

**CONSTRAINTS TO MICRO AND SMALL ENTERPRISE GROWTH IN UGANDA:
IMPLICATIONS FOR DEVELOPMENT**

By

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ABSTRACT

The rapid proliferation of micro and small enterprises (MSEs) has become an increasingly important factor for economic growth in less developed countries. In Uganda, the micro and small enterprise sector has been particularly successful in providing employment opportunities for rural populations. As a result, the Government of Uganda has implemented policy initiatives designed to encourage their sustained development. In order to evaluate some of the policies that have been drafted by the government, survey work was carried out in two secondary towns of Uganda, Wobulenzi and Lugazi, in order to better characterize the enabling environment of MSEs and to study the effects of better water infrastructure provision on firm productivity.

The empirical evidence obtained suggests that individuals are able to easily enter into the MSE sector but that firms are highly constrained once established, and therefore, unable to grow. Some of the most significant obstacles to growth for the MSEs surveyed are the taxation system, the limited access to financing and an unreliable electricity supply. It has also been found that the provision of piped water infrastructure in Wobulenzi has had a significant effect on the productivity of these micro and small enterprises. However, much must still be learned about these MSEs and their constraints to growth in order for government intervention to prove to be successful.

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Table of Contents

Abstract	2
Acknowledgements.....	3
List of Tables	6
List of Figures.....	9
Chapter 1. Introduction	10
1.1 Structural Adjustment in Sub-Saharan Africa.....	10
1.2 Structural Adjustment in Uganda.....	11
1.3 Micro and Small Enterprises in the Developing World.....	14
1.4 Micro and Small Enterprises in Uganda.....	16
Chapter 2. Wobulenzi, Lugazi and the Methodology.....	19
2.1 Wobulenzi.....	19
2.2 Lugazi	20
2.3 Survey Design, Pre-testing and Implementation.....	21
Chapter 3. Micro and Small Enterprise Characteristics in Wobulenzi and Lugazi	23
3.1 MSE Costs, Revenues and Profits	29
3.2 Discussion	31
Chapter 4. Constraints to Growth.....	32
4.1. General Findings	32
4.2. Taxation	34
4.3. Financing.....	36
4.4. Infrastructure.....	38
Chapter 5. The Rural Towns Water and Sanitation Programme.....	41
5.1 Evaluating the Rural Towns Water and Sanitation Programme.....	41
5.2 The Water Supply in Wobulenzi and Lugazi.....	42
5.3 Water Usage in Wobulenzi Prior to the Rural Towns and Sanitation Project... 44	
5.4 Costs of Production	46
5.5 Quantity of Output.....	50

5.6	Increased Price of Product.....	53
5.7	Willingness to Pay: Lugazi.....	53
5.8	Willingness to Pay: Wobulenzi	56
5.9	Discussion.....	57
Chapter 6. Discussion and Recommendations.....		59
6.1	Constraints to Growth.....	59
6.2	The Rural Towns Water and Sanitation Programme	61
6.3	Recommendations	61
Appendix One.....		63
Appendix Two.....		65
Bibliography.....		71

List of Tables

Table 1.1. Composition of Merchandise Exports: Shares of Total Exports.....	13
Table 1.2. Structure of the Economy: Percent of GDP.....	14
Table 1.3. Increase in population, labor force and employment in small enterprises in Bostwana, Kenya, Malawi, Swaziland and Zimbabwe (1981-1990).....	15
Table 1.4. Increase in Small Enterprise Employment: New Start-ups vs. Expansions (1981-1990).....	16
Table 3.1. Percentage of Firms Surveyed of Indicated Business Type	24
Table 3.2. Employee Characteristics	24
Table 3.3. Hours and Days of Operation.....	25
Table 3.4. Percentage of Respondents of Indicated Position.....	25
Table 3.5. Respondents' Education and Experience	25
Table 3.6. Age of Firms	26
Table 3.7. Percentage of respondents with Indicated Principal Reason for Starting Business	27
Table 3.8. Total Number of Paid and Unpaid Workers.....	27
Table 3.9. Percentage of Respondents who have Made any Capital Investments in their Firm in the Previous Year.....	27
Table 3.10. Percentage of Respondents who Plan to Expand their Businesses in the Next Year	28
Table 3.11. Of those Respondents who Plan to Expand their Business, the Way in which They Plan to Do So.....	28
Table 3.12. Wobulenzi: Revenue and Capitalization	29
Table 3.13. Lugazi: Revenue and Capitalization.....	30
Table 3.14. Wobulenzi: Total Expenditures per Firm based on Average Expenditures per Category.....	30
Table 3.15. Lugazi: Total Expenditures per Firm based on Average Expenditures per Category.....	30
Table 3.16. Monthly Profits.....	31
Table 4.1. Business Registration	36
Table 4.2. Percentage of Respondents who would be able to Obtain a Loan for 300,000 shillings (US\$ 244).....	37

Table 4.3. Land Rights.....	38
Table 5.1. Potential Impacts of Improved Water Supply on MSEs.....	41
Table 5.2. Principal Source of Water for Business.....	43
Table 5.3. Wobulenzi: Percentage of Firms Using Indicated Water Source	43
Table 5.4. Lugazi: Percentage of Firms Using Indicated Water Source.....	44
Table 5.5. Percentage of Respondents that use Water for Indicated Purposes.....	44
Table 5.6. Wobulenzi: Respondents who Used Indicated Water Source Prior to the RTWSP.....	45
Table 5.7. Wobulenzi: Firms that Used Vendors Prior to the RTWSP	45
Table 5.8. Wobulenzi: Amount of Water Obtained per Day	47
Table. 5.9. Lugazi: Amount of Water Obtained per Day.....	47
Table 5.10. Wobulenzi: Cost of Water per Jerrican	47
Table 5.11. Lugazi: Cost of Water per Jerrican.....	47
Table 5.12. Wobulenzi: Water Usage of Firms Whose Previous Water Source was Vendors ...	48
Table 5.13. Percentage of Respondents that Store Water.....	49
Table 5.14. Of those Respondents that Store Water, the Amount Currently Stored.....	49
Table 5.15. Container Used to Store Water	49
Table 5.16. Cost of Tank or Large Container of those who Store Water	49
Table 5.17. Wobulenzi: Percentage of Respondents who Treat Water	50
Table 5.18. Lugazi: Percentage of Respondents who Treat Water.....	50
Table 5.19. Percentage of Respondents who have had to Shut Down their Firm because of a Lack of Water	51
Table 5.20. Of those Respondents who have had to Shut Down their Firm, the Number of Days they were Required to do so	51
Table 5.21. Percentage of Respondents who Plan to Expand Their Business in the Next Year.....	52
Table 5.22. Of those Respondents who Plan to Expand, How They Plan to Expand	52
Table 5.23. Percentage of Respondents Who Indicated that the RTWSP has directly Affected their firms by the Indicated Impacts... ..	52

Table 5.24. Lugazi: Percentage of Owners Willing and Able to Pay 250,000 shillings (US\$ 203) for a Private Water Connection.....	54
Table 5.25. Lugazi: Percentage of Renters Willing and Able to Pay for the Use of a Private Connection at the Indicated Prices.....	54
TABLE 5.26. Lugazi: Percentage of All Respondents who would Be Willing to Use a Kiosk at the Indicated Prices.....	55
Table 5.27. Lugazi: Of those who Indicated that they Would Use Both a Kiosk and a Private Connection, the System they Would Prefer	55
Table 5.28. Wobulenzi: Percentage of Owners Willing and Able to Obtain a Private Connection at the Indicated Prices.....	56
Table 5.29. Wobulenzi: Percentage of Renters Willing to Obtain a Private Connection for Indicated Monthly Charge	57
Table 5.30. Wobulenzi: Satisfaction with Current Water Source.....	57
Table 5.31. Lugazi: Satisfaction with Current Water Source	57

List of Figures

Figure 3.1. Number of Firms with Indicated Business Age	26
Figure 3.2. Lugazi: Respondents' Economic Outlook for Business.....	28
Figure 3.3. Wobulenzi: Respondents' Economic Outlook for Business	29
Figure 4.1. Standardized Rankings of Constraints to Growth Factors	33
Figure 5.1. Average Monthly Revenues for Firms Based on Principal Source of Water	46

Sub-Saharan Africa (SSA) continues to be one of the greatest development challenges in the world. Decades of reform have encouraged growth but it has been limited and poverty is still pervasive; Africa is as poor now as it was 20 years ago. Human development continues to be a challenge; 25 out of the 48 SSA countries have adult literacy rates below 40% and 15 countries still enroll less than half of their children in primary school. 240 million citizens, 40% of the SSA population, live on less than \$1 a day. Economic growth has been slow; in 1997, the annual growth rate was estimated at around 4.6% compared to 4.8% in 1996 and 3.3% in 1995. With the highest rate of population increase in the world (2.8% per year), the situation is acute and the challenge continues to be discovering why previous attempts for development have been unsuccessful and to define new strategies for successful development (World Bank, 1998b).

About 70% of Africa's poor live in rural areas, and the rural population will continue to outnumber the urban population for nearly three decades to come. While agriculture continues to be an engine of growth in rural areas, its past performance has been disappointing with growth being exceeded by an expanding population. Agriculture accounts for 35% of the region's GNP, 40% of exports and 70% of employment (World Bank, 1998b). As a result, governments and international aid organizations have looked towards strategies for economic development that could work in partnership with agricultural production. Although in the past large-scale industrial growth has been encouraged, more recently there has been growing attention paid to micro and small enterprise (MSE) development. This chapter presents a history of structural adjustment in SSA, and specifically in Uganda. It also gives evidence of MSE growth and effectiveness. Finally, it presents the issues that are explored in this paper.

1.1. Structural Adjustment in Sub-Saharan Africa

Under the guidance of and in partnership with the World Bank and the International Monetary Fund, SSA countries have implemented ambitious and drastic policy and structural reforms in order to restructure the economic framework upon which growth would be based. By 1990, most SSA countries had structural adjustment programs in place. This

widespread participation in adjustment programs was based on the assumption that before any type of economic development could be sustained, a stable macroeconomic framework was needed (World Bank, 1998c).

