

**THE WORLD BANK'S EXPERIENCE WITH URBAN WATER SECTOR REFORM
- AN INSTITUTIONAL ANALYSIS**

by

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ABSTRACT

The urban water supply sector in the developing world is in crisis, partly because of failure to treat water as the scarce resource that it is. Reforming public water supply utilities has proved difficult, despite a focus by the World Bank on institutional reform and governance. This paper analyzes the Bank's experience with, and evolving approach to, urban water sector reform. It shows that a more comprehensive understanding of the bureaucratic aspects of institutional reform can help public water supply institutions to adopt more sustainable practices in cities that currently do not provide universally available, safe, and affordable water. The paper summarizes the theoretical approaches to institutional development, and sets out a practical framework for policy and project analysis and design. Using the World Bank's experience with urban development in Nairobi as a case example, it clearly shows why one city department succeeded, and another failed, to meet project objectives.

When the well's dry, we know the worth of water - *Benjamin Franklin,*

Poor Richard's Almanac, 1746

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1. INTRODUCTION

1.1 Background

The World Bank's success with urban development has been very good by physical measures such as infrastructure improvements. However, it has been much less so when measured by institutional and policy reform in such areas as poverty reduction and water conservation; much of the discrepancy is due to institutional obstacles to reform.¹ In looking at institutional reform this thesis covers some old ground - Arturo Israel published a review of the World Bank's experience with institutional development in 1987 - but a fresh perspective is useful for several reasons. Institutional obstacles to development continue to be troublesome, even though - or perhaps because - much of the "easy" development such as basic infrastructure provision is well advanced in most countries. Despite much focus on this issue, it is still unclear why many institutional reform programs fail. And the types of issues to be addressed are increasingly complex as the emphasis turns to sustainable development.

Sustainable water usage policies, such as demand management, are becoming increasingly important as urban populations increase, and as cities face increasing scarcity of both water and money. It is difficult to review comprehensively the project experience with water conservation in developing country cities, because the notion of pricing or regulating water as a scarce resource is still new and controversial, and therefore very few projects having this objective are complete. Instead, I examine the World Bank's overall experience with urban reform since about 1970, using institutional analysis. I therefore draw not only on water sector reform, but also look at other sectors such as housing and urban development, in order to learn about successful models for policy reform. The conclusions, which include

¹World Bank 1997:ii.

both my own and those already drawn within the Bank, will contribute to better policy and project design.

1.2 Conceptual Framework: Old and New Agendas

The 1992 United Nations Conference on Environment and Development held in Rio de Janeiro, and the International Conference on Water and the Environment held in Dublin earlier the same year, generated a consensus that the developing countries face two great challenges in the water supply and sanitation sector. The first challenge is to complete the "old agenda" of providing household services. Although significant progress has been made, much remains to be done. During the 1980s the number of people without safe water decreased from 1.8 to 1.2 billion, while the number of people without suitable sanitation remained static at about 1.7 billion. Despite these relative successes, the shortfall in adequate water supply and sewerage has dire consequences for human development.²

The second challenge is the "new agenda" of environmentally sustainable development. For the urban water sector this challenge includes the need for more efficient and equitable water supply pricing and delivery. This will require, firstly, better methods, including both market and non-market instruments, to promote sustainability, raise revenues and provide fairer prices, particularly for the poor. In contrast, under the old agenda, the focus was on infrastructure and on the supply side. Secondly, institutions must adapt to the new agenda in order to implement the proposed reforms.

The shift from the old to the new agenda is not limited to water and sanitation, but is a global phenomenon that is changing the way we think about cities and urban services; it is a shift from *providing* to *enabling*, and from *building* to *managing*. This evolution can be seen

²Serageldin 1994.

in the approach of the international aid agencies to urban shelter, services and infrastructure over the past 30 years: from a focus on the building of large public works, to an enablement approach concerned with prices, incentives, regulation, property rights and governance.³

Water utilities and the local governments that regulate or own them need to change to meet the new challenges, because the new agenda requires a new mindset. Agencies that historically have been good at building new water supply infrastructure must become good at managing better what they already have.

1.3 Research Objectives

The overall goal of this thesis is to use institutional analysis to examine and contrast bureaucracies, and show how they could be better designed to do the complex tasks required of urban utilities in developing countries today. The context is cities that do not provide universally available, safe, and affordable water. The thesis analyzes the World Bank's experience with and evolving approach to urban water sector reform, and argues that a comprehensive understanding of the institutional aspects of reform can help public water supply institutions to adopt more sustainable practices. The paper summarizes the theoretical approaches to institutional development, and the practical context of urban water and urban development in developing-country cities. It then reviews the World Bank's experience with urban water sector reform up to 1993, using Nairobi as a case example. It draws conclusions about the lessons learned from this history. Finally, it calls for a broad, interdisciplinary viewpoint for overcoming institutional obstacles to water sector reform.

³Ibid. 1994.

These specific goals have been developed from the foregoing:

1. ***Describe the structure of the urban water sector in several developing country contexts.*** Review and summarize the general literature on water supply in developing countries, including water pricing and demand management. The focus is partly, but not exclusively, on Nairobi.
2. ***Summarize the literature about institutional development.*** Review and summarize the general literature on the functioning and development of institutions, particularly public utilities in developing countries, and develop an analytical framework for analysis. Define key terms such as *project, policy, agency, institution, and governance*.
3. ***Analyze the Bank's experience with urban water sector reform.*** Using the analytical framework, review project experience with urban water policy reform, and urban development generally in Nairobi.
4. ***Derive lessons and implications for future project design.*** Combine the theory and history from the previous tasks and draw conclusions about the circumstances that enable water sector reform projects to be effective. Finally, examine the extent to which post 1993 World Bank policies recognize these circumstances.

1.4 Research Methods

The specific questions which are to be answered in order to achieve the overall goal are these:

1. What are some common elements in the structure of the urban water sector in developing countries, and what are some practical goals for reform?
2. How can an institutional analytical approach improve policies and projects for water sector reform?
3. What is the World Bank's experience with water sector reform, particularly from an institutional viewpoint?
4. What practical lessons can be learned from the application of institutional analysis to the Bank's experience with reform?

Details of Methodology

The research is based on literature reviews and reviews of publicly available World Bank reports, supplemented by personal communications with Bank staff. The following paragraphs briefly describe the research methods used for each task, which in turn flow from the specific goals set out above.

- ***Task No. 1: Describe the structure of the urban water sector (Chapter 2)***

A literature search was completed to summarize several major themes in urban water supply, including the concept of the "low level equilibrium trap." The chapter concludes by discussing a number of possible reforms in the urban water sector, such as demand management.

- ***Task No. 2: Develop an institutional framework for analysis (Chapter 3)***

To form the theoretical foundation for the rest of the study, this task summarizes current thinking about the functioning of public agencies, in order to develop a framework for analyzing and planning water sector projects, particularly projects that attempt to implement the new agenda. This began with literature searches on development economics, institutional

economics, and institutional development. Finally, these elements were drawn together to develop a framework for analysis that was used in the subsequent chapters.

- ***Task No. 3: Analyze the World Bank's experience with urban water sector reform (Chapters 4 and 5)***

Using the analytical framework developed in Task No. 2, the World Bank's experience is reviewed with respect to its success in achieving the reforms outlined in Task No. 1. World Bank water projects are generally long in duration: 6 to 8 years to completion, and another 2 to 4 years to publication of the audit report. Therefore the project history can be reviewed only up to the early 1990s. In order to be more comprehensive, a two-prong approach is used:

- (i) narrow sectoral focus / wide geographic scope: the experience with water sector reform since 1970.
- (ii) narrow geographic focus / wide sectoral scope: the experience with water supply, urban development and institutional reform in Nairobi since 1970.

The new agenda should be seen in the context of the historical experience with urban development, including housing, water and sanitation, and institutional development projects. The World Bank has very broad project experience in these areas, and this experience was reviewed. For example, between 1967 and 1989, the Bank completed some 120 water and sanitation projects; between 1990 and 1994, it initiated over 50 projects, of which 36 included some element of water demand management.⁴

The main source of data for this task was Bank appraisal reports, project completion reports, and project audit reports, particularly these:

- (i) *Portfolio Improvement Program - Review of the Water and Sanitation Portfolio* (1997);

⁴Cestti et al 1996:36.

(ii) *Kenya, Impact Evaluation Report, Development of Housing, Water Supply and Sanitation in Nairobi* (1996); and

(iii) *Water Supply and Sanitation Projects: The Bank's Experience - 1967-1989* (1992 - widely known as the Buky Report).

This thesis is based on analysis of publically available World Bank publications.

From time to time this analysis was supplemented by informal discussions with Bank staff.

However, a formal interview pocess was not a part of the methodology.

- ***Task No. 4: Derive lessons and implications for future project design (Chapter 6)***

This task forms the important link between the *theory* outlined in the first two tasks, and the *history* summarized in the third. Since 1993 the World Bank's policy on water resources management has been multidisciplinary, including explicit emphasis on sustainability, water conservation, institutions, and governance. The implications for this policy will be analyzed in light of the lessons generated by past project history, in order to see how well the Bank has learned these lessons.

2. CONTEXT - THE CHANGING URBAN WATER SECTOR AND PRACTICAL GOALS FOR REFORM

2.1 Water as an Economic Good

A premise of the new agenda is that water is an economic (scarce) resource; economic pricing of water should include the external costs of environmental degradation, and the opportunity costs of uses forgone. This is not done in practice, partly because it is very difficult, and partly because the idea of economic pricing is still controversial: at a recent meeting of the International Commission on Irrigation and Drainage in Oxford, England, those in favour of managing water as an economic good “were not quite in the ascendancy but certainly presented some compelling arguments.”⁵ This thesis summarizes some of the “compelling arguments” for treating water as an economic resource; these relate to market “failures” such as distorted prices, uncompetitive markets, and private trading in public goods.⁶

Where water resources are scarce but access is uncontrolled (a kind of public good known as an open resource good), they will be overused. This is the case, for example, with surface water in Bangkok,⁷ and with groundwater in Jakarta.⁸ Factoring in the economic cost of water abstraction would tell the decision-maker how to design an incentive system to protect the resource - since free riders cannot be excluded, indirect methods must be used. Regulations (enforcement measures) are needed to grant limited property (access) rights.

⁵World Water and Environmental Engineering 1998.

⁶Panayotou 1993; World Bank 1993:81-92.

⁷Kraisoraphong 1995.

⁸Crane 1994.

Regulations are also needed if overuse could destroy the future usefulness of the resource, as is the case with salinization of groundwater in Jakarta.

Finally, to the extent that water is a merit good - one having positive externalities - regulations are needed to ensure equitable access to the minimum supply required for public health. Indeed, the equity argument is the principal argument for treating water as a common, as opposed to an economic, asset. There are two principal points. First, everyone needs water for life, health, and hygiene. No allocative system should exclude anyone from his minimum share of water. Second, no-one can own flowing water, and the exploitation of it should be controlled. For historical reasons, this common property view of water is deeply ingrained in most societies, and Kinnersley provides fascinating examples.⁹

Property Rights

In Roman law there were public rights of movement and fishing on navigable waters. Subsequently most societies have tried to find a balance between public and private rights. For example, in medieval England non-tidal rivers could be owned, but as early as 1285 a law was passed forbidding salmon fishing during annual closed periods. In the United States and Canada, riparian water rights exist in the relatively humid east, and appropriative rights in the drier west. The latter system, which evolved partly from Spanish and hence Roman law, uses a system of water licences to establish priority of use among users; in return for rights of use, licensees must put the water to beneficial use.

The environmental consequences of treating water as an open-access good started to become acute once settlements grew beyond the carrying capacity of their immediate hinterlands. In the early nineteenth century, recurrent outbreaks of cholera and typhoid in

⁹Kinnersley 1988:34-56.

London led to improvements in drainage, sanitation, and water law. The same issues still confront urban planners today, particularly in the mega-cities of the emerging economies.

In developing countries the same patterns generally underlie the transition from “traditional” to “imported” water rights systems. In most countries water was, and is, regarded as public property.¹⁰ Public officials decide who gets it, at what price, and how it is used. The government also builds and operates the necessary infrastructure for water delivery. The track record of such administered systems of water allocation has not been impressive, as described in this thesis. Declining water quality, waterlogging, and salinity have ruined many agrarian societies.

Kraisoraphong (1995) studied Bangkok’s initiatives to introduce effective water pricing, and found that property rights to water was a central issue: “water is treated as open-access in Thailand and unless property rights to water are clearly specified, water pricing could never be effectively applied.”¹¹ Property rights have never been defined in law, and Thais have enjoyed free access to surface water. Proposed attempts to control utilization face the twin obstacles of historical inertia and lack of institutional capacity to enforce allocative rules. A subsidy, once it comes to be considered an entitlement, is very difficult to remove. Again the problems are in implementation, not design: “the task of specifying property rights to water in the case of Thailand involves challenges beyond simply devising legislative measures. Especially when considering that the forms of resource ownership adopted in a society are naturally determined by the combination of a society’s legal development and its social and political-economic conditions, discussions about the issue of property rights specifications for water in Thailand require an understanding of the nature of Thai political

¹⁰Thobani 1995.

¹¹Kraisoraphong 1995:212.

economic development in terms of ownership of resources.”¹²

Water Pricing

In addition to the human and institutional history that works against the view of water as an economic good, there are considerable practical problems with even defining economic costs. The benefits of aquatic systems, including habitat, waste absorption, climate moderation, and aesthetic value, are not traded in the marketplace, and so have no prices; furthermore, it may be controversial to assign a price to water if it is considered a human right.

The view of this thesis is that, at least, water should be priced to discourage profligate waste, and it should also be priced equitably so that the poor do not pay higher prices for water than the rich. There are considerable positive externalities associated with provision of clean water and adequate sanitation to everyone, and these benefits are part of the economics of water supply.

Economic theory says that a resource should be priced at the marginal cost of providing the next increment. Historically, however, water has been provided below cost or even free. Most often, water tariffs are set to recover not marginal costs, but average financial costs at best. The difference essentially is that cost-recovery pricing reflects past costs, while marginal-cost pricing reflects future costs. Average-cost pricing therefore can encourage over-use. Further, in many places, flat-rate or declining-block rate structures are still used, which offer no incentives to conserve water.

However, calculating prices still is often easier than collecting tariffs, which is why the institutional angle is important. The existence of powerful interests may lead to price

¹²Ibid. 1995:215-6.

distortions, uncompetitive markets, and private trading in public goods. If an influential minority benefits from water subsidies at the expense of the majority, the subsidy can be hard to scrap.

A Third World Issue

Urban water pricing is not, of course, a purely third world issue. This thesis focuses on that context because the urban problems of the next century will be dominated by several dozen mega-cities possessing a combination of weak governments and burgeoning populations. Furthermore, many of them will reach their hydrologic limits, implying a critical need to stop wasting water.

