

WASTE-ECON

"Making waste work for the economy"

Volume 3 - 1/2002

A. NEWS AND ACTIVITIES

1. WASTE-ECON Project Steering and Coordinating Committees met in Hanoi

Two sessions of the Steering and Coordinating Committees of the WASTE-ECON Project were held in Hanoi on 5 August and 8 December 2001 respectively. In these sessions, relevant issues were presented and discussed by members of the Committees focusing on:

i. Project progress and results including

- The progress of the five pilot projects;
- Waste-economics curriculum framework development in Viet Nam and completion of the seventh draft;
- Training activities;
- Financial issues;
- Preparation of Newsletter Volume 3; and
- Operations of the Project office.

ii. Proposed work plan developed to February 2002;

iii. Approval of a preparatory plan and an agenda for the third National Planning Conference.

(Pham Kien Thiet)

2. Training Workshop on "Results-Based Management" Approach

The Results-Based Management (RBM) approach has been adopted by the Canadian International Development Agency (CIDA) for the design, monitoring and evaluation of CIDA funded projects and programs worldwide since the 1990s. This performance measurement tool has proven to be the most effective way to manage CIDA's financial and human resources for Canadian funded projects /programs in developing countries.

This method is new to the Vietnamese partners of the WASTE-ECON project. A training workshop on the RBM approach was delivered on 25 August 2001 in Hanoi in order to help local partners become familiar with the approach. The training workshop was attended by 23 participants including: members of the Project Coordinating Committee and Secretariat,

representatives of the five pilot research groups, and Canadian Project Director, Prof. Virginia Maclaren, Ms. Sharon Brown and other managers.

At the workshop, Ms. Sharon Brown, Waste-Econ's Canadian Project Manager, presented the RBM concept, methodology and indicators; associated risks and assumptions; project performance measurement, approach to participation, work plan development, and reporting. Important indicators need to be developed during the project design stage to reflect all short, medium and long-term results from the project performance.

At the workshop, the participants discussed relevant indicators to be developed for the five pilot research projects. Knowledge of the RBM approach will benefit the Vietnamese partners in implementing and managing the WASTE-ECON Project.

(Nguyen Thi Anh Thu)

3. Two Week Training Courses on Waste Economics

Following the model of the training activities delivered in the first year of the WASTE-ECON Project, three 2-week training courses on waste economics were organized in Ho Chi Minh City (4- 17 Sept. 2001), Da Nang City (15-27 Oct. 2001) and in Thai Nguyen (12-23 Nov. 2001) during the second year.

These courses were attended by 89 participants (including 39 women) who are working in waste-related training, research and management fields of government agencies and non-governmental organizations (NGOs) from 29 provinces and cities in the country. The courses provided relevant knowledge of waste management planning and technology; industrial waste management; public health, education and waste economics; waste economics-principles and theories; economics of waste management and research methodologies of waste economics. Field trips were arranged for participants to visit various local agencies dealing with waste management.

Local resource persons for the two-week training courses have extensive experience in training and research, and gained further knowledge of waste economics through the six week training course held in Hanoi in the summer of 2000, taught by professors from the University of Toronto. The Canadian-developed lectures have been consolidated, supplemented and adapted by the resource persons to local conditions for each course. To help the participants learn the material, brainstorming and participatory approaches and modern teaching aids were applied by the resource persons.

At the end of the courses, the participants produced group reports, and in the Ho Chi Minh City course the participants also developed research outlines and made self-evaluations. In each course, rewards were granted for the participants who made outstanding reports.

(Nguyen Thi Anh Thu)

4. Pilot Research Projects

4.1. Organic waste pilot project at Bai Chay beach, Ha Long City

From September to December 2001, the project team has launched four campaigns of collecting data and documents relating to local environmental, socio-economic conditions, and additional field studies in the research area at Bai Chay Beach, Ha Long City.

Interviews have been organized among numerous officials and people from local government agencies and authorities at all levels and local mass associations in Ha Long City. Survey questionnaires with different formats were distributed, in combination with direct interviews, to 290 local people dwelling on land and sea. Fifty samples of solid waste have been collected and analyzed to identify its composition. The collected data, volumes, composition and characteristics of solid wastes discharged from inland and ships have been analyzed and synthesized. Field surveys have been taken on local major tourist destinations- such as Bai Chay beach and the islands of Tuan Chau, Dao Thien Cung, Hang Dau Go, and Titop.

Local officials from the Quang Ninh provincial Department of Science, Technology & Environment, Ha Long Bay Management Board, Ha Long Tourism Co., Harbor Management Board of Bai Chay Beach Tourism, and Hon Gai Ward People's Committee, have been involved in these terrestrial and maritime field surveys. During the surveys, various issues relating to waste management and environmental sanitation in the research area have been discussed between the team members and local officials.