The main objectives of these adjustment programs are to:

1. Create a long-term equilibrium where indigenous resources and investments can be better allocated and used more efficiently.
2. Encourage overall higher rates of savings, investments and learning in firms so as to provide a stable ground from which growth can be sustainably encouraged (Biggs, 1996).

These objectives are to be achieved by lowering inflation; establishing competitive exchange rates and market-determined interest rates; reducing budget deficits; introducing trade liberalization; reducing taxation on imports and exports; and abolishing price controls. The strategies used to achieve these goals have varied widely from country to country but in general, progress has been slow. Overall, economic growth has averaged just 3.3% since 1962, only slightly above the 2.8% population growth for the region (World Bank 1998a).

1.2. Structural Adjustment in Uganda

After independence in 1962, Uganda was considered to be one of the most promising countries in SSA. Self-sufficient in food and agriculturally strong, Uganda also had a healthy manufacturing sector. In both agriculture and manufacturing, export earnings were financing imports and the country's exports exceeded imports (positive current account). Uganda also had an extremely reputable health service system with widespread immunization programs and vaccinations centers. This promising growth, however, was dramatically reversed when Idi Amin assumed power in 1971.

Amin's eight-year dictatorship proved devastating for the country both economically and socially. An estimated 500,000 Ugandans lost their lives and as many as one million were displaced from their homes. 200,000 were estimated to have fled the country to live in exile. This outmigration resulted in a tremendous loss of skilled labor and was accompanied by dramatic economic decline. Between 1970 and 1980, Uganda's GDP declined by 25%, imports by 50% and exports by 60% (World Bank, 1993). Government expenditures

become increasingly dependent on bank borrowing and, as a result, average annual inflation rates often exceeded 70% (World Bank, 1993).

Political and civil strife continued after Amin was overthrown in 1979 by the Apollo Milton Obote regime and did not abate until 1986 when the National Resistance Movement (NRM), led by Yoweri Museveni, assumed power. However, the legacy left by 15 years of economic mismanagement had made Uganda one of the poorest countries in the world. Real gross domestic product (GDP) per capita was 42 percent below its level in 1970; the public revenue base had collapsed; hyperinflation persisted; and government expenditures, exports and investment had all fallen to below 10 percent of GDP (World Bank, 1999). The health and education system had disintegrated over the years and physical infrastructure had completely crumbled. The challenges facing President Museveni were formidable.

In order to provide macroeconomic stability and a basis from which to encourage economic recovery, Uganda initiated an ambitious structural adjustment program in 1987. With the strong support of multi-lateral and bi-lateral aid agencies, Uganda implemented a strategy focused on achieving:

1. Financial stability and low inflation
2. A balanced current account
3. Increased capacity utilization of existing industries
4. Infrastructure rehabilitation and
5. Increased productive capacity
6. Improved pricing policies and producer incentives
7. Efficiency in the public sector and improved resource allocation (World Bank 1998a)

These overarching goals translated into policy measures that included:

1. The introduction of a new currency coupled with a 30% tax on currency and bank deposits held by the public
2. A 77% devaluation of the Ugandan Shilling in foreign currency terms
3. Increases in producer prices of traditional export crops
4. Increases in the prices of petroleum products.

Over the last ten years, the policy measures have been coupled with strategies to facilitate growth of the agricultural and industrial sectors.

The focus on agriculture was crucial because of its historical importance and because it accounts for some 80% (1992) of the nation's employment. Agriculture was seen as having the potential to supply food to regional markets, to provide the raw materials for an industrial sector and most importantly, to encourage exports and generally act as the main instrument for country-wide economic growth (World Bank, 1993). To encourage the development of the agricultural sector, therefore, the government adopted numerous policies focused on increased research and development, infrastructure, privatization of agricultural enterprises, international market access, and land ownership (IMF, 1997).

Agriculture will likely continue to play an importance role in the nation's economy. Uganda is favored with fertile land and a good climate. Nonetheless, the ability of the traditional crops to attract foreign exchange has decreased substantially over the years (Table 1.1). Despite fluctuating world prices and competition from non-traditional agricultural exports (NTAE), the government continues to emphasize traditional cash crops for export revenues and as a main factor in economic growth (World Bank, 1996).

At the same time, there has also been an increasing focus on the development of the industrial sector. While still quite small relative to the agricultural sector (Table 1.2), the Ugandan government has made concerted efforts to encourage private investment in manufacturing so as to not only spur an export market but also to prompt a transformation of the economy.

Table 1.1. COMPOSITION OF MERCHANDISE EXPORTS: SHARES OF TOTAL EXPORTS

(percent)	Traded Agriculture ¹	Non-Traded Agriculture ²	Manufactured Goods
1989	90.9	7.6	1.3
1990	80.3	18.3	1.3
1991	72.1	21.6	1.3
1992	74.2	23.7	2.1
1993	67.5	28.3	4.3

¹ Coffee, tea, tobacco and cotton

² Less Traditional Exports

Source: Background to the Budget, 1994-95, MFEP, and EPADU for 1993 estimates.

Table 1.2. STRUCTURE OF THE ECONOMY: PERCENT OF GDP

	1976	1986	1996	1997
Agriculture	73.3	56.6	45.5	43.8
Industry	7.5	10.2	16.0	17.3
Manufacturing	6.1	6.4	7.8	8.2
Services	19.2	33.2	38.5	38.9

Source: The World Bank, 1999b.

The results of these reforms have been hailed by the World Bank and the IMF as great successes. Real GDP growth has averaged 6.4 percent over the past decade and has been steadily increasing (it was 8 percent in 1994/5-1996/7, and underlying inflation was 5 percent). In fact, Uganda had the 6th fastest growing economy in the world in 1998 (World Bank 1998a). Nonetheless, 46% of the population still lives in poverty (World Bank, 1998c).

Uganda's emphasis on creating a stable and prosperous agricultural and industrial sector is not without precedent. As the past development of many newly-industrialized countries has shown, strong government support of particular sectors can help them become engines of growth that catalyze rapid economic development. However, as the above discussion shows, growth dependent on the agricultural sector is not secure. Fluctuating world prices and low levels of private and foreign investment have spurred the government to look towards other mechanisms for growth, in particular - the support and development of micro and small enterprises (MSEs).

1.3. Micro and Small Enterprises in the Developing World

Over the last several years, growing evidence suggests that MSEs can contribute significantly to economic growth and poverty alleviation in Sub-Saharan Africa or less developed countries. MSEs have characteristics that provide a good fit with the needs of developing countries, among them:

1. self-employment opportunities for the poor
2. use of labor-intensive, rather than capital intensive, technologies
3. opportunities for indigenous peoples rather than the need for foreign human investment
4. opportunity for indigenous peoples to develop skills
5. a bottom-up approach to development. (Miller, et. al. 1990)

By addressing the above needs, MSEs provide an opportunity to those not engaged in agriculture and large-scale industry for significant income generation. At the same time MSEs can draw those within agriculture and industry into more skilled and productive activities. By being based in a liberalized market economy, MSEs also help to shift development from large scale industries widely dependent on direct foreign investment and significantly vulnerable to world prices to more micro-managed and equitable development. Essentially, the literature suggests that the bottom-up development strategy offered by MSEs can promote poverty alleviation by providing employment and stimulating small-scale economic development by building upon existing capabilities (Biggs, 1996).

Growth in the MSE sector has been exceptional in many developing countries, particularly in South and East African countries. In a study of five African countries - Botswana, Kenya, Malawi, Swaziland and Zimbabwe - Mead (1994) shows that 40% of the increase in employment within these countries can be attributed to small enterprises (Table 1.3). Additionally, 75-80% of the employment growth in the sector can be attributed to new MSE start-ups. However, the expansion of existing businesses in the sector appears to be relatively small; only 23% of businesses were able to add one or more people to their workforce over the same 10-year period (Table 1.4) (Mead 1994). This implies that the barriers to entry into MSE activities are few but the ability of businesses to grow is severely limited. What, then, are the constraints to MSE growth and what are the implications for policy makers?

Table 1.3. INCREASE IN POPULATION, LABOR FORCE AND EMPLOYMENT IN SMALL ENTERPRISES IN BOTSWANA, KENYA, MALAWI, SWAZILAND AND ZIMBABWE (1981-1990)

	Five-Country Aggregate (in thousands)
Increase in population of working age	6,736
Increase in labor force	4,859
Increase in employment in small enterprises	2,094
Percentage (row3/row2)	43%

Table 1.4. INCREASE IN SMALL ENTERPRISE EMPLOYMENT: NEW START-UPS VS. EXPANSIONS
(1981-1990)

	Five-Country Aggregate (in thousands)
Employment creation through new start-ups	1,618
Employment creation through expansion of existing enterprises	476
Total employment creation in small enterprises	2,094
Percentage (row 2/row 3)	23%

Source: MEAD, 1994.

1.4. Micro and Small Enterprises in Uganda

Similar to some of the previously mentioned countries, MSEs play an important role in Uganda: 90% of total non-farm private sector workers, approximately 1.5 million people, are employed in about 800,000 MSEs. Over the last five years, the sector has witnessed 20% annual growth (MSEPU, 1998). As a result, the Ugandan government has taken an active role in promoting MSE activities. In particular, in June 1996, Uganda established an MSE Policy Unit (MSEPU) within the Sectoral Planning Department of the Ministry of Planning and Economic Development (MPED). The creation of the unit was based on the government's belief that it must create an enabling environment that encourages and helps to sustain growth in the private sector.

The MPED is charged with:

1. Facilitating policy formulation, reform and co-ordination in favor of MSEs.
2. Providing an instrument through which cooperation and coordination of MSE activities can be better facilitated.
3. Promoting financial services, access to training and technology, trade and investment and rural development related to MSEs.
4. Creating a database for monitoring progress and assessing impact of government policies on MSEs.
5. Creating awareness of private sector development and MSEs in particular (MSEPU, 1998).

Most significantly, the MSEPU drafted a formal MSE policy document with the cooperation of private sector representatives, entrepreneurs and government agency staff in April 1998.

This policy document reflects the official position and goals of the Ugandan government with respect to MSE promotion.

The policy document asserts that the main constraints to growth are as follows:

1. Lack of savings and credit facilities
2. Lack of access to training and extension facilities related to technology dissemination and enterprise management
3. Inadequate information on business opportunities, services, new technologies and government policies
4. Unfavorable legislation and government rules and regulations
5. Lack of efficient organization and common interest groups
6. Failure to cater to the well-being of the MSE sector at the national level
7. Poor physical infrastructure facilities.

