

Action Plan of Danang City

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A. Problem:

“Action plan of industrial and medical waste treatment in Danang city”.

B. Target population:

With the annual growth rate of approximately 1.9%, at the end of the year 2005 the city has 790.191 persons (not include the workers and the student move to the city finding jobs and studying) with the rate 51.71% of males, the labour force and the student occupy of 48% and 9.6%. In the urban areas of approximately 200 square km there were 79% of the population to live.

There are about 129.000 workers in industrial zones. In waste treatment field, there are 980 persons involved, in which 510 are males (occupied of 42%).

The numbers of patient beds in 80 hospitals and clinics are 3.200, the numbers of person come to hospitals and clinics for medical examination and in-patient cure are 1.75 millions person times and 0.13 millions times annual. Number of doctors is 950.

C. Resources and constraints:

There are many constraints, but some factors below can be recommendation:

- *Finance*: the city has many fields and many development programs to fund, therefore shortage of finance to invest in industrial and medical waste treatment. Another hand, waste treatment expenditure are only funded from the local state budget which is not stable, if the source of revenue of local state budget are poor, the funding expenditure to be cut out, so the city is easy to be threaten by “environment security”.

Environment treatment services in the city are supplied by only Danang URENCO, the service quality are poor because of without competition.

- *Human resource*: workers and staff in environment treatment are not trained through technical school, they train theirselves by empiricism. For this reasons, to apply the environment treatment standard into practical are not close to obey.

- *Regulation implement*: many environment treatment national standards are promulgated; The People's Committee also imposed the Regulation to protect the environment in Industrial zones, but due to lack of management mechanism and uncompleted combination, there were several environment problems.

- *Community awareness*: still limited. Mostly private small enterprises do not comply with environment treatment procedure.

- *Technical factor*: environment monitoring and examination do not implement regularly due to shortage of finance, facilities and skill-technicians.

D. Action plan:

1. Strengthening institution :

- To draft the “environment protection strategy toward 2010”, set up “Environment Recovery Fund in Danang city” by Department of Environment and Natural Resources, set up “Regulation of waste treatment when construct the civil and industrial works” by Department of Construction at the end of 2007, enforce at the end of 2008 by the People’s Committee.
- To set up “Steering Committee of environment protection strategy in Danang city” to co-ordinate the interdisciplinary activities and combine the environment protection programs into social-economic development strategies. Department of Internal Affairs have responsibility setting up this Steering Committee.
- From 2006 to 2007, Danang URENCO will pilot the program of “waste sorting at home” in Phuoc Ninh ward of 300 households (15,000 persons) with the expenditure of 170 Million VND. Operating the program "Clean and Green city at school".
- Continuing to implement the strategy of removing the factories from the urban center into the industrial zone or suburban areas. Up to 2010, remove all the polluted factories from the urban center, the other will be implemented steps by steps depending on the finance situation of the city.
- Intensify of inspection, examination, supervision the apply of the environment protection regulation to tackle strictly the violence of environment protection. Draft and promulgate the “Regulation in compensation for environment damage”. Exam the quality of waste treatment process at rubbish dump periodically.
- Draft the policies to assist the capita, reduce tax and subsidy fees for the activities in environment protection at the city; draft will be completed in 2007 by Department of Finance and Department of Environment and Natural Resources.
- Making a study on current situation, basic survey, forecast and warning about natural resources and environment; Implemented by Department of Science and Technology and Department of Environment and Natural Resources at the end of 2008.

2. Reconstruct of organizations:

- Change the form of Danang URENCO into “One member limited company” prior to 2008 to improve gradually the service quality, call for capita to invest the equipment, reduce the depend on the local state budget.
- Set up a new company on 2007 to manage the newly rubbish dump to be handed over from the Drainage and Sanitation Project.
- In 2007, upgrading the Company to manager the water treatment plant and drainage network of the city; Making operation regulation; expense norm and finance for the company.
- In 2008, complete the construction stage and operate of the Processing Solid treatment into composting fertilizer Plant.
- In 2008, finish the feasibility study and draft co-operate form of the LPG collection and Energy Recovery CDM Project at old rubbish dump to submit the authority approved.
- In 2008, finish feasibility study and draft operative, co-operative and business form of “industrial and medical waste treatment plant construction project-1st phase” to call the potentiality for investment in 2009.

