

WASTE-ECON

"Making waste work for the economy"

Volume 7 - 1/2004

A. NEWS AND ACTIVITIES

1. Project Coordinating Committee Meetings - August 31st, 2003 and December 7th, 2003

Following the Fourth National Planning Conference, two Project Coordinating Committee meetings were held in Hanoi on August 31st, 2003 and in Da Nang on December 7th, 2003 to review the implementation and outcomes of the project and to discuss future plans. Major topics included: (1) follow-up workshops of the 2 and 6-week training courses on waste economy, (2) early submission of the outline of the curriculum on waste economy to management agencies, as well as the completion of this document, (3) commitments by parties and partners involved in the Take-over Strategy for the Waste-Econ Program. At the August 31st, 2003 meeting, the Canadian Waste-Econ Project Director, Professor Virginia Maclaren delivered a presentation on "Integrated Waste Management (IWM) approach".

(Tang The Cuong)

2. First International Conference in Hanoi on November 10th, 2003

The First International Conference took place in Hanoi on November 10th, 2003 with the participation of delegates from 4 partner countries (Canada, Cambodia, Laos and Vietnam). High on the agenda were:

- Reports on project progress and future plans in each partner country;
- Suggestions and recommendations touched upon in the mid-term evaluation report;
- Content of the Take-over Strategy for the Waste-Econ Program and implementation methods;
- Sharing of experiences gained during project implementation.

(Tang The Cuong)

3. Summary of the Take-over Strategy for the Waste-Econ Program

As mentioned earlier, the 4-partner meeting in Hanoi discussed the formulation and implementation of the Take-over Strategy for the Waste-Econ Program. The Strategy aims to revitalize commitments by related parties and partners to achieving the project's long-term objectives. For example, concerned parties and partners are committed to translating waste economy ideas into legal documents, strategies and policies focusing on the project's outcomes. The Strategy focuses on:

(1) Teaching capacity: Strengthening teaching capacity, formulating training manuals and reinforcing research capacity on IWM.

(2) Utilization and future development of IWM knowledge: Waste management experts apply IWM in their work and extend the knowledge to the national, regional and local levels.

(3) Utilization and application of IWM practices: IWM strategies and practices proposed following the implementation of pilot projects, will be applied in related localities and expanded, thus possibly leading to spin-off projects.

(4) Increasing community interest in IWM and improvement of IWM knowledge: Increasing community awareness of waste management, particularly IWM and maintaining its positive impact on the community even after the end of the project.

(5) Continual cooperation between partners: Consolidating cooperation in IWM through workshops, conferences, surveys and research.

(Tang The Cuong)

4. Follow-up workshops for 2-week & 6-week training courses on waste economy

The follow-up workshops took place in Thai Nguyen (August 20th, 2003), Da Nang (August 30th, 2003), HCM City (November 7th, 2003), and Hanoi (November 11th, 2003), where related training courses were held earlier. They aimed to evaluate the application of knowledge the participants learnt during the training and discuss future activities. The follow-up workshop for the 6-week training course in Hanoi, was attended by organizers of the 6-week training courses from Lao PDR and Cambodia.

Following are participants' comments on the training courses:

(i) Most of the participants agreed that the training was of different levels of usefulness. The courses provided them with basic and systematic knowledge of waste economy and methodology, which contribute markedly to improving their relevant capacity.

(ii) The knowledge accumulated through the training courses serves as a theoretical and North American-styled framework. Therefore, it has been adjusted by the participants to adapt to specific Vietnamese conditions.

(iii) The application of the knowledge has varied, depending on the participants' working conditions, access to financial resources and opportunities. As a result, some participants have not yet made full use of their knowledge

It is difficult to identify the direct contributions of the waste economy training courses because the participants have also gained their knowledge from other sources. However, some impacts can be determined as follows:

(i) Integration of knowledge learnt from the training into university curricula and subjects on environment for students specializing in economics, finance and accountancy, agricultural business, rural development, bio-technology, health and geography. Waste economy has become a separate component in the subject of economics and environmental management at the National Economics University.

(ii) Application of the courses' methodology (raising and settling issues, group discussion, active learning) in the education of students/trainees

(iii) Use of the waste economy approach in different aspects of research projects relating to the waste economy or environmental management.

(iv) Consolidation of participants' awareness of waste and waste treatment as well as their self-confidence in selecting solid waste treatment technology in their localities. The training also reinforced their confidence in providing consultancy on environment and waste projects to concerned authorities.