Various policy initiatives have been identified to address most of the above constraints:

1. Promoting an “enabling environment” for businesses: the legal and regulatory framework; research, sub-contracting and marketing; district and national development planning; co-ordination and organization; infrastructure development
2. Financial service delivery
3. Training, advice and extension services
4. Technology development and transfer
5. Information dissemination
6. Cross-cutting issues: HIV/Aids, Gender

Although a variety of issues are in the policy document, emphasis is placed on access to financial services (e.g., loans), and information and technology dissemination.

The government should be lauded in its recognition of and action taken to support MSEs, however, insufficient information about constraints to firm growth remains a challenge. Without such knowledge it is particularly difficult to evaluate the MSE policy recommendations in terms of their relevance to the “felt needs” of firms. The work presented here aims to improve that knowledge and serve as a benchmark for future research to see in what ways policy actions have affected the MSE environment. This

research is an attempt to address the MSEPU policy focused on infrastructure and to create a greater understanding of what factors MSEs feel to be the most constraining to their growth. The focus is on the relative importance of certain factors and, in particular, water provision.

The basis of the work presented is a comparative analysis conducted on the effects of the provision of piped water infrastructure on MSEs. As Wobulenzi was recently the recipient of a piped water system, we have been able to compare water usage by firms in Wobulenzi and Lugazi and within Wobulenzi before and after the project. This analysis furthers our understanding about constraints to MSE growth generally, and also provides evidence regarding the effects of particular infrastructure investments on the economic performance of MSEs. In doing so, we have been able to evaluate the policies adopted by the Government of Uganda (GoU) and suggest areas where further government action appears warranted.

In January 1999, MSEs in two secondary towns in Uganda, Wobulenzi and Lugazi, were surveyed about their enabling environment, costs and revenues. More specifically, we obtained information from firm owners and/or managers about what they felt to be their constraints to growth. These included taxes, regulations, access to credit, electricity, transportation, water and land. The data have been analyzed to assess which factors are most constraining.

This paper is organized into six chapters. Following this introduction, the second chapter gives a brief overview of the two towns surveyed, Wobulenzi and Lugazi, and a description of the study methodology and survey work conducted. The third chapter presents the characteristics of the MSEs surveyed. The fourth chapter presents the results and evaluation of the constraints analysis. The results of the comparative analysis of water usage is presented in the fifth chapter and final conclusions and recommendations are made in the sixth chapter.

This chapter will present an overview of the secondary towns of Wobulenzi and Lugazi, Uganda. It will also present the survey design, pre-testing and implementation.

2.1. Wobulenzi

Wobulenzi is a town of approximately 10,000 residents, located 48 km north of Kampala in the Luwero district. The major highway between Kampala and the Northern Region of Uganda runs through the center of the town and renders Wobulenzi the trading center of the Luwero district. The town is divided into the West, Central and East parishes. Most of the modern trading development is in the Central zone although much commerce happens throughout the parishes.

The main economic activities of the town include coffee cultivation and processing, maize processing and gin production. The center of town is mixed commercial-residential consisting of two lodging houses, two petrol stations many retail shops and restaurants. There is also a small marketplace, post office and a taxi park. Wobulenzi has both electricity and telephone service.

The land in Wobulenzi was once owned by several private landlords; currently, however, much of the land has been divided into plots and sold freehold to individuals. The Socio-economic survey conducted by the Small Towns Water and Sanitation Project indicates that 60% of the residents in Wobulenzi live in homes that they own. About 40% of the residents has a households have between 4 and 7 people and about 77% of all residents are married. The main occupations of the household heads are commerce/trade (48.3%), employees of others (18.6%), and farming (13.4%). 84.7% of the residents have a household monthly income of under 100,000 shillings per month.

The water situation in Wobulenzi has changed dramatically in the last two years. Installation of a piped water system was completed in 1998 under the auspices of the Rural Towns Water and Sanitation Programme (RTWSP) of the Government of Uganda. Prior to the project, residents primarily depended on seven boreholes (two of which belong to schools),

two protected springs, one piped system in the Luzzi zone and a number of unprotected sources (swamps and wells). The new water system provides water sold at kiosks in 31 different locations. Businesses and households can also obtain private water connections. About 20 households and businesses currently have private water connections.

The Government of Uganda obtained funds from the World Bank to implement a nationwide RTWSP whose objective was to provide improved water and sanitation facilities specifically to meet the needs of the communities. Wobulenzi was identified in 1994 as one of the 11 towns in the nation to participate in the program. The construction of the project began in 1997 and was designed to accommodate a population of 17,333 people. The project cost was estimated, in 1994, to be approximately US\$ 1,500,000.

The source of water for the piped system is untreated groundwater, which is pumped by electricity-powered pumps by the Water Authority (WA). The WA is responsible for managing the kiosk system where attendants sell the water at specified hours everyday. The price per jerrican is 25 shillings. The WA is also responsible for installing private connections to households and businesses. The costs of a private connection are approximately 250,000 shillings (US\$ 203) with associated monthly usage costs. Owners of private connections are allowed to sell water to other residents without further payment to the WA.

There is no sewage collection system in Wobulenzi. Most residents have conventional latrines (75.1%) or traditional pit latrines (16.3%).

2.2. Lugazi

Lugazi is located 43 kilometers east of Kampala in the Mukono District. The main highway between Kampala and Jinja runs directly through the center of the town. There are approximately 20,000 residents with an average population density of 800 persons per square kilometer. The topography of the area is hilly and the climate tropical. Annual rainfall is approximately 1400 mm.

The main economic activities in the area are the cultivation and processing of tea and sugar cane. There is a mixed commercial-residential town center of a few square blocks, which includes a central marketplace, a few lodging houses, petrol stations, garages, and restaurants. Lugazi also has a bank, post office, health clinic, and railway station. Lugazi also has electricity and telephone service.

Most of the property in Lugazi is either owned by or leased from just two large families, Mehta and Kulubya, who control the town's large sugar cane and tea plantations, respectively. Roughly one third of Lugazi's population lives in rent-free housing within labor camps managed by these plantations. Of the remaining two-thirds, only 14 percent live in owner-occupied housing. Forty two percent live in private, rented housing. Less than half of households have electricity for lighting. Ninety-one percent of the population cook either with firewood (38 percent) or charcoal (53 percent). Twenty five percent of the population of Lugazi is illiterate (Uganda, 1991).

Water supply, as well as other services, are provided to households in the plantation labor camps free of charge by the owners. In the rest of Lugazi, the majority of residents fetch water themselves from springs (56% do so in dry season, 38% rainy season). Another 41% obtain their water from vendors in the dry season and 29% do so in the rainy season at a cost of 125 shillings per 20-liter jerrican. The remaining population obtains their water from handpumps, boreholes or rainwater; there is no piped water system. Nor is there a sewage collection system; a majority rely on some form of pit latrine.

2.3. Survey Design, Pre-testing and Implementation

The research described in this thesis was conducted over a three-week period in Uganda during January 1999. Seven university-educated men and women from Kampala were hired to serve as enumerators for the study. During the first week, firm level surveys were developed and pre-tested for each of the communities studied. The enumerators participated actively in survey development, revision and translation and also received intensive training in survey administration. Role plays and survey pre-testing in suburbs around Kampala were used both to refine the survey instrument and to hone enumerator's skills.

During the second week, the team traveled to Wobulenzi where a total of 184 firm surveys were completed. Local representatives assisted enumerators by facilitating introductions with local businesses and encouraging firm owners to cooperate with requests for interviews. Enumerators completed an average of 7 surveys per day for 5 days, and were refused interviews by 4% of potential respondents. Enumerators were instructed to attempt an interview with firm owners but were allowed to interview senior managers in the event that an owner was unavailable.

During the final week of field work, the study followed a similar approach in Lugazi. The enumerators were divided among the districts of the town and instructed to approach every business for an interview. There were six enumerators that interviewed an average of 8 firms per day for four days for a total of 176 surveys. Approximately 5% of potential respondents refused to provide interviews.

A similar sampling strategy was used in both towns: Each enumerator was assigned a particular commercial area and was instructed to interview every enterprise within its borders. The team thus moved through the main commercial districts of both towns in a progressive pattern, with the aim of 100% coverage.

We have identified MSEs as an important sector insofar as they are being looked at as new tools for economic growth in Uganda. In order to better understand what these MSEs are and how they operate, this section will focus on identifying the general characteristics of the MSEs that were surveyed and more importantly, it will focus on the unique characteristics of MSEs that have made them targets of policy reform. This chapter will first present the background characteristics of the MSEs surveyed and then further explore the various factors that are unique to MSEs as an economic sector in the developing world and that are shared by the firms surveyed; more specifically, the use of labor intensive rather than capital intensive technologies, equitable opportunities, ease of entry, self-employment opportunities and the barriers to growth.

Wobulenzi and Lugazi are two small secondary towns both located on major highways. Many of the MSEs have located along the sides of the highways in order to attract travelers as well as residents of the town. This location choice may also be because of their need for access to transportation services.

The majority of the MSEs surveyed are retail establishments selling dry goods and foodstuffs (Table 3.1). The variety of retail establishments is wide-ranging and many are quite specialized; some shops sell stationary, imported clothing, furniture, spare parts for bicycles, passion fruit juice, maize, or packaged foods. Many of the firms are also service establishments such as beauty salons, battery charging shops and various repair shops. There are also a few restaurants and lodges. The restaurants are usually small, in terms of capitalization, but the one or two lodges within each town are usually quite larger than the other firms. Wholesale businesses are a very small percentage of the firms surveyed as are petrol stations. In Lugazi, there were a number of clinics and pharmacies surveyed but much fewer in Wobulenzi. These firms usually provide rudimentary health care services and drugs.

