water resource management
  - Expand water supply network to newly developing area.
  - Establish a integrated fee collection system for water supply and waste water treatment
  - Promote people awareness to saving water and environmental protection through environmental education
  - Promote reuse of water and rain water(in case water resource development is pessimistic)

4. Approach to solid waste management

4. Approach to solid waste management

- Classification

Valuable: collected by the private,community or/and informal sector

Domestic: collected and treated by URENCO

Hazardous and Large scale Industry:
contracted by private company or URENCO

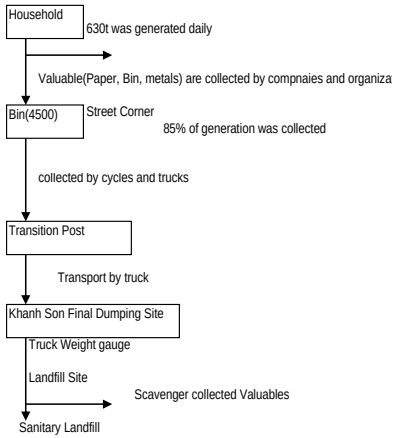
Hospital Waste:
treated by each hospital or URENCO by contract basis (A new incinerator has been constructed and operated)

Sludge from septic tank or night soil treatment :
URENCO and private company by contract basis

4. Approach to solid waste management

- Current status for domestic waste
  - Composition
    - Biodegradable waste = About 80%
    - Recycable =About 10%
  - Service
    - More than 85 % of the waste was estimated to collect
    - Urban Area more than 95%(serviced everyday) ,
    - Rural area: estimated to half
  - Waste Generation
    - 0.8KG/Person/day : Cf. Hanoi 1.0kg/person/day
  - Financial Status
    - 7,000VND to 43,000VND according to the distance from roads
    - 98,000 household paid out of 160,000 (estimated to 60 to 70%)

4. Approach to solid waste management



4. Approach to solid waste management

- Current status for industrial waste management
  - Difficulty to comply the legal regulations 2005
  - Environmental training and staffing are insufficient
  - Weak monitoring and instructing capacity in district level

4. Approach to solid waste management

- Current Challenge for the solid waste service (2008 -2010)
  - Increase service coverage including rural area
  - Hospital waste incinerator constructed
  - Countermeasures for Leachate from the Kahnh Son lanfill site

4. Approach to solid waste management

- Generation volume Projection for domestic waste

Item	Unit	2007	Scenario1		Scenario2			Scenario3	
			2015	2025	2015	2020	2025	2015	2025
Unit Rate	Kg/person/day	0.8	1.1	1.2	1.1	1.15	1.2	1.1	1.2
Generation volume	Tons /day	645	1,385	1,458.	1,190	1,380	1,800	1,284	2,571
Collection rate	%	85	90	95	90	92	95	90	95
Collected volume	Tons/ day	549	977	1,385	1,071	1,270	1,710	1,156	2,443
Multiplicity	Times	1.0	1.8	2.5	2.0	2.3	3.1	2.1	4.5
Cumulative amount from07	1000 ton	-	2,228	6,352	2,364	4,313	7,419	2,488	9,828

4. Approach to solid waste management

☞ Future development according to the DaCRISS Scenario

Domestic waste

- ☞ Introduction of intermediate treatment
- ☞ Introduction of 3R(Reduce, Reuse, Recycle) and awareness campaign
- ☞ Integrated solid waste management among neighboring local governments and construction of final dumping site

Industrial waste

- ☞ Establishment of industrial waste collection and treatment system

Hospital and Hazardous waste

- ☞ Review collection system and Enforcement for the polluter

Economic Development

August 7, 2009

DaCRISS
Hisaaki Mitsui

Structure of presentation

I. Targets for economic development
II. Ownership structure
III. Orientation for economic development
IV. Conclusion

I. Targets for economic development

- GDP growth rate will increase by 13% per year during 2001-2005, 14% in 2006-2010 and 13.5% in 2001-2010.
- Per capita income will reach US$ 2,000 in 2010.
- The export turnover will increase by 21-13% per year during 2001-2010.
- Create new jobs fro about 22-25 thousand workers per year.

Source: Danang city socio-economic development plan for 2010

GDP growth rate

Table 1: Actual and targeted figures of GDP growth rate in Danang

	actual				target	
	2004	2005	2006	2007	2001～05	2006～10
Agriculture, forestry & fishing	4.8	10.2	-10.2	4.0	n.a.	n.a.
Industry and construction	20.3	16.6	1.3	9.1	16.1	15.5
Service	7.1	11.1	21.3	14.4	n.a.	n.a.
All	13.2	13.8	**9.0**	**11.4**	**13.0**	14.0

Poor performance of 'Industry and construction' sector made it difficult to achieve the growth targets after 2006.

Source: Table 19, Danang City Statistical Yearbook 2007, "Danang city socio-economic development plan for 2010".

Export turnover

Table 2: Actual and targeted figures of export turnover in Danang

	actual					target	
	2003	2004	2005	2006	2007	2001～10	2010
Value (mil. US$)	261	309	349	377	470	n.a.	1,720
Growth rate (%)	5	19	13	8	24	21～23	n.a.

Targeted value of the export turnover in 2010 might not be achieved, due to the moderate growth rate.

Source: Table 70, Danang City Statistical Yearbook 2007, "Danang city socio-economic development plan for 2010".

Sector composition

Figure 1: Structure of gross domestic product of Danang by sector

The share of industrial output has been gradually declining.