The annual renewable freshwater supply on land - that made available by the hydrologic cycle - is about 110,000 cubic kilometers, only one ten-millionth of all the water on earth. Nearly two-thirds of this is lost to evapotranspiration, leaving about 40,000 cubic kilometers as runoff. Of this, most again is "wasted" as floodwater, or else is remote from human habitation. The total stable, geographically accessible supply from aquifers and year-round river flows is some 12,500 cubic kilometers, or about 2,200 cubic meters per person per year. Global demand for irrigation, industries and households now stands at an estimated 4,430 cubic kilometers, of which consumptive use is 2,285 cubic kilometers. Humans therefore abstract over 35 percent of the available supply, and when instream uses are added, the figure could approach 50 percent.¹³

These figures underscore the need for demand management on a global scale, but the need is much more acute on a regional scale because water resources are very unevenly distributed. As of 1995, forty-four countries containing some 740 million people had annual

¹³Statistics from Postel 1996:9-12.

renewable water supplies below 1,700 cubic metres per person, the runoff level below which food self-sufficiency is likely to be problematic. By 2025, forty percent of the world's population will be in this situation. Many cities such as Bangkok, Beijing and Mexico City already are facing water crises, and will need to use water more efficiently and equitably.¹⁴

For many cities, the need for demand management is driven by rapid population growth and in-migration, combined with rising incremental costs for water supply. For example, Mexico City's population of 20 million people (now growing at 3.5 percent per year) historically has relied on groundwater, which on average costs \$0.53 per cubic meter to supply. However, overpumping of groundwater is depleting the aquifer and causing severe land subsidence, and therefore is triggering development of new, more distant water sources. Pumping from the Cutzamala River, 180 km away, costs \$0.82 per cubic meter - 55 percent more than groundwater - and more distant sources will cost more still.¹⁵

Such marginal cost ratios are typical: new water sources in Lima, Algiers, Bangalore, and Shenyang will cost two to three times more than existing ones; in Dhaka, Hyderabad, and Amman the equivalent cost ratios exceed three.¹⁶

2.2 The Low Level Equilibrium Trap and Market Failure

The water market may be very complex in developing country cities. Many cities do not provide safe and affordable water to all their residents. They also fail to properly recover costs for the water they do supply, which leaves them unable to extend service; this vicious circle has been termed a "low level equilibrium trap." Some characteristics of such a system

¹⁴Postel 1996.

¹⁵World Bank 1993; National Research Council 1995.

¹⁶World Bank 1992b.

are summarized below; this list is neither complete nor universal, but rather is a list of symptoms that are frequently found, and that pose obstacles to development.

First, water service is not universal, and this leads to multiple sources and multiple prices. Consumers are forced to choose - often between quality and cost. Those who don't have piped water supply may get free water from rivers or wells, or they may buy water from vendors or standpipes - but often at 5 or 10, or even 25 or 50 times the price of piped water.

Second, water losses from leakage, theft and other causes often are very high: a survey of losses in nine cities in Asia and Latin America showed losses varying from 40 percent to over 60 percent.¹⁷ Typically, half or more of the overall losses are commercial losses; that is, water used but not paid for.¹⁸ They stem from illegal connections, faulty meters, and inadequate systems of meter reading, maintenance, billing, and collection. The overall result of high losses is wasted water, reduced revenues, and fewer consumers served.

Third, water consumption varies greatly depending on access to sources. This makes it very difficult to predict demand as the water system expands, and this must be carefully evaluated during project design. Crane (1994) surveyed the average costs of purchasing water from various sources in Jakarta: from municipal connections, \$0.18 per cubic meter; from private household resale, \$1.08; from semi-private standpipes, \$1.26; and from private street vendors, \$2.62. Those who did not have piped water therefore paid 6 to 14 times more than those who did. Not surprisingly, the former group purchased much less water than the latter: 14 litres per day versus 62 litres, on average. They generally limited their meager ration of purchased water to drinking and cooking, and used well water for other purposes. (Note that such market distortions are not untypical. Bahl & Linn (1992) surveyed vendor

¹⁷Cestti et al 1997:5.

¹⁸Yepes 1995.

prices relative to municipal charges for water: Burkina Faso, 3 to 5 times higher; Ghana, 13 to 25; Kampala, 4 to 10; and Nairobi, 7 to 10.)

Fourth, clear property rights may be lacking. Without secure tenure, people tend not to invest in household improvements such as connections to the piped water system.¹⁹ Again, this affects demand, and it also affects the ability to use infrastructure to alleviate poverty.

Fifth, expanding service to the poor can upset vested interests, and provoke political resistance. There is always the potential for private profit from public goods.

Finally, many water supply institutions do not have the resources and autonomy to deal with these problems. That is why a more complete understanding of institution-building is needed, as will be discussed in the next chapter.

2.3 Practical Goals - Price Reform And Demand Management

Many cities, then, are stuck in a trap of low service and low revenues. Price reform and demand management are practical reforms that can conserve water, increase revenues, and hence expand service and make everyone - even the poor - better off. If the poor are paying 10 times the formal rate for water, there is scope to raise prices, and still make them better off - if they can gain access to the formal market. An example is Bombay: "to a large extent, Bombay's water rationing need not exist because the gross supply is sufficient to meet the needs of the current population. Further, there is ample scope to reduce waste ... and to raise the very low tariffs for households to fund the rehabilitation and expansion of ... water and sewerage networks."²⁰ Another example is Nairobi: "In the long run, a low income consumer will be better off having a house connection, provided that a funding mechanism is

¹⁹McPhail 1994.

²⁰Ebrahimi 1996.

available which makes the house connection more easily affordable; he/she will enjoy a better service level (and consume more water) with less money compared to carrying over-priced water from a distant kiosk."²¹

Extending the water distribution system and reforming water tariffs can raise prices for some, while freeing up water for others. Middle class households and industries respond well to tariffs and other incentives to conserve. Increased revenues in turn let utilities reduce waste to leakage and theft, improve billing effectiveness, and expand the distribution network - a virtuous circle.

Other demand management tools are discussed below. The World Bank supports water metering, tariff reform, leakage reduction, and improved commercial and management practices - as well as institutional development.

Demand Management Tools

Water demand management has been defined as "any measure designed to reduce the volume of fresh water being withdrawn from surface of groundwater sources ... but without reducing consumer satisfaction and/or output."²² Demand management encompasses both market and non-market instruments, and is less a single tool than a bundle of tools with the same overall goal.

Creating Market Incentives. The goal of market policies is to align private incentives with social optimality, thus reducing the need for coordination and control by governments. Implicit in this goal is "internalizing" externalities from pollution and other environmental damage, by having decision-making at the proper scale.

²¹World Bank 1995:27.

²²Bhatia et al 1995, Introduction.

Price is the most direct market incentive because users alter their market behaviour in response to their private costs. Price matters, in developing countries as elsewhere; price elasticities of demand are consistently found to be negative and significant, varying between -0.3 and -0.7, and averaging -0.45. This means that, all else being equal, a 10 percent increase in water price will lead to a 4.5 percent reduction in demand. In spite of this, many analysts, within the World Bank and elsewhere, assert that water prices do not play a significant role in determining demand, because water bills constitute only small fractions of total household expenditures and total industrial production costs.²³

As discussed above, raising prices for piped water can still benefit the poor, if they are paying very high prices to vendors, and if they can connect to the municipal system. The cost of the "next" water supply project can be two to three times the cost of the current project; and because prices are already subsidized, a move to full-cost pricing often would mean increasing water rates by six or seven times. However, this still leaves "room to move" if the poor are paying 5 to 10 times, or even 25 times the official rate.²⁴

Pricing policies, to be effective as demand management tools, should be volume-based, that is, based on water metering. In the industrial sector, Bhatia et al (1994) reported that several large industries in India reduced demand by up to 80 percent through measures such as conservation and recycling, in response to metering and marginal cost pricing.

Another, indirect way of signalling the true cost of water abstraction is by means of pollution or effluent charges applied to large consumers such as industries. Again, these should be based on the volume and strength of the effluent.

²³Cestti et al 1997:ii.

²⁴Arlosoroff 1993:25.

Other market-based direct incentives include tax incentives for investment in water-saving technologies by industries, rebates for low water-use appliances in homes, as well as loans, discounts and technical assistance. Again the goal is to encourage consumers to invest in actions that have higher social than private returns.²⁵

Finally, a market-based method of signalling the opportunity cost of water is by the use of water auctions, water markets and tradable water rights. These are mentioned only in passing because they really apply at larger scales (i.e., basin-wide) than are considered here. As of 1995, Chile was the only developing country with a comprehensive set of water laws to encourage water markets.²⁶

Creating Non-Market Incentives (Enforcement). Command and control measures, such as plumbing legislation, regulations, standards, and water use restrictions, require considerable enforcement capability, and political support from large and powerful users. Essentially these attempt to do with planning what market-based instruments do with private incentives. Cestti et al (1997) list some important disadvantages of water-use restrictions: (i) they override peoples' freedom to choose how they want to use water, (ii) users that already use water efficiently are penalized disproportionately, (iii) large families are penalized more than small ones; and (iv) the costs involved in the administration and enforcement may not be explicit, and may be higher than the benefits derived from the restrictions.

The use of water-conserving fixtures can be mandated by plumbing codes, but caution must be used when introducing such measures. First, they require institutional and technical capacity, and should be supported by other measures such as educational programs and rebate programs. This may be beyond the capacity of many utilities. Second, plumbing and similar

²⁵Cestti et al 1997:iii.

²⁶Bhatia et al 1995:16.

codes historically have been ineffective and roundly ignored in many developing country applications, and in many cases a culture of non-compliance must be overcome.

A balanced mix of market, enforcement and incentive structures is needed to effectively control water demand. However, this requires adequate institutional capacity for management.

Operational Interventions. Demand-side operational interventions include loss and waste reduction. Although loss-reduction programs can be prohibitively costly, there are many success stories. Singapore reduced unaccounted-for water (UFW) from 11 to 6 percent in five years through programs of leakage monitoring, scheduled pipeline and meter replacement, prevention of meter tampering, and progressive tariffs. Not coincidentally, the city utility is highly motivated and capable.²⁷ At a village scale, remote coastal communities in British Columbia reduced leakage by 40 to 80 percent through community awareness programs and simple repairs to house connections.²⁸

Another operational intervention that can save water is the implementation of wastewater reuse schemes for industrial and other non-potable uses. However, such measures are better encouraged through market mechanisms such that industries will treat and reuse wastewater up to the point where the marginal cost of treatment equals the marginal cost of supplied water.

Supporting Activities. Finally, supporting activities such as education and advertising campaigns can be effective. Again Singapore is a good example of how public exhibitions and school programs can create awareness of water use. The city of Bogor, Indonesia instituted a voluntary home water audit program aimed at high-volume users,

²⁷Yepes 1995.

²⁸Kerr Wood Leidal Associates Ltd. 1997.

which included feedback about estimated repair costs and savings.²⁹ Educational campaigns to reduce peak demands for services such as electrical power and long-distance telephone, as well as water, are well known in developing countries. Such measures can be particularly suited to developing countries because radios are ubiquitous, and most countries have a government broadcasting network. Cessti et al (1997) give examples from Singapore and elsewhere.

2.4 Summary of Findings

In a world of increasing scarcity and maldistribution, water resources must be conserved. When demands for water outstrip the supplies provided by nature - or the supplies that utilities can afford to deliver - the demands must be reduced. At the same time, governments increasingly are constrained financially, and many cities cannot provide basic services to all their people. In developing countries, the tools of water demand management - pricing, regulations and education - potentially can help many water utilities to move out of this low level equilibrium trap caused by inadequate pricing and revenue collection, while simultaneously extending and improving service. Therefore it is increasingly of interest in such situations. However, the realization of these benefits has yet to be confirmed because the history of demand management in developing countries is short.

Reforming water policies to encourage conservation is difficult to do. It requires a high degree of institutional capacity and community support, because demand management comprises a set of policies that generally includes raising prices. Implementing demand management will require understanding the full spectrum of urban issues; and will require an understanding of institutions to ensure that those charged with reform are able and willing to

²⁹Cessti et al 1997:30.

carry it out. It requires a new agenda that includes hydrologic, economic and institutional imperatives.

3. ANALYTICAL FRAMEWORK - INSTITUTIONAL ANALYSIS

3.1 Introduction

An institutional analysis of a development project or recipient agency can help to explain why good ideas sometimes do not get carried out. Economic theory can determine the benefits of a reform measure, but often fails to explain why beneficial reforms are not adopted, or if they are, why they are not successful.³⁰ Adding institutional elements to traditional economic analysis can begin to address such issues by merging theory with economic history, as suggested by Gunnar Myrdal (1978) and others. Institutional economics has been used to enrich the vocabulary of development, and to define appropriate institutional and policy designs involving a pragmatic mix of roles for the public, private, and voluntary sectors. It has also helped to define the goals of and limitations to public sector reform. But it does not specify how these are to be achieved; this requires looking more closely at the bureaucracy of the agency itself.

3.2 Approaches to Public Policy Analysis

One of the difficulties of studying public policy is the enormous range of approaches, informing different political viewpoints, that have been brought to bear on the subject. While this chapter cannot examine all of them, it presents a brief taxonomy of approaches to policy analysis based on different units of analysis, namely the behaviour of individuals, groups and institutions.³¹

³⁰Clague 1997:1.

³¹Howlett & Ramesh 1995:18-47.

Theories Based on Individual Behaviour

Neoclassical economics, or *welfare economics*, was until this decade the most widely used approach to the practice of development policy design.³² This approach, which has its roots with Adam Smith, is based on the notion that “individuals, through market mechanisms, should be relied upon to make most social decisions.”³³ Neoclassical economics is based on the rational, selfish behaviour of atomistic agents. Values, technology, and institutions are taken as given and exogenous; in the strict model, there is no reason for the existence of institutions at all. In practice, institutions are required to guarantee property rights and the stability of the money supply, but otherwise state activity is often seen as generally hindering the functioning of markets. Development economists recognize, however, that markets cannot always distribute resources efficiently, that is, cannot aggregate individual utility-maximizing behaviour. The need to correct such market “failures” as imperfect competition, imperfect information, externalities and the tragedy of the commons may even constitute “a rationale for the existence of governments.”³⁹

The tool used to determine the most efficient government intervention is cost-benefit analysis. This tool has been criticised on many grounds, both practical and ethical. One practical problem stems from the inability to price that which is priceless, such as human welfare, or ecosystem preservation.⁴⁰ One ethical problem is the lack of focus on distribution (losers and gainers). Another is the lack of focus on morality: in certain areas such as environmental regulation, “there may be many instances where a certain decision might be

³²Picciotto 1997a:343.

³³Howlett & Ramesh 1995:28.

³⁹Panayotou 1993:44.

⁴⁰Howlett & Ramesh 1995:30.

right even though its benefits do not outweigh its costs.”⁴¹

For policymakers, however, the main problem with the neoclassical approach is the failure to incorporate political phenomena; the “failure of theorists using this approach to recognize that states almost never make their policies in the essentially technical manner assumed by the theory.... Welfare Economics’ neglect of political variables has led its critics to describe it as ‘a myth, a theoretical illusion’ which promotes ‘a false and naive view of the policy process.’”⁴²

Public choice theory, in contrast, attempts to apply the concept of individual utility-maximization to political phenomena. Its roots lie in the political economics tradition, and its chief assumption is that “political actors, like economic ones, act rationally to maximize their utility (satisfaction) and that the only political actor that counts is the individual.”⁴³ In the strict version, individuals vote for the political party that best advances their interests, while policy-makers devise policies that will maximize their income, power, and prestige. A more realistic assessment would recognize that “people do form groups and internalize norms that constrain their opportunism - without such behaviour, the [institutional] arrangements in the successful countries would not function....”⁴⁴

The problems with the theory include the following. First, it views human nature too simplistically; not all personal or political activities can be attributed to utility-maximization, although there is doubtless scope for the creation of incentives based on this motivation. Second, the theory relies on free competition among political parties, and therefore has little

⁴¹Kelman 1981.

⁴²Howlett & Ramesh 1995:32-33.

⁴³Ibid. 1995:19.

⁴⁴Clague 1997:370.

to say about policy-making in non-democratic societies. Third, it disregards the effects of institutions on individuals, and the durability of the institutions themselves.⁴⁵

Practitioners working within neoclassical and, especially, public choice frameworks tend to promote state-minimalist policies that promote markets as much as possible, and that limit the role of governments to correcting market failures. Yet both of these frameworks still contribute usefully to economic development practice, and have been modified and extended to address some of the problems noted above.⁴⁶

Theories Based on Group Behaviour

Theories based on group behaviour include, most notably, Marxism and its variants. In these models each mode of production develops a dual class structure consisting of the owner (capitalist) class and the worker class, and public policies are interpreted as reflecting the interests of the capitalist class. There are severe problems with this approach to analyzing modern economies, and particularly emerging economies. First, it is unclear in modern society what is a class and what is not. Second, it is unclear how or if the capitalist class always drives government policies, or how governments can pursue policies contrary to the wishes of that class. Third, the theoretical primacy of the economic “base” does not accord with the actual importance and complexity of the social “superstructure;” the theory cannot avoid reducing complex social and political phenomena to class conflicts.