Table 3.1. PERCENTAGE OF FIRMS SURVEYED OF INDICATED BUSINESS TYPE

	Wobulenzi	Lugazi
Retail: Dry Goods	29.3	32.6
Retail/Wholesale: Dry Goods	1.6	2.2
Wholesale: Dry Goods	1.1	1.1
Retail: Foodstuffs	29.3	28.1
Retail/Wholesale: Foodstuffs	1.6	3.4
Wholesale: Foodstuffs	0.5	0.6
Services	21.7	11.8
Clinic/Pharmacy	1.6	8.4
Restaurant/Lodge	12.5	10.1
Petrol Station	0.5	1.7

The MSEs in our sample are typically firms with few employees but long business hours. The median number of workers in both towns is two, with more than 70% of firms surveyed having 2 workers or less (Table 3.2). However, these firms are often open for business for an average of 13 hours per day, seven days a week (Table 3.3). These businesses tend to be quite small, in terms of turnover and physical size, so there is less of need for more workers. Also, many are also attached to households (34.1% in Wobulenzi and 20.3% in Lugazi). The owners and managers, therefore, tend to stay at the firm throughout the day. These firms are also more labor-intensive than capital-intensive. Firm expenditures on equipment in Lugazi is only 1.2% of total annual average firm expenditures and in Wobulenzi, 2.5%. These costs rank lower than most other firm expenditures and indicate the lesser need for technologies as opposed to labor which is 21.2% of costs in Lugazi and 8.3% of costs in Wobulenzi.

Table 3.2. EMPLOYEE CHARACTERISTICS

	Wobulenzi	Lugazi
Average Number of Workers	1.9	2.2
Median Number of Workers	2.0	2.0
Percentage with 1 Worker	46.7	38.8
...2 Workers	37.5	38.2
...3 Workers	6.0	11.8
...4 Workers	3.8	5.0
...5 Workers	4.9	0.6
...6 Workers	1.1	1.7
...7 or more Workers	0.0	3.9

Table 3.3. HOURS AND DAYS OF OPERATION

	Wobulenzi	Lugazi
Average Number of Days Open	6.6	6.6
Average Number of Hours per Day	12.6	12.5
Median Number of Days Open	7.0	7.0
Median Number of Hours per Day	12.5	12.0

MSEs are often identified as providing more equitable opportunities for women. In the firms surveyed, this has proven to be true. In Wobulenzi, 65.2% of the survey respondents were the owner or co-owner (Table 3.4). Of these, 54% were female. Of the respondents that were managers (23.9%), 66% were female. In Lugazi, of the 53.4% of the respondents that were the owner or co-owner, 43% were female and 53% of the managers were female. This is a very strong indication in support of MSEs and their ability to be an opportunity for both men and women to generate income. Additionally, over 90% of the respondents in both towns attended some type of school. However, most have only completed secondary school (Table 3.5). These characteristics reinforce the idea that MSEs are an equitable opportunity for individuals with a variety of socioeconomic and demographic characteristics.

Table 3.4. PERCENTAGE OF RESPONDENTS OF INDICATED POSITION

	Wobulenzi	Lugazi
Owner/Co-Owner	65.2	53.4
Owner's Wife	10.9	9.6
Manager	23.9	36.5

Table 3.5. RESPONDENTS' EDUCATION AND EXPERIENCE

	Wobulenzi	Lugazi
% Attended School	97.0	95.0
% Completed Up to Primary	30.0	36.0
% Completed Up to Secondary	56.0	46.0
% Completed College/University	10.0	17.0
% Completed Vocational School	4.0	4.0
% With No Schooling	3.0	5.0
Average Number of Years of Business-Related Experience	6.3	5.6

The increasing importance of MSEs as income generating activities for rural populations is often proven by looking at their growth in recent years. In Wobulenzi and Lugazi, the number of firms that have been started in recent years is striking. As Figure 3.1 shows, the majority of firms surveyed were started within the last five years. The median age of a firm in

Wobulenzi is 3 years whereas in Lugazi it is 2 years (Table 3.6). The rapid proliferation of these firms is indicative of the positive environment for MSE start-up and is reinforced by the reasons these firms were started. When owners were asked why they started their business, 64.5% of the owners in Wobulenzi said that it was because they saw a profitable opportunity and 76.7% indicated so in Lugazi (Table 3.7). Although some respondents indicated that they were not able to find jobs, the option of opening a firm was available to them, reinforcing the belief that the barriers to entry into the MSE sector are few, even when other employment opportunities may not exist.

Figure 3.1 NUMBER OF FIRMS WITH INDICATED BUSINESS AGE

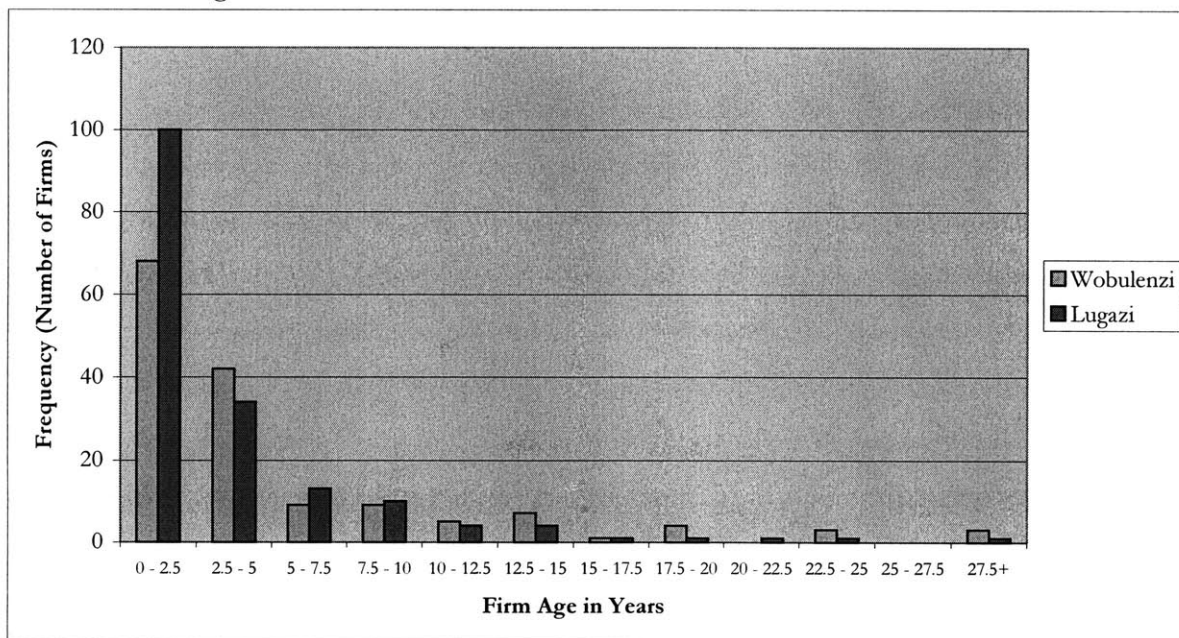


Table 3.6. AGE OF FIRMS

	<i>(years)</i>	
	Wobulenzi	Lugazi
Average	4.9	3.6
Median	3.0	2.0
Stand. Dev	6.2	4.8

Table 3.7. PERCENTAGE OF RESPONDENTS WITH INDICATED PRINCIPAL REASON FOR STARTING BUSINESS

	Wobulenzi	Lugazi
Profitable Opportunity	64.5	76.7
Opportunity to Work for Myself	16.7	16.7
Relatives/Friends in Business	5.1	3.3
Could not get a Job	13.7	3.3

However, even with the recent growth in the number of MSEs in the last five years within these two towns, the number of these same firms that have been able to expand their businesses is relatively small. In order to measure individual firm growth, several survey questions were analyzed. One is the change in the number of employees in these firms. In Wobulenzi, the median number of employees (paid and unpaid) at firm start-up was 1 and now it is 2. In Lugazi, the total number of employees has remained consistent with a median of 2 employees per firm (Table 3.8). The little or no change in the number of firm employees suggests that, in fact, firms have not been able to grow. Another demonstration of firm growth is the firms' past ability to make capital investments. Only 27% of firms in both Lugazi and Wobulenzi were able to make such investments in the past year (Table 3.9).

Table 3.8. TOTAL NUMBER OF PAID AND UNPAID WORKERS

	Lugazi		Wobulenzi	
	At Start-Up	Currently	At Start-Up	Currently
Mean	2.1	2.2	1.8	1.9
Median	2.0	2.0	1.0	2.0

Table 3.9. PERCENTAGE OF RESPONDENTS WHO HAVE MADE ANY CAPITAL INVESTMENTS IN THEIR FIRM IN THE PREVIOUS YEAR

	Wobulenzi	Lugazi
No	72.7	72.8
Yes	27.3	27.2

However, the perception of survey respondents about their potential for future growth is positive. Of the respondents, 54.5% in Wobulenzi indicated that they were planning to expand their businesses within the next 12 months and 52.6% indicated so in Lugazi (Table 3.10). Although it is questionable as to whether or not they will be able to make such expansions, there is an indication that a majority of the respondents are confident about the ability of the firm to grow. Most plan to expand their businesses by expanding or increasing the production of goods and some indicate stronger types of expansion in their intentions to hire more workers or open another location (Table 3.11) Furthermore, these firms have indicated a positive economic outlook for their businesses. In Lugazi, 64% of the respondents said that their firm's economic outlook was positive and 70% indicated so in Wobulenzi (Figures 3.2 and 3.3).

Table 3.10. PERCENTAGE OF RESPONDENTS WHO PLAN TO EXPAND THEIR BUSINESSES IN THE NEXT YEAR

	Wobulenzi	Lugazi
No	45.5	47.4
Yes	54.5	52.6

Table 3.11. OF THOSE RESPONDENTS WHO PLAN TO EXPAND THEIR BUSINESS, THE WAY IN WHICH THEY PLAN TO DO SO.