Source: Table 17, Danang City Statistical Yearbook 2007

Employment

Table 3: Share of labor force in Danang by sector

	2004	2005	2006	2007
Industry	18%	18%	18%	18%
Trade and repair	5%	6%	6%	8%
Hotel & restaurant	2%	3%	3%	5%
Personal & public services	1%	2%	2%	4%
Transport	4%	4%	4%	3%

'Industry' still makes a large contribution to generate jobs.

Source: Table 12, 36, 75, 85, Danang City Statistical Yearbook 2007

Finding and suggestion (i)

- Industry sector shows poor performance but its contribution to growth, export and employment should be still large.

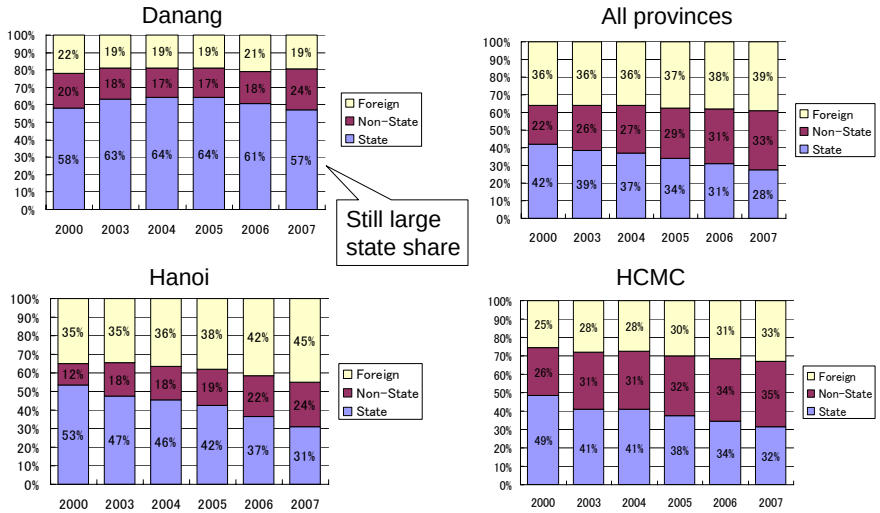
- Industrial growth should be promoted.
  - To achieve high economic growth
  - To increase export earning
  - To create jobs

II. Ownership structure

- Danang's economic development has been mainly driven by the state sector's investment.
- Non state and foreign invested sectors have become new and powerful driving forces of economic development in HCMC and Hanoi, but they still remain weak in Danang.

Structure of industrial output

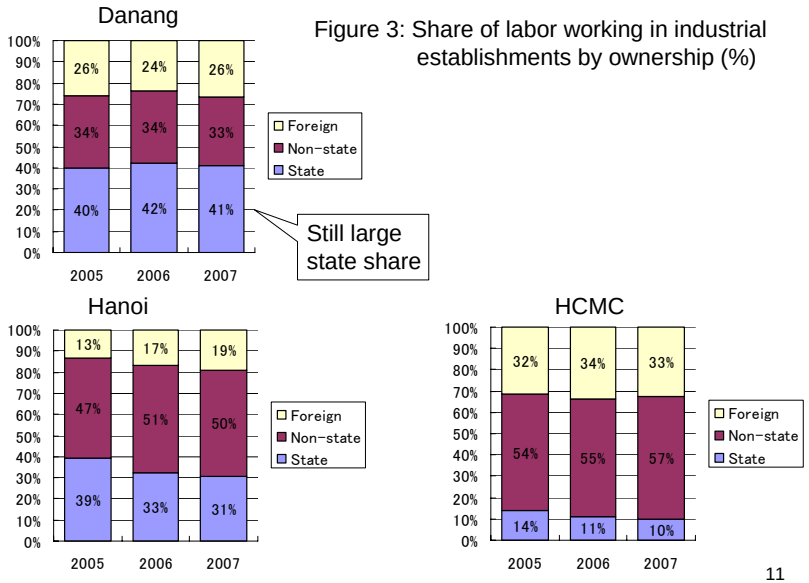
Figure 2: Share of industrial gross output by ownership



Source: Table 171, 175, 187 and 197, Vietnam Statistical Yearbook 2007

Structure of employment

Figure 3: Share of labor working in industrial establishments by ownership (%)

