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Causes of Poor Performance in World Bank Water and Sanitation Projects

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Causes of Poor Performance in World Bank Water and Sanitation Projects

by

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Causes of Poor Performance in World Bank Water and Sanitation Projects

Thesis directed by Department Chair, Keith R. Molenaar

Poor performance affects one in three water and sanitation projects financed by the World Bank. The causes of poor performance in terms of cost, schedule, achievement of objectives, institutional development impact, and sustainability are not well understood. This research evaluates these five measure of performance separately and identifies factors of poor performance, rather than success factors, in order to find common weaknesses in the design and implementation of water and sanitation development projects. This research identifies the causes of poor performance and their frequencies using a multi-method analysis that includes a content analysis of post implementation project reports from the World Bank's Independent Evaluation Group and interviews with a panel of World Bank task managers. This research finds that most projects in the study population were over schedule and under cost, and a small portion of projects performed poorly in terms of objectives, institutional development, and sustainability. Multiple root causes of poor performance were identified for each measure. Insufficient institutional development is found to be one of the major determinants of project performance. Inadequate revenue, poor organization, and overly optimistic goals are other major causes of poor performance in efficacy and sustainability. The findings from this research provide a list of challenges that practitioners can plan for and mitigate in order to improve project efficacy.

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Introduction

1.1 Observed Problem

Over 2 billion people gained access to improved water sources between 1990 and 2010 and 1.8 billion gained access to improved sanitation [28]. However, even if current trends continue, 605 million people will be without improved access to drinking water and 2.4 billion will lack access to improved sanitation in 2015. Much of Sub-Saharan Africa is not on track to meet the Millennium Development Goals for access to improved drinking water and sanitation.

The amount of money dedicated to international development and aid is growing each year but it is unclear how much of a lasting positive impact it has on developing economies and societies [13, 25]. According to the UNDP, official development assistance spending is not enough to address the existing water and sanitation needs or to meet the Millennium Development Goals [27].

While there is an inadequate quantity of support for international development, there is also a problem associated with quality of aid and assistance. International development projects have a high rate of failure. Until 2000, 50% of World Bank projects in Africa were considered unsuccessful as measured by the Bank's overall project rating. The Independent Evaluation Group (IEG) of the World Bank estimates that 39% of all World Bank projects were unsuccessful in 2010 as measured by the IEG's overall rating [9]. Between 1997 and 2007 a review of World Bank water and sanitation projects found that 33% of projects were unsuccessful using the same criteria for evaluation [16].

It can be inferred from the poor rate of project success that a better understanding of the causes of poor performance in these types of projects is required. International development

projects are complex and the traditional understanding of performance and project management is not adequate to understand them. Researchers are only beginning to investigate the complexities of success in international development projects [2, 11, 12, 17, 21, 22].

1.2 Research Question and Method

What are the causes of poor performance in international development projects? To explore this question this research focuses on the performance of World Bank projects in the sector of water and sanitation.

The unit of analysis for this research is individual World Bank projects. The unit of observation is the experience of the project task manager regarding project performance. In seeking the root causes of poor performance we define good project performance, measure performance in a sample of projects, and identify the leading causes of poor performance in this context. Project success is well defined in the literature for international development projects [1, 11, 18, 22]. We gather information on the experience of project task managers regarding project performance through post implementation reports from the World Bank and the IEG and interviews with a panel of World Bank task managers. Figure 1.1 outlines the approach of this research. Following a literature review, a content analysis of World Bank and IEG reports is conducted to identify causes of poor performance. Interviews are then used to validate the findings from the content analysis.

Figure 1.1: Research Approach

After the completion of each World Bank project the task manager produces an implementation report providing an account of their experiences that is presented in a consistent format between projects and provides a perspective that is unhindered by response bias and memory loss. The IEG also produces implementation reports following a review of a completed World Bank

project. Content analysis of these reports provides a preliminary list of causes associated with different outcomes of project performance. A panel of experts is selected from a pool of retired World Bank task managers who have worked on water and sanitation projects. This panel verifies the causality between identified root causes and poor performance. Interviews with these experts are utilized to come to an agreement on the relative frequency of these root causes and their causal pathways. With this analysis we are able to identify the root causes of different measures of poor performance and comment on their frequency in water and sanitation projects.

1.3 Thesis Format

This research is presented in three chapters with a stand-alone journal paper presented in Chapter 2. The introduction and conclusion chapters provide context for the paper and comments on the entire research process, not just the findings. This introduction describes the motivation for and outline of the research approach. The conclusion summarizes the theoretical and practical contributions from this research, some of the limitations encountered, and the implications for future research.

Chapter 2

Causes of Poor Performance in World Bank Water and Sanitation Projects

2.1 Abstract

Poor performance affects one in three water and sanitation projects financed by the World Bank. The causes of poor performance in terms of cost, schedule, achievement of objectives, institutional development impact, and sustainability are not well understood. This research evaluates these five measure of performance separately and identifies factors of poor performance, rather than success factors, in order to find common weaknesses in the design and implementation of water and sanitation development projects. This research identifies the causes of poor performance and their frequencies using a multi-method analysis that includes a content analysis of post implementation project reports from the World Bank's Independent Evaluation Group and interviews with a panel of World Bank task managers. This research finds that most projects in the study population were over schedule and under cost, and a small portion of projects performed poorly in terms of objectives, institutional development, and sustainability. Multiple root causes of poor performance were identified for each measure. Insufficient institutional development is found to be one of the major determinants of project performance. Inadequate revenue, poor organization, and overly optimistic goals are other major causes of poor performance in efficacy and sustainability. The findings from this research provide a list of challenges that practitioners can plan for and mitigate in order to improve project efficacy.

2.2 Keywords

project performance; international development projects; critical success factors; world bank; fail factors; risk factors; water and sanitation

2.3 Introduction

Over 2 billion people gained access to improved drinking water sources between 1990 and 2010 and 1.8 billion gained access to improved sanitation. However, even if the trends in improved access continue, 605 million people will be without access to safe drinking water and 2.4 billion will still lack access to improved sanitation in 2015 [28]. Development assistance has been steadily increasing since the 1990s and a total of US$166.8 billion in official development assistance (ODA) was provided in 2010, one of the highest annual commitments measured in constant dollars [25]. Despite the growth, this bilateral and multilateral support is not enough to meet current development needs or to reach the Millennium Development Goals, especially those to increase access to improved water and sanitation [27, 28].

Official development finance takes the form of grants, loans, and technical assistance and is mostly allocated to development projects [25, 27]. These projects are investments in fundamental social and physical infrastructure and economic stimulating activities. Therefore, understanding and improving project performance is of paramount importance to maximize the effectiveness of funding and assistance.