(multiple responses allowed, percentage of respondents)

	Wobulenzi	Lugazi
Open another location	16.7	13.0
Hire more workers	12.9	6.6
Increase production (more of existing products)	63.8	56.0
Expand production (new products)	14.9	23.1

Figure 3.2. LUGAZI: RESPONDENTS' ECONOMIC OUTLOOK FOR BUSINESS

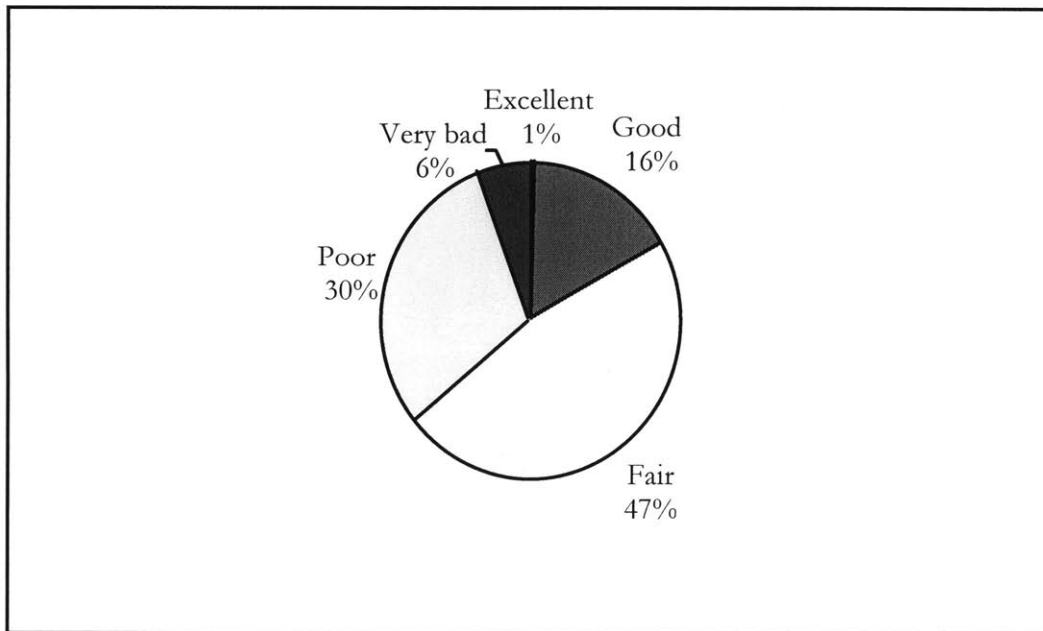
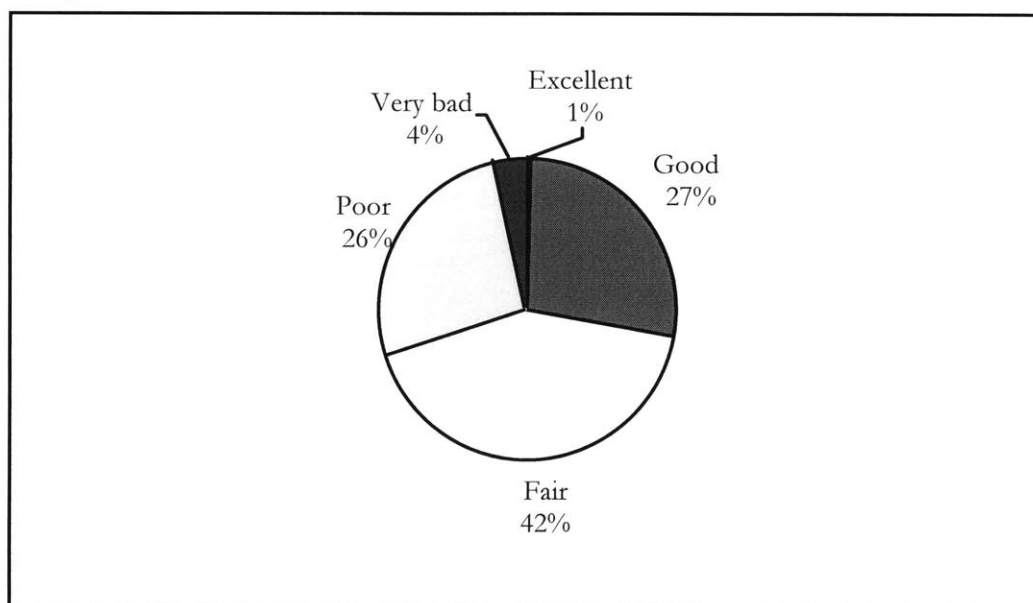


Figure 3.3. WOBULENZI: RESPONDENTS' ECONOMIC OUTLOOK FOR BUSINESS



3.1. MSE Costs, Revenues and Profits

The reported costs and revenues of the firms surveyed vary widely. Many respondents had difficulty in providing an accurate estimate of their monthly revenues, primarily because firms in the towns often do not maintain written accounts. Firm owners were asked about the costs, revenues and level of capitalization in several different ways; a summary of this information is provided in Tables 3.12 and 3.13.

When looking at the median revenues, sales and capitalization levels of firms in Lugazi and Wobulenzi, they are quite similar. The median monthly revenues of firms in Wobulenzi is US\$ 292.68. Weekly sales based on the top three grossing products is US\$ 227.64 and the capitalization costs are US\$ 1138.21 (Table 3.12). In Lugazi, the median monthly revenues are slightly higher at US\$ 341.46 and weekly sales are US\$ 243.90. The median capitalization level is lower at US\$ 813.01 (Table 3.13).

Table 3.12. WOBULENZI: REVENUE AND CAPITALIZATION
(in dollars)

	Monthly Revenues	Weekly Sales	Capitalization
Mean	1088.29	14027.88	2364.23
Median	292.68	227.64	1138.21

Table 3.13. LUGAZI: REVENUE AND CAPITALIZATION
(in dollars)

	Monthly Revenues	Weekly Sales	Capitalization
Mean	1324.13	1784.49	3421.24
Median	341.46	243.90	813.01

Although these numbers are quite similar, it is interesting to see the differences in expenditures between firms in both towns. The majority of the firms' costs are those associated with obtaining goods for resale. In Lugazi, 89.9% of total average costs per firm is associated with goods for re-sale. In Wobulenzi, 79.1% of total average costs per firm are for goods for re-sale. When calculating the costs per firm without goods for resale, we find that firm expenditures do vary considerably between the towns (Tables 3.14 and 3.15).¹ We find that in Wobulenzi, most costs are associated with equipment, raw materials, packing materials, outside services and other fees. In Lugazi, utilities (telephone, electricity, transportation and water) are the highest percentage of firm costs. Lugazi firms also spend a higher percentage of total expenditures on paying fees (both formal and informal) than the firms surveyed in Wobulenzi.

Table 3.14. WOBULENZI: TOTAL EXPENDITURES PER FIRM BASED ON AVERAGE EXPENDITURES PER CATEGORY

	Percentage
Credit	0.5
Fees (formal and informal)	5.1
Rent	18.0
Other Expenses*	18.6
Labor	24.1
Utilities	33.7

*Equipment, raw materials, packing materials, outside services, and other costs.

Table 3.15. LUGAZI: TOTAL EXPENDITURES PER FIRM BASED ON AVERAGE EXPENDITURES PER CATEGORY

	Percentage
Fees (formal and informal)	2.5
Credit	4.4
Labor	9.1
Utilities	11.8
Rent	27.9
Other Expenses*	44.4

*Equipment, raw materials, packing materials, outside services, and other costs.

¹ All percentage costs were calculated without the goods for resale category unless otherwise noted.

Similarly, when comparing the firms' profits, we find a wide variation in the responses and the resulting numbers between towns. Wobulenzi displays more positive profitability although the margins remain small. Lugazi, however, consistently shows negative profitability. Given the somewhat higher revenue and sales figures for the firms in Lugazi, the associated expenditures per firm are higher in Lugazi than in Wobulenzi and is reflected in the lower profits (Table 3.16).

Table 3.16. MONTHLY PROFITS

	Lugazi		Wobulenzi	
<i>(in dollars)</i>	Profits based on Reported Revenues	Profits based on Reported Sales	Profits based on Reported Revenues	Profits based on Reported Sales
Mean	-425.21	-764.92	-209.25	12663.70
Median	-46.07	-89.58	37.99	10.92

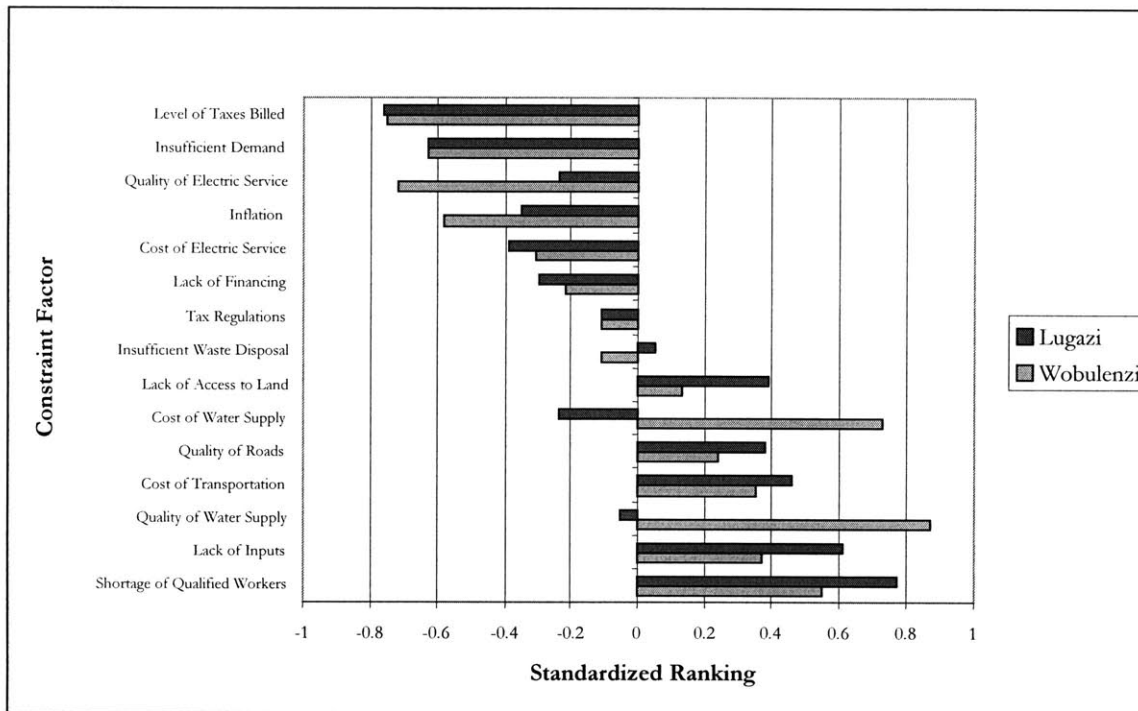
3.2. Discussion

The characteristics of the MSEs surveyed in Wobulenzi and Lugazi are quite similar to those described in other developing country communities in the literature. These characteristics – the use of labor-intensive, rather than capital-intensive, technologies, equitable opportunities, ease of entry, and self-employment opportunities – are what have made MSEs an opportunity for economic expansion and therefore a target of the Ugandan government for financial and institutional support. However, in order to continue to encourage MSEs' role as an increasingly important economic sector, more must be understood about why, despite ease of entry, individual firm growth has been limited.

