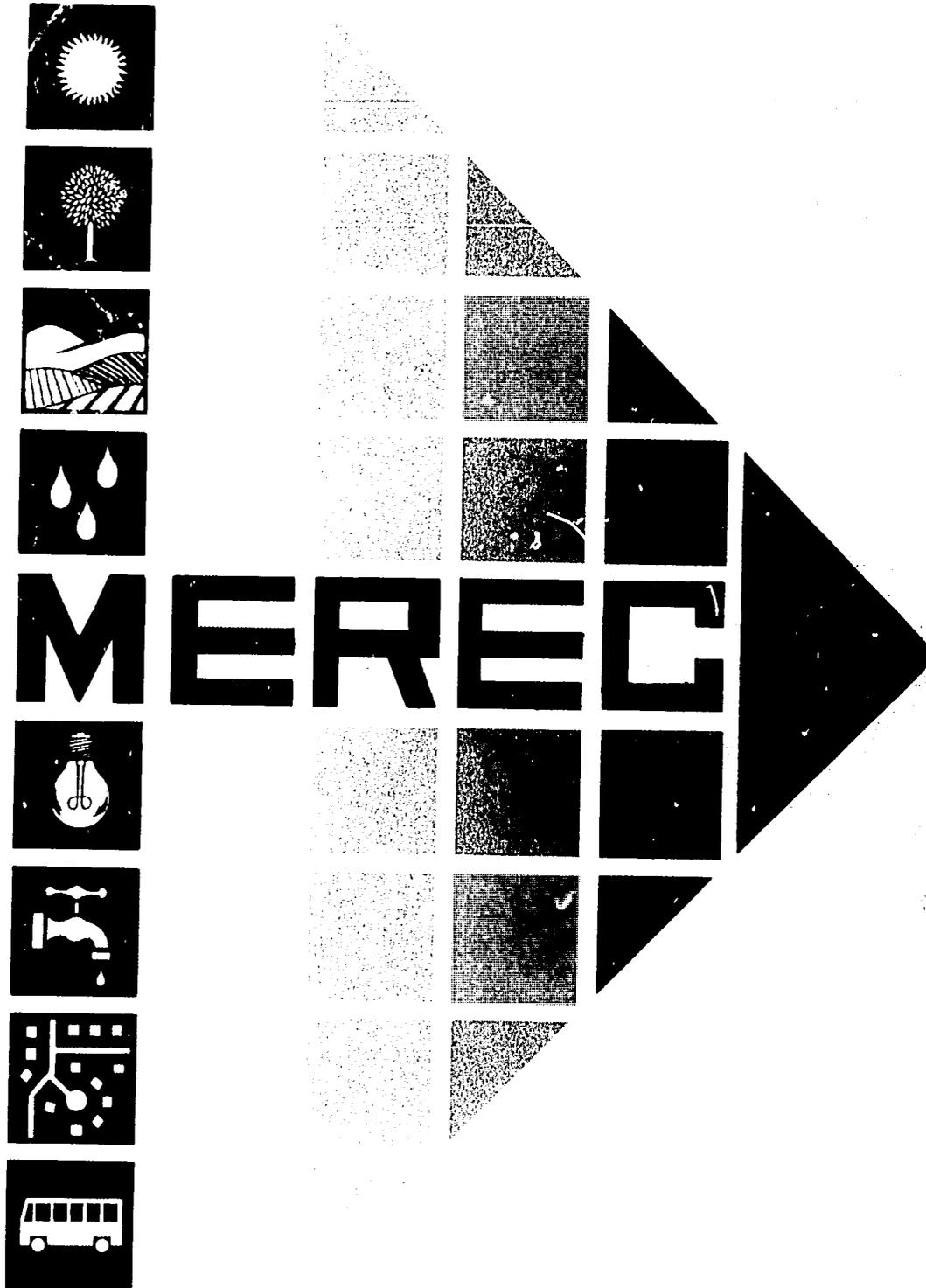


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MANAGING ENERGY AND RESOURCE EFFICIENT CITIES

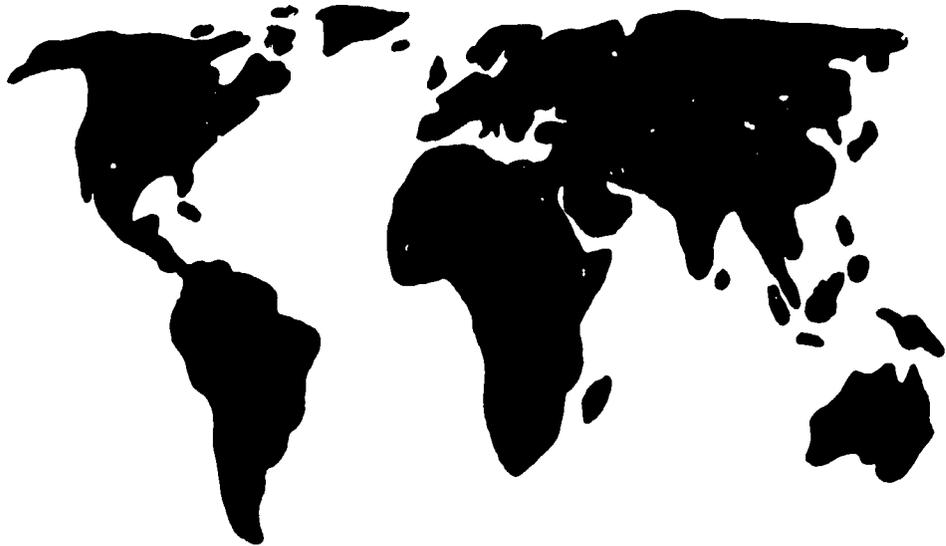
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**MANAGING ENERGY AND RESOURCE  
EFFICIENT CITIES**  
A Demonstration Project

United States Agency for International Development  
Bureau for Science and Technology  
Office of Multisectoral Development  
Regional and Rural Development Division

October 1982  
TVA/OECD/CD—83/11

## THE PROJECT

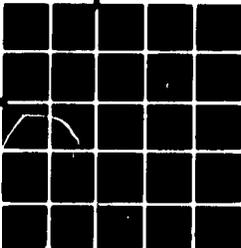
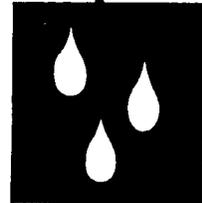
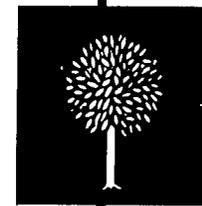