International development projects are significantly different from traditional domestic projects in terms of the managerial and political environment [2, 11]. They feature complex goals and must satisfy multiple stakeholders. These projects are often not driven by profit motivations and typically incorporate software programs alongside hardware development [2]. Additionally projects feature complex managerial organization where the implementation country, the lending or funding organization, and beneficiaries all play a important leadership roles.

Implementing international development projects poses a mixtures of challenges that are not

frequently addressed in the traditional project management body of knowledge. This is particularly observed in projects financed by multilateral development banks such as the World Bank [11,16,18]. Until 2000, 50% of World Bank projects in Africa were considered unsuccessful and the Independent Evaluation Group (IEG) estimates that 39% of all World Bank projects were unsuccessful in 2010 [9]. Between 1997 and 2007 a review of World Bank water and sanitation projects found that 33% of projects were unsuccessful [16].

Providing insight into the causes of poor performance in international development projects will enhance the opportunity for success. This research aims to identify causes of poor performance in international development projects by determining which factors attribute to project failure in World Bank water and sanitation projects. We believe that these findings will improve the understanding of international development projects in all sectors.

2.4 Literature Review

2.4.1 Success Criteria

Defining what constitute a successful project provides insight into the barriers to good performance. The World Bank defines success in terms of the extent to which a project's major relevant objectives are achieved efficiently. The World Bank therefore rates their projects based on the stated objectives and on three criteria: the relevance of the objectives and design (relevance), the extent to which the objectives were achieved (efficacy), and the efficient use of project resources (efficiency).

The international development project literature utilizes a broader definition of success. Diallo and Thuillier [11] evaluate the performance of development project in terms of cost, schedule, quality, impacts, beneficiary satisfaction, objectives achievement, institutional capacity, financial returns, and innovation. Khang and Moe [22] distinguish between project management success and project success. They assess overall international development project success in terms of having a visible impact, building institutional capacity, having a good reputation, having a good chance of

being extended, and sustaining project outcomes. Ahsan and Gunawan [2] evaluate performance of international development projects in terms of cost and schedule. The definition and measures of project success continues to grow, however it is agreed that success includes both efficiency and efficacy [18]. A review of the literature reveals that researchers are utilizing many of the same success criteria to understand international development projects as summarized in Table 2.1.

Table 2.1: Succes Criteria from the Literature

Success Criteria	Source
Within Cost	[1, 11, 18, 22]
Within Schedule	[1, 11, 18, 22]
Achieved Objectives	[1, 11, 18, 22]
Satisfied Beneficiaries	[1, 11, 18, 22]
National profile/relevancy	[11, 18, 22]
Visible impact	[11, 18, 22]
Good chance of being extended/funded	[11, 22]
Built institutional capacity	[11, 22]
Has good reputation	[11, 22]
Sustainability (Outcomes likely to be sustained)	[18, 22]

2.4.2 Critical Performance Factors

Few authors have investigated specific failure factors or risk factors associated with international development project performance. Kwak [23] identifies broad factors that create high risk in accomplishing objectives in international development projects. These include political, legal, cultural, technical, managerial, economical, environmental, social, corruption, and physical factors. Denizer et al. [10] look at project level factors that are negatively correlated with project success and find some generalized risks for World Bank projects. They find that factors such as project size, task manager quality, and the extent of project supervision are correlated with project outcomes.

There is a strong understanding of the critical success factor for international development projects, however the causes of poor performance are not widely studied in the literature. Research has focused on identifying success factors specific to different project dimensions. These include management level factors, environmental factors, and project level factors. Diallo and Thuillier [12]

identify trust and communication between managers, coordinators, and the implementation team as the key project management success factors. Khang and Moe [22] identify critical success factors for different life cycle phases of projects based for both project management and project level factors. Ika et al. [18] identify critical success factors for World Bank Projects based on task manager's perception of success and self-reported success factors. Khan and Spang [21] look at all international projects and group success factors into their own dimensions for the project, people, organization, and nation. These identified critical success factors allow specific project and managerial factors to be addressed during project design in order to encourage project success.

2.4.3 Cost and Schedule Performance

Cost and schedule variation is common in any infrastructure project, but especially common in international development projects [2]. An analysis of transportation projects in Nigeria finds that the main causes of project cost and schedule overrun are poor contract management, shortages of materials, price fluctuations, and inaccurate estimates [19]. A case study of groundwater projects in Ghana finds that the main causes of cost and schedule overrun are poor technical performance, escalation of material prices, material procurement, poor contractor management, and delayed payments [15]. Kaliba et al. [19] find the root causes of cost escalation in Zambia road construction projects are rain and flooding, scope change, environmental protection costs, schedule delays, strikes, technical challenges, inflation, and local government pressure. They also find the major causes of schedule delays are delayed payments, contract modification, economic problems, materials procurement, changes in design, staffing problems, equipment availability, poor supervision, construction mistakes, poor coordination, and labor disputes. Ashan and Gunawan [2] conversely find that schedule overrun is often associated with cost underrun in Asian Development Bank projects. They find the top causes for project delay are delays in contract evaluation and awards, procurement delays, civil works and land acquisition delays, delay in recruiting consultants, natural calamities, and government procedural delays. Cost underrun is found to be caused by depreciation of local currency, lower prices for goods and services, competitive international

bidding, less use of contingency funds, project scope cut, project design changes, and local financial policy changes. In international development projects the literature shows that cost and schedule variation is common and the causes are varied and complex.

2.5 Theoretical Gaps

There are three main theoretical gaps that this research will address in identifying the causes of poor performance in international development water and sanitation projects. First, many researchers attempt to simplify project success by aggregating success criteria into a single measure. Significant information is lost and incorrect conclusions can be derived when data is aggregated. Second, international development projects are frequently grouped together for analysis regardless of the specific sector in which they are implemented. Therefore, water and sanitation projects are evaluated with transportation and social projects, resulting in a very broad understanding of project level factors. And third, the majority of existing research has been dedicated to identifying success factors while little has been done to identify failure factors. While a project may contain all the necessary factors that indicate a success, certain challenges and risks may commonly present barriers that can undermine the ability for success.

Current research that evaluates critical factors for successful international development projects tend to utilize a single measure of success for analysis. These can include using the World Bank's overall project rating or the project leader's perception of project success [10, 23]. Other research uses an aggregation of the success criteria listed in Table 2.1 [12, 18, 21, 22]. For example Ahsan and Gunawan's [2] research utilizes the weighted average of relevance, effectiveness, efficiency, and sustainability to create a proxy variable for success. Evaluation of individual measures of success has not been done in the literature except for analysis of cost and schedule variation, leaving out a large portion of how project performance can be understood [2]. Considering many projects perform poorly in terms of cost and schedule but are still rated as successful, significant knowledge can be gained by understanding what factors affect different specific success criteria.