Of group theories other than Marxism, *pluralist theory* is influential especially in American political science, and is based on the assumption of the primacy of interest groups in the political process. In contrast to Marxism, “groups in pluralist theory are not only many

⁴⁵Howlett & Ramesh 1995:21.

⁴⁶Clague 1997.

and free-forming, they are also characterized by overlapping membership and a lack of representational monopoly.”⁴⁷ Thus pluralism is able to capture some of the complexity of the policy process that Marxism misses.

Wilson (1989) classifies government agencies according to the character of the interest-group pressures they experience: see table below.⁴⁸

Table 3-1 Classification of Agencies and Interests

		Distribution of Benefits	
		Concentrated	Diffuse
Distribution of Costs	Concentrated	Interest-group politics: two or more rival interest groups in conflict over agency’s goals	Entrepreneurial politics: one dominant interest group opposing its goals
	Diffuse	Client politics: one dominant interest group favouring its goals	Majoritarian politics: no important interest groups

An agency can occupy one of four kinds of political environments. *Client* politics results when the benefits of a program are concentrated in the hands of a small interest or elite, such as a specific industry, while the costs are borne by society as a whole. The recipients will have an incentive to organize in support of the program, while the opponents do not, because their individual costs are low or even hidden. This insight helps to explain the “low level equilibrium trap” described in Chapter 2.

⁴⁷Howlett & Ramesh 1995:33.

⁴⁸Based on Wilson 1989:72-83.

The opposite of client politics is *entrepreneurial* politics. When the costs are borne by a small group while the benefits are diffuse, the agency may have a difficult time; examples include agencies that are responsible for regulating certain industries.

Classic *interest-group* politics results when both costs and benefits are concentrated. The agency will then be subject to opposing interest-group pressures. Both the beneficiaries and the cost-payers have strong incentives to organize and press their competing claims.

Lastly, *majoritarian* politics results when both costs and benefits are spread diffusely: no single interest has a strong incentive to either support or oppose the agency's goals, and the agency will face no strong interest-group pressure.

This framework was designed to explain the behaviour of U.S. agencies, which provide generally open access to interest groups. In other countries with less open parliamentary institutions, including most developing countries, the definition of "interest" must be broadened. For example, interest pressures may result from informal, personal contacts rather than formal, group contacts. Such politics have been referred to as *patron-client* politics or *personal rule* politics.

Theories Based on Institutional Behaviour

A third approach recognizes the limits of individual and group-based theory in dealing with political phenomena by considering institutions endogenously. *Institutionalism* has its roots in the historical and descriptive traditions of writers such as Durkheim and Veblen; modern institutionalism is often called *new institutionalism* to distinguish it from the older traditions. A number of disciplines inform the new institutionalist approach, including political science, sociology and economics; indeed "there are as many 'new institutionalisms'

as there are social sciences.”⁴⁹ All of them share the belief that institutions are more complex than merely the sum of individual-level properties; and all seek to reconcile theory with observation, given that rational-actor models do not explain institutional behaviour.

Within the traditions of economics and public choice theory, institutions are viewed as means of reducing transaction costs among individuals. Institutions are “products of human design, the outcomes of purposive actions by instrumentally oriented individuals.” This is in contrast to the traditions of sociology and organization theory, which consider institutions to be “certainly the result of human activity, [but] not necessarily the products of conscious design.”⁵⁰ Both views turn out to be relevant to development economics.

Definitions

Based on the foregoing, this sub-section defines important terms used in the following chapters, namely projects, policies, institutions, agencies/organizations, and governance.

Projects are simply activities in the development process. Before 1970, they were thought of mostly in terms of physical constructions, but since then have included other components such as financial and government reforms.⁵¹ The conception used herein is that of the development investment project: “Projects aim at finite, specific, monitorable objectives. They incorporate resources commensurate to the task and aim to overcome market failures. They are the building blocks of development programs, and their selection for external assistance implies that they have priority for concentrated attention.”⁵²

⁴⁹Powell & DiMaggio 1991:1.

⁵⁰Ibid. 1991:8.

⁵¹Israel 1987:140.

⁵²Picciotto 1997a:343.

Policies are “purposive courses of action followed by an actor or a set of actors in dealing with a problem or matter of concern.... Policies [and public policies in particular] are often the result of not only multiple decisions, but of multiple decisions taken by multiple decision-makers, often scattered throughout complex government organizations.”⁵³ Finally, policy frameworks are the guiding principles that inform the design of projects.

In the social science tradition, *institutions* are viewed, broadly, as organized, established procedures, or “the rules of the game.”⁵⁴ However, in common usage the term also refers to actual agencies, organizations, or government departments: “the broad concept of institution encompasses entities at the local or community level, project management units, parastatals, line agencies in the central government, and so on.”⁵⁵ In general, “the term institutions can refer to phenomena as diverse as formally structured agencies, ... to any recurrent system of relationships, such as institutional arrangements to improve water use efficiency.”⁵⁶ These systems of relationships can include personal relationships within and between bureaucracies, the polity, and society.

In this thesis the concern is with public utilities that provide urban services: a public utility is a legally constituted group of people who are paid public employees and who use skills and technology to provide certain services or outputs. Similar definitions are adopted, often implicitly, in the literature on institutional or organizational development.⁵⁷

⁵³Howlett & Ramesh 1995:6.

⁵⁴Jepperson 1991:143.

⁵⁵Israel 1987:11.

⁵⁶Guggenheim 1992:21.

⁵⁷Hage and Finsterbusch (1987:11) define an organization as “a social collective which has been in existence for at least five years, including at least ten paid employees who work largely full time throughout the year, use essentially the same core technology, and are arranged in a variety of prescribed positions designed to achieve some specific collective output(s).”

In order to be clear, such legal entities are referred to herein as *agencies* or *organizations*. These in turn contain bureaucracies in the Weberian sense. By contrast, the concept of *institutions* refers to “the formal rules, compliance procedures, and standard operating practices that structure the relationship between individuals in various units of the polity and economy. As such, they have a more formal status than cultural norms but one that does not necessarily derive from legal, as opposed to conventional, standing.”⁵⁸ Organizations, through their bureaucracies, pursue interests, the same as individuals, groups, classes, and states. Institutions, on the other hand, do not cause actions but affect and constrain the actions of the actors.⁵⁹

An *institutional analysis*, then, is one that “emphasizes the institutional relationships, both formal and conventional, that bind the components of the state together and structure its relations with society....”⁶⁰ The following chapters apply institutional analysis to World Bank development projects.

There is a family of terms, including *institutional development*, *institutional capacity-building*, and *organizational change*, which in common development parlance generally refer to the process of reforming organizations.⁶¹ In this thesis the term *institutional development* is used to denote not only reform of organizations, but also reform of the policy environment.

Finally, *governance* refers to the overall process of governing. It is “the sum of the many ways individuals and institutions, public and private, manage their common affairs. It

⁵⁸Hall, Peter A., 1986, *Governing the Economy: the Politics of State Intervention in Britain and France*, Cambridge: Polity Press:19, quoted by Howlett & Ramesh 1995:26-27.

⁵⁹Howlett & Ramesh 1995:27.

⁶⁰Hall, Peter A., 1986, *Governing the Economy: the Politics of State Intervention in Britain and France*, Cambridge: Polity Press:19, quoted by Howlett & Ramesh 1995:26-27.

⁶¹See Hage and Finsterbusch 1987; and Burke 1993.

is a continuing process through which conflicting or diverse interests may be accommodated and co-operative action may be taken. It includes formal institutions and regimes empowered to enforce compliance, as well as informal arrangements that people and institutions either have agreed to or perceive to be in their interest.”⁶²

3.3 Development Economics

This section briefly traces the evolution of development economics from neoclassical economics to new institutional economics. Decades of experience with development based on neoclassical economics showed that it failed to prevent market failures, failed to account for behaviour that could not be explained by individualism, and failed to consider institutional effects.⁶³ Therefore, by 1994 institutional economics had been “invited to join the arena of development economics.”⁶⁴

New Institutional Economics

Institutional economics, or rather new institutional economics, attempts to overcome the shortcomings identified above. The new institutional economics “adds a healthy dose of realism to the standard assumptions of microeconomic theory. Individuals attempt to maximize their behaviour over stable and consistent preference orderings, but they do so, institutional economists argue, in the face of cognitive limits, incomplete information, and difficulties in monitoring and enforcing agreements. Institutions arise and persist when they confer benefits greater than the transaction costs . . . incurred in creating and sustaining

⁶²Commission on on Global Governance 1995:2.

⁶³Picciotto 1997a.

⁶⁴Ibid.:362.

them."⁶⁵ Development project design has been enriched by the inclusion of institutional principles:

- *Multidimensional values.* Cost-benefit analysis can mask information rather than illuminating, because all phenomena are converted to a single measure, usually dollars.
- *Broader view of human nature.* People are neither entirely selfish nor entirely rational. They do "irrational" things for idealistic reasons, and because of social and familial norms.
- *Beyond "State vs. Market."* Institutional arrangements should favour a mixed economy rather than be extreme on either the state or market side. Prices must be fair as well as efficient.⁶⁶ Institutionalists are critical of the claim that markets will operate more efficiently simply by removing state hindrances to individual maximization decisions. Markets are viewed as "broad institutional structures that support the exchange process."⁶⁷

The neoclassical and new institutional viewpoints share common foundations, and they agree on many points, notably on the importance of prices and their effect on the choices of individuals. However, institutional economics recognizes two conduits for prices' improving conditions: directly through market efficiency, and indirectly through institutional reform driven by changes in relative prices.⁶⁸

In contrast to neoclassical economics, institutional economics tends to use open-ended, evolutionary models. It is interdisciplinary, and tends to regard values, technology and institutions as endogenous. "Power is at the heart of the institutional view, and the fact

⁶⁵Powell & DiMaggio 1991:3-4.

⁶⁶Söderbaum 1990:490.

⁶⁷Stein 1994:1845.

⁶⁸Ibid.:1838.

that a transaction takes place does not necessarily mean that it is fair either with respect to buyer and seller or in relation to third parties.”⁶⁹ Normatively, institutional economics is relatively more concerned with public interest in the tradition of Rousseau, rather than with individualism in the tradition of Locke. Outcomes are measured more by pragmatism than by efficiency. There is no *a priori* preference for public or private institutions. Institutional economics is inclusive, interdisciplinary, messy, descriptive, and grounded in circumstances. The divergence between social goals and actual circumstances is the driving impetus behind institutional innovation.⁷⁰

There are, broadly, two schools of institutional economics. The older, based on the work of Thorstein Veblen and others in the first decades of this century, rejects the emphasis on utility-maximizing agents in favour of social, economic and legal explanations for economic outcomes. The newer, which is generally used in development economics, accepts the fundamental precepts of neoclassical economics but looks at institutions and the roles they play in helping the operation of markets. Seen in this way, institutional economics is a refinement of neoclassical economics that is also referred to as “new institutional economics.”

Classification of Goods and Services

New institutional economics attempts to find the right balance between the public, private and voluntary sectors. To this end, four major classes of goods are distinguished as follows:⁷¹

⁶⁹Söderbaum 1990:490.

⁷⁰Livingston 1993.

⁷¹From Picciotto 1997a:348.

Table 3-2 Classification of Project Goods

		Subtractability	
		Low	High
Excludability	Low	Public goods	Common-pool goods
	High	Toll goods	Private goods

In this classification, private transactions are effective only for goods that are consumed by one person at a time (high subtractability), and in circumstances where individual consumers can be excluded without incurring substantial costs (high excludability). Housing is an example of a private good; it is noteworthy that “public” housing is still a private good if it exhibits high subtractability and excludability.

In contrast, public goods such as roads and sidewalks are those that are consumed by all, and for which individuals cannot easily be excluded. There can be no “market” for a pure public good, because access is unrestricted - implying that there is a role for regulation.

Piped water is a toll good, and so must be charged for so that it is not treated as a public good and over-used. For toll goods, a mix of market and regulatory controls seems appropriate. The following paragraphs provide guidance as to the selection of appropriate policy mixes, depending on the nature of the project goods.

Design of the Policy Mix

Picciotto (1997) provides a framework for policy selection that defines the relative roles played by the market and the state in the delivery of project goods. In simplified form

the framework is summarized in the following table.⁷²

Table 3-3 The Role of Market and Hierarchy

		Bureaucracy	
		Low	High
Market	Low	Common-pool goods	Public goods
	High	Private goods	Toll goods

Private goods are distributed primarily through market mechanisms; the bureaucracy's role is limited to correcting market failures. In contrast, the market has little role in the distribution of public goods; instead, effective policing (bureaucracy), as well as social norms, come into play. Finally, toll goods demand organizational structures that combine market and state elements, and judicious assessment of institutional potentials and constraints.

Summary

The new institutional economics therefore can help to determine the appropriate policy mix between the state and market. The transaction-cost approach can also help to define the goals of institutional reform, such as accountability, the rule of law, transparency, and participation. In the neo-institutional or new institutional economics perspective, the two types of social organizations that reduce transaction costs are the market, and the

⁷²Adapted from Ibid.:351. Picciotto uses the term "hierarchy" not "bureaucracy" but in the present context the two terms are analogous.

hierarchy or bureaucracy.⁷³ The approach therefore enriches those previously described by making institutions endogenous. But while it specifies the goals of public policy reform, it does not explain exactly how executives, managers, and line workers are to achieve them, or why they would want to. A main weakness of the approach, therefore, is that “while it provides an excellent discussion of the constraints placed on policy-makers, it says very little about what causes them to move in any particular direction.”⁷⁴ These causes must be found in the structure of the public bureaucracy itself.

3.4 The Nature of Public Agencies

The formal study of bureaucracies begins with Max Weber, but now they tend to be viewed as less monolithic, powerful, and predictable than in Weber’s conception.

“Bureaucratic action is sometimes regular and predictable, but just as often it is irregular and unpredictable.”⁷⁵ No single theory of bureaucratic behaviour exists. However, based on both institutional theory and empirical experience, bureaucracies can be analyzed in terms of the environment they operate in, and the constraints they operate under. Considering an individual public agency in light of institutional analysis, it has external relationships, both formal and informal, with other agencies, the state (government), and society as a whole. Further, the agency itself has layers of bureaucracy comprising executive, managerial, and operator levels, each with links up, down, and outside. Executives are concerned with maintaining their agencies in a complex and unpredictable political environment; managers are concerned with the constraints that this environment imposes; and operators are

⁷³Howlett & Ramesh 1995.

⁷⁴Ibid.:27-28.

⁷⁵Wilson 1989:x.

concerned with their own particular circumstances, culture and professional goals.⁷⁶ This conceptual framework is illustrated in Figure 3-1.

The foregoing discussions have revealed some of the important characteristics of bureaucracies, such as the type of projects they deliver, and the external interest pressures they face. Adopting a governance viewpoint also implies a concern with tasks and compliance, constraints, and formal and informal links. Each type of operative, vertical or horizontal institutional link, and agent of change in the figure is discussed below.⁷⁷

1. External institutional links: Interests. As described above, pluralist theory together with transaction-cost analysis provides a framework for categorizing how agencies are subject to different interest group pressures, depending on how they distribute costs and benefits. A water utility, for example, ideally should distribute the benefits of clean water equally to all citizens, and in turn charge economic tariffs from everyone. In this case both the costs and benefits have low per capita value, and no important interest group will be continuously active in trying to change the system. However, where water service is not universal, and the relative few who are served pay too little for the service, then the many are subsidizing the few. In this case the beneficiaries, who include the politically powerful, have a strong incentive to maintain the status quo. Conversely, those (the poorer groups) who are unserved and must pay much higher prices experience high costs, and therefore have a strong incentive to press for change. Neoclassical economists could argue that when the transaction costs of institutional change exceed the benefits, the incentive to engage in political action disappears, implying that if the poor do not engage in such action, the existing situation must

⁷⁶Ibid.:31.