3. Training:

- Collaboration with University of Danang to set up an Environment Faculty.
- Recruitment more environment management specialist for the Department of the city, particular in Department of Science and Technology and Department of Environment and Natural Resources, Department of Public Works and Transportation and Industrial Zone PMU.

- Making a training course to upgrading knowledge for the environment waste treatment workers and staff periodically of 6 month. Making a program of training volunteers.
- Take part in the co-operation programs with the international organization to exchange the experience.

4. Strengthening service and supply activities:

- Opening the areas to collect and carry waste at suburban and rural, in 2009 raise the rate of waste to be collected and carried up to 90%.
- Continuing the increasing fee process to reduce depending on the local state budget of the waste treatment expenditure. On 2008 to increase the waste treatment fee and water drainage fee of addendum of 10%.

5. Involvement of NGOs:

- Encouraging the NGO's activities (Women Association, Youths Association, Veteran Association, Children sponsoring Association,...) to focus on propaganda about environment protection. To encourage the NGO's activities taking part to consult, inspect, recognize, certify, criticize and monitor in environment projects or programs when required.

6. Involvement of the private sector:

- Encouraging the private sector to take part business in collection and treatment of waste by tending for supplying the environment services.

7. Raising knowledges:

- Launching the movements to raise the awareness about environment protection, enhancing the role of the NGO activities in this field.
- Diversifying the investment capita for environment protection. Asking the local state budget not less 1% of the total costs in 2008 and increasing this rate to follow the growth of the economic development.
- Raising the awareness about environment protection for business community; Making the training courses to redisseminate on laws and exchange knowledge; Making the competition about environment protection for every enterprises and resident communities.
- Posting the weekly program of "environment protection" on local multi-media and the city's websites.

E. Monitoring system:

1. Monitoring system data:

a. Health indicator, survey each 6 months:

No	In distric	Cases of contracting a disease							
		Diarrhoea		Dysentery		Cholera		Typhoid	
		Cases	Cases per 1000 capita	Cases	Cases per 1000 capita	Cases	Cases per 1000 capita	Cases	Cases per 1000 capita
	Hai Chau								
	Thanh Khe								
	Son Tra								
	NHS								
	Lien Chieu								
	Total								

b. Water quality in lakes and ponds:

No	Location	TSS (mg/l)	BOD5 (mg/l)	Coliform (MNP/10 0ml)	COD (mg/l)	Nitrogen total (mg/l)	Phosphorus Total (mg/l)	Tubid	PH

c. Waste water quality in rubbish dump:

No	Location	DO (ml/g)	COD5 (ml/g)	BOD5 (mg/l)	NO3 (ml/g)	NO2 (ml/g)	NO4 (ml/g)	Fe (ml/g)	Cl (ml/g)	Tss (mg/l)	NH3 (mg/l)	Colf orm (MN P/10 0ml)	Ecoli (MN P/10 0ml)

2. Desired aim:

No	Index	Current data	Desired aim to 2010	Desired aim to 2015
	Collected and treated ratio of waste	85%	90%	95%
	Water quality in lakes and ponds (following the national standard 5945 – 1995)	type B	Type A	type A
	Waste water quality in rubbish dump	Type C	Type B	type A
	Treated ratio of medical waste	20%	50%	100%
	Collected and treated ratio of industrial waste	50%	60%	80%
	Numbers of business in environment service supply	01	03	>3
	Environment treatment expenditure againts total costs of local state budget ratio	0,5%	0,7%	0,9%