It has been frequently overlooked that factors that influence project performance vary for

different types of projects [22, 26]. This is a major reason why international development projects are studied independently of traditional projects. However, international development projects include a subset of project types as well. The World Bank categorizes its projects into ten mutually exclusive sectors including (1) water and sanitation, (2) education, (3) health and social services, (4) industry and trade, (5) agriculture, (6) law and justice, (7) energy, (8) transportation, (9) communications, and (10) finance. Only in the international development literature are projects in such diverse sectors aggregated and evaluated together.

Creating a gap in the literature, much of the international development project research has focused on identifying critical success factors [12, 18, 21, 22]. Failure factors, or factors that lead to poor performance rather than good performance, are not widely studied for international development projects. The reason for this is that poor performance in certain success criteria does not necessarily mean a failed projects, making analysis of poor performance more complex than good performance [5]. Additionally, it is difficult to gather data from project participants on failed projects.

2.6 Research Objectives

This research aims to identify the causes of poor project performance in international development projects by evaluating World Bank water and sanitation projects. Disaggregating the measures of success allows the causes of poor performance to be assessed for specific criteria within both overall successful and unsuccessful projects. In this research, success is measured in terms of cost, schedule, achievement of objectives, institutional capacity, and sustainability of outcomes. To our knowledge there is no research that has investigated the root cause of poor achievement of these five success metrics for international development water and sanitation projects. Evaluation of the water and sanitation sector will identify unique causes of poor performance that may not be found in all international development projects. Identification of the causes of poor performance has scarcely been studied and this research attempts to link risk and failure factors to effects on specific success measures rather than success factors.

The outcome of this study is to explore how different project, management, and environmental factors contribute to the poor performance over a project's life in order to expand the body of knowledge of project performance and improve effectiveness of international development projects in water and sanitation. The findings from this research will also provide practitioners with an understanding of the factors that most frequently contribute to poor performance wherein which, according to their goals, they can plan for and mitigate them. A understanding of potential risks and problems in the project assessment and design phase will allow the World Bank to increase the effectiveness and efficiency of their projects.

2.7 Research Method

This research identifies the root causes of poor performance in World Bank projects. This analysis is based on the perspective and experience of the World Bank task manager. Task managers document their experiences after each project in an implementation and completion report (ICR). These completed World Bank projects and the ICR are further reviewed by the IEG in a project performance assessment report (PPAR). A content analysis of these two data sources (the ICR and PPAR) provides an initial understanding of the frequency and causes of poor performance. For five specific success criteria the causes of poor performance are documented. A list of root causes of poor performance is then provided to an expert panel of task managers for review and verification. The panel rates the causes of poor performance according to frequency and also provides comments on causal pathways.

This analysis includes five success criteria due to the limited availability of information from the implementation reports regarding the other measures of performance listed in Table 2.1. The success criteria evaluated in this research include cost, schedule, efficacy, institutional impact, and sustainability. Efficacy is defined as the extent to which the project's objectives are achieved or expected to be achieved. The World Bank defines institutional impact as the extent to which a project improves the ability of a country or region to make more efficient, equitable, and sustainable use of its human, financial, and natural resources. Sustainability is the resilience to risk of net

benefits of the project over time.

Secondary data from these implementation reports provides a robust source of information for exploratory analysis of projects as it is more objective than primary survey data and is not contaminated by response biases and memory problems [6]. The ICR is prepared by the task manager and other implementation staff and is a self-review of the accomplishments of the project. The IEG in an independent unit within the World Bank Group that reviews an estimated 25 percent of the Bank's lending operations. The IEG PPAR is a critical review of a Bank project and includes examination of the World Bank project documents, interviews of operational staff and beneficiaries, and often a visit to the project site.

A sample of World Bank water and sanitation projects are selected for the initial content analysis based on the availability of the implementation (PPAR and ICR) documents and if 50% or more of the World Bank financing for the project is allocated to the water, sanitation, and flood control sector.[1] This ensures that a majority of the project finances and resources are focused in our sector of interest. The performance of these sample projects is determined using the ratings provided by the IEG for efficacy of achieving objectives, sustainability, institutional impact. Cost and schedule performance is also taken from the World Bank documentation where variation is measured between the original estimate in the project appraisal document and the final cost and closing date provided by the ICR.

The causes of poor performance for each of the five success criteria are determined using a content analysis of the PPAR and the ICR for projects that did not achieve the specific success criteria. For example the causes of poor schedule performance is determined through content analyses of the implementation reports for the projects that performed poorly in terms of schedule. The results from this analysis are then provided an expert panel of World Bank task manager. The expert panel is selected from a group of World Bank water and sanitation retirees and includes individuals who have a minimum of 10 years experience at the World Bank, have worked on at

[1] This includes World Bank projects in the subsectors of flood protection, general water, sanitation and flood protection, sanitation, solid waste management, wastewater collection and transportation, wastewater treatment and disposal, and water supply.

least five water and sanitation projects, and have held the position of task manager on at least one of these projects. The panel rates the frequency of each root cause of poor performance on a five-point Likert scale, provides additional causes that were not observed in the sample cases, and discusses the pathways of impact for each of the most frequent causes of poor performance.

2.8 Results

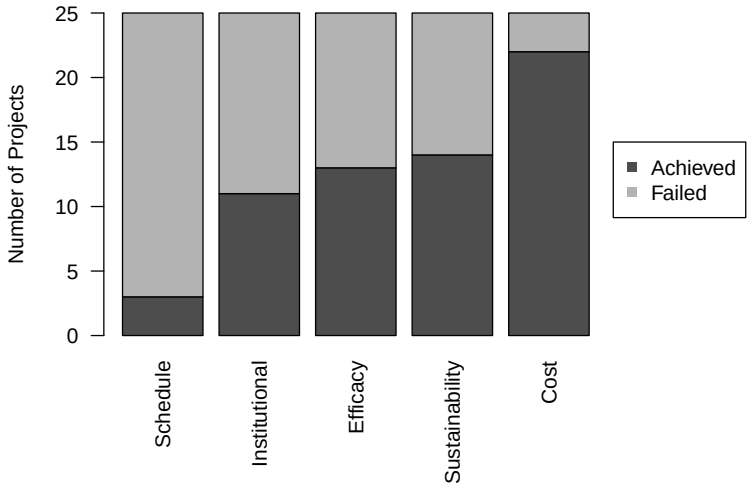
2.8.1 Project Performance

All projects for which implementation documentation was available and that met the criteria of having at least 50% of Bank financing dedicated to the water, sanitation, and flood protection sector were evaluated in this research. A total of 25 projects were selected representing 18 countries and included projects in water supply, wastewater treatment and disposal, solid waste management, sanitation, and flood protection. A complete list of project names can be found in Appendix B.