The characteristics of the MSEs surveyed in Wobulenzi and Lugazi are consistent with the distinctions of MSEs targeted by Structural Adjustment Programs in developing countries. One important similarity is that firms in these towns appear to start-up easily but encounter obstacles to long-term survival and growth. In order to continue to encourage the sustained growth of MSEs, policy interventions should thus be focused on nurturing existing MSEs rather than on easing barriers to entry in the sector. To better understand what policy reforms could help existing MSEs, the firms surveyed in Wobulenzi and Lugazi were asked to rank 14 different factors as to their role as an obstacle to growth and/or productivity on a scale from 1-to-5 (with 1 being a “very big obstacle” and 5 being “not an obstacle at all”). Figure 4.1 presents a summary of responses standardized by firm in order to account for the differences in respondents’ perception of the 1-to-5 ranking system (The raw data obtained can be found Appendix 1).² The data suggest that taxes, electricity, and inflation/price instability are the largest obstacles to growth for firms in both towns. Among the least constraining factors are the availability of qualified workers and inputs/raw materials (Figure 4.1). This section presents a summary of firms’ perceived obstacles to growth and explores several constraints that (1) have been targeted by the MSEPU and (2) are considered significant factors by the firms.

² Standardized numbers reflect each firm’s rankings in standard deviation units relative to that firm’s mean rank (Standardized Value = $(x-\mu)/\sigma$). Essentially, standardization allows us to indicate the relative distance of a constraint ranking from the average scores of the constraint and then evaluate it against the standard deviation positive numbers indicate rankings greater than a firm’s mean value; as the value 5 was given to factors that posed little or no constraint for firms, increasing values decreasing levels of constraint. Similarly, negative values reflect higher-than-average rankings and indicate greater perceived constraint for firms.

Figure 4.1. STANDARDIZED RANKINGS OF CONSTRAINTS TO GROWTH FACTORS



4.1. General Findings

In both Wobulenzi and Lugazi, a shortage of qualified workers was not found to be a significant constraint to growth or productivity. As the size of these businesses is relatively small, the need for many employees is limited. Also, few businesses have the need for specialized skills—for most, unskilled or semi-skilled labor is sufficient. We found that many of these businesses were managed and tended to by the owner or one other employee. As such, there is limited need for outside workers. One exception is in the service industry; respondents in this category felt a shortage of qualified workers to be more constraining than other businesses. This may be explained by the necessary degree of skill required to perform services such as hair cutting and repair work.

In Wobulenzi, the clinics and pharmacies found a lack of skilled labor to be quite constraining relative to the other business types. Again, this may be attributed to the general characteristics of the business type, which we would assume requires more skills. However, this does not seem to be the case in Lugazi. The clinics and pharmacies in both towns give contradictory results throughout our analysis. There are only three samples of clinics and pharmacies in Wobulenzi and it seems as though their perceptions of constraints vary greatly

from the clinics and pharmacies of Lugazi. Additionally, the nature of the clinic and pharmacy imply different firm needs. As such, the findings for the clinics and pharmacies must be interpreted cautiously.

Firms in both towns find waste disposal a relatively small constraint as compared to other factors. Similarly, Shortage of inputs and raw materials are fairly small obstacles in both towns; less than 13% of firms in each town found it to be a very big obstacle.

Some of the more significant obstacles to growth for these firms reflect the limited economic environment in which they operate. In both towns, over 45% of the respondents indicated that insufficient demand was a very big obstacle to their productivity and growth. Additionally, inflation and price instability are also important perceived obstacles to growth in both towns. The uncertainty of prices and fluctuating exchange rates make it difficult for firms to plan investment decisions. Over 40% of respondents in both towns found it to be a very large obstacle.

4.2. Taxation

The largest reported constraint for firms in both Wobulenzi and Lugazi is the level of taxes billed to the enterprises. Over 45% of respondents in both towns reported taxation to be a great constraint to firm growth. The standardized scores suggest equivalent concern over taxes in both towns. The percentage of a typical MSE's costs that can be attributed to taxes and other formal fees (*e.g.*, licenses), however, is quite small. In Lugazi, formal fees and taxes are only .47% of total average costs; in Wobulenzi they are .38% of total average costs.¹ The implied annual tax rates for firms are on the order of 0.47% in Wobulenzi and 0.86% in Lugazi (based on reported revenues). These tax rates emphasize the differences in tax rates between towns and also the notably small rates themselves.

The Uganda Revenue Authority (URA) has only been recently established. Therefore, the taxation process may still be relatively weak in terms of its operations. However, the way in which taxes are collected varies from business to business with little information

¹ If we remove the goods resold category, we find that taxes and formal fees are 4.67% in Lugazi and 1.82% in Wobulenzi of total average costs per firm. Again, this is a small percentage of total expenditures per firm.

dissemination in terms of the level of taxation businesses can expect and the timing of the collection. As such, many businesses feel as though the government is treating them unfairly. This perception in many ways is not unfounded. Evidence from our fieldwork suggests that taxes are often collected by URA authorities who arrive unannounced at businesses, and who then select a rather arbitrary amount of tax based on a rapid assessment of the firm's physical characteristics. It is the nature of this taxation system, then, that promotes resentment and general distrust by MSE operators. It also explains the high degree to which businesses find taxation to be a limiting factor. Variation in scores between business types is quite small and is reflective of the above explanation. Given the small amount of taxes paid, the perception of an unfair taxation system may be biasing these businesses into believing that taxes are a substantial amount of their costs and therefore, a large constraint. Much of this may be attributed to the arbitrary taxation system discussed above and may be alleviated through a more transparent taxation system.

Tax regulations and bureaucracy seem to be less of a constraint for businesses in both towns. However, we did find that more respondents responded negatively to tax regulations in Lugazi than Wobulenzi. This dissatisfaction may have something to do with the relatively higher levels of local taxation in Lugazi.

The MSEPU recognizes the need for a better taxation system. They have proposed making the taxation process more transparent and streamlined, as well as providing better training for URA officers. These are important actions and should directly address the main problems we have been able to assess from respondents. The GoU can also gain much by improving the taxation process. Given the small amount of taxes they have been collecting, by making the process much more stringent and regulated, they gain revenues from the MSEs that may be then used to support other initiatives designed to help MSEs. By not necessarily increasing the levels at which taxes are collected but by providing better information and making the collection system more formal and based on firms' revenues, the government may be able to gain significant levels of revenue, perhaps without further alienating the firm owners. If the tax collection system is indeed as arbitrary as it is perceived, this information could also help inform senior GoU officials about the

performance of URA agents. If the tax collection system is not improved, stronger intervention may be needed in the future if the URA tries to collect higher taxes.

This, however, also highlights the need for firms to operate in a formal business environment. Perhaps the main reason the URA must collect taxes in this manner is because firms do not keep formal records of their revenues and expenditures. It would seem unwise for the URA, then, to collect taxes based on the firm owners' own estimate of revenues without sufficient evidence attesting to the numbers. Without formal bookkeeping methods, URA officials may only be able to trust their own assessment of an individual firm's revenues. Therefore, it is important for firms to learn and adopt conventional bookkeeping practices.

Additionally, although all firms are supposed to register with the town council, only 28% of the firms surveyed in Wobulenzi and 26.3% in Lugazi have formal business registration (Table 4.1). Formal business registration, however, could be greatly beneficial for both the GoU and firms. If firms are formally registered, the GoU can better monitor the MSE environment, implement a more efficient taxation system and be better able to manage programs targeted to MSEs. Additionally, the GoU could make formal registration tied to other MSE targeted policies such as making it necessary to obtain loans.

Table 4.1. BUSINESS REGISTRATION
(percentage of respondents)

	Wobulenzi	Lugazi
Unregistered	67.6	70.9
Registered	28	26.3
Don't know	4.3	2.8

3.3. Financing

Access to financing is another important limitation for MSEs. Loan institutions rarely exist in and around these secondary towns and, given the little capital firms have to use as collateral, banks are reluctant to extend loans. It would seem that this inability to invest for future expansion severely limits growth of these firms. Fifty-two percent of the respondents in Lugazi said that it would impossible for them to obtain a loan of 300,000 shillings (US\$ 244 USD). In Wobulenzi, the comparable percentage was 38.1% (Table 4.2). However, many

respondents were actually unsure of their ability to obtain a loan. This may be because they have never tried to obtain one, are unsure how to obtain information about loans, and/or perhaps they are not interested in obtaining one.

In Wobulenzi, 35.9% considered access to credit to be a very big obstacle and 45.2% did so in Lugazi. Overall, the restaurants and lodges found the lack of access to financing to be more of an obstacle than other types of firms. Given the need for more expensive capital investment in furniture and equipment, this need for more financing is particularly important for restaurants and lodges.

Table 4.2. PERCENTAGE OF RESPONDENTS WHO WOULD BE ABLE TO OBTAIN A LOAN FOR 300,000 SHILLINGS (US\$ 244)

	Wobulenzi	Lugazi
Yes, quite easily	26.0	20.8
Yes, but not easily	18.8	17.2
Maybe/Not Sure	17.1	10.3
Impossible	38.1	51.7

The issue of land tenure is also likely to affect a firm's ability to obtain a loan. If a firm owns property, it will more likely be able to use that property as collateral for bank loans.

However, only 5.5% of the firms surveyed in Wobulenzi have the title deed for their firm property and only 1.1% in Lugazi do (Table 4.3). In Wobulenzi, of those that do have the title deed, 70% have indicated that it would be possible to obtain a loan whereas of those who rent or lease, only 47.3% feel that they would be able to obtain a loan. In Lugazi, 50% of land owners have expressed that it would be possible for them to obtain a loan and 36% of lessees or renters think it would be possible. In these firms, it is clear that those firms with land tenure have a stronger ability to obtain loans. Compared to landowners, a greater percentage of respondents in Wobulenzi and Lugazi have no property rights at all to the land they occupy. The remaining firms rent or lease the land.

