

WASTE-ECON

"Making waste work for the economy"

Volume 8 - 7/2004

A. NEWS AND ACTIVITIES

1. Project Coordinating Committee Meeting and the Fifth National Planning Conference in HCM City

The Project Steering Committee met in HCM City on February, 13th 2004 to review past activities, discuss future plans, and prepare for the 5th National Planning Conference and the 4th International Conference involving all four partner countries to be held in Siem Riep, Cambodia. The 4th International Conference will focus on the development of a CD-Rom containing waste-econ reference materials. The waste-econ curriculum development team also discussed specific work assigned for each team member.

The 5th National Planning Conference took place from 14th to 15th of February 2004 in HCM city with the participation of members of the Steering Committee and Coordinating Committee and representatives from Canada, local agencies, universities, international organizations and the mass media. Reports delivered at the conference touched upon project process and outcomes, the Take-over Strategy for the Waste-Econ Program, the result-based evaluation plan, the efficiency of training within the project framework and feedback from participants as well as the detailed 2004-2005 project work plan. The 2004-2005 work plan, which aims to focus on the Take-Over Strategy for the Waste-Econ Program includes:

- A study tour to learn the development of the waste-econ curriculum and the teaching of this subject in Canada as well as continued preparations of the waste-econ curriculum to be taught in Vietnam in the near future.
- Workshops on "Integrated waste management"
- Training courses on waste-economy with women as the target audience.
- Follow-up workshops for 2-week training courses on waste-economy.
- 5 pilot projects focusing on key issues

- Development of mini-projects to allow previous Waste-Econ trainees to undertake research activities.
- Continued publication of Waste-Econ Newsletters and books featuring "Integrated Waste Management" and results of pilot projects.
- Strengthened coordination with management agencies and international organizations in waste-econ integration and promotion.

(Tang The Cuong)

2. Second International Conference of the four partner countries in Siem Riep, Cambodia

The Conference took place in the Cambodian city of Siem Riep on 21st and 22nd of February, involving delegates from Canada, Vietnam, Laos, and Cambodia. Major topics included the project's process in each country and the 2004-2005 work plan. Representatives from Vietnam, Laos and Cambodia presented main contents of the outline of the waste-econ curriculum, which has been taught and will be taught in their respective countries. The participants also entered in-depth discussion on their cooperative activities including:

- Development of the waste-econ curriculum;
- Compilation of books on waste-economy and integrated waste management;
- Organization of future meetings, conferences and seminars.
- Arrangement of study tours to share experiences in implementing pilot projects and disseminating waste-econ knowledge.

(Tang The Cuong)

3. Workshop on "Application of cleaner production in some key industries" in HCM City

A workshop entitled “*Application of cleaner production in some key industries*” was jointly held by the Institute for Natural Resources and Environment of the HCM City National University and the Waste-Econ Program in HCM City on February, 16th 2004. The workshop drew the participation of 57 delegates from Hanoi, HCM City and southern provinces and cities, where cleaner production demonstrations have been implemented. It was also attended by representatives from industrial establishments in HCM City and the southern region, which have applied cleaner production and achieved encouraging results. Reports delivered at the workshop concentrated on the demonstration of cleaner production in Vietnam, cleaner production and Vietnam’s sustainable development strategy, HCM City’s cleaner production policies and outcomes of the application of cleaner production processes in industries in HCM City, Bac Lieu and other southern provinces and cities. The participants also paid a site visit to a local industrial establishment, which is specialized in frozen food processing for export and has applied cleaner production.

(Tang The Cuong)

4. Workshops on “Integrated Waste Management”

Over the past 5 months, the Waste-Econ Program has hosted 3 workshops on “Integrated Waste Management” (IWM) in Da Nang, Quang Ninh and Hanoi.

4.1. The IWM workshop in Da Nang was organized by the Environmental Protection Research Center (EPRC) from February 23rd to 25th, 2004. It attracted 50 participants from Da Nang city and central provinces including Quang Binh, Quang Tri, Thua Thien-Hue, Quang Nam and Ninh Thuan.

The 3-day workshop provided the participants with basic knowledge of integrated waste management, integrated waste management planning, waste collection and separation at source and composting. They were also informed of case studies on the market for recyclable materials, ASEAN countries’ experiences in solid waste treatment, GIS and its application in landfill planning. Lecturers were Prof. Virginia Maclaren, Director of the Waste-Econ Program and Ms. Carrie Mitchell (University of Toronto, Canada), Prof.Dr. Bui Van Ga and Emeritus Teacher

Nguyen Ngoc Diep (University of Da Nang).