(v) Transfer of knowledge gained from the training to local leaders and colleagues in order to jointly develop projects on waste management and other management issues.

(vi) Application of knowledge in pilot projects on "cleaner production" and "solid waste landfill planning".

(vii) Behavior change in medical practices among participants who are health workers.

Participants' suggestions and recommendations:

(i) Continual access to updated knowledge of the waste economy.

(ii) Setting-up a network of key participants.

(iii) Greater involvement of local authorities in project activities.

(iv) Exchange of pilot project outcomes and information between the participants.

(v) Establishment of small research teams similar to those at the end of the 6-week training courses, and creation of a forum for exchange of their research outcomes.

(vi) Distribution of leaflets on the waste economy in the community.

(vii) Organization of in-depth workshops on various topics in different regions and areas.

(Nguyen Thi Anh Thu)

5. Pilot Research Projects

5.1 Organic Waste Pilot Project Bai Chay beach, Ha Long City

In 2003, a series of activities were carried out in the framework of the pilot project, including a workshop on improving awareness for officials of Bai Chay ward and the local Women's Union, and the delivery of materials and leaflets on guidance

for solid waste separation and household composting. A quiz on solid waste management and environmental protection in Bai Chay tourist resort and Ha Long Bay was launched from June to August. The quiz attracted 199 contestants representing the local community in Bai Chay ward. Among the contestants, 65% were female, 35% male; 13% were tourist boat owners, 22% were hotel owners, 13% were farmers, 13% were pensioners, 19% were civil servants and the rest were involved in other trades. 54% of the contestants provided 100% correct answers and the remainder answered at least 80% of the questions correctly. This proved that the local community's awareness of solid waste and environmental protection has improved sizably (before the project, the rate of correct answers stood at around 50%).

The pilot project has stirred up interest of local authorities about solid waste management. As a result, a number of effective measures have been initiated. For example, the Bai Chay ward People's Committee has joined forces with the Urban Environment Company in the establishment of waste collecting teams and in encouraging local people to honor their commitments to environmental protection. The Management Board of the local port for tourist boats has also established a team responsible for collecting floating waste, and has promulgated their own regulations on solid waste management. The Department of Science, Technology and the Environment has drafted a regulation on solid waste management for the Bai Chay resort area. The draft has been made available for community comment and submitted to the Quang Ninh Provincial People's Committee for approval.

The first phase of the pilot project has been completed and a project on the demonstration of a model on integrated solid waste management and compost production at source with the participation of the community is now taking shape.

(Tran Hieu Nhue & Nguyen Quoc Cong)

5.2 Municipal Solid Waste Landfill Pilot Project in Da Nang

The project team has included 2 chapters on solid waste management in the training manual "*Occupational labor and the environment*" to be taught at the Da Nang University. The new content is taught in 8 of the total 30 periods. The

first chapter "Solid waste" covers the life cycle of materials, the hazards of solid waste for humans, solid waste sources, solutions to minimizing solid waste and the collection and transport of waste. The second chapter "Solid waste treatment" deals with solid waste treatment technology, resource recovery and landfill planning, which is supported by the LANDFILLSITING software developed with assistance from the Waste-Econ Project. The curriculum also includes a field trip to the Khanh Son landfill. The training manual, which was developed as part of the framework of "Integrating environmental protection into the national educational system", was accepted by a ministerial-level council of science, technology and the environment on January 16th, 2004.

The pilot project in Da Nang has been covered in the magazine "Science and Development" and 2 reports delivered at national scientific conferences. The article "Solid waste treatment" features relevant experience of developed countries and a proposed municipal solid waste treatment process consistent with Vietnam's conditions in waste separation at source, composting and waste disposal. The first scientific report "Solid waste treatment and landfill planning for Da Nang" was presented at a conference on scientific research and transfer of environmental technology for industrial environmental training and protection, held in HCM city on the 22nd and 23rd of August, 2003. The second report "Software to support landfill planning" was delivered at a conference on science and technology in South Central and Central Highlands regions, held in Quy Nhon on the 21st and 22nd of December 2003.

Da Nang has recently been recognized as a class 1 city with some adjustments in its master plan. A waste transfer station in Hoa Quy, south of the city and a composting plant will be constructed as proposed by the pilot project. The project team has surveyed 3 new landfill sites for Da Nang based on GIS database and the outcomes of sociological surveys. However, other important factors including the quality of soil and underground water sources have yet been put under survey due to financial constraints.