For the twenty-five projects 22 of the projects were under budget and 22 of them were over schedule. Based on the ratings provided by the IEG, 14 projects were found to be sustainable, 13 projects were effective, and 11 projects achieved an institutional development impact. The breakdown of how the sample projects performed is displayed in Figure 2.1 and demonstrates that the majority of projects were within budget and over schedule. The performance of these projects in terms of effectively achieving objectives, sustaining outcomes, and developing institutional capacity showed no strong tendency towards consistent achievement or failure.

Root causes of poor performance were determined using a content analysis of the PPAR and ICRs for projects that failed to achieve specific success criteria. This content analysis produced a list of root causes for each of the five success criteria which was then presented to the expert panel for review. The panel included eight individuals who met the minimum requirements of 10 years experience at the World Bank, experience on at least five water and sanitation projects, and experience as a task manager. Since the panel was selected from a group of retirees the group had an average of 40 years experience at the World Bank and experience on an average of 22 water

Figure 2.1: Performance of Sample Projects According to IEG Rating [2]



and sanitation projects. The panel consists of financial analysts, civil engineers, and institutional specialists. The results of the content analysis, frequency ratings, and causal pathways discussion are presented below for each of the five success criteria.

2.8.2 Causes of Cost Underrun

According to the expert panel, efficient implementation is rarely a cause for cost underrun. More frequently projects are closed before the project is completed due to delays and inefficient implementation therefore leaving funds unspent. These are most often caused by poor project preparation and poor implementation capacity of the borrower. This pattern is observed in the sample projects where the only project to receive a high rating for efficacy finished over budget, and the three projects to receive a negligible efficacy rating closed under budget.

The most prevalent cause of cost underrun is the inability to spend in a timely manner which captures when projects are closed incomplete due to inefficient implementation. Reduced project scope is identified as a separate but related root cause of cost underrun. Both occur when a project

[2] Success is defined as a substantial or higher rating for institutional development impact, a substantial or higher rating for efficacy, a likely rating or higher for sustainability from the IEG PPAR. Success in cost and schedule is defined as completing the project within the expected budget and timeline stipulated in the Project Appraisal Document.

is not fully completed as designed which leads to less spending. Reduced scope is documented in 44% of the sample projects and inability to spend appropriated funds is found in 11% (see Table A.1 in the Appendix). Inefficient implementation comes in to play very early on in projects as one task manager points out,

> Poor project preparation is obviously the number one reason for not being able to spend money in a timely manner. Bank teams are under pressure to deliver projects by set deadlines and a large chunk of the preparation budget is spent on peripheral issues (safeguards and fiduciary). In theory a project should not be presented for approval unless bidding documents for the first 12 months on implementation are ready. This is not always the case.

There are many additional causes of cost underrun in water and sanitation projects. Depreciation of local currency often leads to lower than expected costs when measured in US Dollars and is found in 44% of sample projects. Competitive international bidding and lower than expected prices are additional causes of cost underrun seen in 6% and 39% of the sample projects respectively. Overestimation of contingency funds also results in unspent finances for the projects in some cases.

For the expert panel policy changes and co-financing are not significant causes of cost variation since they are only knowledgeable of the Bank financed portions of projects. However, for projects that are part of larger national programs financing from other sources and national policy changes can, in some cases, lead to cost underrun from the Bank's perspective. This occurs when these root causes ultimately lead to less use of World Bank funding and not necessarily less total spending by the borrowing country. Co-financing not being disbursed is found in 17% of the sample case projects that were under budget, finances taken from other sources is seen in 11% of these projects, and policy changes inhibiting spending was found in 6% of the projects.

2.8.3 Causes of Cost Overrun

World Bank projects infrequently overrun their budget, however it is a critical measure of project performance. Of the twenty-five sample projects evaluated only three were over budget. Since projects are tracked in equivalent US dollars, it is not uncommon for projects to be over budget

in local currency but documented as under budget due to depreciation of the local currency during the project. Additionally, the Bank generally does not finance cost overruns, however projects can utilize funding from other sources or reallocate Bank funding from poorly disbursing projects in the same sector. For these reasons it is possible that World Bank projects see cost overruns more frequently than is observed in this sample.

The most common causes of cost overrun according to the World Bank panel is higher than expected prices. This can be associated with either an initial underestimation at appraisal, an inadequate estimate of market trends and bid prices, or cost escalation due to delays. Most frequently higher costs is associated with delays which leads to cost escalation and increased project inputs. Higher prices for goods, services, and contracts is found in two of the three over budget sample projects.

Inflation of local currency is another common cause of cost overrun in water projects identified by the expert panel. Additionally, inadequate contingency allowance is associated with cost overrun, especially when implementation delays lead to higher costs. Poor project design leading to scope growth is also found to lead to increased costs and was observed in two of the three overrun sample projects.

Corruption is founds to be a cause of cost escalation in some projects, however it is difficult to verify when it occurs and to identify where finances are being diverted. One task managers comments that,

> There is no doubt that corruption increases costs. In the past, the Bank found corruption difficult to find and more so to deal with if it was obvious that it was taking place. However, in the past ten years the Bank has made anti-corruption a priority and is doing a good job.

2.8.4 Causes of Schedule Overrun

Schedule overrun is a chronic problem in international development projects. Of the twenty-five sample projects, twenty-two were over schedule. Numerous causes of schedule overrun are identified revealing the complexity of achieving international development projects in a timely

manner. The World Bank panel discusses how almost every project suffers from an overly optimistic schedule in the project design.

The most frequent causes of schedule overrun are contract related and include delays associated with bid formation, procurement, and appointing contractors are. The frequency of these causes as observed in the sample projects are listed in Table A.2 in the Appendix. One task manager notes,

> I think that most projects I have worked for have had their closing date extended at least once. Ideally, most procurement packages for at least the first year of implementation should be ready before the project is approved; in some cases the identification of key contractors (such a private operator) is a condition of approval. In fact with the increasing pressure to lend, many projects are not ready for implementation and the first 12 to 18 months are used to carry-out procurement activities.

Contract delays are sometimes due to a lack of experience by the borrowing country in preparing contracting documents, however sometimes it is due to a reluctance by the borrowing country to spend money on project preparation before the project is awarded. Delays due to bid formation and procurement delays is observed in 50% of the sample projects, and delays in appointing contractors is found in 27% of projects.

For each project the World Bank stipulates a set of conditions of disbursement for which the borrower must meet before the bank will disburse the loan. Even after loans are disbursed there is often start-up delays associated with the borrower being unprepared. These are frequent causes of project delay and are found in 18% of the sample project cases.