The workshop focused on how to effectively apply the principle of IWM to specific local conditions. The participants agreed that the knowledge gained was essential and useful for their routine work. They also expressed the hope that the Waste-Econ Program will continue to deliver similar workshops to promote integrated waste management and to host new ones with more diverse topics for wider target audiences in addition to those from Urban Environment Companies and Departments of Natural Resources and the Environment.

(Bui Van Ga & Le Thi Hai Anh)

4.2. The IWM workshop in Ha Long city, Quang Ninh province was held by the Center for Environmental Engineering of Towns and Industrial Areas (CEETIA) from June 4th to 6th, 2004. It was attended by 26 officials from Departments of Natural Resources and the Environment, the Urban Environment Companies, People’s Committees, Women’s Unions and the hotel-tourism sector from the tourist area of Bai Chay, Ha Long city and northern provinces and cities including Hai Phong, Hung Yen, Bac Ninh and Vinh Phuc. The participants had the opportunity to gain basic knowledge of the waste-economy and integrated waste management in Vietnam through lectures by Dr. Nguyen Danh Son, Vietnamese Director of the Waste-Econ Program and Prof.Dr. Tran Hieu Nhue, CEETIA Director. Prof. Murray Haight from the University of Waterloo, Canada introduced the participants to updated knowledge of IWM and Canada’s experiences in this field. A site visit to the Ha Khau sanitary landfill and the construction site of a waste water treatment facility in the north of Ha Long city was also conducted as part of the workshop. The participants also listened to a report by the Ha Long city Urban Environment Company on local IWM and discussed the application of what they learnt to their localities.

4.3. The IWM workshop in Hanoi, held by CEETIA from June 10th to 11th, drew 29 participants from Departments of Natural Resources and the Environment and Urban Environment Companies from Hanoi and the northern provinces including Lang Son, Bac Giang, Yen Bai, Hoa Binh, Phu Tho and Nghe An. Lecturers were Dr. Nguyen Danh Son, Vietnamese Director of the Waste-Econ Program,

Prof.Dr. Tran Hieu Nhue, CEETIA Director and Prof. Murray Haight from the University of Waterloo, Canada. The participants were provided with basic knowledge of waste-economy, theory on IWM and Canada's practical experiences in IWM. They also listened to a report on IWM in Hanoi and discussed ways to apply the knowledge and experiences acquired in their localities.

(Tran Hieu Nhue & Nguyen Quoc Cong)

5. Workshop on “Child Waste Pickers and Waste Economy” in Hanoi

The workshop “Child Waste Pickers and Waste Economy” was held by the Youth Research Institute in Hanoi on February 12th, 2004 in the framework of the CIDA-funded Waste-Econ Program. The workshop aimed to (1) announce the results of a pilot project on raising awareness of occupational hazards in child waste pickers at Nam Son landfill; (2) reveal the results of a survey of local child waste pickers after the pilot project; and (3) discuss proposed models for follow-up activities.

It was attended by 37 representatives from national and local Committees for Population, Family and Children (Hanoi, HCM City and Quang Ninh), the Department of Labor and Employment of the Ministry of Labor, Invalid and Social Affairs, an ILO-funded project, the Vietnam Youth Union, other relevant agencies and authorities of Nam Son and Bac Son communes.

Reports presented at the workshops covered experiences in the settlement of the issue of child waste pickers at Dong Thanh landfill in HCM City, experiences and solutions to child labor in Quang Ninh province and Da Nang city, impact of the environment on child waste pickers in Hai Phong and the prevention of child labor in Nam Son commune of Soc Son district, Hanoi. The participants also debated ways to facilitate conditions for disadvantaged children to seek suitable jobs, to access vocational training and to improve their own knowledge of the environment. This aimed to help them abandon waste picking and raise their living and working conditions.

(Pham Bang)

6. Training course on waste economy for women in Hai Phong

A training course on waste economy with women as the target audience, jointly held by the Vietnam Women's Union and the Hai Phong Women's Union in Hai Phong city from March 15th to 20th, 2004, attracted 33 participants from 16 provinces and cities including Hanoi, Hai Duong, Hung Yen, Bac Ninh and Bac Giang. The participants were Women Union officers from districts and communes where a majority of local residents are involved in waste collection and those who directly engaged in this trade. The training course focused on the following topics:

Topic 1: Environmental and health protection in waste collection, processing, reuse and trading, presented by Associate Prof.Dr. Mrs. Dang Kim Chi, Deputy Director of the Institute for Science and Environmental Technology and member of the Waste-Econ Program Coordinating Committee. This topic covered general knowledge of environmental protection and environmental, health and sanitary issues in waste collection and recycling activities as well as measures to minimize their negative impact on the environment and human health.