⁷⁷Ibid:xi.

be optimal. Institutional economists, on the other hand, would assert that institutional arrangements structure power, and powerful interests have disproportionate influence on institutional change. There is an inherent bias toward the status quo.⁷⁸

Another interest pressure is the need, in many places, for managers to dispense visible acts of patronage. African elites often are linked to large networks of social obligation, and state organizations often pursue the informal, personal goals of their managers, rather than the formal and impersonal ones of the agency. The ability to dispense patronage through construction contracts is a powerful patronage tool, and partly explains the bias to create projects. Construction may be favoured over such things as tariff reform, because lower water rates for the poor produce benefits but no patronage; they are not visible, and the beneficiaries will soon come to accept the rates as their natural right.⁷⁹ The existence of corruption therefore creates a strong incentive to favour construction over management solutions, because this is where the opportunity for kickbacks is greatest.

2. ***External economic links: The nature of the project goods.*** As discussed above, new institutional economics provides a framework for classifying project goods. Agencies must be designed appropriately to the types of goods they are trying to deliver.

3. ***Types of agency: tasks and compliance.*** If the project goods are the outcomes of an agency's activities, then the activities of the individual workers are the outputs. Organization theory is concerned, among other things, with such considerations.⁸⁰ The relationship

⁷⁸Livingston 1993:818.

⁷⁹Leonard 1987:901.

⁸⁰Hage & Finsterbusch 1987:59-92.

between outputs and outcomes determines the type of organization, and the types of compliance structures that may be effective. The issue of compliance is the issue of how to prevent shirking. The problem of shirking is greatest where the employees' actions (outputs), and/or the results of those actions (outcomes), cannot be effectively supervised. Using a principal-agent approach, it is possible to classify agencies according to whether outputs and outcomes are observable.⁸¹

Table 3-4 Types of Agencies

		Outcomes	
		Observable	Not observable
Outputs	Observable	Production organizations	Procedural organizations
	Not Observable	Craft organizations	Coping organizations

In *production* organizations, where both outputs and outcomes are observable, managers can relatively easily design incentive systems. This is the case for some types of private enterprises such as factories, and also some types of public enterprises such as postal services.

In *procedural* organizations, the actions of the operators are readily observable, but the results of their work are not. Wilson uses the example of an army in peacetime, whose actions are highly regulated, but can never be tested until war breaks out. Management in procedural organizations can become means-oriented: how the operators do their jobs is more

⁸¹Wilson 1989:154-175.

important than whether they produce the desired outcomes.

Craft organizations are the opposite of procedural ones: outcomes are observable, but actions are not. In wartime, an army becomes a craft organization. The outcome of a battle (victory or defeat) is certainly observable, but the standard procedures are discarded in the chaos. Professionals such as engineers often work in craft organizations. The outcomes of their work (design drawings and reports) can be seen, reviewed, and controlled; but the actual work is of a technical nature that only the professionals themselves understand, and so it cannot be supervised. For this reason, professional organizations cannot rely on direct supervision, but rather rely on internalized professional norms, and other incentives such as performance bonuses.

Lastly, in *coping* organizations neither outputs nor outcomes can be measured. Teachers in schools cannot be continuously supervised; and the quality of the education will not be known until after the students have moved on, and even then not with certainty.

4. *The executive level: Autonomy.* An important lesson from the World Bank's experience is that utilities, to perform adequately, need operational autonomy - meaning freedom from political interference.⁸² Bureaucracies are often prepared to accept less money with greater control than vice versa: "this is because of the high priority they attach to autonomy, or turf."⁸³ This contradicts the notion that agencies are always seeking to grow in size and responsibilities; what they really seek is to maintain the necessary flow of resources to the agency. In organization-theory terminology, public bureaucracies have "high resource

⁸²World Bank 1992b:39.

⁸³Wilson 1989:179.

dependence.”⁸⁴ For private enterprises these resources are capital and labour; public enterprises require not only capital and labour (funding and personnel), but also political support, which is at its highest when “the agency’s goals are popular, its tasks simple, its rivals nonexistent, and the constraints minimal.”⁸⁵ In reality, the agencies examined in this thesis often face inadequate budgets, controversial tasks, several rivals, and many constraints. Political interference is often cited as a problem for utilities; and good managers are often taken away by rival agencies.

Complete autonomy is of course undesirable, and democratic politics requires accountability. However, the urban service agencies considered here are not usually characterized by excessive freedom, but rather suffer from detrimental political interference, and therefore increasing their autonomy makes them better able to carry out their tasks, although it does not guarantee they will do so. Wilson lists several strategies by which public sector executives strive for autonomy, including these: (i) by seeking out tasks that are not being done by others (and resisting organizations that seek to perform the same tasks), (ii) by avoiding tasks that differ significantly from the central tasks; and (iii) by avoiding actions that produce divided or hostile constituencies.⁸⁶

5. ***The management level: Constraints.*** Whereas autonomy is an agency or executive issue, constraints are management issues. Public enterprises are constraint-driven, as opposed to private ones, which are profit-driven. Public agencies cannot retain or distribute their profits as they see fit, and so are limited in the incentives they can offer. Equity,

⁸⁴Ibid.:181.

⁸⁵Ibid.:181.

⁸⁶Ibid.:188-92.

seniority and politics often are greater considerations than merit in designing incentives.

Public enterprises are subject to rules and regulations, and they are subject to outside interests from such sources as other agencies, legislative and regulatory bodies, and interest groups.

These are constraints on the public manager. He depends on higher levels of government for his agency's funding, and he will spend a lot of time dealing with outside agencies for that reason.⁸⁷

6. ***Identity: Institutional culture.*** Every organization has a culture, that is, a set of conventions about the central tasks of the organization. When it has a strong culture that is supported and lived by its staff, it is a mission. An organization with a strong mission will carry out its central tasks well, and is easier to manage, because outputs do not have to be continuously supervised: operators know what to do and they want to do it well. On the other hand, this may have negative repercussions. First, non-central tasks may not receive the same attention or devotion. Second, there will be conflict if two or more cultures struggle for supremacy. Third, organizations may resist doing tasks that are incompatible with the dominant culture. Although it is often better to work with existing agencies when designing new programs, the new tasks must be appropriate.

The organization may not reward or provide attractive career paths for those working on non-central tasks.⁸⁸ Utilities having a culture that emphasizes and rewards engineering skills may resist taking on tasks that involve, say, promoting changes in consumer behaviour, as opposed to traditional infrastructure and financial solutions. Again, this can be seen in a bias to "create projects" that are not necessarily the lowest-cost solutions from an economic

⁸⁷Ibid.:116-120.

⁸⁸Ibid.:91-101.

viewpoint.

7. ***The operator level: People and incentives.*** Improving incentives in the public sector is central to institutional development.⁸⁹ Adequate wage levels are required to attract skilled personnel to the public service, and adequate links between financial rewards and performance are needed for agencies to function. Public enterprises are limited in the internal incentives that they can provide, so incentives may come from outside the agency: from professional norms; from corruption; and from patron/client relationships. For public servants, career advancement is not always tied to formal goals.

Professional norms are one source of incentives. Professionals such as engineers may look to their peers rather than their colleagues for intellectual rewards. In this regard Wilson distinguishes between bureaucracy and professionalism.⁹⁰ Social setting is another determinant. For example, most Kenyans living in Nairobi retain strong links to rural communities, and therefore tend to have unusually large networks of dependents, who may expect largesse. Patron/client politics comes into play in some places, and under such conditions poor work may go unpunished, and good work unrewarded. Finally, low wages for line workers, combined with poor supervision, can create incentives for corruption.

In waterworks utilities, which are craft organizations, there are many opportunities for corruption among those responsible for meter reading, billing, and elimination of illegal connections. A report from an early 1990s water supply project in Uganda observes the following in regard to illegal water connections: "Many consumers in the City/Town are very crafty. Many reconnect themselves at night, some bypass the meters and even get

⁸⁹Klitgaard 1991:91-113.

⁹⁰Wilson 1989:149.

supply through underground connection which is difficult to identify. Some of these malpractices are abetted by the Corporation workers themselves.... Corporation employees do not carry out effective disconnections, creating room for illegal reconnections which are sometimes carried out by themselves.”⁹¹

3.5 Summary - The Institutional Analysis Framework

Summarizing from above, the following questions about institutional circumstances arise out of the foregoing discussion:

1. ***Interest structure (external institutional links).*** What are the interest politics - interest group, client, entrepreneurial, or majoritarian? How do they affect performance? Are they formal/informal; group/personal?
2. ***The nature of the project goods (external economic links).*** What is the nature of the project goods - public, common-pool, toll, or private? What hierarchy/market mix is appropriate as a consequence?
3. ***Agency type.*** What is the agency type - production, procedural, craft, or coping? What are the outputs and outcomes? Are the compliance mechanisms appropriate for the type?
4. ***Autonomy structure (executive level).*** How autonomous is the agency? How does this affect performance?

⁹¹National Water & Sewerage Corporation.

5. ***Constraint structure (management level).*** What are the constraints on managers?

How does this affect performance?

6. ***Institutional culture (management/operator levels).*** What is the institutional culture? Are there multiple cultures? Is there a sense of mission? Is the agency trying to do tasks that are contrary to the mission?

7. ***Incentive structure (operator level).*** What are the incentives - professional/bureaucratic, internal/external, and/or formal/informal? How do they affect performance?

In Chapter 5 this analytical framework will be used to analyze the World Bank's experience with urban water sector reform.

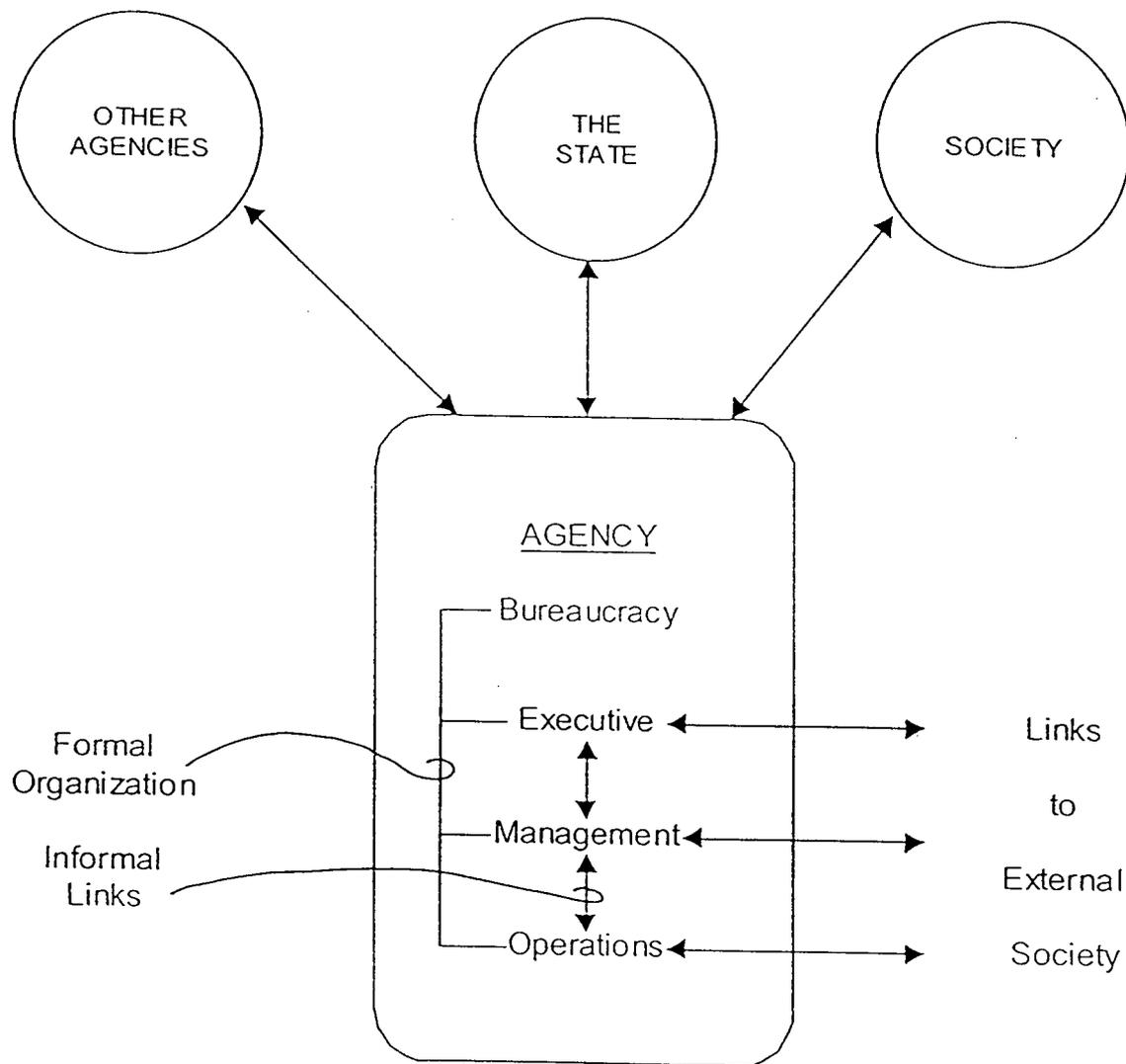


Figure 3-1. Analytical Framework - An Agency, Its Environment, and Its Bureaucracy

4. THE WORLD BANK'S EXPERIENCE WITH URBAN WATER SECTOR REFORM

4.1 Approach to Analysis

In order to apply institutional analysis to the practical problems of the new agenda, I turned to the World Bank's experience. I did this because it has a long experience with water sector reform and institution-building generally, and it is a policy leader in water resources. The Bank adopted a new water resources policy in 1993; because very few projects started since then are completed yet, a systematic evaluation cannot easily be done. Therefore, I looked instead at the experience with sector reform generally, and then a specific case. Two sequential approaches are used:

- Narrow sectoral focus/wide geographical scope: Water Sector reform since 1967 (this chapter); and
- Narrow geographical focus/wide sectoral scope: Institution-building in Nairobi since 1970 (chapter 5).

The first analysis shows the importance of institutions to lasting reform in the water sector.

The second shows the benefits of institutional analysis.

Relevance of the World Bank to Urban Shelter and Services

Since the Second World War, the numbers of the world's poor people have grown at staggering rates, and at the same time the plight of the poor has come into sharp focus through the lens of the television camera. In response, the developed world to its credit has expended considerable efforts on poverty alleviation, public health and shelter in the third world. The World Bank in particular has been a major funder of urban projects, and as a

result the Bank has often set the trend in policies for housing, water supply and other services. The Bank's new urban agenda parallels the *Global Strategy for Shelter to the Year 2000* prepared by the United Nations Centre for Human Settlements (UNCHS), and focuses on "enabling" markets to function better. Governments are seen not as providing services, but as enabling markets to work better and to reach the poor, as part of an overall governance reform.

The Evolution of World Bank Urban Policies

Urbanization in Africa and elsewhere has proceeded extraordinarily rapidly since the 1950s, and young, post-colonial governments, often lacking indigenous managerial capacity, were faced with problems of growing squatter populations, environmental degradation, and serious shortfalls in their ability to provide basic services for all their citizens. The history of urban development during this period is characterized by periodic, fundamental changes in approach. This history is briefly summarized below.