Inadequate administrative capacity to handle project activities is a frequent cause of delays. This includes technical and administrative limitations and results in slow implementation due to delays and additional training and technical assistance required. Administrative capacity issues are identified in 45% of the sample projects that were over schedule. Other project management level causes of schedule overrun found through the sample projects and interviews include government funding delay, staff changes, counterpart funding delays, land acquisition delays, disputes between borrower and contractors, and resettlement delays.

Political challenges are a low frequency, high impact risk in international development project implementation. The World Bank tends to not initiate projects in politically unstable nations, however it is unavoidable when the countries which need Bank assistance the most are in perpetual volatile environments. Civil unrest, economic problems, and legislative changes are rarely encountered but are included as causes of schedule overrun for water projects. These causes are observed in only 9% of the sample projects, however when these risks are realized projects can be delayed significantly.

2.8.5 Causes of Poor Efficacy in Achieving Development Objectives

The development objectives are the main driving goals for each World Bank project, however nearly half of projects fail to achieve their objectives. Twelve of the twenty-five sample cases did not achieve their development objectives, receiving a modest rating or lower for efficacy from the IEG.

Insufficient institutional capacity is the most frequent cause of failing to achieve objectives, being observed in eight of the twelve sample projects. As described above, insufficient institutional capacity can limit technical and administrative achievements, resulting in poor performance and unachieved objectives. Insufficient capacity is related to overly optimistic objectives, which is also a frequent cause of poor efficacy found in one third of the sample projects. One task manager points out,

> Bank staff are pushed into adding developmental objectives at various levels of review by the Bank and the sum total of these make the objectives unachievable.

Slow political or sector reform is observed in 50% of the sample cases that failed to achieve their objectives. Developing water and sanitation infrastructure is often accompanied by restructuring of institutional systems at different levels and drafting of new policies and legislation. These can be necessary components of successful projects but can also slow implementation and impede the construction of new infrastructure systems.

Lack of financial autonomy caused problems in 58% of the sample cases where these projects often aim to utilize user fees and tariffs to support long term accomplishments. However a willingness to pay, adequate capacity to mange fee collection, and a conducive political environment are required to successfully become financially sustainable. Without financial autonomy it can be difficult to pay staff, maintain systems, and ensure the longevity of achievements. Lack of financial sustainability is identified in 58% of projects as a root cause of poorly achieving project objectives.

Economic and political problems are rare, but can have a high impact on project efficacy. These are low frequency, high risk impact risks that are observed in less than 17% of projects.

2.8.6 Causes of Poor Institutional Development Impact

Institutional development impact is an ubiquitous goal in World Bank projects but is difficult to achieve. Fourteen of twenty-five sample projects received a modest or lower rating in institutional development. While the World Bank encourages institutional development goals, the borrowing country often prioritizes the physical works more, which is observed in 29% of the sample projects (see Table A.5 in the Appendix). Similarly if the World Bank does not encourage specific institutional development goals, training and other necessary activities will be omitted from the project objectives as is frequently observed by our expert panel. A task managers observes,

> The role of the Bank staff is to supervise projects and Bank visits are often insufficient in number... Institutional development is often left to consultants and, without competent staff to develop their tasks, is often a major challenge.

When institutional development impacts are not prioritized there is often inadequate funding for training and institutional development activities. This problem derives from either an insufficient amount of project funds set aside or insufficient revenue being drawn for specific institutional goals which is seen in 21% of the sample case projects.

A lack of qualified staff and inadequate training programs are both causes of poor institutional development. Water utility manager positions are often filled by political appointees rather than qualified staff and the pay scale is often inadequate to attract technically proficient personnel. In

situations where the utility staff are not technically qualified and have little incentive to perform well, project activities suffer and training does little to improve capacity. One member of the panel points out the complexity of the problem,

> [There is an] insufficient number of staff with formal education/training. Typically the general manager of a water utility is politically appointed and does not provide proper leadership. Revenue is usually inadequate to cover proper maintenance costs and salaries in the sector are low. Technical assistance [from the Bank] sometimes works, but often those trained leave for better jobs.

2.8.7 Causes of Poor Sustainability

Poor sustainability affects eleven of the twenty-five sample projects according to the ratings from the IEG. Institutional and financial factors are the predominant causes of poor sustainability in these projects.

Insufficient institutional capacity, poorly institutionalize operations and maintenance, and insufficient monitoring are the top causes which are associated with inadequate technical capacity. Without the skills to maintain the water and sanitation systems any benefits observed may be lost as the systems deteriorate. One task manager points out,

> Unsustainability is due to many factors, but institutional and financial factors are generally predominant. Of these two, institutional factors are dominant. We have insufficient knowledge about designing and managing the human and institutional incentives that can lead to the expected outcomes.

Lack of incentives and insufficient revenues are key hurdles to maintaining project outcomes in the long run. Without enough revenue the utility staff will not be able to properly operate and repair systems and ensure long term quality. Financial autonomy is key in ensuring the sustainability of project impacts. Many water and sanitation projects struggle to collect adequate user fees and tariffs to sustain operations as planned. Even a lack of decision making autonomy creates a obstacle in maintaining long term accomplishments as observed in 27% of the sample projects. If a utility cannot make changes regarding operations and management of systems then systems may fail to be adequately sustained.

2.9 Discussion

We have identified the causes of poor performance in five measures of success for World Bank water and sanitation, and projects. Twenty-five projects were evaluated and a panel of task mangers with an average of 40 years of experience at the World Bank verified the causal factors of poor performance. The frequency for each factor is rated according to the perception of the task managers, and the pathways of the causal effects are determined. Table 2.2 provides a list of the causes of poor performance identified for each success criteria.

Table 2.2: Causes of Poor Performance by Frequency

	Frequently	Sometimes	Rarely
Cost Underrun	Unable to spend in a timely manner	Depreciation/devaluation of local currency Reduction of project scope Lower price for goods, services, contracts	Overestimated Contingency Competitive international bidding Policy changes inhibit financing Other sources of funding used Co-financing not disbursed
Cost Overrun	Higher price for goods, services, contracts	Project scope growth Inflation of local currency Inadequate contingency Policy changes require additional spending	Market fluctuations
Schedule Overrun	Bid formation and procurement delay Delay in appointing contractor/consultant Administrative capacity delay/too complex Loan approval and disbursement delay	Government funding delay Poor contractor performance Borrower staff changes Counterpart funding delay Land acquisition delay Dispute between borrower and contractor Resettlement delays	Changes in policy/legislation Civil Unrest/Economic problems Power Supply/Fuel problems
Poor Efficacy	Insufficient capacity for all activities Slow political or sector reform Overly optimistic objectives/goals	Lack of financial autonomy or sustainability Project risks not mitigated Poor coordination between agencies Insufficient monitoring and evaluation Staff or government changes Poorly defined objectives Economic changes	Lack of private sector interest Civil unrest
Poor Institutional Development	Low priority by government Insufficient revenue to sustain achievements Poor organizational efficiency Low priority in project activities/design	Insufficient qualified technical/managerial staff Inadequate training programs Reliance on higher government Lack of trust between government levels	Civil unrest
Poor Sustainability	Insufficient institutional capacity Poorly institutionalized O&M Lack of incentives to maintain outcomes Insufficient revenue/High working ratio	Insufficient monitoring Lack of decision making autonomy No legislative support Beneficiaries resistant to change Staff turnover	Civil unrest

2.9.1 Cost Underrun

This research finds that World Bank water, sanitation, and flood control projects tend to be under cost. Ahsan and Gunawan [2] find this same trend for international development projects.