(Bui Van Ga)

5.3 Gender outreach pilot project for women involved in waste collection and recycling in Trang Minh ward, Hai Phong city

In the second half of 2003, 56 training courses on reproductive health, environmental sanitation and gender equality in the framework of the pilot project were delivered to 420 women involved in waste collection and recycling. The participants' husbands also had the opportunity to attend the courses on gender equality. Project beneficiaries have been equipped with basic knowledge of healthcare, environmental sanitation, particularly issues relating to waste, safe water and occupational safety and health. Solutions to environmental pollution in the ward were also a major topic for discussion at the training courses. The participants are now aware of the importance of wearing gloves and masks at work and have transferred their knowledge to other family members. Gender equality courses have improved husbands' understanding of household workloads, which has contributed to a sense of responsibility for sharing the workloads, and respect for their wives

Four hundred and forty women have accessed loans totalling VND 471,909,200. To date, 618 seed loans have been disbursed, of which 450 are primary loans, 168 are secondary loans, and 386 accumulated additional loans. The total amount of seed loans disbursed since the start of the pilot project has mounted to VND 1.213 billion while the value of additional loans is VND 193 million. The borrowers have also participated in money savings on a monthly basis, which have now reached VND 46.550 million

The Director of GEMS of Hope last year made a site-visit to the pilot project. The project is currently continuing its routine activities including loan disbursement and center/group meetings and is preparing for the midterm project evaluation mission scheduled for April, 2004.

(Cao Hong Van & Tran Thu Ha)

5.4 Awareness Pilot Project for Child Waste Pickers at Nam Son Landfill, Hanoi

The first phase of the project was completed in March, 2003. The project team has recently carried out a number of activities to design a feasibility model for the 2004-2005 period, including:

- A survey to review the situation of child waste pickers in Nam Son and Bac Son communes and compare the current number of child waste pickers with the figure in 2000 (the start of the project). It

also aimed to explore the reason why some children have abandoned their work as well as where they are and what they are doing at the moment. The project team held group discussions with the existing child waste pickers and those who have dropped the work (2 groups in each commune, each group consisting of 8-10 children).

- Discussions with local authorities and relevant agencies on the feasibility of a second phase according to specific conditions of each locality. A study tour of the production of compost from organic waste in Bac Giang and the plastic recycling model in Nhu Quynh, Hung Yen province, were arranged for leaders of the 2 communes.

- An ongoing survey in Nam Son and Bac Son commune to gather detailed information about resources and product consumption to facilitate the development of a feasibility project on plastic recycling (one recycling establishment in each commune).

With assistance from the Waste-Econ Project, the pilot project team is accelerating preparations for a national conference on children and waste-environment scheduled for Hanoi in February, 2004.

(Pham Bang)

B. INVESTIGATIONS - RESEARCH

1. Opening Doors to Cleaner Production (CP) in Vietnam

This past summer I had the opportunity to work in Vietnam on a CIDA-funded project called the Waste-Econ Program, headed by Prof. Virginia Maclaren. With an interest in industrial waste management in Vietnam, I headed off for the economic engine of the country, Ho Chi Minh City. In a city with millions of people and thousands of industries, industrial waste management is indeed a serious problem. My preliminary assessment of the situation indicated that one of the major obstacles in terms of controlling industrial pollution was the size and location of current industrial operations. Small-scale industries, which employ less than 50 people, accounted for ninety-five percent of the total number of industries in the city in 1997. Most of these industries are located in residential neighbourhoods and contribute to urban pollution

and nuisance for residents. For the most part, these industries go unregulated due to the limited human and financial capacity of Vietnam's environmental organizations. As a result, Ho Chi Minh City is now in a precarious position in effectively dealing with both economic growth and environmental protection.

My research specifically focused on a pollution prevention concept known as 'cleaner production' (CP), which is a strategy companies can use to improve their environmental and economic performance at the same time by looking at ways to reduce their consumption of resources and energy, reuse valuable by-products of the production process and recycle materials that they would have otherwise thrown away. Despite the common-sense approach of cleaner production and its applicability in all sizes of firms, I found from a number of key informant interviews that it has not been widely implemented in Vietnam, even with its promotion by government, research and academic institutions. Through a literature review and personal interviews, I determined that obstacles to CP implementation are part of systemic problems related to Vietnam's overall environmental policy, the growing dependence of firms on foreign financial and technical assistance, the traditional corporate culture and the internal management and accounting systems in companies. A number of targeted training and education programs could be developed to combat these problems. Some of my specific recommendations include: development of courses aimed at government officials to promote greater awareness of CP and foster greater intra- and inter-governmental cooperation and communication; creation of courses directed at top management to transform traditional state-run management styles; initiation of pre-training courses to strengthen internal practices within companies; and, development of a sustainability component in all future training, such as introducing more CP courses in universities, to avoid dependence on outside assistance.