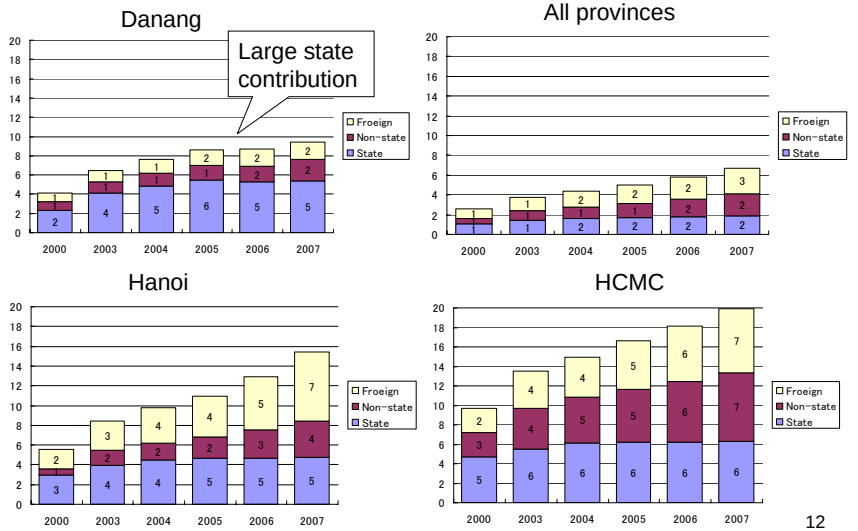


Source: 2007 Statistical Yearbook(s) of the provinces concerned

Per capita output by ownership

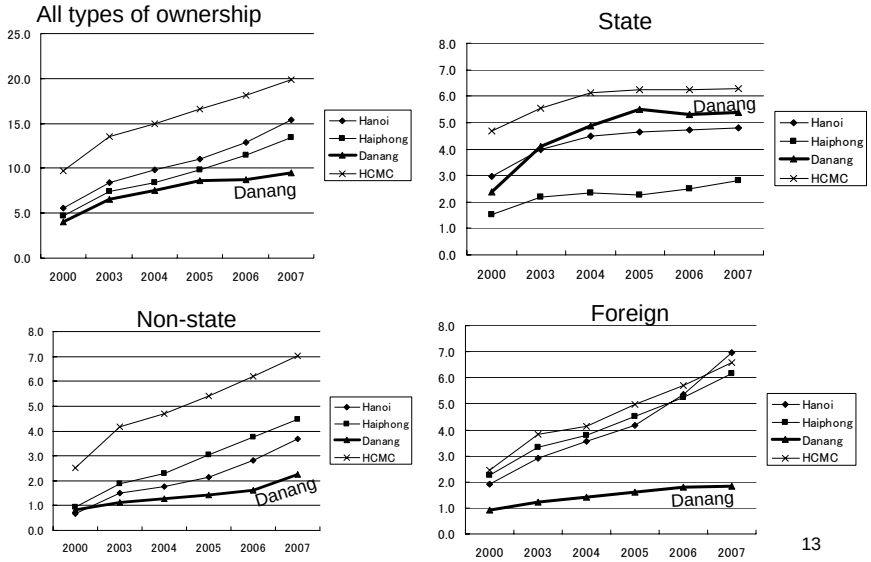
Figure 4: Per capita gross output of industry by ownership

(million dongs; constant 1994 prices)



Source: Table 12, 171, 175, 187 and 197, Vietnam Statistical Yearbook 2007

Figure 5: Per capita gross output of industry by ownership
(million dongs; constant 1994 prices)



Finding and suggestion (ii)

- State sector has been the main driving force of economic development in Danang.
- Private (non-state) and foreign invested sectors are weak in Danang.

⇩

- Danang should develop <u>private sector</u> and promote <u>foreign investment</u>.

III. Orientation for economic development

- <u>Industrial growth</u> should be promoted.
- Danang should develop <u>private sector</u> and promote <u>foreign investment</u>.

⇩

- Development of new strategic industries
- Activation of conventional manufacturing
- Promotion of SMEs & informal sector

1. Development of new strategic industries

(1) ICT industry (software development)

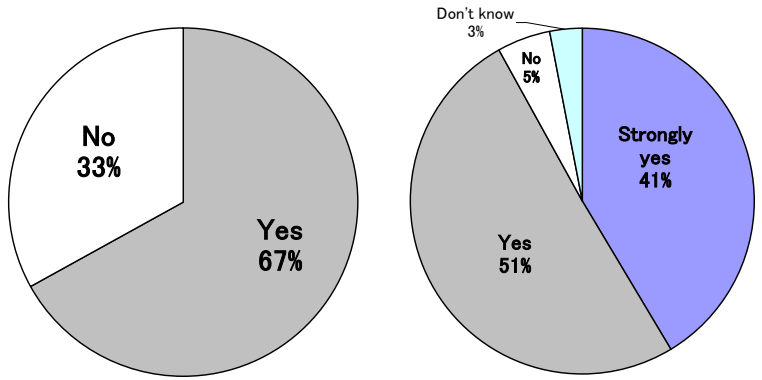
- E-government
  - Custom procedure, tax payment, business registration, driving license, etc.
  - Expansion of demand for local software development industry
- E-business
  - Marketing, selling , buying, advertising, e-commerce, etc.
  - Financial supports to SMEs are required.

(2) Environmental business

- Recycling of industrial waste (metal, plastics, paper, cardboard, foods, etc.) has become increasingly profitable.
- Existing 'recycling villages (*lang nghe tai che*)' should be replaced by the specific and pollution free industrial parks for recycling business.

Figure 6: Awareness and agreement to environmental city

(1) Are you aware of the env. city? (2) Do you agree with the env. city?



Local companies are strongly aware of environmental issues.

Source: Voices of 300 Companies / Establishments in Danang City, DaCRISS, 2009

Table 4: Do you recycle solid waste?

	%			
	Yes	No	Don't know	Total
All establishments	**16**	**73**	**11**	**100**
Manufacturing	33	58	8	100
Construction	23	66	11	100
Hotels and restaurants	5	82	13	100
Commerce and trading	22	67	11	100

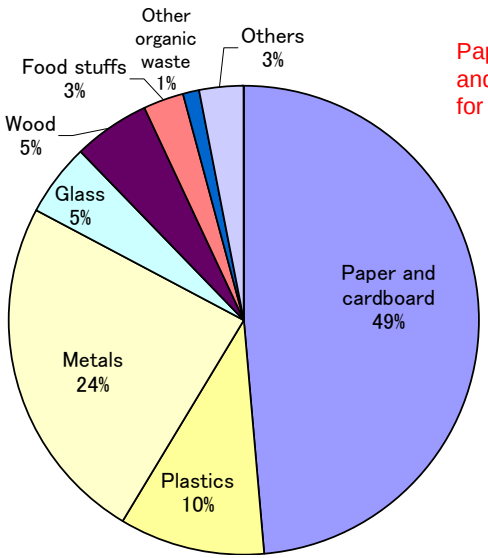
33% of manufacturers recycle their waste

Table 5: Who recycle waste?