They document many of the same causes of cost underrun in Asian Development Bank (ADB) projects as we observe for World Bank projects but with varying frequencies. This indicates there are common challenges encountered by the international development banks.

Inefficient implementation is determined here to be the leading cause of cost underrun for World Bank water and sanitation projects, where a reduced scope or incomplete implementation leads to less spending. Ahsan and Gunawan [2] identify scope cut and design changes as common causes of cost underrun in international development projects. Their study finds currency depreciation is the most prevalent cause of cost underrun in ADB projects which was identified in 44% of our sample cases.

Cost underrun is not observed as frequently in traditional infrastructure projects. Even projects implemented in some of the same countries are found to not exhibit the same trend of schedule overrun and cost underrun. In looking at transportation construction projects in twenty different countries Flyvbjerg et al. [14] find that cost performance is strongly dependent on the length of implementation, where longer projects are linked to cost escalation. Baloi and Prince [4] also find that design changes, measured in the rate of change-orders, is linked to poor cost performance in construction projects in developing countries. This points to the differences between development bank projects and simple infrastructure projects. Development projects incorporate additional complexities associated with achieving institutional, legislative, and social goals alongside the infrastructure, which lead to different challenges encountered during implementation.

2.9.2 Schedule Overrun

This research finds that most World Bank water and sanitation projects in our sample face significant implementation delays. It is found that the main causes of delays are project management related in terms of slow formation of contracts and bids, slow appointment of contractors, and delays in meeting loan disbursement requirements. Ahsan and Gunawan [2] find the same leading causes of delays in their analysis of Asian Development Bank projects.

The literature indicates that there are numerous causes of delays in all types of infrastructure

projects. Assaf and Al-Hejji [3] identified 73 different causes of delays in large construction projects in Saudi Arabia. Frimpong et al. [15] find 25 causes of schedule and cost overrun in groundwater projects in Ghana. Chan and Kumaraswamy's [8] research on Hong Kong construction projects evaluates 83 causes of delays in construction projects.

Despite the diverse and numerous causes of delays in infrastructure projects it is found that the leading causes of delays in our analysis agree with much of the existing literature. Assaf and Al-Hejji [3] find that project bidding and award is the number one cause of delays from the viewpoint of owners and consultants. Frimpong et al. [15] find that poor contract management is the second ranking overall cause of project delays and cost overruns. Inadequate managerial skills is cited as a major cause of delays in Hong Kong projects [8].

While the causes of project delays presented here are confirmed by the literature, there are many frequent causes of delays in the existing research that were not observed in this study including client side design changes and change orders [3,8]. This does not indicate that the projects reviewed in this research are immune to these common causes of delays, rather that the project management level delays are more frequent in World Bank water and sanitation projects and overshadow the day-to-day delays related to design changes.

2.9.3 Efficacy in Achieving Objectives

Efficacy is arguably the most important measure of performance since it indicates whether a project achieves the goals it set out to accomplish. No other research has identified causes of poor efficacy for international development projects. The causes of poor performance identified in this analysis, including institutional capacity, overly optimistic goals, and slow sector reform, may be applied to other international development projects that incorporate infrastructure considering the significant impact these factors can have in these types of projects in any sector.

In order to improve efficacy efforts need to be made in prioritizing institutional capacity development early on in projects. Problems with sectoral and political reform cannot be tackled as easily from the Bank's perspective. Overly optimistic goals often lead to shortcomings in

achievements, but it is better to strive for high goals rather than settle for incremental changes.

2.9.4 Institutional Capacity Impact

Institutional capacity, while being a component of performance, is a key determinant for other measures of performance. Inadequate institutional capacity is identified as a major cause of poor performance for schedule, achievement of objectives, and sustainability. Without technically trained staff and quality project managers projects will struggle to achieve objectives and sustain achievements.

Institutional capacity impact is an important component of any project but is difficult to achieve for borrowers and the World Bank. While it is often a priority for the Bank, implementing the necessary political, economic, and institutional actions needed is challenging. The causes of poor performance observed for poor institutional capacity impact are applicable to all international development projects considering the importance of institutional capacity for all projects. The World Bank utilizes institutional capacity impact as a measure of performance for projects in every sector, and the causes of poor performance identified are clearly pertinent to any type of project.

2.9.5 Sustainability

The root causes of poor sustainability identified here are not necessarily applicable to projects in other sectors. The importance of sustained operations, cost recovery, monitoring, and maintenance in the water and sanitation sector does not translate directly to other sectors that do not include an aspect of infrastructure. Even compared to other infrastructure sectors, water and sanitation projects require a significant dedication to ensuring continuous financial support to provide adequate supply and proper maintenance.

Much of the recent discussion of sustainability in water and sanitation projects in developing countries focuses on the incorporation of beneficiary and community participation. The barriers to ensuring sustainability at the beneficiary level have been identified by different authors to include aspects of motivation, ownership, user knowledge, sociocultural respect, political cohesion,

community participation and continual support [7, 20, 24].

Inclusion of beneficiaries and communities is a critical aspect of World Bank projects, however sustainability for these projects often depends more on adequate participation at the municipal and national government level. The findings presented here illustrate that good operational and financial management are the biggest barriers to sustainability.

2.9.6 Conclusions

Analysis of performance in terms of efficacy, institutional capacity, and sustainability has not been investigated for World Bank projects prior to this study. We find that institutional development impact is both a measure of project success but is also a large determinant of the other measures of performance. Institutional development and capacity is a significant barrier to accomplishing objectives and ensuring sustainability in water and sanitation projects. The challenges associated with inadequate institutional development are well known by practitioners and researchers, however ensuring adequate capacity development has proven to be an elusive task for everyone.

Many of the causes of poor performance determined here are considered economic or project factors that are outside the command of the World Bank or the lending government. These factors, however, can be mitigated and planned for during the project assessment and design phases. The factors presented here that are within the control of the World Bank and government can be targeted to ensure accomplishment of desired goals. Understanding how the identified project, management, and environmental factors contribute to poor performance in water and sanitation projects will expand the body of knowledge in World Bank project management and hopefully improve the effectiveness of international development projects.