Phase 1 (1972-83): Basic infrastructure provision. During this period the basic challenge as conceived by the Bank was to build infrastructure to meet supply deficits. The overwhelming emphasis was on physical works, and as discussed below most projects during this time were essentially successful by this yardstick.⁹² In housing, the Bank embraced the sites and services and *in situ* slum upgrading concepts around 1972, largely based on the "self-help" philosophy of John Turner and others; the intent was to make housing affordable to low-income households without requiring subsidies, in contrast to the heavily subsidized

⁹²World Bank 1997:ii.

public housing approach of the 1960s.⁹³

This approach was rather narrow in its view of housing, and in its understanding of the relationships between the state, the market and households in housing. The state's role was project-oriented, and was to install infrastructure, provide tenure rights, and sometimes do social planning. The Bank also "assumed largely separated actions by markets, states, and people in its division of labour," and did not look at markets in a holistic way.⁹⁴

Nevertheless, the Bank's concept of a "project" was considerably broader than in the first years of African independence; a typical project included both physical and institutional development. The success of institutional development projects varied by sector: the most successful were in industry, telecommunications, some utilities such as water supply, the financial sector, and "industrial" types of agriculture such as plantations. Poorer results were achieved in other types of utilities, and in housing.⁹⁵ In retrospect the new, more enlightened emphasis on "basic needs" in the 1970s, and the resulting projects, often did not fulfil the early hopes. In housing there were successes, but they were few: projects often had to be heavily subsidized, or they failed to help the very poor, or both. In any case, the numbers of houses built were minuscule relative to the needs.

Phase 2 (1983-89): Macroeconomic adjustment. A radical shift in emphasis occurred with the change to a Republican administration in the USA in 1980, and the publishing of the World Bank's *Berg Report* in 1981.⁹⁶ The new emphasis was on macro-

⁹³Pugh 1994:163.

⁹⁴Ibid.:163.

⁹⁵Israel 1987:19-20.

⁹⁶World Bank 1981.

economics and finance. Most newly independent African countries, including Kenya, adopted economic policies which in hindsight proved to be ruinous.⁹⁷ In particular, housing markets were (and are) suffocated by over-regulation, unrealistically high standards and lack of access to credit; this is in addition to scarcity of land and the concomitant high prices caused by rapid urbanization. The approach of USAID, the World Bank and the IMF was to stabilize these economies in a way that would lead to long-term growth, via Structural Adjustment Programs (SAPs). The elements of structural adjustment included tightening monetary and credit conditions, reducing growth in public expenditure, securing reductions of deficits in balance of payments, deregulating markets, liberalizing trade, and privatizing state-owned enterprises. However, long-term gain came at a high short-term price. The austerity measures led to social services cutbacks, skyrocketing consumer prices, the swamping of local markets with imports, and sharp job-losses.⁹⁸

In housing, "the second phase development of housing finance systems had gone beyond narrow project-by-project approaches, but it was self-limiting because it was confined to finance, omitting land policies, the construction industry, infrastructure, and deregulation in town planning."⁹⁹

In water supply, the focus also broadened to emphasize greater autonomy for public sector institutions and a greater emphasis on institutional capacity. As the relative balance of emphasis tilted from physical to institutional measures, project performance ratings began to decline: the low point was in 1995, when only 38 percent of water and sanitation projects (all

⁹⁷See Lofchie 1994.

⁹⁸See for example Saunders 1996, for comments on structural adjustment in Zimbabwe.

⁹⁹Pugh 1994:168.

of which were begun in the 1980s) were rated as satisfactory in their performance.¹⁰⁰

Phase 3 (post-1989): The Enabling Strategy. The third phase theory evolved out of a growing recognition of the need for deeper institutional reforms to create enabling environments, including concerns with housing finance and macro-economic conditions, and it became expressed in the World Bank's strategic housing policy review set to the theme of *enabling markets to work*.¹⁰¹

Whereas the first phase was concerned with government actions, and the second with market actions, the third phase attempted to improve the performance of both governments and markets in developing countries, rather than seeing them as polarized and opposed institutions.¹⁰² It witnessed a shift from a project-oriented approach to a new focus on governance. In the water and sanitation sector, the World Bank (1997) describes the challenges to be met as follows:

- treat water as an economic good;
- manage water at the lowest appropriate level to ensure responsiveness to the customers;
- develop a legal, regulatory, and financial framework (enabling environment) to provide incentives for suppliers to meet demand in an efficient, accountable manner; and
- manage water within a comprehensive framework taking into account cross-sectoral

¹⁰⁰World Bank 1997:ii.

¹⁰¹World Bank 1992a.

¹⁰²Pugh 1994:167.

considerations.¹⁰³

As yet, it is not clear that the powerful weight of historic practice working against adopting economic principles in water allocation has been overcome either in theory or practice: “the transition to the reform agenda is still not sufficiently advanced either in the Bank, among all managers and staff, or among the borrowers.... Without full understanding and commitment to the reform agenda among managers and staff, it is exceptionally difficult to develop borrower commitment to the reform agenda. Similarly, residual ambivalence in the Bank and among borrowers about the relative weights given to managing water as an economic or a social good adversely affects the ability to gain borrower commitment.”¹⁰⁴ A comprehensive analysis of all these issues among all the relevant actors would be a valuable and novel undertaking, but is beyond the scope or resources of this thesis. The focus will be on the public sector bureaucracy in urban service provision, particularly Nairobi.

4.2 The World Bank’s Experience 1967-89

The Bank completed about 120 water and sanitation projects between 1967 and 1989, and subsequently evaluated their effectiveness. The following is based on the Bank’s internal evaluation report.¹⁰⁵ During those years the Bank had four principal objectives for the water supply and sanitation sector:

¹⁰³Quoted from World Bank 1997:ii.

¹⁰⁴World Bank 1997:iii.

¹⁰⁵World Bank 1992b.

- to build least-cost infrastructure;
- to help institutions achieve financial viability;
- to foster institution-building generally; and
- to provide adequate safe water to the poor.

Essentially all of the projects provided the specified physical assets, notwithstanding scope-changes, delays, cost overruns, and mis-forecasting of water demands. However, only about half of the projects were successful in improving institutional financial viability. The most frequent problems were failure of beneficiary governments to provide funding; failure to collect adequate tariffs; and failure of many public enterprises to pay their bills. The principal areas of concern for management were “lack of autonomy from the central authority, continuous political interference, lack of continuity of top management, poor rewards, insufficient training programs, and ‘brain drain.’”¹⁰⁶

Institutional capacity-building in general fared even worse, and “rarely succeeded,” according to the review, “often because [the Bank] did not use its influence to encourage governments to grant management and financial autonomy to the utilities before or during project implementation. In several cases, once project implementation was underway, the Bank did not pursue this objective vigorously.... Sector and institutional development can take many years and repeater projects have a better record of achievement.”¹⁰⁷ About half the projects were begun without established policies for the sector.

Worst of all, poverty-reduction was rarely measured and almost never successful. Often this was due to lack of information about the poor; and because of “pressure from

¹⁰⁶Ibid.:iii.

¹⁰⁷Ibid.:iii.

influential sectors of the population for improved supplies and sanitation.”¹⁰⁸

From an institutional viewpoint, the sector review provides a number of important lessons, including the following. First, an enabling policy framework is required for sustainable change, and this takes time and commitment to build. Second, institutions are the key to achieving sustainable policy change - as opposed to “merely” physical development. Third, complex and long-term goals are unlikely to be achieved with short-term projects; by extension this should also be true of a move to sustainable water resource use - which after all is necessary for poverty reduction. But the review also leaves unanswered questions relating to the nature of an enabling policy framework, and the failure, in many cases, to learn from the mistakes of the past.

4.3 The World Bank’s Experience Since 1993

In 1993 the Bank revised its water resources policies to reflect the agreements of the Dublin and Rio Conferences. Its goals include poverty reduction, economic pricing of water, water conservation, institutional development, and regulatory reform.¹⁰⁹ Very few post-1993 projects with specific water conservation elements are complete, so a systematic analysis of their success is not yet practical, although such a review can and should be undertaken within a few years. However, informal discussions with Bank staff indicate that the problems identified in the 1992 sector review continue to exist. These include:

- Narrow institutional cultures within both donor and recipient institutions. This is described by phrases such as “engineering mentality,” “compartmentalization,” and

¹⁰⁸Ibid.:iv.

¹⁰⁹World Bank 1993.

“no integration between technical and management staff.” Increasingly, the need for integration between the technical, economic and financial management disciplines is emphasized.

- A desire on the Bank’s part to “make projects.”
- Poor projection of water demand, leading to projects that are under- or over-sized. This comes about partly because of poor demographic projections.
- Controversy about the income elasticity of demand for water among the poor - which possibly reflects regional differences. Cestti et al (1997) find that elasticity is negative and significant; McPhail (1998) finds that income and dwelling size are the determining factors of water use.
- Adverse incentives and corruption. There is agreement on the importance of incentives: competent managers and staff often leave the public for the private sector.
- Lack of operational autonomy for line agencies. Proper sector policies need to be in place prior to project lending.
- Insufficient donor cooperation and commitment to long-term support.
- Eroding technical competence within the Bank; failure to keep up with global changes.

Overall, there seems to be agreement within the Bank about the importance of institutions, if not on the practical implications of this importance. For example, there is disagreement about the importance of leadership in utilities, as distinct from management. The importance of private sector participation has grown, and there is ambiguity about its implications.

The foregoing underscores the need to focus more closely on institutions. A frequently voiced concern is that institutional issues tend to get “lost.” They are often secondary to physical and financial aspects of project design. Given this, there is value in discarding for the moment our focus on the water sector and water conservation, and looking more closely at institutional development as such to learn lessons about successful policy reform. I will use Nairobi as a case example.

5. INSTITUTION-BUILDING IN NAIROBI

5.1 Background

The Bank has been supporting water supply, sanitation, housing and urban development projects in Nairobi for some 30 years, and recently completed an evaluation of this history, upon which much of the following is based.¹¹⁰ The focus, again, is wide in sectoral scope.

Three Bank-supported water projects have increased the city's water supply capacity and improved the overall reliability and level of service. This is a remarkable achievement in light of the serious shortcomings that existed by the mid-1970s, and the extremely rapid population growth (5 percent per annum) that has prevailed since then: "for the first time the [city] has some breathing room to plan for the future and concentrate on institutional strengthening."¹¹¹ In the same way, two housing projects have facilitated rental housing for about 10 percent of the city's population, which was 1.7 million when the second project ended in 1992. (Nairobi now has more than 2.1 million people.)

The water projects were carried out by the Water and Sanitation Department (WSD), and the housing projects by the Housing Development and Management Department (HDMD). It is useful to compare these two departments, because in the area of policy reform and institutional development, they fared very differently: by 1996 the water department was a strong agency, while the housing department remained weak.

¹¹⁰World Bank 1996.

¹¹¹Ibid.:22.

5.2 Nairobi - the Setting

Nairobi is the capital of Kenya, located on the east coast of Africa. Kenya's 3.6 percent annual population growth rate - one of the highest rates in the world - presents a serious problem for the country's economy, and rapid urbanization has exacerbated its social problems. Most of Nairobi's residents, and most of the newcomers in particular, live in unauthorised rental housing. Large, informal, and technically illegal settlements exist and grow in several areas of Nairobi, including Mathare Valley, Kibera, Kariobangi and Korogocho.

Urban Development

Kenya has historically been committed to market-based policies, resulting in a relative absence of rent and price controls, and making it a favourite of western aid donors. However, urban development projects have typically been subsidized, thereby contributing to market distortions. Land use policies have created a small, high-priced and high-standard market; and a large, uncontrolled and illegal market in which most people operate.

Kenya's urban development policies have encompassed three broad categories, namely *laissez-faire*, *restrictive*, and *supportive* policies.¹¹² Prior to 1970, the government had a *laissez-faire* attitude towards urban development, and directed financial resources to other development sectors. From 1970 until roughly 1995, the government adopted more restrictive policies based on slum clearance and denial of urban services. The focus by aid donors such as the World Bank on self-help building and sites-and-services projects grew out of concern with such policies, which were by no means unique to Kenya.¹¹³

¹¹²Obudho 1992:105.

¹¹³Gilbert & Gugler 1992:136-7.

More recently, the government has moved haltingly towards more supportive policies, and has tried to improve the living conditions of the urban poor, as described below.

Socio-economic Indicators

Life expectancy for the average Kenyan is 54 years, and the literacy rate is 69 percent. The average fertility rate is estimated at 6.06 children per woman, but this rate is decreasing. An increasing number of households in Kenya are headed by women, and many women are the single or major supporter of their household. Women are less educated than men, and in urban areas face difficulties with access to credit, housing, health care and child care, as well as basic amenities such as water and sanitation.

Land-use planning also impacts heavily on the lives of women. Zoning regulations that advocate the separation of residential areas from commercial and industrial areas do not consider the needs of women who often need to maintain more than one role at the same time.

Development and Urbanization

Migration into Nairobi follows a pattern of long-term circular migration, predominantly by men who leave their families in the villages to farm or to protect the family's interests: in Nairobi there are over 1200 males for every 1000 females.¹¹⁴ Among other things, this leads to a preference for rental accommodation with communal facilities, and a desire to incrementally develop owner-occupied housing. It is also significant that Nairobi's residents maintain unusually strong rural-urban linkages.

¹¹⁴Ibid.:76.

Migrants are usually the younger and more educated, those who live relatively close to Nairobi, and those who have connections to the city through relatives and/or friends. One of the "pull factors" of migration is the hope of access to better employment, education and services.

Nairobi's Evolving Governance Structure

The local authority in Nairobi is under the jurisdiction of the Ministry of Local Government, and depends strongly on it for revenues. The city council historically has been hampered in its effectiveness by "internal political and bureaucratic conflicts, as well as by tensions between the City and the central government.... It lurches from crisis to crisis, leaving a trail of sacked officials."¹¹⁵

The fundamental problems of government in Nairobi have been two-fold. First, the council lacked the power to generate revenues commensurate with its responsibilities. Second, it would not address the needs of the vast majority of the population, because it would not recognize informal settlements, nor permit them to be upgraded or even exist in relative security.

Infrastructure and Services

The city is responsible for providing an astonishing range of services, including water supply, sewerage, roads and lighting, drainage, refuse collection, housing, parks, primary education, social halls and playing fields, markets, clinics and cemeteries.¹¹⁶ In this context, the central contradiction of local governance is that the city has increasing responsibilities but

¹¹⁵Lee-Smith & Memon 1988:232-3.

¹¹⁶Bubba & Lamba 1991:47.

decreasing control over revenues.

5.3 The Water and Sanitation Department: Demand Management

Nairobi's water sector in the 1970s and 1980s was characterized by most of the broad elements outlined in Section 2.2 above. Water service was not universal, especially in the slum areas, where the government resisted extending services. Water losses were very high, estimated at 40 percent in 1987. Predictions of water demand based on historical trends proved relatively accurate; however, the ownership status of much of Nairobi's peripheral land was murky, making enumeration and demand prediction difficult.¹¹⁷ Finally, there were many political and institutional problems, which will be discussed below.

Despite all this, reform of the water department over the 1970-1995 period was moderately successful: it was able to expand water service and increase revenues; it reduced leakage, implemented universal metering, and reformed tariffs; and a progressive tariff system was put in place, and tariffs were raised from time to time to keep the utility viable. (The rationale was cost recovery, not water conservation, but even so the financial health achievements were significant.) After the third project, unaccounted-for water was less than 25 percent and falling, allowing deferment of future supply expansions.