Overall, there is great potential for CP initiatives in Vietnam. I found that many people, particularly the trainers and consultants I interviewed, are quite optimistic about using pollution prevention techniques in industry in Vietnam. The real challenge in the coming years will be to transfer that enthusiasm to the top management in industry and to prove that investing in CP and other pollution prevention techniques will produce long-

term economic benefits for their companies.

(Carrie Mitchell)

2. Research on Microfinance Sector of Vietnam

From May to October 2002, Dr. Katharine Rankin from the University of Toronto and Yogendra Shakya, a PhD student working under Dr Rankin's supervision, conducted extensive research on the microfinance sector of Vietnam. This research was conducted in close conjunction with the microfinance pilot program of the Waste-Econ Project.

We studied six microfinance projects as case studies in our research, including: (1) Action Aid project in Phuong Nam commune, Quang Ninh province; (2) Rural Development Service Centre (RDSC) project in Phuong Mao commune, Phu Tho province; (3) Save the Children (UK) project in Cam Xuyen commune, Ha Tinh province; (4) CIDSE project in Tan Duong commune, Thai Nguyen province; (5) Peoples Credit Fund project in Yen Bai province; and (6) Waste-Econ project in Trang Minh commune, Hai Phong province.

A wealth of data was generated from these six case studies regarding the challenges, potentials and limitation of microfinance. While conclusive remarks can be made only after extensive data analysis, preliminary impressionistic analysis hints at many interesting findings about microfinance. For example, unlike other studies on microfinance, our research shows that microfinance has a highly differentiated impact in the local community. Other studies, which rely heavily on quantitative indicators of sustainability like loan repayment rates and financial sustainability, have tended to show that all borrowers benefit equally from participating in microfinance. Our study indicates that only certain types of households benefit from microfinance while for others participating in microfinance may have neutral or negative impacts. Our research investigated the role of a wide range of factors that affect microfinance outcomes and found that certain factors (such as amount of household land, type of occupation, number of other sources of loan, number of adult household members and allegiance to local cadres) play a much more important role than others. Our research also uncovered interesting findings about how economic marginalized people engaged in different tactics such as loan swapping (paying one loan with another) and loan sharing

(borrowing with a neighbours or relatives name) to avoid penalties or to the maximize positive outcomes from microfinance.

(Yogendra Shakya & Katharine Rankin)

3. Cleaner production policy in HCM City

HCM City is Vietnam's biggest industrial hub, with an annual industrial growth rate higher than the national average level. However, this growth is coupled with increasing environmental pollution, particularly waste disposal. Since 1996, UNIDO and CIDA have provided HCM City with financial and technical assistance to implement a cleaner production project entitled "Minimizing industrial pollution in HCM City", TF/VIE/00/05. The project aims to prevent pollution through resource savings, reduced consumption of resources and energy, reduction of waste generation at source and strengthening of management efficiency, thus contributing to improving the environment and increasing companies' benefits. In other words, it is to turn waste into profits. The project has been implemented in 3 phases. In the first phase, UNIDO and Vietnamese experts conducted a feasibility study on industrial pollution in HCM City to identify project objectives and work out project content. The second phase of the project, from 1997 to 1999, focused on 3 typical polluting industries namely paper-pulp production, food processing and textile-dyeing. The 3 phase, which started in December 2002, concentrated on: (1) Formulating policies and mechanisms to accelerate the application and implementation of CP in industry in HCM City as well as designing a CP action plan for the city. (2) Supporting businesses in delivering training courses on improving capacity and knowledge of CP. (3) Conducting feasibility studies and implementing a pilot scheme on CP services in some enterprises without outside financial assistance. (4) Establishing a network of organizations and individuals involved in CP in HCM City. A group of Vietnamese experts (headed by Dr. Nguyen Danh Son, Director of the Waste-Econ Project-Ministry of Science and Technology), has been requested by HCM city's Department of Science and Technology and UNIDO to be responsible for objective 1 of the 3rd phase. The final report on CP Policy and Plan of Action in HCM City was finalized in December, 2003 and has been submitted to the municipal People's Committee for approval. Knowledge gained from the CIDA-

funded Waste-Econ Project has contributed greatly to this process.

