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PROGRAMME PLANNING

COUNTRY AND INTERCOUNTRY PROGRAMMES AND PROJECTS

CONSIDERATION AND APPROVAL OF GLOBAL AND INTERREGIONAL PROGRAMMES AND PROJECTS

Project recommendation of the Administrator

Assistance for a global project

Research and Development of Integrated
Resource Recovery, (Phase II)
(GLO/84/007)

Estimated UNDP contribution:	\$725,000
Duration:	Two years
Executing agency:	World Bank

I. BACKGROUND

1. As a consequence of rapid urban growth, the problem of the management and disposal of solid and liquid waste is assuming increasing importance in many developing countries. During the period 1976-1978 the World Bank conducted research on low-cost technology for water supply and sanitation in developing countries. The result of the research confirmed the need for technological

alternatives for waste recycling which would, inter alia, reduce waste management costs, while at the same time provide important health and environmental benefits at reduced costs. This generated interest in further research and led to the start of the Integrated Resource Recovery Project (GLO/80/004) three years ago.

2. During the first phase of this project, waste management methods and systems in cities throughout the developing world were examined and documented. It was found that conventional approaches to the management and disposal of waste are frequently not cost effective. Equally important when waste is improperly managed, it poses severe environmental hazards. In many cities, the annual cost of solid and liquid waste management consumes a disproportionate share of the budget for all municipal services. Many cities are presently spending some 40 to 60 per cent of municipal budgets on refuse collection and disposal alone, and these costs are increasing as cities grow and waste problems become acute. Industrial country methods of dealing with waste management are inappropriate for implementation in most developing countries. Integrated recycling activities could significantly decrease the municipal and/or national cost of waste management.

3. The problem of solid and liquid waste management extends beyond the financial impact on municipal budgets, however. Other concerns include:

(a) The depletion of readily accessible high-quality sources of energy, water, space and material resources;

(b) The financial, institutional and social needs for resource self-sufficiency;

(c) The need to conserve much of the original energy, material and labour values as well as water and other materials that otherwise would be wasted.

4. Project activities during the first phase addressed the technological issues through some 26 generic and case studies and identified 6 integrated resource recovery methods and systems which have high potential for use in urban areas: (a) the remanufacturing of inorganic materials; (b) the recycling of both natural and synthetic organic materials into food, fiber, and reconstituted polymers; (c) lagoon treated waste for irrigation; (d) lagoon treated waste for aquaculture production; (e) human waste for large-scale biogas production; and (f) landfilling gas production (with or without composting production). The first phase of the project also demonstrated that the utility of resource recovery methods depends not only upon suitable technologies, but also upon their economic, financial, social and institutional feasibility. The second phase of the project which is now proposed will continue the research and development cycle by primarily addressing the socio-economic, financial, and institutional feasibility of applying these technologies on a large scale in cities of the developing world.

II. THE PROJECT

5. The principal long-term goal of the second phase of the project is to identify and promote cost-effective and environmentally sound methods and systems for the recycling and re-use of waste in developing countries. Within this overall framework, the immediate project objectives are to:

(a) Complete and disseminate the research reports and case studies initiated during the first phase on the methods and systems for waste recovery and recycling and the health and environmental aspects of waste re-use;

(b) Assess the financial, economic, social and institutional feasibility of selected resource recovery methods and systems which have the potential for widespread application in the developing world;

(c) Analyse the present waste management and resource recovery systems in six cities in the developing world in order to identify the potential for economically justifiable waste recovery activities and the magnitude of potential investments;

(d) Complete the monitoring and evaluation of resource recovery demonstration projects, and, based on the results, assist developing countries with the design of further research and development which will lead to pre-investment studies and large-scale investment projects in the future;

(e) Prepare studies including assessment of laws and regulations, to facilitate resource recovery in developing countries.

6. To achieve the project's objectives, five demonstration projects will be designed, organized and implemented in Cyprus, India, Indonesia, Nepal and Peru in order to evaluate specific integrated resource recovery technologies, including thermophilic biogas systems, wastefed aquaculture and wastewater recycling and utilization. The results of these demonstration projects will determine their social, economic and institutional feasibility for replication on a large scale. Case studies will continue on the methods and processes being applied for improving the recovery of industrial and post-consumer inorganic materials in Shanghai, China, which is the best developing country example of a thoroughly integrated large scale resource recovery operation. In addition, six reconnaissance studies on the present practice and problems associated with waste management will be carried out in Abidjan, Colombo, Dakar, Douala, Khartoum and Mexico City. Both the case studies and the reconnaissance studies will include an evaluation of site specific economic, financial, social and institutional questions which will lead to the formulation of policy options for resource recovery in developing countries.

7. Other activities to be conducted during the second phase of the project will include the following:

(a) Continuation and completion of studies on resource recovery technologies which were started during the first phase;

(b) Processing of technical reports including review and clearance for dissemination. A total of 4,000 copies of each report will be distributed to member Governments, bilateral and multilateral agencies, including the World Health Organization, the United Nations Children's Fund, the United Nations Environment Programme, UNDP resident representatives, non-governmental organizations, consulting firms, universities and other interested organizations;

(c) Preparation of a final report synthesizing the findings of the first and second phases of the project;

(d) Initiation and management of workshops and seminars (both national and international) to familiarize developing country officials and other development agencies with the findings and potential application of the research.

8. The Governments of Canada, France, Italy and Switzerland have confirmed their support of the reconnaissance studies and one of the demonstration projects. Negotiations for consultants and final arrangements with the host Governments are being initiated. For the remaining proposed study and demonstration projects, discussions are taking place with donors and host Governments to explore their interest and role in the project. Preparatory work has also been initiated in processing (review, clearance and finalization) the technical reports which were prepared in draft during the first phase in order to expedite dissemination. The project document, including a detailed work plan, will be formulated in consultation with interested Governments and agencies during the preparatory period. To finance the necessary preparatory work, the Administrator has approved an amount of \$125,000 under the authority delegated to him by the Governing Council for the purpose of preparing global research projects.

9. The expenditure components of the proposed UNDP contribution are presently estimated to be:

	\$
Personnel	620 000
Subcontract	10 000
Training	35 000
Miscellaneous	<u>60 000</u>
TOTAL	<u><u>725 000</u></u>

The proposed expenditure for the preparatory assistance phase, January to June 1985 is included in the total.