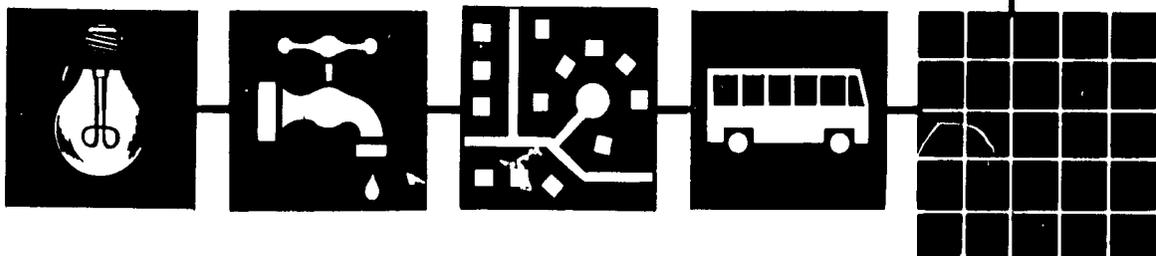


Managing Energy and Resource Efficient Cities (MEREC) is a project of the U.S. Agency for International Development (AID). It is an international demonstration project that will extend over several years and eventually include many participating cities. These cities will undertake efforts to plan and implement a course of development that leads to greater efficiency in the use of energy and other resources. AID and its contractor, the Tennessee Valley Authority (TVA), will assist in these efforts and will record and disseminate the lessons learned so that other cities can benefit.