	%					
	Ourselves	Individual collectors	Other enterprises	Govern ment	Don't know	Total
All establishments	**34**	**44**	**15**	**0**	**7**	**100**
Manufacturing	48	28	20	0	4	100
Construction	25	38	38	0	0	100
Hotels and restaurants	33	67	0	0	0	100
Commerce and trading	27	73	0	0	0	100

Source: Voices of 300 Companies / Establishments in Danang City, DaCRISS, 2009

Figure 7: Type of waste for recycle (all establishments)



Paper, cardboard, metals and plastics are major waste for recycling.

Source: Voices of 300 Companies / Establishments in Danang City, DaCRISS, 2009

Recycle workshop of scrap metal in QN province

Recycle factory of construction waste at Super Eco Town Tokyo

Source: DaCRISS study team

2. Activation of conventional manufacturing

Promotion of foreign management of IZs

- Existing local IZs are not fully utilized.
- Many of the successful IZs in Vietnam are managed by foreign developers having know-how and overseas network.
- Foreign developers should be invited to Danang to manage local IZs.

Table 6: Vietnam's Largest IZs by Registered FDI in 2003

IZ Name	Province	Nationality	Total FDI
Bien Hoa II	Dong Nai	Vietnam	1,106,917,060
Nhon Trach I	Dong Nai	Vietnam	628,039,804
Tan Thuan	HCMC	Taiwan – Japan	611,839,946
VSIP	Binh Duong	Singapore – Vietnam	596,051,971
Nhon Trach II	Dong Nai	Vietnam	448,276,865
Thang Long	Hanoi	Japan – Vietnam	439,623,667
Amata	Dong Nai	Thailand – Vietnam	356,000,000
Sai Dong B	Hanoi	Korea – Vietnam	321,744,320
Kim Hoa	Vinh Phuc	Vietnam	270,000,000
Nomura	Haiphong	Japan – Vietnam	221,467,508
Loteco	Dong Nai	Japan – Vietnam	175,116,256
Phu My I	BR-VT	Vietnam	150,839,000
Lien Trung I	HCMC	China – Vietnam	118,771,433

Source: UNDP Policy Dialogue Paper 2008/2, Hanoi, July 2008

Table 7: Danang's IZs and their management Companies

Name of IZ	Developer/ managing company	Nationality
Danang	MASSDA	Malaysia – Vietnam
Hoa Khanh	DAIZICO	Vietnam (State)
Hoa Khanh (extention)	SDN	Vietnam (Private)
Lien Chieu	DAIZICO	Vietnam (State)
Lien Chieu (extention)	SDN	Vietnam (Private)
Tho Quang	DAIZICO	Vietnam (State)
Hoa Cam	DAIZICO	Vietnam (State)

Source: DPI, Foreign Affairs Division (13. Nov. 2008)

3. Promotion of SMEs & informal sector

(1) Entrepreneurship supports

- Technical support
  - Start up supports (e.g. IYB,SYB by VCCI)
- Financial support
  - SMEs and micro enterprise loans (e.g. VBSP, TECHCOM Bank)
- Incubation service
  - Business incubators (e.g. DUT's pilot project)

(2) Acceleration of equitization

- More resources should be available for private sector, such as land

Table 8: Major business obstacles for manufacturing companies in Danang city
(% of major, severe obstacle)

Crime, theft and disorder	11
Access to Land	10
Electricity	5
Tax administration	5
Macroeconomic policy	5
Transportation	3
Regulatory policy uncertainty	3
Skills/education	3
Access to financing	3
Cost of financing	3
Anti competitive or informal practices	3
Custom and trade regulation	2
Corruption	2
Conflict resolution	2

Access to land is still a big obstacle

Source: Voices of 300 Companies / Establishments in Danang City, DaCRISS, 2009

IV. Conclusion

- Industrial development should be promoted to achieve high economic growth, to increase export earning, and to create jobs.
- Non state and foreign economic sectors should be much expanded and as new driving forces of economic development.