Topic 2: Small-scale business (household business), presented by Mrs. Do Thi Huan, Deputy Director of the Center for Small-sized Enterprise Management. This topic touched upon marketing policies, business opportunities and how to seize them as well as the exploration and analysis of the market and competitors.

Topic 3: Credit and savings activities, presented by Mrs. Cao Thi Hong Van, Head of the Department of Family and Social Affairs of the Vietnam Women's Union and member of the Waste-Econ Program Coordinating Committee. The main contents of the topic included the role of micro-credit in poverty reduction, the role of women and groups in micro-credit management and basic principles of sustainable credit-saving management.

Participants also listened to reports on results of and experiences in credit-saving activities including the implementation of a pilot project on micro-credit for women waste pickers in Trang Minh ward of Kien An district, Hai Phong city. By March 2004, the project had provided loans to 450 poor women involved in waste collection. This financial assistance significantly contributed to increasing income for the beneficiaries and many of them became well-off.

The training course provided a venue for the participants to seek business cooperation opportunities. Participants also paid site visits to the Trang Cat landfill in Hai Phong city and to beneficiaries of the pilot project in Trang Minh ward. The participants were appreciative of the knowledge they acquired, saying that it was relevant and useful for their work.

(Cao Hong Van & Tran Thu Ha)

7. GEMs of Hope's mid-term review of the pilot project on micro-credit for women involved in waste collection in Trang Minh ward of Kien An district, Hai Phong city

Two consultants from Canada's Gems of Hope (Vida Dhaniram and Vandana Juneja) were in Vietnam from April 16th to 23rd for a mid-term review of the pilot project on micro-credit for poor women involved in waste collection in Trang Minh ward of Kien An district, Hai Phong city. The mission aimed to evaluate the capacity of project management boards at different levels with regard to project management, operation and implementation as well as the quality of financial, credit and saving management, the efficiency of training for beneficiaries, project impact on borrowers' living conditions and environmental sanitation in the context that a majority of locals are involved in waste collection.

The Canadian consultants met with leaders of the local administration and Women's Unions at different levels, interviewed borrowers, inspected project financial records and reports and attended project meetings at the grassroots level.

They described the project as an effective credit-saving model, which has contributed markedly to improving people's living standards and socio-economic development as well as women's status in family and social lives. A report released by the mission also raised some recommendations to improve the operation and management of the project and promote education and communication on people's health and the environment.

(Chu Nhi Ha)

B. INVESTIGATIONS - RESEARCH

1. Some research projects by Vietnamese students studying in Canada and Canadian students studying in Vietnam

Five Vietnamese graduates have been sent to Canada for further education (master and doctoral degrees) and every year, some Canadian students are sent to Vietnam to conduct their research in the framework of the Waste-Econ Program. The following are some of their research projects:

1.1. Production efficiency and the shadow prices of environmental products of the Duong O paper craft village in Bac Ninh province.

An analysis of the production efficiency and shadow prices of environmental outputs (BOD, COD, SS) of 63 paper-recycling establishments at Duong O village in Bac Ninh province has yielded the following outcomes:

First, the production efficiency and shadow prices vary among paper recycling establishments.

Second, the average production efficiency of these establishments is as low as 64%.

Third, the average shadow prices of these establishments' environmental outputs are positive. This can be attributed to one of the following 3 possibilities or a combination of them:

- Maximum utilization of production materials and minimization of the amount of waste from wastewater by local paper production establishments.
- Poor supervision and enforcement of environmental regulations.
- Lack of adequate facilities for the reduction of waste generation due to enterprises' poor awareness of environmental regulations.

Fourth, Kraft paper production not only yields the highest efficiency but causes the least pollution as well. It is probably because the production line for this type of paper is more modern than those of other paper products.

(Nguyen Van Ha)

1.2. Integrated Waste Management in the tourism area of Ha Long city

The management of solid wastes by the tourism industry in many cities throughout the developing world has resulted in ecological degradation, and environmental health risks. In cities lacking adequate waste collection services and disposal or environmental awareness amongst local people, solid wastes are often indiscriminately dumped along the roadsides, hillsides, creeks, rivers,

shoreline, or into the sea. Ha Long City, Northeastern Vietnam, has been identified as an international tourist destination, world renowned for its scenic landscape of limestone karst. Although the amount of solid wastes generated in Ha Long City does not pose an immediate threat to human health and environment, solid waste management services are clearly stressed. The situation provides an opportunity for Ha Long City to proactively address anticipated waste management problems and promote sustainable development.