Experience with demand management. Expansion of Nairobi's water supply has traditionally been supply-driven; that is, supply has been increased to meet future demands based on past trends. Between 1970 and 1995, the three expansion projects increased the capacity from 80,000 to 540,000 cubic metres per day. However, although the terminology of demand management was not used at the time, some crucial elements of demand

¹¹⁷UNCHS 1987:49.

management, namely tariff reform and leakage reduction, were implemented during the 1985-91 Third Water Supply Engineering Project. Demand management will assume increasing importance in the future for several reasons. First, demand management has substantial financial benefits: the reduction of unaccounted-for water that was realized should save some \$30 million through postponement of future supply expansions.¹¹⁸ Second, the still rapidly growing population makes it imperative to keep per capita consumption under control. Third, by 1995 the Government of Kenya was alluding to possible conflicting demands on Nairobi's main water source, the Chania River: "...Nairobi City was planning a dam at Ndakaini while Thika Municipality, under the same Ministry of Local Government, was also planning a water project based on abstraction from the same river system."¹¹⁹ The following paragraphs briefly describe the reform measures and some of their implications.

Tariff reform. A multi-tier, increasing-block, volume-based tariff structure was introduced in 1978, and, through periodic increases, was sufficient to keep the WSD financially viable, provide an adequate return on assets, and accumulate cash reserves for future expansion.¹²⁰ As noted, this in itself was a major improvement on the pre-existing situation.

Initially the tariffs were raised at regular intervals, in 1982, 1985, and 1987. However, in 1991 the City strongly resisted the further, relatively large increases demanded by the Bank. Although both the tariffs and the increases over time were quite modest in dollar terms (indeed, the overall trend was negative), the increases were very large in local

¹¹⁸World Bank 1996:22.

¹¹⁹Ministry of Land Reclamation, Regional and Water Development 1995.

¹²⁰World Bank 1989:42.

currency terms - up to 135 percent in Kenya Shillings between 1987 and 1993 (when the City eventually complied with the Bank's wishes). Obviously this posed a hardship on consumers, which translated into political resistance.

Leakage reduction. The Engineering Project, which was a feasibility and institution-building program undertaken between the second and third water supply projects, substantially reduced water losses to leakage. Between 1987 and 1994 the level of unaccounted-for water was reduced from 40 to 25 percent; the level should continue to drop, albeit slower as most of the remaining leaks are smaller and harder to find. The per capita demand is projected to keep rising, though again at a slower rate than before 1985; this reinforces the need to further focus on water conservation in the future. Nevertheless, as noted above, the improvements led to potential financial savings, and immediate relief for the existing system. As an incidental benefit, the program also improved the agency's overall monitoring and maintenance skills.

Positive outcomes. It is significant that tariff reform and unaccounted-for water reduction rehabilitation were generally successful, because these are demand management tools that will be important for any future water conservation measures. It is also encouraging that the impetus for unaccounted-for water reduction came from the WSD itself, not the Bank; the program provided positive feedback in the form of improved technical skills.

The Engineering Project had no physical infrastructure component. This allowed the WSD, and the Bank, to focus on management and training issues, which tend to get "lost" during large infrastructure programs. Compare this with the evaluation of the preceding

water supply project: “Limited information exists about the results of the training effort carried out under Water Supply II. Supervision reports are quite silent about the issue...”¹²¹

The Engineering Project produced significant improvements in *measurable* performance indicators: the number of staff per 1000 connections, the rate of staff turnover, the ratio of skilled to lower level workers, the unaccounted-for water ratio, and the financial performance. Doubtless, the evaluations focus on these issues precisely because they are measurable. However, many of the most important agency outcomes are not so easily quantifiable.

Other lessons learned. Cost recovery proved difficult throughout both projects, and eventually the Bank temporarily suspended disbursements in order to press for rate increases.¹²² The high percentage increases in water rates have already been mentioned; this may partly explain why consumer surveys conducted in 1994 showed that most people felt that water supply reliability had decreased over the previous 10 years, even though the opposite was clearly true.¹²³ The WSD, then, needed to deal with perceptions as well as facts. Most likely, financial performance could be improved by broadening the revenue base by recognizing the informal areas of the city and thereby substantially increasing the revenue base. Lastly, senior government agencies often failed to pay their water bills, thereby hurting the utility and raising costs for the other customers.

The results of efforts to improve service to the poor were mixed. The official prices for kiosk-supplied water were low (18 percent of the lowest tariff in 1993), but the actual

¹²¹World Bank 1995:25.

¹²²Ibid.:32.

¹²³World Bank 1996:25.

prices charged were up to 10 times higher than the official rates. And although the distribution system was expanded into previously unserved areas, the proportion of house connections declined substantially over the years, and the number of people relying on water kiosks increased.¹²⁴ Provision of services to the poor, including water and housing, had been hampered since the beginning of Bank assistance by the government's fundamental opposition to recognizing illegal or informal settlements. This was still the case during the second water supply project; although the Bank demanded that the policy be changed, this demand was not enforced nor even included in the loan agreement.¹²⁵ It was also still the case as late as the early 1990s.¹²⁶ However, by 1995, after 25 years of pressure, the city council had changed its policy to "encourage house connections whether the structures be permanent or mudhouses in order to access the poor to water supply."¹²⁷

Finally, the city failed to control rent-seeking by kiosk operators, who as noted charged up to 10 times the allowable rate. The introduction of licensing did not help much, and the WSD was forced to explore new, market-based, approaches. One approach was to allow connections to informal dwellings; another was to encourage community based organizations to operate their own kiosks.¹²⁸

¹²⁴Ibid.:21-23.

¹²⁵World Bank 1995:22.

¹²⁶Laquian 1995.

¹²⁷Nairobi City Council 1995.

¹²⁸World Bank 1996:28.

5.4 The Housing Development and Management Department: Self-Help Housing

The Bank's review concluded that the development of the HDMD over the 1975-1990 period was negligible and its benefits were unsustainable.¹²⁹ The department's first project, for which it was created, was the Dandora sites-and-services project, which provided some 6000 self-help housing plots complete with wet cores (water and sewer connections and plumbing fixtures). The plots were targeted for sale to poorer individuals, and seemingly strict eligibility criteria were imposed to ensure the impartiality of allottee selection. In fact plot allocation could not be adequately controlled, and the majority of plots ended up owned by absentee landlords, who were not the intended beneficiaries of the projects.¹³⁰ Taken in isolation, this first housing project, which was begun in 1975, was a financial success because cost recovery was near 100 percent. In this regard, Lee-Smith and Memon note that "certainly it was the most successful of the first generation of urban projects funded by the World Bank in Africa."¹³¹ In the long run, however, funds from the project were diverted into general revenues for the city. They continue, "the problems of local authority finance were diagnosed early on as being due to inadequate local management capability, lack of a suitable institutional structure, lack of relation between expenditure and revenue collection, and arbitrary central government decisions."¹³² This situation was not rectified by the project; rather it grew worse during the course of the project. Development of institutional capacity was seriously compromised by political and bureaucratic conflicts, as well as by inter-governmental tensions. The project should be viewed in the wider political context,

¹²⁹Ibid.:7.

¹³⁰Ibid.:39.

¹³¹Lee-Smith & Memon 1988:234.

¹³²Ibid.:234.

which deteriorated rapidly during the late 1970s, to the point where the Nairobi City Council was actually dissolved in 1983. The scale of political interference within the Dandora project was doubtless a contributing factor in the dissolution.

Another early goal of the department was to upgrade slums that technically were illegal or squatter settlements. Strong elements within the City and the central government, however, were opposed to this because the slums were considered undesirable and not to be encouraged.

When the first project began, the City Council had no experience with sites-and-services and slum upgrading, and encountered considerable opposition to implementation. The opposition centred around the focus on urban development, and in particular on the urban poor, and on the lowering of building standards to improve affordability. An early consequence was the deletion of a slum-upgrading component from the project, despite strong Bank support for this element; slum upgrading was incorporated into the second housing project but with very limited success.¹³³

5.5 Comparison of the Two Departments

The experiences with the two departments can be analyzed in terms of the given analytical framework. Table 5-1 summarizes a comparison of the two departments using the analytical framework outlined above.

¹³³Ibid.:222.

Table 5-1 The Framework as a Project Checklist

Framework Element	Water and Sanitation Department	Housing Development and Management Department
1. Interest structure	Majoritarian with some interest groups: focus on market structures with some tinkering	Significant market failures create strong clientelist politics: focus on housing market rather than allocation
2. Project goods	Toll good (piped water): retain and expand state-market mix	Mix of private and public goods: try to separate into different agencies
3. Agency type	Craft agency: retain focus on professionalism and performance-based incentives	Procedural agency: focus on professionalism and operator autonomy
4. Autonomy structure	Historically, agency is reasonably autonomous: focus on technical matters and expanding scope of work	New agency: focus on decision-making at appropriate level
5. Constraint structure	Constraints on revenue-generation: focus on cost-recovery	Constraints on revenue-generation: focus on cost-recovery
6. Institutional culture	Single, dominant culture: focus on gradually introducing new initiatives	New department: discourage competing cultures
7. Incentive structure	Retain focus on operator training, and incentives for mid-level technical staff	Focus on professionalism and operator autonomy

1. Interest structure. Interest-group pressures affected both departments, but probably more so the housing department. By their nature, its activities created conflicting interests: new subsidized housing plots benefited renters - but absentee landlords benefited

disproportionately. Furthermore, there were significant distortions in the housing market, as illustrated in the following table.

Table 5-2 Housing Market Distortions

Type of Housing	Building Standards	Rental Costs ^[1]	Profit	Comments
Public	Good	Low K.Sh 300 for house with services	Negative (Subsidized)	Best deal for renters, but no longer built
Sites and Services (Dandora)	Fair to good	Higher K.Sh 400 for room with shared services	High ^[2]	Original plots were cheap, but rents are high
Unauthorized	Very poor	Highest prices (but low expenditures) K.Sh 300 for room with no services	High	Lack of controls allows exploitation by landlords

^[1] From UNCHS 1987.

^[2] Compared to the owner's monthly charges of K.Sh 131 for mortgage, utilities and building loan.

There was a relatively small stock of subsidized housing dating from the 1960s that was not being replenished. At the other end of the scale was illegal housing, which was low cost but high priced, a phenomenon analogous to that of vendor-supplied water. Occupying a middle ground was sites-and-services housing such as Dandora, which was also relatively costly, but of higher standards than illegal housing. Significantly, however, the market rental value of just one room in a typical Dandora house was much higher than the owner's costs, and some absentee landlords rented out up to eight rooms, contrary to the allocation rules.¹³⁴ Ironically the very poor were shut out by the eligibility criteria because it was thought they

¹³⁴UNCHS 1987:72.

could not afford to pay the monthly charges. In the end, the question of benefit allocation was never resolved, because the HDMD was hampered by client politics. A relatively small number of landlords were able to appropriate the housing subsidies to themselves because the allocation process could not be controlled.

The HDMD, then, created non-market housing and therefore an allocation problem. The WSD, by contrast, generally used price as its allocative tool, and thereby allowed the market to work. In this climate of majoritarian politics, no interest groups strongly or continuously resisted the agency's goals, although it was not entirely free of interest pressures. As noted, private water kiosk vendors were able to profit from private trading of toll goods, but again this allocation problem forced the WSD to turn to private sector remedies. Another example of an interest pressure was the opposition to raising water rates.

2. ***The nature of the project goods.*** Piped water is a toll good, and the WSD's mix of market and regulatory or bureaucratic tools was therefore appropriate. The focus was on market mechanisms, particularly tariff reform, but there were non-market mechanisms as well, notably the use of subsidized water sales through kiosk vendors. Significantly, this was one of the less successful project components because of the failure to control prices. There should be plenty of scope to adopt other non-market Demand management tools such as plumbing legislation, regulations, standards, and water-use restrictions.

Housing is a private good, and therefore the market should have played a significant role in allocation. However, the housing was mostly non-market, and as a result the HDMD was saddled with a huge allocation task that it simply did not have the capacity to carry out. If the City had followed the Bank's wishes and relaxed sites and services standards, then a greater fraction of people could have afforded to pay market rates, and this burden could have

been eased.

Furthermore, the HDMD built other things such as roads, sanitation, and clinics, some of which were public or quasi-public goods. These would have required a different state-market policy mix, so that there was no single, appropriate policy thrust for the agency as a whole.

3. *Agency Type.* The central task of the WSD was to provide sufficient water for the city's needs at the lowest cost. The agency's performance with respect to this goal was relatively easy to measure by means of water metering and revenue tracking. The outcomes (results) of the agency's actions therefore were measurable. However, the outputs (actions) of individual operators were not so easily observable, either because their work was technical in nature, or because the workers were in the field. The WSD was therefore a craft agency, and its compliance mechanisms should not rely too heavily on direct supervision of operators; in this regard, the project audits show that there was a strong professional ethic that dated back to colonial times. The WSD also provided good internal incentives, especially after the 1985-91 Third Water Supply Engineering Project, which unlike previous projects specifically focused on capacity-building and manpower development. The project improved working conditions, and the WSD became generally a good place to work; its staff turnover rate was lowered, and it acquired a qualified pool of mid-level staff.¹³⁵

The central task of the housing department was "to provide affordable shelter and related services to the low-income segments of Nairobi's population."¹³⁶ The department was to facilitate - the actual engineering and construction were done by others. The daily

¹³⁵World Bank 1995:15.

¹³⁶World Bank 1996:53.

activities of the HDMD operators, which centred around the processing of housing applications, could therefore be readily observed. The ultimate outcome, however, which was poverty-reduction, could not be immediately measured, but would only be apparent with the passage of time. And even if the project beneficiaries were indeed helped, it was still difficult to show that they were the most needy.

The HDMD is a procedural organization, and therefore its compliance mechanisms should be suitable. Even more so than the WSD, the HDMD's operators should be guided by professional norms, so that they will act in the best interests of their clients even when they are not constrained by performance measures to do so. The available documentation does not address this aspect, but Wilson indicates that professionalism in procedural organizations is rare, probably because most public-sector managers are loth to allow their operators to exercise discretion when the outcome is questionable: "putting the fig leaf of professionalism over the nakedness of unknown outcomes will not fool anybody."¹³⁷

4. ***Autonomy.*** Generally the WSD preserved its autonomy by avoiding tasks that differed significantly from the central tasks, and by avoiding conflict. It backed away from poverty reduction, and avoided slum upgrading.

The HDMD never achieved the required level of autonomy. When it was created in 1975 (as the then Dandora Project Department), it was governed by a commission, which represented local and senior governments, and which was subject to increasingly partisan infighting and interference. The department's mandate was controversial from the beginning; it never had solid political support; it lost out in the competition for funding; and its responsibilities overlapped with those of many existing departments. By the end of the

¹³⁷Wilson 1989:164.

second housing project, the department still faced a number of constraints, lacked autonomy and flexibility, and its development initiatives needed approvals from other levels of government.¹³⁸

Many factors were beyond the department's control. Senior governments imposed over-regulation and unrealistically high standards; this was in addition to scarcity of land and the concomitant high prices caused by rapid urbanization. It is indeed remarkable that despite these constraints, land price increases were dramatically less in the housing projects than elsewhere in the city.¹³⁹

By the 1990s the WSD had comparatively good control over the resources it required for maintenance of the agency, namely funding, personnel, and political support. The HDMD did not. Finally, World Bank support was strong and focused for water, which benefited from specific training programs. Capacity-building was a secondary goal for housing, and really an incidental goal, and worse, support weakened when the department faltered in the 1980s.

5. **Constraints.** A fundamental constraint on all local governments in Kenya is that they lack the power to generate revenues commensurate with their responsibilities. Local authorities depend almost entirely on central government for their finances. Central government approval is required for any increase in the local revenue base, and the central government has, over time, tended to withdraw various local authority revenue sources.¹⁴⁰ For these reasons, local authorities have historically depended on loans or grants for capital

¹³⁸World Bank 1996:53-54.

¹³⁹Ibid.:41.