(Nguyen Danh Son)

4. International seminar on "Green Productivity and Solid waste management"

An International seminar entitled "Green Productivity and Solid Waste Management" was organized in Hanoi on November 3rd, 2003 involving delegates from Bangladesh, Taiwan, Fiji, India, Indonesia, Iran, the Republic of Korea, Laos, Mongolia, Nepal, the Philippines, Singapore, Sri Lanka, Thailand, Myanmar, Samoa, Japan and Vietnam. The seminar, part of the Green Productivity Program of the Asian Productivity Organization, aimed to formulate a strategy on productivity improvement and environmental protection, contributing to the production of environment-friendly products or services. Participants discussed the application of green productivity concepts and implementation methods in solid waste management and exchanged information on solid waste technology, management and control. Other topics included waste management through recycling, and the application of the principles of green productivity to minimize the negative impact of solid waste. Reports delivered at the seminar stressed that rapid industrial growth and urbanization has put remarkable pressure on the environment, particularly in developing countries. According to World Bank statistics, urban areas in Asia dispose more than 2.7 million m³ of waste a day and Asian governments are spending USD 25 billion a year on solid waste management. A report on Vietnam's environment in 2003 showed that the amount of solid waste disposed from provinces and cities nationwide stood at 0.5-0.8kg/person/day. Outcomes from a survey in Hanoi indicated that in the last 2 months of 2001, plastic and nylon accounted for 8.65% of household waste and the figure jumped to 12.09% in the first 2 months of 2002. Notably, hazardous solid waste generated from household activities made up 14.2% of the total amount, of which 9.7% were PVC and the rest is rat adhesive, used batteries and mercury-containing bulbs.

(Vietnam News Agency - November 3rd, 2003)

C. EXCHANGE OF VIEWS & EXPERIENCES

1. Canadian University Level Curriculum on Waste Economy (continued)

Environmental Decision Making (The Course recommended by the Canadian Professors of University of Toronto at the Workshop on Curriculum Development of Waste Economy, Hanoi, May 14-15, 2001).

This is the teaching course of Prof. P. Byer and Prof. I. Stefanovic, University of Toronto, Canada. The bellow is the Outlines of the course.

This course aims to foster the development of student's critical thinking skills and to provide tools and approaches for informed decision-making to address environmental issues. Basic questions to be considered include:

- How do we make decisions in a rational manner and what does it mean to be rational?
- What types of solutions are available to address environmental problems?
- How do we balance tradeoffs in reaching decisions in an imperfect world?
- What is the role of science in developing environmental policies?
- What role do various stakeholders, including the government and public, play in making environmental decisions?
- What role do interdisciplinary approaches play in investigating interdependencies among environmental phenomena?

The course contents include 4 parts with the following structure:

- Critical thinking in environmental decision-making: 10%
- Rational approach to decision-making: 35%
- Values and perceptions: 35%
- Case study: 20%

(Philip Byer)

2. The issue of waste in the National Environmental Protection Strategy till 2010 and Orientation till 2020

The National Environmental Protection Strategy till 2010 and Orientation till 2020 were approved by the Prime Minister on December 2nd, 2003. Regarding the area of waste, these documents deal with the following issues:

a. Indicators till 2020:

- Standardized waste water treatment systems installed in 100% of urban areas, industrial parks and export processing zones
- A waste recycling industry is developed, which is expected to utilize at least 30% of the waste collected

b. Objectives till 2010:

- 100% of newly established industries must apply clean technology or be equipped with standardized pollution reduction and waste treatment facilities
- 30% of households and 70% businesses have equipment for waste sorting at source, and waste containers are installed in 80% of public places
- 40% of urban areas and 70% of industrial parks and export processing zones are equipped with standardized waste water treatment systems
- 90% of household, industrial and serve (**NOT SURE WHAT THIS WORD SHOULD BE**) waste are collected
- 60% of hazardous waste and 100% of hospital waste are treated

c. Basic solutions

- Preventing, treating and controlling pollution sources and environmental degradation throughout the country
- Improving capacity and the efficiency of waste management
- Applying tough measures against severely polluting establishments
- Accelerating the utilization of economic tools in environmental management.

(Nguyen Danh Son)

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