Field research was conducted from July to September 2003 to investigate solid waste issues in Ha Long City and explore how an Integrated Waste Management (IWM) approach can contribute towards sustainable tourism development. IWM presents planners with a comprehensive and integrated framework for understanding the waste stream; assessing feasible alternatives; and selecting technologies that are environmentally, economically, and socially acceptable. Participants in interviews and a survey questionnaire were drawn from the tourism industry, local and provincial levels of government, and formal and informal waste management sectors.

Waste options for Ha Long City focused on options that promoted avoidance, minimization, reuse, and recycling. These waste options ranged from strengthening environmental awareness to stimulating the linkages between formal waste managers and informal waste pickers. In particular, the implementation of a composting demonstration in the tourism area of Bai Chay Ward was identified as a feasible waste option. Composting reduces the amount of solid wastes entering the landfill for final disposal. Other benefits include the production of a marketable product and creation of a source of economic opportunity for informal waste pickers. Stakeholder participation was identified as an important element for the effective implementation of waste options. Stakeholders from government, tourism industry, households, and individual waste pickers expressed a strong willingness to participate and collaborate with each other. As a result, the implementations of a composting demonstration at several hotel sites in Bai Chay are presently underway.

(Zeralynne Te)

1.3. Opportunity for the production of compost from organic wastes generated by hotels in Bai Chay tourist destination, Ha Long city.

The quality of the water, soil and air in Bai Chay beach area in Ha Long city is deteriorating due to the growing volume of municipal wastes. Every year, Bai Chay ward alone spends more than 20 billion VND on waste collection, transport and treatment. A waste auditing process has been undertaken in some multi-star hotels in an effort to seek appropriate options for solid waste management and treatment in the Bai Chay area in general and in hotels, recreational complexes and restaurants in particular.

All hotels in the area have been involved in waste recycling and reuse in one way or another. Their efforts to collect all kinds of plastic, metal and carton materials and to use left-over vegetables and food as animal feeds, have contributed to reducing waste, which would otherwise be disposed to the environment. Initial auditing results show that between 40% and 50% of wastes generated from hotels have been collected for recycling or used as animal feed.

Meanwhile, organic wastes including fruit peels, leaves and unused or leftover vegetables, which make up around 50% of the total volume of wastes disposed, provide a suitable source of materials for the production of compost.

Therefore, only 25% of the volume of wastes generated from hotels will be disposed to the environment if all organic wastes are collected for compost production. This option helps extend the lifetimes of landfills and minimizes the volume of leachate and greenhouse gas emission at landfills. As a result, it not only brings benefits to the environment but also provides a soil conditioner for tree planting in hotels.

(Hoang Phuong Chi)

1.4. Estimation of economic benefits of a system on the separation of organic wastes from the landfill in Da Nang through cost-benefit calculation.

Initial results of a research project showed that a number of pilot programs on waste separation at source have been carried out in Hanoi and HCM city. In Hanoi, programs on waste separation in households in Hanoi are implemented in Sai Dong, Gia Lam district by the Gia Lam district Urban Environment Company and in Phan Chu

Trinh ward of Hoan Kiem district by the Hanoi Urban Environment Company. In HCM city, a pilot program on waste separation at source in ward 12 of district 5, funded by ENDA, a French non-governmental organization, was completed in 1999. HCM city plans to carry out a program on waste separation at source for the whole city in 2005.

According to a research report, "Estimation of economic benefits of a system on the separation of solid waste from the landfill in Da Nang and its cost-benefit calculation", the Da Nang Urban Environment Company, URENCO has established a network of waste collection with the installation of 220-liter waste containers along streets and in residential areas in the city. The city also has set up a network of barrows to collect and transport waste from major roads and residential areas. Da Nang authorities are expected to build a plant to produce compost from wastes. However, the city's URENCO has no plan on waste separation at source, saying that the compost production plant will have this function. The research in Da Nang focuses on analysis and calculation of the composition of organic wastes in domestic wastes, which will help estimate the total amount of organic wastes generated in the whole city. This procedure will be followed by the calculation of the cost and benefit of waste separation.