¹⁴⁰Bubba and Lamba 1991:39.

expenditure, while current revenue is derived from taxes and fees. This weakened the local authorities, who were not free to dispose of revenues; in fact funds from agencies were often diverted to general revenues.

6. *Institutional culture, mission and tasks.* The WSD had a strong engineering tradition with its roots in the pre-1964 colonial administration; indeed, until the 1980s many of its senior technical and management professionals were expatriates. As noted, its mission and tasks were very clear, and it also provided good internal incentives. There appears to have been both a dominant engineering culture, and a sense of mission based on engineering practice. While this was generally positive, the department seems to have been less enthusiastic and successful when it came to taking on tasks that were not informed by this culture, such as poverty-reduction, extension of services into slum areas, and so on.

By contrast, the HDMD did not inherit an institutional culture that favoured low-cost housing, and in fact there was considerable resistance to it. By the time of the second (1978-86) urban project, such a culture was indeed developing indigenously, but by that time Bank concern for policy development had “evaporated.”¹⁴¹ The housing department’s objective, again, was to provide affordable shelter and related services to the poor. Unfortunately it was not obvious on the face of it what it should actually do to achieve this. It could have chosen to develop appropriate building standards, promote community involvement, ease allocation systems, facilitate credit, ensure land tenure, develop new lands, or upgrade slums. In the event it tried all these things, and predictably encountered resistance. Again, despite Bank pressure, there was no consensus in the government that building codes should be relaxed to help the poor, or that anything much should be done to encourage slum settlements. Because

¹⁴¹World Bank 1991:viii.

there were conflicting cultures within the department, many of its tasks, such as the setting of appropriate housing standards, engendered enormous conflict.

7. ***People and Incentives.*** Incentives within the WSD improved its ability to carry out its central tasks. It gave high priority to internal promotions in developing its capacity, and the level of training was the key factor in internal promotion decisions. The training undertaken as part of the Engineering Project improved performance measures in the department as noted above. However, despite the noted reduction in staff turnover rates, incentives for managers and line workers remain problematic; the best people often leave for the private sector.¹⁴²

5.6 Summary

Most of the literature referenced in this chapter, including the Bank's project appraisal reports, are descriptive and anecdotal in nature, and do not consider the institutional aspects of the projects in a theoretical or comparative context. Partly this stems from lack of clear definition of what an institution is. Partly it stems from failure to look at the bureaucracies themselves, and their environments and their constraints, in a systematic manner. While no "theory of institutions" is visible on the horizon, the framework outlined herein provides a useful checklist for policy and project design.

When combined with the existing principles of institutional economics, the framework should be useful not only in analysis, but more importantly also in project design. In this regard, a hypothetical redesign of the projects would use the guidelines in the same conceptual manner as Table 5-1.

¹⁴²Skytta 1998.

6. LESSONS - IMPLICATIONS OF AN INSTITUTIONAL FOCUS

6.1 Summary

This thesis has used institutional analysis to examine important characteristics of public agencies, such as their institutional culture, tasks, constraints, interests, pressures, autonomy, internal incentives, performance measures, and management. First it examined the overall experience of the World Bank with institutional development; then it examined the case of the development of two Bank-supported agencies in the city of Nairobi: one (the water and sanitation department) advanced with reasonable success, while another (the housing department) did not. The following are some conclusions that emerge from both the overall and specific experience.

With hindsight some of the institutional problems, especially in the housing agency, could have been predicted. With foresight similar problems can be predicted for future institutional development initiatives if the World Bank and recipient governments do not learn from the past. Institutional development is complex, takes time, and is hard to measure. The following paragraphs set out the lessons derived from the foregoing chapters.

6.2 Water Demand Management (Task No. 1)

The need for demand management is driven by hydrologic and economic imperatives. Sustainable development demands the collection of adequate tariffs for water, in order to ensure the financial viability of suppliers, and to ration scarce resources. Notwithstanding some real success stories, some of which are described in Chapter 2, the treatment of water as an economic resource is still the exception rather than the rule. Tariff reform and unaccounted-for water reduction are practical measures that are consistent with the

institutional culture of utilities - but other measures such as enforcement and educational campaigns need to be considered.

Market-based instruments should be used where possible. This may lead to political resistance if prices become too high, as in Nairobi, but it promotes institutional independence (autonomy), facilitates expansion, and minimizes allocation problems. Interest-group pressures can be minimized by balancing benefits and cost burdens; and by utilizing private sector participation where appropriate. Institutional economic analysis identifies a “status quo bias;” changing the status quo can upset vested, and sometimes powerful, interests.

The World Bank’s 1993 policy paper advocates efficiency in water supply, which would involve the private sector, non-governmental organizations, and user groups, as well as cost recovery and equity.¹⁴³ Although this thesis could not do so, the Bank should undertake a comprehensive review of the success of post-1993 urban water projects relative to these goals.

6.3 Institutional Development (Task No. 2)

The World Bank’s new institutional economics approach enriches the old neoclassical approaches by making institutions endogenous. But while it specifies the goals of public policy reform, it does not explain exactly how executives, managers, and line workers are to achieve them, or why they would want to. A weakness of the Bank’s approach is that, while it sets out performance goals for public agencies, it does not consider in sufficient detail the compatibility of the agencies and the goals. This compatibility must be found by looking at the structure of the public bureaucracies themselves, and in this regard an analysis framework was developed which takes the bureaucracy itself as the unit of analysis. Table 6-1

¹⁴³World Bank 1993:12.

summarizes this framework, its theoretical origins, and its practical applications.

Table 6-1 Summary of Analysis Framework and Practical Applications

Framework Element	Theoretical Origin	Example of Practical Application
1. Interest structure	Pluralist theory	Avoid creating or opposing powerful interest groups
2. Project goods	Institutional economics	Determine the appropriate market/non-market policy mix
3. Agency type	Principal-agent theory	Determine the appropriate internal compliance mechanisms
4. Autonomy structure	Organizational theory	Select appropriate agency tasks
5. Constraint structure	Organizational theory	Determine appropriate management structures
6. Institutional culture	Organizational (Weberian) sociology	Estimate level of internal support for new agency tasks
7. Incentive structure	Institutional economics and sociology	Improve performance and reduce corruption

6.4 The World Bank's Experience with Water Sector Reform (Task No. 3)

Agencies often have trouble with radical changes to their mission - by extension this would be generally true of a move to full-economic pricing of water. However, demand management measures such as leakage reduction and tariff reform are practical things that can be (and have been) done to improve agency capacity, increase revenues, and extend

service in some urban areas, particularly in the developing world. In this regard, Israel (1987) advises that in many cases small, practical steps should be taken, rather than succumbing to “the sin of comprehensiveness.”¹⁴⁴

Long-term, complex goals such as building capacity and reducing poverty are much harder to achieve than more technical ones such as improving financial viability or providing infrastructure. These points together imply the need for longer time frames (often decades) than the development agencies have been used to; and the need for long-term support. Other points include the need to create appropriate (market) incentives, the need for operational autonomy for line agencies, and the need for an enabling policy environment.

The World Bank under Jim Wolfensohn has turned its attention to the reform of governance systems in recipient countries. In this macro-institutional framework, “institutional capacity” is a primary determinant of economic and social performance, and it comprises the state, market, and voluntary institutions.¹⁴⁵ From this perspective, projects can add to or deplete a country’s institutional capacity. This belief in appropriate roles for the state sector explains why development assistance now addresses governance issues in their own right.

The institutional analysis of the Nairobi projects illustrates the need to understand the initial conditions, and to be clear about what institutional reform is. It also demonstrates the need for long-term commitments that are not limited by “project” incrementality: “By and large, the Bank is still judging its aggregate effectiveness one operation at a time. This is useful but it is not enough.... Management has yet to put in place adequate systems to

¹⁴⁴Israel 1987:199.

¹⁴⁵Picciotto 1997a:356.

evaluate objectively and comprehensively its research, advisory and fiduciary services.”¹⁴⁶

An institutional economic viewpoint helps to determine the proper balance between the state, market, and voluntary sectors. Klitgaard (1991) calls this "adjusting to reality." However, there appear to be several problems with the new institutional economic approach in practice, that is, in development projects. First, a concern with institutions implies acceptance of the evolutionary nature of institutional change, and acceptance of much longer time frames than international financial institutions historically have dealt with. The traditional approach is characterized by impatience or (to use Thomas Callaghy's term) "analytic hurry."¹⁴⁷ Arturo Israel (1987) notes that "the development process for most countries will continue to be a slow, painstaking process, perhaps slower and more painstaking than is generally acknowledged."¹⁴⁸ Second, Callaghy (1994) stresses that an analytic attack that includes new institutionalist, historical and political economy viewpoints has sobering lessons about the approaches to institutional development favoured by the aid agencies and development banks: "change is slow, incremental, uneven, often contradictory from a given analytic point of view, and dependent on the outcome of unpredictable socioeconomic and political struggles."¹⁴⁹ Finally, institutional analysis, at least as conceived by the World Bank, has been hampered by confusion about institutions, institutionalization, and organizations.

The foregoing institutional analysis of the Nairobi experience, as well as the World Bank's own evaluations, has highlighted a number of lessons for policy-making, institutional

¹⁴⁶Picciotto 1997b:7.

¹⁴⁷Callaghy 1994.

¹⁴⁸Israel 1987: 200.

¹⁴⁹Callaghy 1994:211.

development and project design.

1. The need for an enabling environment. A lesson strongly reinforced by the study is the need for an enabling policy environment. The World Bank agrees, but often fails to support policy reform if it is concurrent with investment (construction) lending - as in the case of water supply to informal housing in Nairobi. The Bank has been reluctant to criticize borrower nations in this regard (though this may be changing): "Bank staff are reluctant to openly criticize political systems in a country and the political management of the sector. Therefore, many of the [project appraisals] hint, rather than openly confirm, that many of the problems of failure to deliver projects as designed lie at this level."¹⁵⁰ Because of this, sector reform programs could usefully be completed before extensive investment lending - a conclusion reached by the World Bank's 1992 sector review.¹⁵¹

An agency cannot create change if it is not supported. And it cannot help the poor if the informal settlements where they live are not recognized as having the right to exist. In order to reduce interest pressure and increase autonomy, the agency must operate in an enabling policy environment which is consistent with the agency's goals. This was not the case in Nairobi. Fundamentally the city government did not recognize the informal (illegal) sector, and did not want to extend services to squatter areas, for fear of legitimating them.¹⁵²

Another fundamental problem was that the city government lacked financial resources and control over finances. It did not have authority commensurate with responsibilities, and the city could benefit from becoming more autonomous from the central government in this

¹⁵⁰World Bank 1992b:39.

¹⁵¹Ibid.:vi.

¹⁵²Laquian 1995.

regard.

Experience shows that when institutional development is included as merely a component of a larger physical project, it tends to receive lower priority. (One can contrast the cases of Nairobi and Lilongwe to illustrate this point. In Nairobi, the Bank's experience with institution-building spans 30 years - but only the most recently completed project, the Third Water Supply Engineering Project, was successful in this regard. The previous water supply and urban development projects had institutional development components, but they became somewhat neglected. Sustainable capacity-building did not occur until the Engineering project, which was implemented *specifically* to strengthen the WSD's management.¹⁵³ Thus, capacity-building was done after, or at best concurrently with, investment lending. In Lilongwe, by contrast, a specific capacity-building program *preceded* investment lending, and both were successful.¹⁵⁴)

2. *The need for new performance measures.* Performance measures are crucial to project evaluation, and to the improvement of future designs through feedback.¹⁵⁵ The World Bank's approach to institutional development often focuses on the most easily quantifiable performance measures, such as technical training and operations, personnel, and financial management. What the World Bank calls institution-building is what Leonard (1987) refers to as "bureaucratic hygiene."¹⁵⁶ There is relatively less focus on management-level issues (constraints and incentives) and even less on executive-level issues (autonomy, interests and

¹⁵³World Bank 1996:15, 51.

¹⁵⁴Skytta 1998.

¹⁵⁵Klitgaard 1991:85-9.

¹⁵⁶Leonard 1987:907.

institutional culture). When considering the factors that make an agency successful, the hierarchy of importance begins with the policy environment, is followed by leadership, then internal management, and ends with bureaucratic hygiene - which is the reverse of the order in which these are often considered in project evaluation reports.¹⁵⁷ Because institutional development takes longer and is more difficult to measure than physical works, the former must be clearly differentiated in the project design, with its own schedule, milestones and performance measures.

Leadership as such is rarely discussed in project appraisals, although “high turnover of key staff” is a frequent complaint. This lack of discussion is a result of the difficulty of measuring leadership, except by proxy measures, and the highly personal and sensitive nature of leadership. It should be noted, though, that Bank staff are aware of the issues, although they often are not put in writing.

3. ***The need for a broader conception of institutions.*** A detailed understanding of bureaucracies is required. History shows that too often, inappropriate tasks are foisted on agencies. When designing new programs, planners need to consider whether to establish new agencies or work with existing ones. Existing ones, like the WSD at the beginning of Nairobi’s water supply expansion, may not have institutional cultures attuned to the needs of the new tasks. New ones, like the HDMD at the beginning of Nairobi’s sites-and-services expansion, may lack the required autonomy and support. Working with existing institutions and existing norms and conventions, and not against the institutional grain, can be more successful, depending on circumstances. New agencies and departments must be autonomous: should not overlap with existing agencies or conflict with government policies,

¹⁵⁷Ibid.:900.

stated or unstated.

Arturo Israel observes that “in a sample of the new-style projects three-quarters of them had more than one implementing agency, and one-third of them more than four.”¹⁵⁸ At best, such an institutional structure imposes a burden of coordination among the various agencies; this burden becomes more onerous if the agencies are located at different hierarchical levels - for example when a municipal agency must coordinate with a central government ministry.¹⁵⁹

There is a strong case for adapting existing, proven agencies for implementing new projects: “Good progress in institutional development took place mainly in institutions or activities which already had a relatively high standard of performance.”¹⁶⁰ However, experience also demonstrates the need to avoid radically new tasks.

Finally, the potential for private sector participation as part of the policy mix should be considered; this is discussed below.

6.5 Institution-Building in Nairobi (Task No. 3)

The two agencies in Nairobi were examined using the analytical framework developed in Chapter 3. This framework proved to be a powerful tool, and helps to explain in a systematic way the differences in the performance of the two agencies. Moreover, the framework can be used for designing future policies and projects. Some of the generalizable lessons are summarized as follows.

¹⁵⁸Israel 1987:194.

¹⁵⁹Ibid.:196.

¹⁶⁰Ibid.:20.

1. ***Consider the prevailing interest-group politics.*** Creating or harming powerful interests will affect project success. This requires careful consideration of the economic and socio-political circumstances, and it requires consideration about how costs and benefits are distributed. Finally, the absence of interest-group pressure does not imply that a situation is optimal with respect to all interests, particularly the interests of the poor.

2. ***Let the nature of the project goods determine the appropriate policy mix.*** In particular, it is difficult for an agency to deliver two or more radically different types of project goods, such as public and private goods.

3. ***Let the nature of the agency determine the internal compliance mechanisms.*** Bureaucracies may be production, procedural, craft, or coping organizations, depending on whether the outputs and outcomes are observable. This in turn determines the types of internal compliance and incentive structures likely to be successful.

4. ***Maximize agency autonomy.*** This means providing the required funding, personnel, and political support. Determine whether to work within existing institutions, or create new ones. As a guide, agencies maximize autonomy (i) by seeking out tasks that are not being done by others (and resisting organizations that seek to perform the same tasks), (ii) by avoiding tasks that differ significantly from the central tasks; and (iii) by avoiding actions that produce divided or hostile constituencies.

5. ***Let constraints guide the design of the management structure.*** Allow managers to provide internal incentives to promote staff retention and productivity. Similarly, consider

the situation-specific constraints on management. In Nairobi managers were constrained by political realities that included strong rural-urban links, extended networks of obligations, and the need to provide patronage.