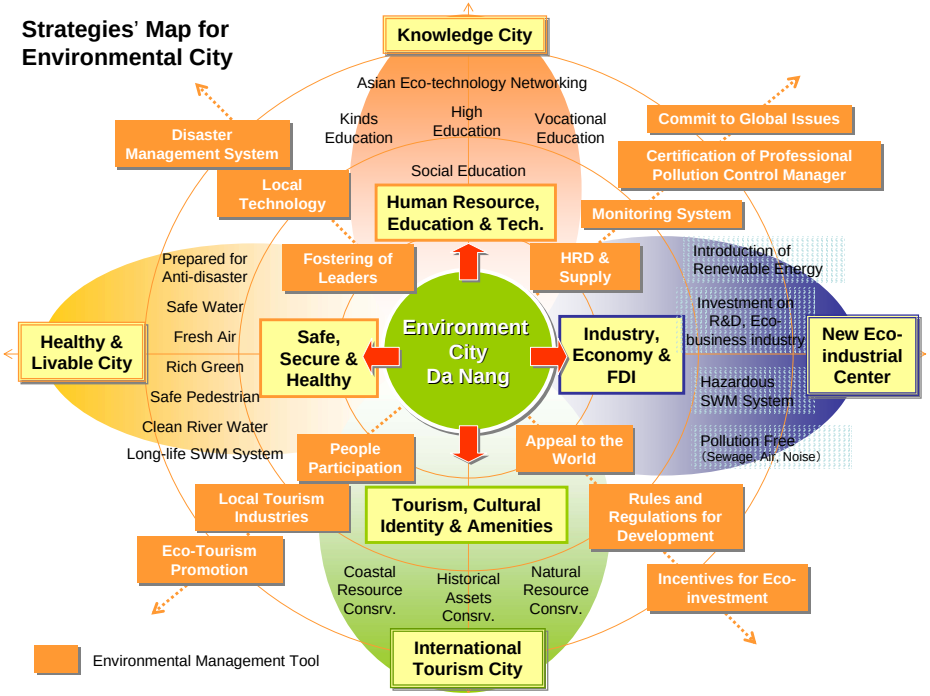
- ICT and environmental business can be the new strategic industries for Danang.
- Foreign management of industrial zone should be promoted for effective utilization of existing IZs.
- SMEs and informal sector business should be technically and financially supported. Equitization of SOEs should be further accelerated to free resources for the private.

Overall Environmental Management System (a proposed structure)

Discussion Topics

1. Vision, Strategies and Tools
2. Four pillars for structure the vision of the Environmental City
3. Integrated Administration towards Formation of the Environmental City

CP Weekly Meeting on 28th August, 2009
Dr. K. Nagayama, JICA Study Team



Four Pillars for One Vision

Internationally Reputable **Environmental City**

1. Healthy and Livable City
   - To get all communities be safe, secure and healthy
2. Eco-knowledge City
   - To develop human resource through multi-levels of education, and network with the world
3. New Eco-industrial City
   - To introduce eco- & infro-technologies and environmental business, involving SMEs
4. International Eco-tourism City
   - To integrate tripartite resources of historical, cultural and natural tourism assets

Environmental Management Strategies and Tools for Healthy and Livable City

- Objective:
  - To get all communities be safe, secure and healthy
- Strategies:
  - To assure Safe Water; Fresh Air; and Rich Green
  - To make River and Beach clean and hygienic
  - To establish a long-life Solid Waste Management System
  - To promote a Safe Pedestrians Policy in traffic rules and regulations
  - To prevail community-based "Disaster Preparedness Movement" for mitigate disaster damages
- Management Tools

【 In linkage with the Eco-knowledge City 】

  - Fostering **Community Leaders** through a **Social Education System**
  - Develop **local technologies** as well as introduction of modern technologies for the "Green-Clean-Beautiful Communes" initiative.
  - Establish an **Overall Disaster Management System** in Da Nang City, integrating community-based preparedness measures

【 In connection with International Eco-tourism City 】

  - Encourage **local people's participation** for eco-tourism promotion, conserving all natural resources
  - Foster and develop **Local tourism industries** and **products**

Environmental Management Strategies and Tools for
Eco-knowledge City

- Objective:
  - To develop human resource through multi-levels of education, and network with the world
- Strategies:
  - To establish a **Social Education System** for environmental knowledge dissemination (Citizen's College, Community Night School, and /or Special Lectures)
  - To develop an "**Environmental Science Classes and Curriculums**" at different levels of education of Elementary, Middle-high, High education and Vocational education
  - To strategically enhance the higher educational organizations to be the **National Center for Environmental Science and Technology** (NCEST-Danang), equipped with sufficient R&D functions as well as knowledge training and laboratory functions
  - To proactively organize an **Asian Eco-technology Networking** with outstanding universities and institutes in Asia.
- Management Tools

【 In linkage with the Healthy and Livable City 】
  - Fostering **Community Leaders** through a **Social Education System**
  - Develop **local technologies** as well as introduction of modern technologies for the "Green-Clean-Beautiful Communes" initiative.
  - Establish an **Overall Disaster Management System** in Da Nang City, integrating community-based preparedness measures and educational knowledge and facilities

【 In connection with the New Eco-industrial City】
  - Establish a reliable **Monitoring System** for water (surface, underground and sewage water)r, ambient air and soil quality in collaboration with the NCEST-Danang.
  - Develop a qualification system for **Certified Pollution Control Managers**, who should be posted at manufacturing industries which have risks to discharge waste water, air pollutants, hazardous waste, and noise , vibrations, and so on.
  - Commit to the **global issues** on reduction of CO_2 emission , and proactively participate in **CDM projects**

Environmental Management Strategies and Tools for
New Eco-industrial City

- Objective:
  - To introduce eco- & infro-technologies and environmental business, involving SMEs
- Strategies:
  - To promote FDI on R&D on environmental business, pollution-free industries and renewable energy generation, etc.
  - To promote new industrial locations of ICT-related and value-added manufacturing industries
  - To encourage development of SMEs' technologies, integrating inter-provincial products/technologies
  - To provide infrastructures and utilities necessary for pollution–free industrial park in association with good management practice
  - To regulate pollution control measures, including positing of certified pollution control manager(s)
- Management Tools