(Tran Hieu Nhue)

4.2. Industrial Waste Pilot Project in Ho Chi Minh City

This pilot project has been executed by CEFINEA, National University of Ho Chi Minh City with involvement of local partners- Departments of Science, Technology & Environment and Industry, selected industrial enterprises, and individual environmental scientists and managers.

Initially, relevant industrial waste data have been collected and acquired to assess the city's industrial waste situation and predict future trends on which local efforts to mitigate local industrial waste generation should be renewed and where its industrial waste management practices could be improved by applying waste economics.

(Lam Minh Triet)

4.3. Solid Waste Landfill Pilot Project in Da Nang City

Various problems facing the existing solid waste management system in Da Nang city have been attributed to rapidly accelerated urbanization and production expansion. The system has witnessed overloads in all of its operations, ranging from collection to separation, transport, and disposal at Khanh Son landfill. Therefore, a new landfill development plan and appropriate treatment technology selection have been proposed by the city.

The Da Nang University's Environmental Protection Research Center has carried out a pilot study of these issues in collaboration with the University of Toronto and the city's URENCO. So far, the following information and data have been collected and analyzed for a new solid

waste disposal plan: prediction of solid waste generation, compositions and baseline surveys of local environmental, socio-economic conditions in a proposed landfill site, and even local waste pickers in the city.

Some outcomes from the research were presented at a Regional Review Conference on Science, Technology and Environment for Central Vietnam and Tay Nguyen (Central Highlands) provinces held by MoSTE on 13-14 Dec. 2001 in Da Nang.

Location of alternative landfill sites and appropriate disposal technology selection are being considered by the project in order to enable local authorities to effectively develop a new landfill plan.

(*Bui Van Ga*)

4.4. Gender Outreach Pilot Project for Improving Access to Credit for Poor Women Waste Pickers in Trang Minh ward, Kien An district, Hai Phong City

This pilot project has been implemented by the Vietnam Women's Union to develop a credit model with a management mechanism appropriate to local practical conditions. Questionnaires have been developed by the project staff to survey key issues including poor women pickers' living conditions, gender awareness and human health status in Trang Minh ward.

A two-day training course on 'micro-finance' was organized on 8-9 January 2001 in Hai Phong city. It was attended by 15 local people and Mr. John Paterson, Director, Gems of Hope, Canada. The participants listened to experiences and successful models on micro-finance schemes worldwide and discussed ways of adapting the model to practical conditions of the ward.

During the course, local women pickers expressed their needs, expectations and possible participation in the project.

Operational and managerial documentation and training activities are being completed by the project staff prior to the first disbursement period scheduled in March 2002.

(*Cao Hong Van*)

4.5. Awareness Improvement Pilot Project for Child Waste Pickers in Nam Son Landfill, Hanoi

The project started in the second quarter of 2001 and questionnaires were sent out among 102 child waste pickers at Nam Son landfill. Talks were organized with leaders from relevant stakeholders and associations in two local communes Nam Son and Bac Son (four discussions each) to review all relevant issues. Talks were also held with groups of local children (boys and girls) and their parents. Information and data were collected and analyzed, and a survey report has been completed.

Communication: Twenty environmental and children's rights protection posters have been produced. An outreach program has been broadcast weekly in each commune on their own voice transmitting systems. A drawing contest entitled "Children and the Environment" has been launched involving 2000 pupils from lower secondary schools in Nam Son and Bac

Son. The candidates' pictures were selected by professional artists. Awards were granted for 40 pictures and some of them were selected and printed in a collection produced in 1500 copies. 3000 leaflets in simple, easy and plain language have been produced by the project which provide information on environmental issues and childcare and the right to an education.

Education : Four courses were organized for 100 pupils from four blocks of classes from the Nam Son lower secondary school. Pens and textbooks have been presented to children from families facing difficult circumstances.

Health Care: Health examinations and medicine have been provided for 300 local social policy beneficiaries and child waste pickers in Bac Son Commune. Funds have been granted to equip a first aid kit for the child waste pickers at Nam Son and Bac Son communal health care stations.

(Pham Bang)

5. Feedback on the Two-Week Training Courses

In 2001, there were three 2-week training courses on waste economics delivered in Ho Chi Minh City, Da Nang and Thai Nguyen. The courses were attended by 89 participants. Most of the participants felt that their knowledge had been improved after the courses. All of the students felt the course was a positive experience: 9% marked excellent, 18%: very productive and 82%: useful. The participants have acquired knowledge of new methods and practical skills.

In evaluating organizational arrangements of the courses, the participants valued the convenient boarding and lodging facilities, modern training tools, easily understandable teaching methods, and diverse lectures combined with brainstorming discussions.

As far as timing is concerned, half of them said two weeks was too short for such training courses. The rest felt that the timing was reasonable but it could be better if additional time were spent on in-depth discussions and fieldtrips.