(Nguyen Thi Thuc Thuy)

2. Activities in support of MoNRE in the compilation of VEM-2004 report

Waste Econ is cooperating with the Vietnam Environmental Protection Agency and the World Bank to produce the 2004 Vietnam Environmental Monitor, which will be on solid waste. This report will assess the current state of solid waste management in Vietnam and identify future challenges in a number of areas, including the need for continuing investment in the waste management sector, improving livelihoods for the poor, women and children who work with waste, supporting recycling, reuse and composting, improving the quality of waste management facilities, building capacity in waste management agencies, and improving collection services.

(Virginia Maclaren)

3. Other related investigations and research

3.1. Research on the site selection for the

removal and upgrading of 3 landfills scheduled for 2005

The Ministry of Construction has assigned the Center for Research and Planning on Urban and Rural Environment (CRURE), a Vietnamese partner of the Waste-Econ Program, to conduct a study on site selection for the removal and upgrading of 3 landfills within 2005 (Vung Duc-Quang Ninh, Ba Ho mountain-Quy Nhon and Chau Doc-An Giang). This is in response to the Prime Minister's Decision No. 64/2003/QD-TTg, approving a plan to comprehensively settle the problem of severely polluting establishments. Under this decision, the above landfills are included in the list of 52 landfills, whose pollution problem must be addressed comprehensively by 2007. The 5-month project, to be completed by December this year, is now in the process of data collection and status assessment. Its main activities include survey and assessment of the state of waste volume, composition, generation sources, collection, transport, treatment, solid waste management. It also assesses the size, technology, treatment capacity and pollution levels of the 3 landfills as well as forecasts the volume, composition, and characteristics of solid wastes to be generated till 2010 and 2020. These assessments will serve as a basis for proposed options, which may include upgrading, improving and expanding the 3 existing landfills or selecting sites for removal or closing the existing landfills and building new sanitary ones. Outcomes of the research are expected to provide the foundation for the adoption of appropriate options for the remaining landfills and for the construction of new landfills.

(Luu Duc Cuong)

3.2 HCM City: 91 billion VND for seven years of solid waste treatment

HCM City is the first locality in Vietnam to adopt a comprehensive system of waste management solutions with an investment of 91 billion VND for a period of 7 years to address the problem of solid waste and to improve local residents' living conditions.

HCM City's People's Committee has decided to allocate more than 91 billion VND to settle some urgent issues in 2004 and to lay a foundation for waste management till 2010.

A legal system will be adopted by September, 2004 to encourage participation in solid waste

collection, transport and treatment by all economic sectors and to attract all social organizations to supervising the solid waste management system in the city.

Local authorities will spend 8.3 billion VND to develop a master plan for a management system of solid waste of all kinds, human, technological and medical; and for an effective workforce-training program.

It will also set up a plant for recycling urban solid waste, targeting to compost 50% of solid waste, recycle 20%, burn 10% for electricity generation, and bury 10%, by 2015.

A compost processing plant with a capacity of 200 tonnes per day and stations for classifying waste into organic and inorganic components will be built with an investment capital of 49 billion VND.

Another 29 billion VND will be spent to build a water treatment plant with a capacity of 800 m³ per day using biological and filtering technologies in Phuoc Hiep, Cu Chi suburban district.

A further 5 billion VND will be used to purchase facilities for surveying, monitoring and testing environmental standards.

(VietnamNet, 24/04/2004)

Sustainable Cities in Vancouver. The Vietnamese guests were able to tour state-of-the-art landfills, waste treatment facilities and incinerators in Guelph, Waterloo and Vancouver. They also took part in discussions on waste management and treatment with Canadian and Vietnamese students.

The detailed outline of the waste-econ curriculum developed by the Waste-Econ Program has been approved under the Ministry of Education and Training' Decision No.1567/QD-BGDDT-DH-SDH signed by Vice Minister Tran Van Nhung on March 24th, 2004. The curriculum will be taught in different universities as from the 2004-2005 academic year.

(Nguyen Dinh Huong)

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C. EXCHANGE OF VIEWS & EXPERIENCES

A curriculum development study tour to Canada and the decision on the approval of the detailed outline of the waste-econ curriculum.

Four members of the Waste-Econ Curriculum Development Committee took part in a study tour to Canada from March 29th to April 11th, 2004 to learn the experiences of Canada in the development of waste-econ-related curricula and teaching. Prof.Dr. Nguyen Dinh Huong, head of the Committee and leader of the study tour, presented a seminar on the proposed waste-econ curriculum for Vietnamese universities and Prof.Dr. Dang Kim Chi presented a seminar on cleaner production in Vietnamese industries. The team met with professors from related academic departments at the Universities of Toronto, Guelph, Waterloo, and British Columbia and the British Columbia Institute of Technology. The team also visited the International Centre for