# THE PURPOSE

The overall purpose of MERECE is to demonstrate, refine, and promote means for increasing energy and resource efficiency in secondary (medium size) cities in developing countries. It will do this by accumulating information from field experience with efforts to address energy and resource concerns and by making that information available in usable form to those who could benefit from it.

Much of this information will come from the efforts of the MERECE demonstration cities. These cities will develop strategies for increasing efficiency in the use of urban resources, such as energy, wood, land, and water. They will devise means for carrying out these strategies through action plans for their urban sectors such as electric supply, water supply, land use, and transportation. Before the end of the first year of activity these cities will begin to implement projects within strategic frameworks and will have laid the groundwork for continuing coordination among urban sectors to ensure further improvements in energy and resource efficiency in the future.

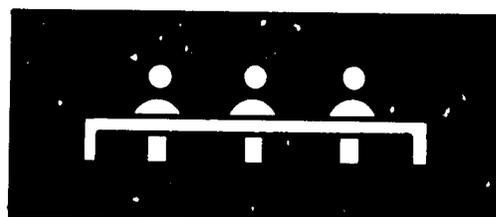


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# THE MEREC CITY PROCESS

Although the process will vary from city to city in accordance with local circumstances, problems, and opportunities, each MEREC demonstration city effort will receive some financial support from AID and will have three broad phases.

**1** Startup—A three-month period during which an organizational workshop will be held to develop a local MEREC workplan, work will be started on the local MEREC information base, and arrangements will be made for cooperation and coordination among local participants.

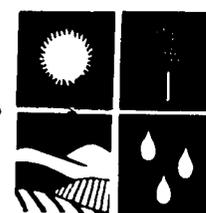


ORGANIZE

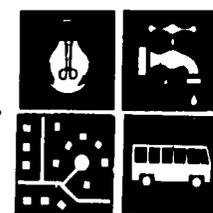
**2** Planning—A six-month period during which resource strategies and sectoral action plans will be formulated. Work will be done in sectoral working groups and coordinated by a local MEREC Task Force. AID/TVA will provide technical assistance and training. Specific investment projects will be identified and planned. Midterm and final workshops will be held during this period.



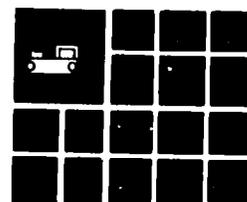
BUILD DATA BASE



FORMULATE STRATEGY



FORMULATE ACTION PLAN



IMPLEMENTATION CONTINUATION

**3** Implementation and continuation—In the following months and years, investment projects will be implemented, activities will be launched, energy/resource savings will be monitored and evaluated, and the MEREC process will be regularized so that strategies and action plans will be continuously refined.

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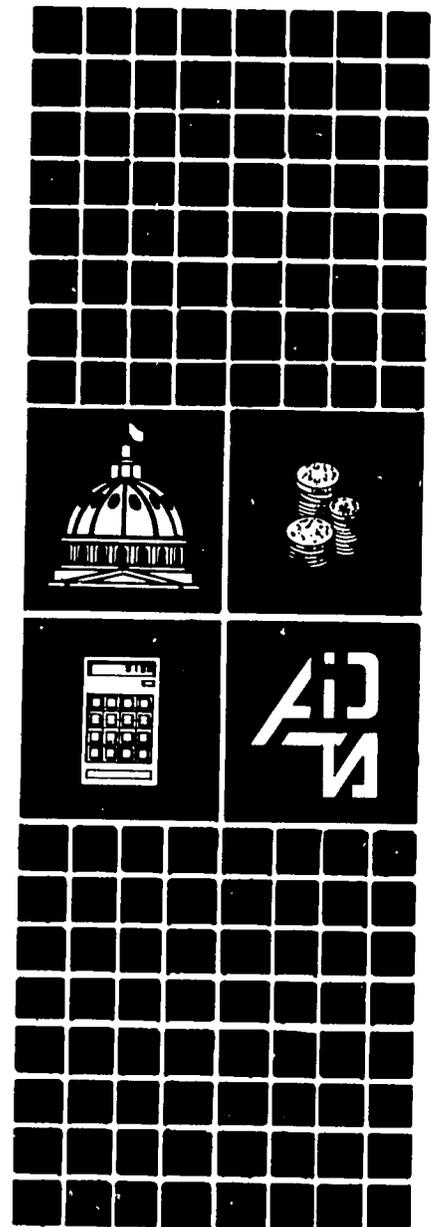
# THE PARTICIPANTS