【 In connection with the Eco-knowledge City】
  - Establish a reliable **Monitoring System** for water (surface, underground and sewage water)r, ambient air and soil quality in collaboration with the NCEST-Danang.
  - Develop a qualification system for **Certified Professional Pollution Control Managers**, who should be posted at manufacturing industries which have risks to discharge waste water, air pollutants, hazardous waste, and noise , vibrations, and so on.
  - Commit to the **global issues** on reduction of CO_2 emission , and proactively participate in **CDM projects**

【 In linkage with the International Eco-tourism City 】
  - Appealing of "*Eco-oriented economy harmonized with eco-tourism*" to **the world market**
  - Formulate a strict **legal framework** and/or **guidelines** to ensure pollution-free tourism business operation as well as industrial activities
  - Provide **incentives** of taxation and/or governmental subsidies for eco-investment on improve tourism and industrial activities

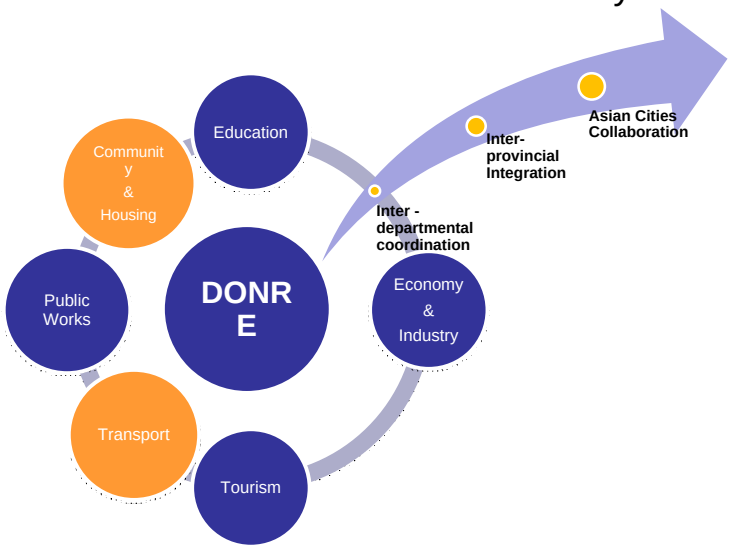
Environmental Management Strategies and Tools for
International Eco-tourism City

- Objective:
  - To integrate tripartite resources of historical, cultural and natural tourism assets
- Strategies:
  - To conserve coastal resources, including the livelihood of fishery families as well as marine biodiversity
  - To conserve historical and cultural assets endowed with neighboring provinces
  - To involve the tourism business sector and tourists to work for the above strategies, imposing **special fees** for the **environmental conservation fund** on hotel bills (5% by tourist and 5% by hoteliers).
- Management Tools

【 In linkage with the Healthy and Livable City 】
  - Encourage **local people's participation** for eco-tourism promotion, conserving all natural resources
  - Foster and develop **Local tourism industries** and **products**

【 In connection with the New Eco-industrial City】
  - Appealing of "*Eco-oriented economy harmonized with eco-tourism*" to **the world market**
  - Formulate a strict **legal framework** and/or **guidelines** to ensure pollution-free tourism business operation as well as industrial activities
  - Provide **incentives** of taxation and/or governmental subsidies for eco-investment on improve tourism and industrial activities

Integrated Administration towards Formation of the Environmental City



Socio-Economic Framework for Danang City in 2025

September 11, 2009
DaCRISS
George Terahara

What is Socio-Economic Framework?

- Numeric indicators to illustrate the situation of Danang in 2025.
- To be shared among sectors
- To be adopted by sector plan
- To be verified for appropriateness
- To be revised as necessary

Selected Indicators

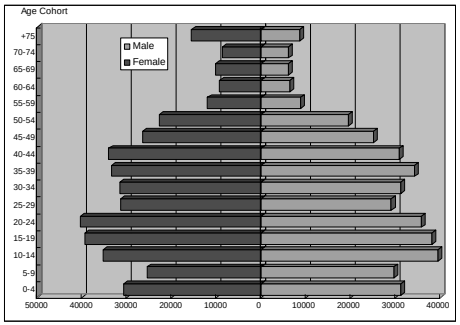
- Society
  - Population
  - Dependency Rate
  - Size of Households
- Economy
  - GDP and GDP per Capita
  - GDP Growth Rate by Industry
  - Employment

Society

- Population
  - Total 822,178 persons (2008)
  - Annual average growth rate 1.7% (2000-2008)
    - Natural Growth: around 1.1%
    - Social Growth: around 0.6%
- Household Size
  - 3.96 person per HH
- Dependency Rate (=(0-14yrs+65+yrs)/Total Population)
  - 31%

Society

- Population Structure
  - "Demographic Transition" has been already happened.
  - Ageing of society
- Migration (estimated)
  - Out 5,000
  - In 10,000



Society

- Population and its Structure in 2025
  - Population
    - Rapidly increase 2,100,000
  - Household Size
    - Decrease to 2.5~3.2 person per HH
  - Dependency Rate
    - Increase to around 35%

Economy

- Gross Regional Domestic Products (GRDP)
  - GRDP(2007) by Region

	GRDP (billion VND)	Population (persons)	GRDP per capita (VND)
Da Nang	15,107	806,757	18,725,465
Ho Chi Minh City	228,106	5,425,500	42,043,314
Viet Nam Total	1,232,683	84,170,702	14,645,031