The participants felt most of the issues presented in the courses were useful, but the most important were waste management planning and technologies; industrial waste management and economy of waste management.

The participants expressed a preference for information from the Project's Newsletter on a range of topics, including general and specific waste management issues in the industrial, domestic, urban sectors; landfill development; application of waste economics by enterprises in Viet Nam and the world; the project's activities including training and pilot research sectors and other information relating to cleaner production.

The participants have recommended:

- increasing the length of training courses;
- replicating such training courses in other provinces;
- organizing higher level training courses for those participants who have completed the two-week training course;

- Expanding the length of discussions and fieldtrips;
- Including more relevant references and reading documents.

(Nguyen Thi Anh Thu)

B. INVESTIGATIONS - RESEARCH

1. Investigations and research by Canadian students in Vietnam

In 2001, five Canadian post-graduates from the University of Toronto studied relevant thematic issues in Vietnam within the framework of the Waste Econ project.

- “Small scale credit schemes for waste collectors in Vietnam” is a Master’s degree report by Sarah Robin. This research is closely linked to the pilot project for women involved in waste collection and recycling in Truong Minh ward, Hai Phong city.
- “Comparison of rural credit programs between Vietnam and Nepal” is a doctoral degree research paper by Yogendra Shakya. The research has been carried out in Vietnam through various individual and group interviews and field studies taken in some localities where activities relating to the topic exist. In particular, the topic is closely linked to the pilot project for women involved in waste collection and recycling in Truong Minh ward, Hai Phong city. The research will continue in Vietnam in 2002.
- “Public medical care and health aspects of waste management” is the focus of research by Nguyen Thanh Viet Huy and Rachelle Zilber, carried out in Hanoi and Ho Chi Minh City through interviews with individuals and social and health care services and associations, and surveys of informal and formal waste collectors and pickers. This research is associated with the awareness improvement pilot project for improving child waste pickers’ living and educational conditions at Nam Son Landfill, Hanoi.
- “Industrial waste management in Vietnam - Ho Chi Minh city case study” is Master’s degree research by Nupur Malaviya. This research has been primarily carried out in Ho Chi Minh City and closely linked to the pilot-research project on “Waste economics- a Ho Chi Minh city case study”. The research continues in Vietnam in 2002.

The studies by the Canadian students have been facilitated and supported by relevant local agencies and individuals, particularly the Vietnamese partners to the project.

(Tang The Cuong)

2. Thematic reports on the two-week training courses

Participants in the two-week training courses have made group reports in two different forms: research outlines (Ho Chi Minh city course) and thematic papers. The themes addressed are diverse.

Six groups in Ho Chi Minh City focused on such issues as feasibility study of organic residential waste-based fertilizer production; public involvement in community-based solid waste collection; municipal solid waste separation management measures in Dong Thap

province; industrial solid waste generation assessment and its feasible management options in Ho Chi Minh City; and development of scientific rationales for solid waste landfill siting within practical conditions in Ho Chi Minh City.

Da Nang training course participants have made eight research reports covering various issues: “socialization” of MSW collection in Tam Ky provincial town, Quang Nam province; study of support measures developed by a street child protection center to assist child waste pickers at Khanh Son landfill, Da Nang; assessment of the current status of medical waste management system and options to improve its efficiency; treatment of wastes discharged from 120-150 pig/day capacity slaughterhouses; preliminary assessment of coastal environmental sanitation conditions and resolutions in Da Nang city; identification of options in solid waste separation to improve the quality of organic fertilizer in Da Nang; economic efficiency and modifications to a pilot waste oil treatment model of Da Nang Urenco; assessment of the current status of, and options to improve, Quy Nhon township’s solid waste management.

In the Thai Nguyen training course, six reports have been made covering: industrial effluent treatment measures in Hoang Van Thu paper mill; medical solid waste treatment options in Thai Nguyen province; assessment and industrial effluent treatment measures in Hoang Van Thu paper mill; current status of toxic heavy metal (lead and arsenic) contamination caused by local non-ferrous smelting plant; and polluted water in the Cau river: current status, pollution causes and waste economics based remedy options.

In these thematic reports, the urgent needs for solutions to these problems are presented. Proposed methods, causes and resolutions are discussed. The reports will serve as good references for other training courses and for university courses.

(Nguyen Thi Anh Thu)

3. Policies and Options to Improve the Quality of the Environment in Vietnam’s Rural Craft Villages

Both traditional and new craft village development have become a focus in a rural industry development process since the start of industrialization and modernization of the country. However, environmental issues of craft villages in Vietnam have become a serious concern.

