CHAPTER 6

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 BACKGROUND OF THE PROBLEM

The condition of water supply service in Third World cities remains unsatisfactory, in spite of the International Drinking Water Supply and Sanitation Decade. Increasing the level of service and improving management efficiency remain the major challenges.

This study formulates a paradigm, or a tentative explanation, of water supply management in urban areas of developing countries. It summarizes the lessons that have been learned and seeks answers to two questions: why the level of water supply service is still low; and how can water supply service in those areas be improved? Based on those lessons, a guideline to formulate a strategy for the improvement of the service is developed. The applicability of the paradigm is demonstrated in the case of the Jakarta Water Supply Enterprise.

6.2 SUMMARY OF FINDINGS

The review of the literature showed that the problems of water supply management in Third World cities are complex. Major issues include increasing demand, environmental degradation, appropriate technology, pricing policy and tariff structure, critical need for community management, and the need to distribute service to urban poor.

This study's framework, organizes the lessons learned from past experience in a systematic way, and provides a comprehensive perspective. This framework is also a useful tool for the managers and decision makers of water supply management in Third World cities to analyze and identify management problems in a particular city.

Cities in developing countries have rapid rates of urbanization and environmental degradation. Urbanization in developing countries results in the development of urban primacy, in which a city grows in one sprawling, metropolitan area.

Environmental degradation in developing countries is a consequence of urbanization, high population density, industrialization, inappropriate sanitation systems, lack of environmental laws, and the weakness of law enforcement. The use of polluted water as raw water supply sources results in direct impacts to the performance of water supply service such as a decline of production efficiency, an increase of chemical applications, and ultimately a larger cost of water produced.

The depletion of the groundwater table due to over-abstraction and the pollution of groundwater suggest better control of groundwater as an alternative source of water supply.

Limited production capacity, coupled with dramatically increasing water demand, results in only partial coverage of the piped water. Consequently, water supply service in Third World cities is characterized by the coexistence of public and private systems. The shortage of production capacity also causes low average water consumption and the limited use of water for domestic purposes.

Water supply service improvement should be directed primarily to providing service to more people on the basis of basic needs, rather than providing a high level of service to a limited number of people. Special attention should be given to the expansion of service to the urban poor, which usually have the worst service conditions but the lowest ability to pay. Improving management efficiency is another critical challenge to maintain the level of service to meet increasing demand.

The differences in social, cultural, and economical conditions requires the application of appropriate technology in Third World cities. However, appropriate technology is not the same as low-cost technology. Technical, social, and financial factors govern the selection of the technology appropriate to a particular condition. Offering alternative distribution methods to potential consumers according to their

ability to pay is an example of appropriate technology.

The success of water supply service improvement depends on the integration of efforts between the government, water supply agencies, and communities. Strengthening local agencies is the main goal, and in this case, human resources development is the key element.

The development of community management is especially important to water supply service improvement among the urban poor. The successful implementation of this approach, however, requires adjustment of the perception of water managers, decision makers, and communities to the changed role of water supply agencies. That is, water supply agencies must maintain a balance between their business and social functions. To implement the social role of the agencies, water managers must be equipped with skills to support community managed systems.

Integration of water management is needed at the city level to overcome problems due to the degradation of surface and groundwater quality, and at the river basin level as a result of the competition of water uses between urban water supply and other water users.

Water supply agencies must be given more autonomy to manage systems using economic efficiency and social welfare principles. A progressive tariff structure is the best pricing policy for the Third World cities, because this approach can maintain a balance between the need for equity of service, efficiency of the management, and conservation of the limited

water. A water tariff must be determined mainly for economic and financial reasons.

For the continuity of service, all beneficiaries must contribute according to their ability to pay. In some situations, government subsidy is still needed, especially for the low income groups. This subsidy, however, must be directed to a specific purpose and must encourage local resources mobilization.

The case of Jakarta demonstrates a typical example of the complexity of water supply problems in urban areas of developing countries. The rapid population growth, environmental degradation, partial coverage, declining production efficiency, and high rate of unaccounted-for water, characterize water supply condition in Jakarta. These conditions are also experienced by other Third World cities.

These complex problems confirm the need for a comprehensive perspective in the paradigm of water supply management in Third World cities. The paradigm must address the complexity of the problems, interdependency of water supply service with the environment, and the need for a common language in the policies and strategy formulation. The paradigm is a concept, or a frame of reference about water supply management, that focuses on a management system with technological, institutional and financial subsystems. It yields a pattern of results that are measured by level of service and management efficiency, all within an external

environment with fixed physical and social characteristics.

6.3 CONCLUSIONS

It can be concluded that the level of water supply service in Third World cities is still very low in spite of many efforts during the last three decades, and attention given during the Decade. The faster rate of urbanization in developing countries results in dramatically increasing demand, while environmental degradation and financial shortage become the main obstacles for improving the service.

The characteristics of Third World cities suggest a different approach for managing water supply service. Water supply management practices must be sensitive to the physical and social environment where the systems are located. Understanding the problems in a comprehensive way is the critical step to developing policies and strategies for the development of the service.

Limitation of resources and rapid growth in demand require the generation of local resources and the efficient and effective use of them. The comprehensive perspective helps us to identify the available resources and to use them wisely and to manage the dynamics of water supply problems in Third World cities.

The paradigm provides a framework as a tool for analyzing the condition of water supply service in particular areas, formulating the nature of the problems, and for coping with

the problems comprehensively. The holistic approach offered by this perspective helps us to identify the potentials, even though minor, which may support improvement of service.

6.4 RECOMMENDATIONS

This study has developed a framework to evaluate water supply management in urban areas of developing countries. The areas of research that need additional attention are the following:

(a) Developing a model to improve water supply systems, maintain efficiency on each stage of development, and use staged, strategic, and systematic development based on the anticipated city growth in the future.

(b) Investigating alternatives for implementing community water supply management among the urban poor. This would include the management arrangements between water supply agencies and community managed systems. The possibility of managing the system through a water supply cooperative can be used as an alternative model.

(c) Developing a framework to monitor and evaluate the progress of water supply development, so that necessary actions and corrections can be identified during the implementation of the development programs.

(d) Developing a simulation model of financial management that can help water managers to evaluate their policy, especially in determining water tariffs.

(e) Investigating appropriate sanitation systems in very dense populated areas that are technologically and financially feasible.

Implementation of the above research areas will go far to improve the condition of water supply service in urban areas of developing countries.

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