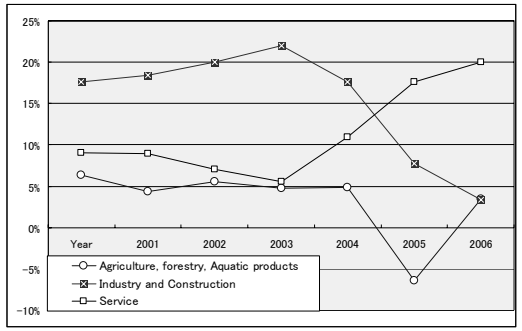
Current Price

Economy

- Gross Regional Domestic Products (GRDP)
  - GRDP Growth Rate of Danang

Year	2001	2002	2003	2004	2005	2006	2007	Total
Agriculture, forestry, Aquatic products	6.4%	4.4%	5.5%	4.8%	4.9%	-6.4%	3.4%	3.2%
Industry and Construction	17.6%	18.4%	20.0%	22.0%	17.6%	7.7%	3.4%	15.1%
Service	9.1%	9.0%	7.0%	5.6%	10.9%	17.6%	20.0%	11.2%
Total	12.2%	12.6%	12.6%	13.2%	13.9%	11.1%	10.8%	12.3%

Based on 1994 constant price.



Economy

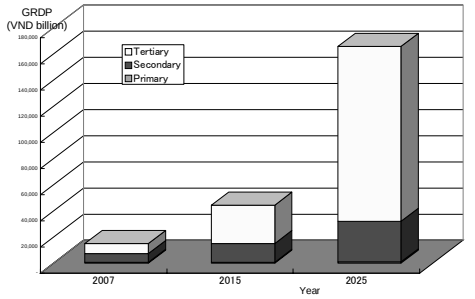
- Target GRDP of Danang in 2025
  - GRDP Target: Twice of Current HCMC
    - VND 80,000,000 per capita
  - Summary

Year	GRDP (billion VND)	Population (persons)	GRDP per capita (VND)
2007(Actual)	15,107	806,757	18,725,465
2025(Target)	168,000	2,100,000	80,000,000

Economy

- Growth Rates by Industrial Sector
  - Primary : Low growth rate
  - Secondary: Stable and active
  - Tertiary: Future main industry of Danang

	GRDP (billion VND)			Growth Rate (per year)	
	2007	2015	2025	2007-2015	2016-2025
Primary	597	757	922	3.0%	2.0%
Secondary	6,713	14,389	31,065	10.0%	8.0%
Tertiary	7,797	29,308	133,818	18.0%	16.4%
Total	15,107	44,454	165,805	14.4%	14.1%



Economy

- Employment

	Employment (persons)			GRDP per Employee (million VND)		
Year	2007	2015	2025	2007	2015	2025
Primary	39,582	31,000	21,000	15.1	24.4	43.9
Secondary	97,835	159,000	235,000	68.6	90.5	132.2
Tertiary	237,671	456,000	728,000	32.8	64.3	183.8
Total	375,088	646,000	984,000	40.3	68.8	168.5

Comparison among Scenarios

		Year	2007	2025		
Indicator		Unit	Actual	Scenario 1	Scenario 2	Scenario 3
Society	Population	Person	806,757	1,102,640	1,493,000	2,100,000
Land	Land Suitable	square km	36.6	36.6	74.2	179.4
Economy						
GRDP		billion VND	15,107	122,678	175,000	168,000
GRDP per Capita		million VND	18.7	111.3	117.2	80.0
GRDP Share	Primary	%	4.0%	0.9%	1.6%	0.6%
	Secondary		44.4%	68.4%	55.6%	18.7%
	Tertiary		51.6%	42.9%	42.8%	80.7%
Employment	Primary	Person	39,582			21,000
	Secondary		97,835			235,000
	Tertiary		237,671			728,000

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

Application of DaCRISS GIS

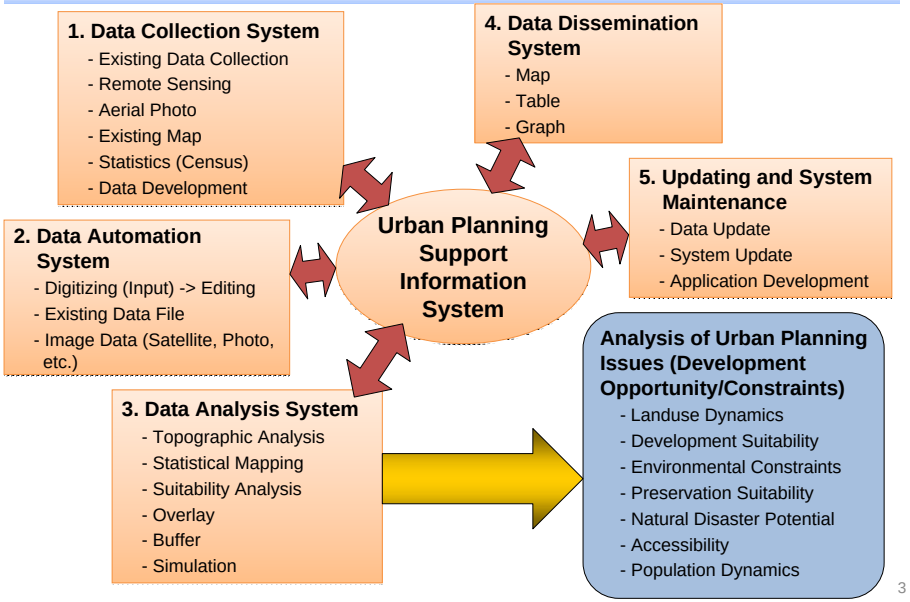
18 September, 2009

JICA Study Team

TOPICS

- System Components of GIS Database
- Setup of GIS Environment for DaCRISS
- Setup of Data Dissemination System
- DaCRISS GIS Database
- DaCRISS Atlas
- DaCRISS GIS Databook
- DaCRISS Viewer
- Updating and System Maintenance

System Components of GIS Database



Setup of GIS Environment for DaCRISS

GIS Software

- ArcView of ESRI, software vendor in USA which is now widely accepted GIS package software in the world.