A research project on “scientific rationales and practices to develop environmental improvement policies and options for Vietnam’s rural craft villages” has been implemented by the Institute of Environmental Science and Technology, Hanoi University of Technology, within the framework of the KHCN-08 coded National Level Research Program on Science and Technology. This project will be implemented for three years (2001-2004). The project focuses on following objectives:

- Assessment of current status of the craft villages’ environmental and production conditions, environmental impact assessment, and classification of Vietnam’s rural craft villages;
- Review of relevant environment-related policies and development of rationales on which new integrated policies on environmental protection and production would be formulated;

- Development of technical and managerial options including cleaner production, environmental quality monitoring and pollution control measures to improve the environmental quality of craft villages;
- Development of databases on craft villages' environmental management, digital mapping of environmental baselines, and launch of a website on Vietnam's craft villages.

Expected outcomes from the project would serve as rationales for relevant policies and options for sustainable development of Vietnam's rural craft villages.

(Dang Kim Chi)

C. EXCHANGE OF VIEWS & EXPERIENCES

1. Waste-Econ Curriculum Development in Vietnam

A waste-econ curriculum has been developed in collaboration with the University of Toronto, Canada within the framework of the CIDA funded WASTE-ECON Project with the goal of meeting the teaching needs of waste economics in Vietnam's universities.

Upon its completion, the curriculum will be submitted to the Ministry of Education and Training (MoET) to consider and decide whether it would be included into formal tertiary training programs in Vietnam. As a framework for a curriculum to be introduced in Vietnam, it may be adjusted and adapted to specific training objectives and target audiences by different universities.

This is an initial effort to outline a new curriculum on waste economics to be introduced at the tertiary education level in the country, and a contribution to the existing tertiary educational reform in Vietnam.

The following are initial ideas on the framework of waste-econ curriculum developed by professors and doctors of various universities and research institutes, and managers working as Vietnamese partners to the WASTE-ECON project on the basis of discussions and reviews in a recent seminar, and consultations provided by professors of the University of Toronto:

- Nature of the curriculum: It is an open curriculum. It means that the curriculum may be modified as it is a core curriculum.
- Contents: consist of two parts including general environmental knowledge and basic waste economy knowledge.
- Provision of knowledge: includes transfer of basic knowledge (compulsory knowledge) and optional knowledge (decided by specific universities).
- Timing: six credits or 90 hours
- Target audience: undergraduates in universities.
- Goals: general and basic knowledge on the waste economy would be transferred for environment-related specialized students.
- Structure; the curriculum is structured into three parts including:
 - + Part I: transfer of general knowledge and basic rules of economics and environmental economics;

- + Part II: provision of waste-econ basic principles; and
- + Part III: transfer of waste management basic knowledge.

Based on the curriculum framework developed for the undergraduates, another framework will be developed for post-graduate (Doctoral and Master degree) training courses. It will temporarily be called the fourth part (specified later on) with the goal of providing target audience groups with advanced knowledge in waste economics.

(Nguyen Danh Son)

2. Canadian University Level Curriculum on Waste Economy

Some examples of waste economics course offerings provided at the University of Toronto include the following:

- **Hazardous and Industrial Waste Management: Technologies and Policy**
 - Topics:
 1. Introduction to hazardous waste
 2. Toxicology and risk assessment
 3. Environmental legislation and regulations
 4. Hazardous Waste characterization, sampling and analysis
 5. Pollution prevention and waste minimization
 6. Chemical and physical treatment
 7. Biological treatment
 8. Thermal processes
 9. Treatment process and facility siting
 10. Transportation and storage of hazardous waste
 11. Groundwater contamination
 12. Landfill and injection well disposal
 13. Environmental audits and site assessment
 14. Site remediation.
- **Environmental Economics**
 - Topics:
 1. Environmental economics theory
 2. Cost benefit analysis
 3. Economic instruments for environmental management I: user fees, pollution taxes
 4. Economic instruments II: pollution trading
 5. Economic evaluation of environmental services
 6. Environmental and resource accounting
 7. Environmental expenditures and municipal finance.
- **Advanced Topics in Urban Waste Management**

This course is intended for students who have already taken an undergraduate course that addresses the social, economic and policy aspects of waste management. It takes an international perspective on waste management problems, comparing problems and strategies from countries around the world. There is flexibility in this course for students to develop their own topics of study, but among those that will be considered are the following.

- Topics:

1. History of waste management and the rise of consumerism
2. The debate over incineration versus landfills
3. Household source separation: motivations and barriers
4. Strengths and weaknesses of life cycle analysis
5. Electronic waste reuse and recycling
6. Policies for product and packaging stewardship
7. Private versus public sector responsibilities for waste management
8. Construction waste
9. Waste management and health
10. Effectiveness of voluntary initiatives for waste reduction and management
11. Waste management in the tourism sector
12. Women and children as waste workers: improving their livelihoods
13. Comparative analysis of waste picking in industrialized and developing countries
14. Planning for waste management in small towns and rural areas.

(Virginia Maclaren)

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