Understanding the causes of poor performance for different success criteria will allows World Bank projects to focus on accomplishing specific goals such as sustainability and institutional capacity development and implement more effective projects. Increased effectiveness will result in more efficient use of development assistance and financing. This will ultimately allow for an

increase in the number of people gaining access to improve water and sanitation with less failed projects. An increase in project performance can bridge the gap needed to reach the Millennium Development Goals in both water and sanitation.

Chapter 3

Conclusion

3.1 Contributions

The causes of poor performance are identified for five measures of performance including cost variance, schedule overrun, efficacy in achieving objectives, institutional development impact, and sustainability. These root causes are relevant for water and sanitation projects executed by the World Bank and can be applied to other types of international development projects with caution.

This research addressed three theoretical gaps in the current research. First, we overcame the problems associated with aggregating different measures of success by evaluating performance in each success criteria independently. Second we focused on a specific sector within international development projects in order to better understand why certain types of projects perform poorly. Evaluating performance over all types of projects does not allow for the identification of sector specific challenges, many of which were highlighted in this research. Third, we evaluated causes of poor performance rather than success criteria. Evaluation of the risks and failure factors is possible since we disaggregated the measures of success, which has not been done before.

For practitioners, the causes identified here provide an understanding of how and why projects perform poorly. The causes of poor performance can be targeted to improve project efficiency and efficacy. While not all the factors identified are within the control of the World Bank or the borrowing country, it is valuable to understand which factors are most problematic and how they relate to other aspects of project management and design.

This research additionally provides a new step in the theoretical understanding of interna-

tional development project performance. Previous research has only investigated the causes of cost and schedule variation in the context of development projects, while here we expand the study to include five different measures of performance. While this research focuses on the subset of water, sanitation, and flood control projects within international development projects, the findings from this research can be extrapolated to different sectors given a careful understanding of the similarities and differences. It is important to note that our findings for the causes of cost and schedule variation are in sync with other studies results, which indicates there are similarities between types of international development projects.

3.2 Limitations

3.2.1 Sample Case Study

All projects for which documentation was available and that met the criteria of having at least 50% of Bank financing dedicated to the water, sanitation, and flood protection sector were evaluated in this research. The sample size was limited to only 25 project for many reasons including the fact that water projects make up just a portion of the hundreds of Bank projects approved each year. Additionally, the IEG only reviews an estimated 25% of World Bank projects and it takes several years after a project is completed for the Bank to submit the post implementation report and for the IEG to review the project. Although the IEG has been reviewing Bank projects for more than 40 years, their documents are only available as far back as 1989.

The sample size was further limited by evaluating only the projects that performed poorly in the given measures. That is, only around half of the projects performed poorly in terms of efficacy, institutional development, and sustainability, resulting in a limited sample from which to identify trends in root causes of poor performance in these factors.

The initial list of root causes of poor performance for each of the five performance measures were taken from the post implementation reports. This secondary data provides consistent reporting between projects and an objective perspective from the IEG. However, these reports are sometimes

sparse in describing the direct causes of problems encountered during implementation. Additionally there is sometimes disagreement between the World Bank's report and the IEG's report as to the main cause of problems. For our study, when discrepancies were encountered the IEG's explanation was used considering their goal to provide an unbiased account of the project's implementation. This, however, may have resulted in the omission of important information from the task manager's perspective that was missed in the IEG's review.

Ideally we would have the opportunity to talk to the project managers from each of the twenty-five case study projects to understand the relationship between documentation and actual perception of the project leaders. However, none of these task managers were available for interviews when contacted. The task managers that were included in the expert panel have experience on water and sanitation projects, but not with the projects included in our sample. The projects were selected if they were reviewed by the IEG, and since only 25% of projects are reviewed it is difficult to find both documentation and task managers for the same project.

3.2.2 World Bank Expert Panel

We developed an internet questionnaire to gather data from World Bank employees regarding their perception of the frequency of different root causes of poor performance. The solicitation was sent to an estimated 250 retired World Bank employees, however only ten responded. The exceptionally low response rate is thought to be due to the fact that few members of the solicited population were actually qualified to answer the questions. Water and sanitation projects only account for roughly 7% of World Bank lending, and it can be assume that a small portion of retirees would have worked in this sector. Similarly, the questions required knowledge of project performance from beginning to end of projects, which only the task manager and a few other staff would have knowledge of, and these individuals only make up a select sample of the surveyed population.

In light of the limited questionnaire response, we chose to interview the original respondents. We attempted to reach an agreement between the respondents on the frequency of root causes of

poor performance. We also asked additional questions on the relationship between different root causes, as well as the interaction between different measures of project performance.

A more robust method would have included a Delphi panel from the outset rather than adding an interview upon limited response to the questionnaire. Respondents were not prepared for additional questions and may have submitted to agreeing with their colleagues rather than raise disagreeing viewpoints to the initial responses from the internet questionnaire.

3.2.3 Applicability to Different Types of Projects

Only World Bank projects from the water and sanitation sector were evaluated in this research which limits how the findings can be applied to other types of projects. We feel that these findings hold true for international development water and sanitation projects that are funded by the multilateral development banks. Where possible, our results were compared to findings from other sectors and financing institutions. The development banks structure their projects significantly different than other infrastructure construction projects, even within the same countries, and the findings presented here do not translate to simple construction projects. On the other hand, since the development banks tend to follow a systematic approach for their projects across sectors, we feel that the findings presented here are relevant to projects in other sectors within the development banks' portfolios that include aspect of infrastructure construction.

Some of the findings presented here may be applicable to water and sanitation projects that are not funded by the multilateral banks but that include aspects of social, administrative, and governmental reform. However, due to the diversity of projects implemented in developing countries, we hesitate in claiming the applicability of our findings to other development projects.

It is clear that institutional capacity is a primary factor in poor performance in many types of projects. We found that it is a major cause of poor performance for nearly all measures of success. Considering the use of similar success factors for all types of international development projects we stress the importance of this factor in achieving project objectives and sustaining achievements in any development project.

3.3 Future Work

Some of the limitations identified above can be resolved in future research. The research question asked here can be reevaluated in terms of different sectors within international development projects. This will help isolate which factors are sector specific versus universal for development projects. Here we caution against generalizing the findings to other sectors considering the lack of analysis of sectoral differences in international development projects.

Future research should also focus on studying the nuances within the water and sanitation sector. It is clear that projects perform differently based on size, geographic location, and whether they are implemented in a rural or urban setting. These factors need to be controlled for in order to determine the causes of poor performance within each of these specific contexts.