Although firms feel that a lack of access to land is not a very strong obstacle, it is a significant percentage of their costs. In Wobulenzi, 28% of average firm expenditures is for rent and 18% is for rent in Lugazi. Many may perceive land ownership as not a very large constraint because of the ease in which they can find rented land. Nonetheless, the land comprises a large percentage of firm expenditures and is directly related with their abilities to

perform other activities that could enhance their growth. Similarly, many may be unaware of the bearing land tenure has on their access to credit. Therefore, land ownership should not be looked at as a non-limiting factor in MSE growth; it indeed is tied directly with many other factors for firms in terms of costs, financing and security.

Table 4.3. LAND RIGHTS
(percentage of respondents)

	Wobulenzi	Lugazi
Title Deed	5.5	1.1
Lease	1.6	1.7
Rent	79.7	88.0
None	13.2	9.1

4.4. Infrastructure:

Uganda's investment in infrastructure is a vital factor in its efforts to encourage sustained economic growth. As such, infrastructure investment efforts are always being made with help from outside donors and multi-lateral aid agencies. Unfortunately, the situation Uganda was left in after the civil strife and the huge capital investment needed in order to provide solid infrastructure has made this a monumental task. It is often viewed, therefore, that any and all investment in infrastructure development is a positive one. Although this may be true in many cases, the limited resources the GoU has, and its reluctance to take on additional debt to development banks, makes these investment decisions critical ones. It is necessary to prioritize the investments that must be made. In the policy document adopted by the MSEPU, all investment in infrastructure is described as critical in the support of MSEs, with the implication that resources will be directed towards all infrastructure improvements with no prioritization of which improvements would be of most benefit to MSEs. However, given the limited ability of the government to support all such investments financially, the empirical evidence we have gathered has shed light on the relative importance of certain infrastructure investments for MSE promotion.

The firms surveyed indicated that the quality of roads is not a significant constraint to their development. This can be attributed to the towns' locations on major highways that are made of asphalt. Although secondary roads, which are usually made of packed red clay, are of lower quality, respondents seem generally satisfied with the road system. They also expressed satisfaction with the costs of transport. A possible explanation may be that the

roads, providing ease of access to inputs and a larger customer base, are what attracted MSEs to these towns; as a result, they are less of a priority once these firms are established. Instead, these firms place a higher priority on other types of infrastructure investments.

Once such investment is electricity. In Wobulenzi, 71% of the firms surveyed have electricity and 84.3% do in Lugazi. However, the quality and reliability of electric service is the third largest constraint overall for the entire sample. Throughout Uganda, electricity is a major problem that has been partially mitigated through a power shedding scheme whereby areas must be cut off from electricity use for several hours a week in rotation. Although this scheme follows a somewhat fixed schedule, firms in Wobulenzi appear to have a much more unreliable electricity supply. In the time we spent in Wobulenzi, electricity was unable for several hours on a daily basis. In Lugazi, electricity was unavailable for only one night and the firms were aware of the timing and duration of the blackout or shutdown. Although it is unclear why Wobulenzi's electricity supply is less reliable, better information dissemination to firms may help mitigate the negative impacts on firm productivity of the unreliable electricity supply. It seemed that firms in Wobulenzi were uncertain as to the length of time electricity would be unavailable; either the information was not given to them or they were unable to obtain the information themselves. For these firms, access to information about the electricity situation is vital for them to operate in a way that is efficient and allows them to plan their activities around power availability.

Additionally, electricity affects the way in which other utilities operate. In the Rural Towns and Sanitation Programme in Wobulenzi, the introduction of piped water infrastructure has been an important and cost-saving development for firms. However, the new water system also relies on electricity-dependent technology to pump the ground water. This has introduced a measure of unreliability for the new water system that has indeed imposed limitations on the ability of the water system to be fully effective. This will be further discussed in Chapter Five.

However, the new piped water system has seemed to have mitigated a significant constraint for firms in Wobulenzi. Wobulenzi firms' standardized rankings of the quality and reliability of water supply suggest that this is the least constraining of the 14 factors surveyed. In

Lugazi, however, it is the ninth most constraining obstacle to growth. Similarly, the cost of water in Wobulenzi is the second least-constraining factor and in Lugazi, it ranks as the sixth most constraining obstacle (along with the quality and reliability of electric service). It is obvious, then, that water plays an important role for these firms. Although other factors such as taxes and insufficient demand are considered more important, water supply still ranks high in importance in terms of infrastructure development.

Firms in Wobulenzi and Lugazi seem to share many similar concerns. The variation in their perceived obstacles to growth is relatively small with the exception of water supply. Given the differences in the way in which firms in each town perceive water as an obstacle to their growth, further analysis can shed light on to what extent the RTWSP in Wobulenzi has increased a firm’s capacity to grow. If capacity-building has been significant, Wobulenzi’s recent experiences can better inform the GoU about the importance of water infrastructure investment and enhance the GoU’s ability to promote MSE growth and expansion.

5.1. Evaluating the Rural Towns Water and Sanitation Programme

In order to evaluate the effects of the RTWSP on firms, the potential impacts of the project should be understood and used as an analytical framework. Both in the short-run and the long-run, improved water supply should increase firms’ profits through effects on their production costs, output quantity, and product prices (Table 5.1).

Table 5.1. POTENTIAL IMPACTS OF IMPROVED WATER SUPPLY ON MSEs

	Short-Run	Long-Run
Decreased Costs of Production	<ul style="list-style-type: none"> ◆ Reduced expenditures on water purchases and storage ◆ Reduced time for water collection ◆ Less time spent for water treatment 	<ul style="list-style-type: none"> ◆ Adjust fixed inputs to be at cost-minimizing levels with new, lower water prices. ◆ Investment in more efficient technology from savings from lower water costs.
Increased Quantity of Output	<ul style="list-style-type: none"> ◆ Decreased water costs enables firms to lower prices and increase sales. ◆ Reduced risk of shutdowns 	<ul style="list-style-type: none"> ◆ Reduced water expenditures produces savings that firms can use to invest in expanded capacity for increased production
Increased Price of Product	<ul style="list-style-type: none"> ◆ Lower water costs for households, increases their disposable income and therefore increases demand for goods (higher demand, higher price firm can charge) 	<ul style="list-style-type: none"> ◆ Same effect as short-run

The provision of a cheaper water supply to firms should decrease, in the short- and long-run, production costs. Additionally, the improved reliability and quality of the water should also have the impact of time savings and therefore, a lower cost function. In the long-run,

the lower costs should enable firms to adjust their mix of fixed inputs at a new cost-minimizing level and to invest in more efficient technologies. Concurrently, firms can also increase their output because of lower input costs and increased reliability of the water supply. The savings on water expenditures can have the effect of allowing firms to expand capacity to produce more goods or services. From the perspective of demand, households' reduced expenditures on water will increase their disposable income and therefore, increase their demand for goods and services. As a result, firms can increase the prices of their products thereby increasing their profitability.

Because this research was completed only 7 months after the introduction of the piped water system in Wobulenzi, it is difficult to assess all the potential impacts of the piped water system. However, the data obtained does provide information on the immediate, or short-run, impacts of the water system, and also provides some indication of the long-run effects. This chapter presents evidence regarding some impacts of improved water supply on the MSEs surveyed, both by comparing firms in Wobulenzi with those in Lugazi, and by comparing MSE performance in Wobulenzi before and after the Rural Towns Water and Sanitation Programme.

5.2. THE WATER SUPPLY IN WOBULENZI AND LUGAZI

The RTWSP project in Wobulenzi introduced a piped water network with two new sources of water for town residents: private water connections and kiosks. Only two firms surveyed had private water connections. Others had not obtained one mainly because they rent their business property or because it is too expensive; average connection costs are 160,000 shillings (US\$ 130). However, many firms have taken advantage of the new kiosk system (Table 5.2). The kiosks are located in 31 different places throughout Wobulenzi, many of which are within minutes' walking distance from the firms (kiosks are staffed by attendants who sell water for 25 shillings (US\$.02) per jerrican throughout the day). When unattended, the kiosks are locked. the majority of MSEs interviewed now use the kiosks as their principal source of water.¹

¹ The full results of the data obtained concerning water may be found in Appendix Two.

Table 5.2. PRINCIPAL SOURCE OF WATER FOR BUSINESS

	Wobulenzi	Lugazi
Kiosks	46.7	N/A
Vendors	31.0	94.4
Standposts	3.8	N/A
Boreholes (wells)	3.8	N/A
Private Connection (WC)	1.1	N/A
Private Connection (Neighbor)	1.1	N/A
Private Connection (Luzzi)	0.5	N/A
Springs	N/A	7.4
Rain Water	N/A	16.2
Surface Water	0.5	N/A

In Lugazi, the situation is dramatically different, where MSEs have only three sources of water: vendors, which are relatively expensive; springs, which are inconvenient; and rainwater, which is seasonal. Vendors are the principal source of water for the MSEs surveyed in Lugazi (Table 5.2). The distribution of business types that use a particular source do not vary considerably between water sources. In all cases, the majority of firms that use water are retail establishments for both dry goods and foods (Tables 5.3, 5.4).

Table 5.3. WOBULENZI: PERCENTAGE OF FIRMS USING INDICATED WATER SOURCE
(by enterprise type)

	Kiosk	Vendors	Other Sources
Retail: Dry goods	25.6	28.1	35.0
Retail/Wholesale: Dry Goods	1.2	3.5	0.0
Wholesale: Dry Goods	2.3	0.0	0.0
Retail: Food	27.9	31.6	35.0
Retail/Wholesale: Food	2.3	1.8	0.0
Services	1.2	22.8	25.0
Clinic/Pharmacy	18.6	5.3	0.0
Restaurant/Lodge	20.9	5.3	5.0
Petrol Station	0.0	1.8	0.0

Table 5.4. LUGAZI: PERCENTAGE OF FIRMS USING INDICATED WATER SOURCE
(by enterprise type)

	Vendor	Springs	Rainwater
Retail: Dry Goods	32.3	46.2	21.4
Retail/Wholesale: Dry Goods	2.4	0.0	0.0
Wholesale: Dry Goods	1.2	0.0	0.0
Retail: Food	26.4	30.8	25.0
Retail/Wholesale: Food	3.6	0.0	0.0
Wholesale: Food	0.6	0.0	3.6
Services	12.6	7.7	14.3
Clinic/Pharmacy	9.0	0.0	21.4
Restaurant/Lodge	10.2	15.4	3.6
Petrol Station	1.8	0.0	10.7

In both towns, the majority of respondents use the water they obtain for business purposes (Tables 5.5), defined as tasks necessary for the operation of the firm (*e.g.*, cleaning the premises), but does not include the washing of hands or preparation of food for personal consumption.² Similarly, in both towns, between 50-60% of respondents use the water for production purposes—tasks that are important for the production processes of the firm (*e.g.*, washing of food for re-sale, the cleaning of utensils, mixing of cement).