Projection and Coordinate System

- DaCRISS study team has been utilized an user defined coordinate system based on “WGS_1984_UTM_Zone_49N”.
- VN2000 which is the official coordinate system in Vietnam is applied for DaCRISS GIS Database as the shared GIS database in Danang City.

Hardware and Software Prepared

- The following hardware and software were installed to operate the DaCRISS GIS Database in the Study. Those will be transferred to the counterpart agency after completion of the Study.
  - ArcView: 3 licenses
  - Personal computer: 3 units (Acer L3600, CPU E4600, HD320GB)
  - Large format plotter: 1 units (HP Designjet T610 44in)

Setup of Data Dissemination System

- DaCRISS GIS Database
- DaCRISS Atlas
- DaCRISS GIS Databook
- DaCRISS Viewer

DaCRISS GIS Database

Objective

- All the collected GIS data has been compiled in to DaCRISS GIS Database.
- It includes GIS data in SHP format.
- It allows the users for on-demand utilization of GIS and update of database.

Outline

- Database is composed from the following folders;

00_Administrative	01_SocioEconomic
10_NaturalConditions	20_Transportation
30_RoadNetwork	40_Infrastructure
50_Landmarks	51_Building
60_LandConditions	70_Hazard
80_Environment	90_Others

DaCRISS Atlas

Objective

- Thematic maps prepared in DaCRISS Study has been organized in to DaCRISS Atlas, an A3 size booklet, to see the output map by hands.

Outline

- DaCRISS Atlas has been classified into five categories;

(A)Base Map: to see the administrative area and topographical condition of the City

(B)Urban Planning Tools: to know the spatial distribution of urban planning issues, such as socio-economic conditions, natural conditions, environmental management, hazard/risk records, existing urban land use, urban transportation, and development suitability

(C)Urban Utilities: to know the spatial distribution and manage the utilities

(D)Public Facilities: to know the spatial distribution and manage the facilities

(E)Master Plan: to know the spatial distribution of the current master plan and construction projects

DaCRISS GIS Databook

Objective

- To explain about the thematic maps in DaCRISS Atlas, a Databook will be attached.
- It contains 1) table explaining attribute data of shapefile, 2) profile of type, number, area or length of data by commune, and 3) detail information of data.

Outline

- It follows component of DaCRISS Atlas.

DaCRISS Viewer

Objective

- To see the thematic maps prepared in DaCRISS study and the collected GIS data in computer system, DaCRISS Viewer has been developed.
- It was designed to be utilized by the urban planners or facility management officials.
- It shall be distributed by DVD to the Danang City Departments.

Outline

- It has two functions, one for ready-made “Thematic Maps” viewing, and the other for “Integrated GIS Browser Menu”.
- “Thematic Maps” viewing system is including the maps listed in DaCRISS Atlas in both JPG and PDF format. The users can see JPG format maps only in ready-made style, however, PDF format maps can change the layers setting in a map to show or not to show.
- “Integrated GIS Browser Menu” let the users to prepare maps as they prefer without GIS skills.

Updating and System Maintenance

- To keep the GIS database updated is discussing issues to be solved.
- The key points are;

  (i) who should be responsible,

  (ii) how to share the update information between the Departments,

  (iii) how often it should be.
- The frequency of the updates is depending on the capacity of officials and the budget. It should be carefully discussed considering the balance and objective of GIS and affordability.
- System update is another important issue of GIS since the information technology is advancing day by day. If the system don’t have enough capacity to operate GIS, it should be renewed.
- Application system other than DaCRISS Viewer should be developed according to the users needs for more customized utilization of GIS.

→ All the responsibility for GIS is up to Danang City

Expected Responsible Departments for Data Update

- The following Departments are expected to be the responsible agencies to update each data in DaCRISS GIS Database.

Category	Contents of Data	Expected Responsible Departments for Data Update
Base Map	Boundary of City, District, and Commune, Topographic Condition (Water System, Transportation System, Land Use (Natural and Urban), Contour, Building)	DONRE, DOC, DOT, DARD
Urban Planning Tools	Socio-economic Condition, Natural Environmental Condition, Urban Transport, Development Suitability Analysis	DPI, DONRE, DOC, DOT, DARD
Urban Utilities	Water Supply Network, Drainage and Sewerage Network, Electricity Network, and Dumping Site	DOT, DOC, DOIT, DONRE
Public Facilities	PC Offices, Danang City Departments, Police Stations, Postal Service Facilities, Parks, Sport Facilities, Schools, Hospitals, Tourism Spots, Markets, Cultural Facilities, Religious Facilities	DOC, DOIC, DOCST, DOH, DOET, DOIT
Master Plan	DOC Master Plan, On-going Construction Projects	DOC, All Departments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