Sanitation systems and water supply systems are frequently implemented in independent projects. Rarely does a single project implement infrastructure for both purposes, however the sector is almost always evaluated as a whole. These types of systems are significantly different and require different expertise. The challenges associated with sanitation systems may not be the same as those encountered in water supply systems. Therefore future studies of these projects should focus on evaluating water and sanitation separately.

As more research is dedicated to studying project performance in terms of finding determinants of quality, efficacy, efficiency, sustainability, and institutional development, a better understanding of how to design successful projects will emerge. With an increase in the rate of successful projects, international development efforts will be more effective and more people will gain access to improve water and sanitation.

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Appendix A

Data Tables

Table A.1: Causes of Cost Underrun

	Task Manager		Sample Cases	
Unable to spend in a timely manner	3.8	Frequently	2	11%
Depreciation/devaluation of local currency	2.8	Sometimes	8	44%
Reduction of project scope	2.8	Sometimes	8	44%
Lower than expected price for goods, services, and contracts	2.5	Sometimes	7	39%
Competitive international bidding	2.2	Rarely	1	6%
Policy changes inhibit financing or spending	2.4	Rarely	1	6%
Other sources of funding used in lieu of Bank financing	2.0	Rarely	2	11%
Co-financing not disbursed	1.8	Rarely	3	17%

Table A.2: Causes of Cost Overrun

	Task Manager		Sample Cases	
Higher than expected price for goods, services, and contracts	2.8	Frequently	2	67%
Project scope growth	1.8	Sometimes	2	67%
Inflation of local currency	1.8	Sometimes	2	67%
Policy changes require additional financing or spending	1.5	Sometimes	1	33%
Market fluctuations	1.0	Rarely	1	33%

Table A.3: Causes of Schedule Overrun

	Task Manager		Sample Cases	
Bid formation and procurement delay	3.1	Frequently	11	50%
Delay in appointing contractor/consultant	3.0	Frequently	6	27%
Administrative capacity delay/too complex	2.8	Frequently	10	45%
Loan approval and disbursement delay	2.7	Frequently	4	18%
Government funding delay	2.4	Sometimes	3	14%
Poor contractor performance	2.4	Sometimes	4	18%
Borrower staff changes	2.4	Sometimes	7	32%
Counterpart funding delay	2.3	Sometimes	5	23%
Land acquisition delay	2.0	Sometimes	2	9%
Dispute between borrower and contractor	2.0	Sometimes	0	0%
Resettlement delays	2.0	Sometimes	2	9%
Changes in policy/legislation	1.4	Rarely	2	9%
Civil Unrest/Economic problems	1.1	Rarely	2	9%
Power Supply/Fuel problems	0.5	Rarely	2	9%

Table A.4: Causes of Poor Efficacy in Achivement of Objectives

	Task Manager		Sample Cases	
Insufficient capacity for implementation of activities	3.0	Frequently	8	67%
Slow political or sector reform	2.9	Frequently	6	50%
Overly optimistic objectives/goals	2.8	Frequently	4	33%
Lack of financial autonomy or financial sustainability	2.6	Frequently	7	58%
Project risks not mitigated	2.4	Sometimes	2	17%
Poor coordination between implementing agencies	2.1	Sometimes	4	33%
Insufficient monitoring and evaluation	1.9	Sometimes	4	33%
Staff or government changes	1.9	Sometimes	5	42%
Poorly defined objectives	1.6	Sometimes	0	0%
Economic changes	1.6	Sometimes	1	8%
Lack of private sector interest	1.0	Rarely	1	8%
Civil unrest	0.6	Rarely	2	17%

Table A.5: Causes of Poor Institutional Development

	Task Manager		Sample Cases	
Low priority by government	2.8	Frequently	4	29%
Insufficient revenue to sustain achievements	2.6	Frequently	3	21%
Poor organizational efficiency	2.6	Frequently	5	36%
Low priority in project activities/design	2.5	Frequently	1	7%
Inadequate training programs	2.1	Sometimes	2	14%
Reliance on higher government	1.9	Sometimes	1	7%
Lack of trust between national and local government	1.8	Sometimes	1	7%
Civil unrest	0.6	Rarely	2	14%

Table A.6: Causes of Poor Sustainability

	Task Manager		Sample Cases	
Insufficient institutional capacity	3.3	Frequently	4	36%
Poorly institutionalized O&M	3.3	Frequently	9	82%
Lack of incentives to maintain outcomes	2.9	Frequently	2	18%
Insufficient revenue/High working ratio	2.7	Frequently	9	82%
Insufficient monitoring and maintenance	2.4	Sometimes	9	82%
Lack of decision making autonomy	2.4	Sometimes	3	27%
No legislative support	2.3	Sometimes	3	27%
Beneficiaries resistant to change	2.1	Sometimes	1	9%
Staff turnover	1.9	Sometimes	1	9%
Civil unrest	0.6	Rarely	1	9%

Appendix B

Sample Projects

Table B.1: List of Sample Projects

Project ID	Project Title	Country
P008260	DURRES WATER SUPPLY REHABILITATION	Albania
P066491	WATER SUPPLY URGENT REHABILITATION PROJECT	Albania
P044458	WATER, SANITATION, URGENT WORKS	Bosnia and Herzegovina
P006541	WATER QUALITY AND POLLUTION CONTROL PROJECT	Brazil
P006522	ESPIRITO SANTO WATER AND COASTAL POLLUTION MANAGEMENT	Brazil
P006436	CEARA URBAN DEVELOPMENT & WATER RESOURCE	Brazil
P039002	ISTRIA WATER SUPPLY & SEWERAGE	Croatia
P049924	RURAL AND SMALL TOWNS WATER SUPPLY AND SANITATION	Ecuador
P000973	URBAN ENVIRONMENTAL SANITATION	Ghana
P050616	SECOND COMMUNITY WATER AND SANITATION	Ghana
P009877	DAM SAFETY	India
P001409	HILAND WATER 1B PROJECT	Lesotho
P005521	MAWATER RESOURCES MGMT.	Morocco
P002084	WATER REHAB	Nigeria
P064008	SMALL TOWNS WATER	Nigeria
P002109	STATE WATER I	Nigeria
P039983	4TH RURAL WATER SUPPLY & SANITATION	Paraguay
P004576	WATER DISTRICTS DEVELOPMENT PROJECT	Philippines
P008778	BUCHAREST WATER SUPPLY	Romania
P010467	COLOMBO ENVIRONMENTAL IMPROVEMENT	Sri Lanka
P037006	WATER SECTOR INSTITUTIONAL STRENGTHENING PROJECT	Trinidad and Tobago
P051553	THREE CITIES SANITATION PROJECT	Vietnam
P004830	WATER SUPPLY PROJECT	Vietnam
P043367	RY-TAIZ WATER SUPPLY PILOT	Yemen
P005907	RY SANA'A WS/SANITATION	Yemen