The Public Sector—The Mayor and other local officials designated by the Mayor, including heads of municipal departments and elected officials; representatives of appropriate government corporations and representatives of other levels of government.

The Private Sector—Representatives of trade organizations, development organizations, voluntary organizations, major local enterprises, financial institutions, and others deemed appropriate by the Mayor.

Technical Specialists—AID/TVA will support the efforts of local participants by providing technical consultants to help satisfy special requirements that emerge during the planning process.

MEREC Management and AID Personnel—TVA project management personnel based in Knoxville, Tennessee, and AID/Mission and AID/Washington, D.C. personnel will attend workshops, provide technical support through a central MEREC Information System, lend ongoing support throughout the MEREC city process, and provide the framework for cumulating the lessons of experience.



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# THE CITIES

Secondary cities selected to participate in MEREC will vary widely in development context, location, administrative structure, and energy/resource efficiency problems. All, however, will satisfy the following criteria.

MEREC has local support.

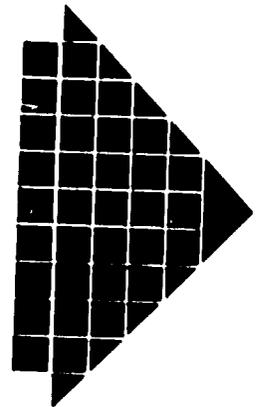
- Key participants give high priority to MEREC.
- There is interest in improving planning and management processes.
- There is local concern for energy and resource efficiency.

MEREC is technically, administratively, and economically feasible.

- There is an adequate administrative structure.
- Basic information requirements can be met.
- There is a sufficient commitment of financial and personnel resources.

MEREC is clearly needed.

- There is an urgent need for greater energy/resource efficiency.
- MEREC will reinforce other ongoing development activity.
- There is a good potential for replication in other cities of the country.



# **MANAGING ENERGY AND RESOURCE EFFICIENT CITIES**

A PROJECT OF THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

## **PROJECT PROSPECTUS**

# **MEREC PROJECT PROSPECTUS**

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## **BACKGROUND AND SUMMARY**

Rapidly growing cities in developing countries make heavy demands on scarce energy and natural resources. Besides consuming large amounts of fossil fuels for transportation and electric power generation, urban dwellers are using up land, water, wood, food, and other natural resources at increasing rates. In developing countries consumption of energy is much greater in cities than in rural areas.

While the large cities of the developing world are growing fast and are intensive energy and resource users, their infrastructure, economic, and transport systems have long been established at a large scale. Modifying the energy and resource consumption patterns in these cities, while important, is a monumental and costly proposition. Small and medium-sized cities, on the other hand, offer opportunities to introduce significant conservation measures while urban structure is in an early stage of development. In small cities there is still time to build energy and resource conservation into emerging transportation systems, waste disposal methods, building designs, and land use patterns.

In addition, the development problems of smaller cities are often more manageable than those of large metropolises. In small and medium-sized cities fewer resources are needed to make significant impacts, the institutional framework tends to be more accessible and less bureaucratic, and communications among groups and individuals are more direct and frequent.

Managing Energy and Resource Efficient Cities (MEREC), a project of the U.S. Agency for International Development (AID), is designed to take advantage of these opportunities by establishing in small and medium-sized cities integrated approaches to energy and resource conservation carried out at the local level. MEREC revolves around the evaluation of key resources and their roles in local economic development. Under the MEREC approach local leaders work together to develop a multi-sectoral energy and resource conservation strategy. Resource utilization trends are identified, linkages among resources and economic activities are analyzed, and development opportunities and con-

straints related to resources are derived. This leads to the development of a program of sectoral activities which are:

- Cost effective;
- Technologically sound and of appropriately small scale;
- Manageable by families, community groups, and small local agencies;
- Capable of being developed further by the private sector or encouraging private sector growth;
- Replicable in other cities and capable of becoming self-sustaining; and
- Capable of contributing to the local knowledge base.