6. *Let the institutional culture guide the assignment of agency tasks.* Tasks need to be clear: the tasks assigned to the fledgling HDMD may have been too complex; they were new and controversial; and they overlapped with those of existing agencies. It may have been better to phase in reforms via subprojects, rather than trying to do everything at once; that is, avoiding “the sin of comprehensiveness.”¹⁶¹

The WSD was successful in lowering unaccounted-for water and reforming tariffs - because those tasks were consistent with its existing mission, and with good utility management generally. One key to success, then, is to take advantage of existing strengths.¹⁶² On the other hand, water conservation is not so radical as other movements in the development field, like self-help housing. Again, many demand management tools are part of good management generally - although there are a number of water conservation measures that have not yet been tried to any great extent in developing countries.

7. *Provide incentives for managers and line operators.* The World Bank’s experience suggests that “distortions in wages and salaries are probably among the most costly obstacles to institutional performance.”¹⁶³ Further, “it is no exaggeration in many developing countries

¹⁶¹Ibid.:199.

¹⁶²Ibid.:199.

¹⁶³Ibid.:126.

to speak of a crisis in public sector incentives.”¹⁶⁴ Despite this, the performance evaluations are virtually silent about staff wages, benefits, and incentives. This negative finding points to a need for more specific focus on this topic.

8. Commit to the long term. Finally, institutional development requires a long-term commitment, especially when World Bank goals are at odds with borrower goals. In the case of the WSD, certain goals took 25 years to achieve; in the case of the HDMD, the weakening of support led to failure. Second and subsequent projects tend to do much better than early ones, as was well illustrated in the case of the Nairobi water supply projects.¹⁶⁵ Israel notes that “institutional development is a slow process; it certainly takes longer than for the implementation of a more traditional investment. For this reason, the most successful attempts have been those in which the Bank has promoted, and the country has accepted, institutional development over long periods, usually several decades, in the course of several investment projects.”¹⁶⁶

6.6 Refinement of the Analytical Framework and Further Work (Task No. 4)

Although this thesis is concerned with public bureaucracies, the framework could be extended and revised for use in analyzing various types of private enterprises, non-governmental organizations, and community-based organizations. Private enterprises can overcome many of the problems of public ones, but they need to operate in a policy environment that includes clear property rights and enforceable contracts - private firms are

¹⁶⁴Klitgaard 1991:91.

¹⁶⁵World Bank 1995:16.

¹⁶⁶Israel 1987:19.

regulated by government agencies, and government agencies may also be their biggest customers. Thus private sector participation needs to be carefully managed to incorporate proper incentives, such as water conservation and service to the poor. Again institutional analysis can help.

The institutional analysis of the World Bank's experience in general, and the Nairobi experience in particular, points to the potential role of private sector participation in urban service provision. Private enterprises have significant advantages arising out of their ability to provide clear objectives, concise performance measures, effective production technologies, strong motivation, and clear lines of authority.¹⁶⁷ For these reasons, an increasingly common practice over the past dozen years is to contract private firms to operate public utilities.

A complete discussion of private sector participation is beyond the scope of this thesis. However, institutional analysis reveals some caveats with respect to the private sector. An understanding of public institutions becomes if anything more important, because the role of the public sector changes as water development is privatized, for a number of reasons: "First, major decisions must be made about which planning, regulatory, and operational functions to retain during privatization. Second, institutional reforms are often needed to facilitate private sector management, such as establishing ownership rights to water resources that encourage their efficient development and exchange. Third...major institutional restructuring is often required before privatization can occur.... Last, the private sector is generally less directly concerned with equity and environmental matters, and the public must depend on the sector to respect pre-existing public policy frameworks."¹⁶⁸

¹⁶⁷Klitgaard 1991:87-88.

¹⁶⁸Guggenheim 1992:22.

Private firms have no direct incentive to achieve social goals such as extension of services to the poor. And certainly they have no incentives to “manage” demand for the commodity that they are selling, namely water, in the absence of financial incentives to achieve such objectives. Given complete freedom, private firms can import their own corporate cultures, and structure their own incentives. The rub is that they do not have complete freedom. Often many or most of the pre-existing public employees have to be retained, because mass layoffs are not likely to be tolerated.

Closure

From the Bank's viewpoint, the water sector is getting more complex as new objectives emerge. A conclusion of an internal Bank review of its water and sanitation projects was the need for more broadly skilled task managers.¹⁶⁹ This thesis points to the need for technical experts who also are conversant with development history, economics, public administration, and the private sector.

¹⁶⁹World Bank 1997:v.

LIST OF ABBREVIATIONS

CBO	Community-Based Organization
DM	Demand Management
HDMD	Housing Development and Management Department
NGO	Non-Governmental Organization
PSP	Private Sector Participation
UFW	Unaccounted-for Water
WSD	Water and Sanitation Department

BIBLIOGRAPHY

- Arlosoroff, Saul, 1993, "Water Demand Management in a Global Context: A View from the World Bank," in D. Shrubsole and D. Tate, eds, *Every Drop Counts, Proceedings of Canada's First National Conference and Trade Show on Water Conservation, Winnipeg, Manitoba*, Cambridge, Ont.: Canadian Water Resources Association, pp. 23-8. (ISBN 0-9694535-6-6)
- Bahl, R.W., and J.F. Linn, 1992, *Urban Public Finance in Developing Countries*, New York: Oxford Univ. Press, 552 pp. (ISBN 0-19-520805-6)
- Bhatia, Ramesh; Rita Cestti and James Winpenny, 1995, *Water Conservation and Reallocation: Best Practice Cases in Improving Economic Efficiency and Environmental Quality*, Washington DC: World Bank. 102 pp.
- Bhatia, Ramesh; Peter Rogers, John Briscoe, Basawan Sinha and Rita Cestti, 1994, *Water Conservation and Pollution Control in Indian Industries: How to Use Water Tariffs, Pollution Charges, and Fiscal Incentives*, Washington DC: World Bank. 24 pp.
- Bubba, Ndinda; and Davinder Lamba, 1991, "Urban Management in Kenya," *Environment and Urbanization*, 3(1), April, pp. 37-59.
- Burke, W.W., 1993, *Organization Development*, Addison-Wesley.
- Callaghy, Thomas M., 1994, "State, Choice, and Context: Comparative Reflections on Reform and Intractability," pp. 184-219 in David E. Apter and Carl C. Rosberg, eds, *Political Development and the New Realism in Sub-Saharan Africa*, Charlottesville and London: Univ. of Virginia Press.
- Cestti, Rita; Guillermo Yepes and Augusta Dianderas, 1997, *Managing Water Demand By Urban Water Utilities (A Review of the Literature)*, Washington DC: World Bank.
- Cestti, Rita; Guillermo Yepes and Augusta Dianderas, 1996, *Managing Water Demand By Urban Water Utilities*, Washington DC: World Bank.
- Clague, Christopher (ed), 1997, *Institutions and Economic Development - Growth and Governance in Less-Developed and Post-Socialist Countries*, Baltimore: Johns Hopkins Univ. Press.
- Commission on Global Governance, 1995, *Our Global Neighbourhood*, Oxford Univ. Press.
- Crane, Randall, 1994, "Water Markets, Market Reform and the Urban Poor: Results from Jakarta, Indonesia," *World Development*, 22(1):71-83.
- Ebrahimi, Farah, 1996, *From Rationing to Full Service: Water and Sanitation Challenge for Bombay*, OED Precis, No. 128, World Bank Operations Evaluation Department.

- Gilbert, Alan; and Josef Gugler, 1992, *Cities, Poverty and Development - Urbanization in the Third World*, New York: Oxford Univ. Press.
- Guggenheim, Scott, 1992, "Institutional Arrangements for Water Resources Development," pp. 21-24 in Guy Le Moigne, Shawki Barghouti, Gershon Feder, Lisa Garbus and Mei Xie, eds, *Country Experience with Water Resources Management - Economic, Institutional, Technological and Environmental Issues*, Washington DC: The World Bank.
- Howlett, M.; and M. Ramesh, 1995, *Studying Public Policy: Policy Cycles and Policy Subsystems*, Oxford Univ. Press.
- Hage, Jerald; and Kurt Finsterbusch, 1987, *Organizational Change as a Development Strategy: Models & Tactics for Improving Third World Organizations*, London: Lynne Rienner.
- Israel, Arturo, 1987, *Institutional Development - Incentives to Performance*, Baltimore: Johns Hopkins Univ. Press, 214 pp.
- Jepperson, R.L., 1991, "Institutions, Institutional Effects, and Institutionalism," in Powell, W.W.; and P.J. DiMaggio (eds), 1991, *The New Institutionalism in Organizational Analysis*, Univ. of Chicago Press.
- Kelman, Steven, 1990, "Cost-Benefit Analysis: An Ethical Critique," in T.S. Glickman & M. Gough (eds), *Readings in Risk*, Washington DC: Resources for the Future.
- Kerr Wood Leidal Associates Ltd., 1997, *Manual of Procedures for Water System Leak Detection Programs for Small Communities, and Case Studies*, Vancouver: Kerr Wood Leidal Associates Ltd.
- Kinnersley, David, 1988, *Troubled Water - Rivers, Politics and Pollution*, London: Hilary Shipman.
- Klitgaard, Robert, 1991, *Adjusting to Reality - Beyond "State Versus Market" in Economic Development*, San Francisco: ICS Press.
- Kraisoraphong, Keokam, 1995, *Evolving Water Policy in the Bangkok Metropolitan Region*, Ph.D. Thesis, Vancouver: Univ. of British Columbia. 326 pp.
- Laquian, Aprodicio, Director, Centre for Human Settlements, U.B.C, 1995, personal communication.
- Lee-Smith, D.; and P.A. Memon (1988), "Institutional Development for Delivery of Low-Income Housing -- An Evaluation of the Dandora Community Development Project in Nairobi", *Third World Planning Review*, 10(3):217-238.

- Lofchie, 1994, "The New Political Economy of Africa," pp. 145-183 in David E. Apter and Carl C. Rosberg, eds, *Political Development and the New Realism in Sub-Saharan Africa*, Charlottesville and London: Univ. of Virginia Press.
- Leonard, D.K., 1987, "The Political Realities of African Management," *World Development*, 15(7):899-910.
- Livingston, Marie Leigh, 1993, "Normative and Positive Aspects of Institutional Economics: The Implications for Water Policy," *Water Resources Research*, 29(4):815-21.
- McPhail, Alexander, Senior Economist, World Bank, 1998, personal communication.
- McPhail, Alexander, 1994, "Why Don't Households Connect to the Piped Water System? Observations from Tunis, Tunisia," *Land Economics*, 70(2):189-96.
- Ministry of Land Reclamation, Regional and Water Development (Kenya), 1995, memo to the World Bank dated May 12 (Attachment II to World Bank, 1995).
- Myrdal, Gunnar, 1978, "Institutional Economics," *Journal of Economic Issues*, 21:1001-38.
- Nairobi City Council, 1995, memo to the World Bank dated May 17 (Attachment I to World Bank, 1995).
- National Research Council, Academia Nacional de la Investigacion Cientifica AC, and Academia Nacional de Ingenieria AC, 1995, *Mexico City's Water Supply: The Outlook for Sustainability*, Washington DC: National Academy Press, 107 pp.
- National Water & Sewerage Corporation (Uganda), undated (c1991), *Strategy for Improvement of Billing and Collection Efficiency of NWSC*, Uganda: National Water & Sewerage Corporation, 10 pp.
- Obudho, Robert A., 1992, "Urban and Rural Settlements in Kenya," *Regional Development Dialogue*, 13(4), Winter, pp. 86-111.
- Panayotou, Theodore, 1993, *Green Markets: The Economics of Sustainable Development*, San Francisco: ICS Press, 170 pp.
- Picciotto, Robert, 1997a, "Putting Institutional Economics to Work: From Participation to Governance," in Clague, Christopher (ed), *Institutions and Economic Development - Growth and Governance in Less-Developed and Post-Socialist Countries*, Baltimore: Johns Hopkins Univ. Press.
- Picciotto, Robert, 1997b, *Change at the World Bank*, Washington DC: The 1818 Society.
- Postel, Sandra, 1996, *Dividing the Waters: Food Security, Ecosystem Health, and the New Politics of Scarcity*, Washington DC: Worldwatch Institute, 76 pp.

- Powell, W.W.; and P.J. DiMaggio (eds), 1991, *The New Institutionalism in Organizational Analysis*, Univ. of Chicago Press.
- Pugh, Cedric, 1994, "Housing Policy Development in Developing Countries - The World Bank and Internationalization, 1972-93," *Cities*, (11)3, August, pp. 159-180.
- Saunders, R., 1996, "Zimbabwe: ESAP's Fables," *Southern Africa Report*, 11(2), January, pp. 8-11.
- Serageldin, Ismail, 1994, *Water Supply, Sanitation, and Environmental Sustainability: The Financing Challenge*, Washington DC: The World Bank, 35 pp. (ISBN 0-8213-3022-5)
- Skytta, Tauno, Principal Evaluation Officer, Operations Evaluation Department, World Bank, 1998, personal communication.
- Söderbaum, Peter, 1990, "Neoclassical and Institutional Approaches to Environmental Economics," *Journal of Economic Issues*, XXIV(2):481-492.
- Stein, Howard, 1994, "Theories of Institutions and Economic Reform in Africa," *World Development*, 22(12):1833-49.
- Thobani, Mateen, 1995, *Tradable Property Rights to Water*, Washington DC: World Bank Technical Dept., Latin America and the Caribbean Region. (on line.)
- UNCHS, 1987, *Case Study of Sites and Services Schemes in Kenya - Lessons from Dandora and Thika*, Nairobi: UNCHS.
- Wilson, James Q., 1989, *Bureaucracy: What Governments Do and Why They Do It*, BasicBooks, 433 pp. (ISBN 0-465-00785-6).
- World Bank, 1997, *Portfolio Improvement Program - Review of the Water and Sanitation Portfolio*, Washington, DC: The World Bank Transportation, Water & Urban Development Department.
- World Bank, 1996, *Kenya, Impact Evaluation Report, Development of Housing, Water Supply and Sanitation in Nairobi (Report No. 15586)*, Washington, DC: The World Bank Operations Evaluation Department.
- World Bank, 1995, *Performance Audit Report, Kenya, Second Nairobi Water Supply Project and Nairobi Third Water Supply Engineering Project (Report No. 14797)*, Washington, DC: The World Bank Operations Evaluation Department.
- World Bank, 1993, *Water Resources Management - A World Bank Policy Paper*, Washington DC: The World Bank, 140 pp. (ISBN 0-8213-2636-8)
- World Bank, 1992a, *Housing: Enabling Markets to Work*, Washington DC: World Bank.

- World Bank, 1992b, *Water Supply and Sanitation Projects: The Bank's Experience - 1967-1989 (Report No. 10789-GLB)*, Washington DC: World Bank Operations Evaluation Department. (Widely known as the Buky Report.)
- World Bank, 1991, *Project Performance Audit Report, Kenya, Second Urban Project (Report No. 9730)*, Washington, DC: The World Bank Operations Evaluation Department.
- World Bank, 1989, *Staff Appraisal Report, Kenya, Third Nairobi Water Supply Engineering Project (Report No. 7500-KE)*, Washington, DC: The World Bank Infrastructure Operations Division, Eastern Africa Department.
- World Bank, 1981, *Accelerated Development in Sub-Saharan Africa: An Agenda for Action*, Washington, DC: The World Bank. (Widely known as the Berg Report.)
- World Water and Environmental Engineering, 1998, *What Price Water?*, 20(10):3.
- Yepes, Guillermo, 1995, *Reduction of Unaccounted for Water - The job can be done!* Washington DC: The World Bank, 13 pp.