The energy and resource conservation program becomes a part of the city's long-term development plan. Two byproducts of the process are the strengthening of municipal planning and implementing capacity and the identification of opportunities for private investment.

The contractor for management and execution of the MEREC project is the Office of Economic and Community Development of the Tennessee Valley Authority (TVA). TVA will draw on its experience in urban/regional development to assist a number of secondary cities in developing countries to strengthen their capacities to manage the use of energy and other resources for more efficient and effective urban development. This will be done within the context of relatively brief and intensive individual city planning efforts involving local public and private officials. These planning efforts will lead to energy/resource efficiency strategies and action plans, identification of priority projects for immediate implementation, and the institutionalization of means for continuing the effort, including local information collection and analysis, policy formation, project preparation/implementation, and evaluation mechanisms.

In addition to providing on-site assistance, TVA is charged with ensuring the cumulation of experience associated with individual city MEREC efforts, and combining, refining, recycling, and encouraging further use of the knowledge gained, including reusable information and procedures, in other cities.

The design of the MEREC project has benefited from an AID "pre-test" in the city of Tacloban, Philippines, in 1981-82. Tacloban has now embarked upon the implementation of projects arising out of the MEREC planning effort. It is also continuing with information collection and administrative coordination procedures. Mechanisms for monitoring and evaluating energy/resource savings are being established for use during the implementation/continuation phase.

### **MEREC CITY EFFORTS**

Each individual MEREC city effort has three broad phases: startup, planning, and implementation/continuation.

Startup activities extend over approximately a three-month period, beginning with a "startup workshop." Participants in the workshop will include city officials and private sector representatives designated by the mayor, officials from other levels of government, and AID/TVA project personnel. In each case the workshop will be designed, prepared, and conducted by local officials in a manner appropriate to the circumstances of the particular city. The purpose of the workshop will be to detail the local MEREC workplan and conclude a cooperative agreement with AID/TVA for carrying it out.

During the remainder of the startup phase, local participants will meet regularly to review progress on data collection and analysis. They will (1) establish and review institutional arrangements to enhance cooperation and coordination among local urban sectors, (2) identify education and training needs, (3) identify technical assistance needs, (4) refine the local MEREC information and decisionmaking mechanisms, and (5) develop preliminary ideas for a local MEREC strategy and action plan.

Planning activities extend over a six-month period, beginning with the arrival on-site of technical specialists. The specialists will assist local officials in specific urban sectors, in accordance with needs identified and requests made during the startup phase. The technical specialists will be available as needed throughout the planning phase.

Generally, it is anticipated that local MEREC efforts will be conducted through an organizational framework comprising sectoral Working Groups, each of which is represented on an overall MEREC Task Force headed by the mayor. The Working Groups,

which include public and private officials from the urban sectors, will undertake MEREK tasks relevant to their respective sectors of concern. It will be the job of the MEREK Task Force to integrate and coordinate the output of the different Working Groups. The planning phase will proceed through a process of successive refinement and based on continuing interaction between the sectoral Working Groups and the MEREK Task Force.

The principal tasks of the planning phase are the following:

- a. Compiling and Analyzing Information.** Information will be collected on four basic topics: (1) energy and other resources of concern, (2) urban sectors and their activities affecting resource use, (3) options to induce change, and (4) the effectiveness and cost of measures taken. This will constitute the local MEREK information base.
- b. Formulating a MEREK strategy.** The MEREK strategy will set out policy regarding the resources of principal concern in the city, such as energy resources, urban/agricultural land, water resources, woodlands, recreational resources, and so on. A strategy "element" will be formulated for each resource. Each such element will, of course, have implications for all sectors connected with that resource.
- c. Formulating a MEREK action plan.** The action plan will identify and detail the specific projects and related activities through which the strategy will be implemented. An action plan "element" will be formulated for each urban sector such as electric power, land use, water supply, recreation, transportation, housing, and waste removal. In addition to an element for each relevant urban sector, the action plan will contain an element regarding institutionalization of the MEREK process and an element regarding education and training.
- d. Institutionalizing the MEREK process.** The institutionalization element of the action plan will account for maintaining and upgrading the MEREK information base; reviewing and updating the MEREK strategy; reviewing and updating the MEREK action plan; and monitoring and coordinating implementation of the action plan. An essential component of institutionalization will be assignment of technical support functions to an appropriate municipal agency and establishment of needed institutional linkages within the city and relevant regional and central government agencies.
- e. Education and training.** The education and training element of the action plan will provide for continuing programs, both to convey information and systematically to upgrade the capacity of the private and public sectors to achieve greater energy/resource efficiency.

Approximately halfway through the planning phase a "planning review workshop" will be conducted. At this workshop the first consensus on the MEREK strategy and action plan will be concluded, though in preliminary form. This workshop will also review progress in all areas of MEREK activity and agree on needed revisions in the workplan.

The planning review workshop will precede a "wrapup workshop" by sufficient time to allow for further revision and detailing of the MEREC strategy and sectoral action plans. Participants in the wrapup workshop will review and evaluate all demonstration activities, finalize the MEREC strategy and sectoral action plans, and address financing issues related to implementation of the action plan.

Implementation/Continuation activities entail implementation of the MEREC strategy and sectoral action plans. Specific projects and long-term planning activities will be launched; associated energy/resource savings will be monitored and evaluated and fed back into the MEREC process. Thus, the MEREC process remains not a discrete "project" in each city, but becomes an established member of the family of local development decisionmaking mechanisms.

During the implementation/continuation phase, AID will assist with implementation of specific projects; and TVA will continue to lend follow-up support in terms of identification of funding sources, technical assistance, training, and assistance with local monitoring and evaluation efforts.

## **MEREC MANAGEMENT**

In its MEREC management role TVA will be assisted by Development Analysis and Programming, Inc. (DAP), a Washington, D.C. based consulting firm specializing in urban, regional, and environmental planning and management, and by a limited number of other outside technical specialists. A major management function has been designed into the MEREC project by AID because the MEREC project is conceived not as a collection of individual city efforts, but rather as an overall demonstration project. It is intended to test, evaluate, refine, and disseminate reusable information and procedures that, adapted to local conditions, can provide means for increasing efficiency in the use of energy and other resources in the context of secondary city development in developing countries worldwide. It is designed as a learning-based project, calculated to cumulate a diversity of field experience and data in a manner that facilitates the widest possible replication of individual city successes.

TVA will maintain a central MEREC Information System (MIS). The MIS will store informa-

tion gathered from city MEREC information bases, MEREC workshops, and expert sources worldwide. This information will be processed into generalized information reports in a variety of relevant subject areas so that a record of what works and under what circumstances can be built up for use by cities wishing to undertake MEREC efforts.

Thus, in the MEREC management role TVA will have three major functions: (1) overall project management, (2) technical assistance in all aspects of all phases of MEREC city efforts, and (3) responsibility for ensuring the cumulation and application of what is learned. Personnel associated with MEREC management will participate in selection of cities included in the MEREC project; establish working relationships with local officials; attend all local workshops; assist in establishing local MEREC information bases; provide or arrange for technical assistance and training; establish and maintain the MIS; and provide information to advance, monitor, evaluate, and adjust the MEREC process. In addition, TVA will provide a link among MEREC cities and ensure that each benefits from what has been learned in others; assist with identifying financing sources for local MEREC strategy and sectoral action plan implementation; coordinate MEREC activities with AID; prepare MEREC city case studies; and each year summarize and evaluate what has been learned in report form.

During 1983 two to four secondary cities in Asia and the Near East will join Tacloban as cities undertaking MEREC efforts. It is anticipated that approximately four additional cities in developing countries will be added each year thereafter.