Table 5.5. PERCENTAGE OF RESPONDENTS THAT USE WATER FOR INDICATED PURPOSES

	Wobulenzi		Lugazi	
	Business	Production	Business	Production
Yes	95.0	62.5	97.8	58.3
No	5.0	37.5	2.2	41.7

5.3. Water Usage in Wobulenzi Prior to the Rural Towns Water and Sanitation Project

The majority of respondents (48.1%) used the vended water system prior to the Rural Towns Water and Sanitation Project (Table 5.6). The respondents that used the vended water system were primarily retail establishments but almost all categories of businesses used vended water as their primary source. A large percentage (54.7%) of previous vendor users continues to use vended water as a primary source although many have converted to the kiosk system (44.0%) (Table 5.7).

² For the purposes of this analysis, the water users in Wobulenzi are divided into three groups: vendor users, kiosks users and other users. Other users are those that use any on of the 5 other sources available in the town, 10.9% of all firms.

Table 5.6. WOBULENZI: RESPONDENTS WHO USED INDICATED WATER SOURCE PRIOR TO THE RTWSP

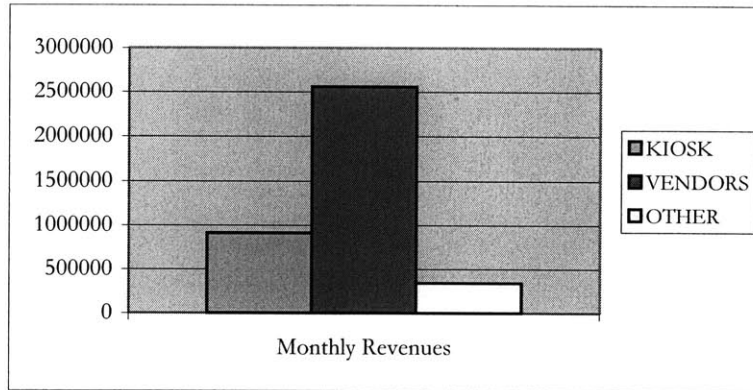
	Percent
Not In Wobulenzi before the project	10.9
Private Luzzi Connection	0.6
Neighbor's Luzzi Connection	2.6
Standposts	19.9
Vendors	48.1
Surface Water	10.9
Boreholes	7.1

Table 5.7. WOBULENZI: FIRMS THAT USED VENDORS PRIOR TO THE RTWSP
(by current water source)

	Percent
Kiosks	44.0
Vendors	54.7
Boreholes	1.3

Understanding which firms have switched to the kiosk system is important to understand who is taking advantage of the water project. The characteristics of firms that have switched to the kiosk system are quite similar to those who have stayed with the vendor system but that largest differences lies in the sales and revenues of the firms. It can be seen that the costs and revenues of the vendor users are higher than those of the kiosk users are, although the profitability of those firms is higher than the vendor users (Figure 5.1). These firms, otherwise, have very similar usage patterns, with the only other distinguishing characteristic being the amount of money spent on the water.

Figure 5.1. AVERAGE MONTHLY REVENUES OF FIRMS
BASED ON PRINCIPAL WATER SOURCE



The firms that have switched to the kiosk system from the vended water system use slightly more water on average than previously. Currently, they obtain 3.16 jerricans of water per day on average whereas when they were using the vendor system they obtained 2.89 jerricans per day, a difference that is very small. Those businesses that previously used vendors and have converted to a kiosk system also tend to use more water than other kiosk users. The average amount obtained per day is 3.16 jerricans whereas the overall average for kiosk users is 2.59 jerricans. Slightly less of these users store water (42.4%) and the amount stored is also less (22.43 liters). Additionally, 69.7% use the water for production purposes, slightly higher than the 60% of all kiosk users. The average satisfaction of this category of kiosk users is 1.36, a higher satisfaction rating than by all the kiosk users overall. Water usage within Wobulenzi has changed very little since the introduction of the RTWSP. Although a cheaper source of water is now available, firms are using only very slightly more water than previously.

5.4. Costs of Production

The amount of water obtained by firms in both towns, currently, is identical. The median amount obtained for both Wobulenzi and Lugazi is 2 jerricans (40 liters) (Tables 5.8, 5.9). The similarity in water usage is surprising given the relatively cheaper and more convenient water supply available in Wobulenzi. Since the water is used for business purposes, there may be a need only for a minimum amount of water and little need to obtain larger volumes. However, even within the two towns, the amount of water obtained from the more expensive water sources is comparable to the amount of water obtained from cheaper

sources. Between the towns, it just may be too soon to observe the firms' adjustment of inputs to capitalize on the cheaper water source. In the future, it may be possible to observe increased water usage as a result of an adjustment in firm behavior.

Table 5.8. WOBULENZI: AMOUNT OF WATER OBTAINED PER DAY
(jerricans)

	Kiosk	Vendors	Other
Mean	2.59	2.55	1.60
Median	2.0	2.0	1.75

Table. 5.9. LUGAZI: AMOUNT OF WATER OBTAINED PER DAY
(jerricans)

	Vendors		Springs		Rainwater
	Rainy Season	Dry Season	Rainy Season	Dry Season	Rainy Season
Mean	2.8	3.0	113.5	93.2	3.2
Median	1.0	2.0	2.0	2.0	1.0

The cost of water, however, is very different for both towns. In Wobulenzi, a majority of businesses use the kiosks as their principal source of water. The cost of water at the kiosk is 25 shillings (US\$ 0.02) per jerrican. In Lugazi, most businesses use vendors where the average cost per jerrican is 145 shillings (US\$ 0.12) per jerrican (Tables 5.10, 5.11). This difference in implies a reduced cost in production for those firms that have taken advantage of the kiosk system.

Additionally, the large difference in water costs between towns also reinforces the implications of the amount of water obtained by these businesses; although water is more expensive in Lugazi, businesses obtain almost the same amount of water as those in Wobulenzi implying an inelastic demand for small volumes of water by firms.

Table 5.10. WOBULENZI: COST OF WATER PER JERRICAN

	Kiosk	Vendors	Other Sources
Mean	28.6	121.3	21.1
Median	25	100	22.5

Table 5.11. LUGAZI: COST OF WATER PER JERRICAN

	Vendors		Springs	
	Rainy Season	Dry Season	Rainy Season	Dry Season
Mean	145.2	157.8	29.0	49.0
Median	150.0	150.0	0.0	0.0

Within Wobulenzi, the effect of the piped water system on firms' costs of production have been dramatic. In addition to giving firms an option for cheaper water, the piped water system has introduced increased competition in the water supply market and has driven prices for vended water down. The average cost per jerrican for kiosk users is 25.8 shillings (US\$ 0.02) per jerrican, a substantial decrease from the 131.7 shillings (US\$ 0.11) they paid on average when using the vendor system. Respondents who have continued to use the vendor system have also benefited from decreased water prices; they are currently paying an average of 127.9 shillings (US\$ 0.10) per jerrican as compared to the 190 shillings (US\$ 0.15) per jerrican they were paying before (Table 5.12). This significant shift in prices for water has allowed firms to realize decreased costs of production and should allow them to pursue increased investment in their firms.

Table 5.12. WOBULENZI: WATER USAGE OF FIRMS WHOSE PREVIOUS WATER SOURCE WAS VENDORS
(by current source, in shillings)

		Current		Previous	
		Cost per Jerrican	Daily Expenditure	Cost per Jerrican	Daily Expenditure
Kiosk	Mean	25.8 (US\$ 0.02)	81.4 (US\$ 0.07)	131.7 (US\$ 0.11)	380.5 (US\$ 0.31)
	Median	25.0 (US\$ 0.02)	50.0 (US\$ 0.04)	150.0 (US\$ 0.12)	300.0 (US\$ 0.24)
Vendor	Mean	127.9 (US\$ 0.10)	307.0 (US\$ 0.25)	190.0 (US\$ 0.15)	456.0 (US\$ 0.37)
	Median	100.0 (US\$ 0.08)	200.0 (US\$ 0.16)	200.0 (US\$ 0.16)	400.0 (US\$ 0.33)

Another important distinction in water usage between the towns is the pattern of water storage. In both towns, about 50% of the MSEs store water (Table 5.13). However, the amount of water stored and the storage containers used are quite different. In Lugazi, the average amount of water stored is 335 liters where in Wobulenzi it is 27 liters (Table 5.14). Although the median amount of water stored in both towns is identical (20 liters), those businesses in Lugazi that store very large quantities of water are important because they have made large investments in water storage containers because of a critical need. Resources allocated to water storage could be used for other types of investments if water supply were not an important concern. In Lugazi, 7.4% of the MSEs surveyed use some type of large

container or storage tank in order to store the water. The median cost of such a container is 250,000 shillings (US\$ 203). In Wobulenzi, only 2.3% of the MSEs reported having a large storage container and only one reported the cost of the container (16,000 shillings, US\$ 13.01) (Table 5.16). The difference in costs for water storage containers is significant between the two towns, however, because of the small sample these numbers should be interpreted cautiously.

Table 5.13. PERCENTAGE OF RESPONDENTS THAT STORE WATER
(All primary sources: Kiosks, vendors, springs, other)

	Wobulenzi	Lugazi
Yes	53.7	53.1
No	46.3	46.9

Table 5.14. OF THOSE RESPONDENTS THAT STORE WATER,
THE AMOUNT CURRENTLY STORED
(liters)

	Wobulenzi	Lugazi
Mean	26.9	334.7
Median	20.0	20.0

Table 5.15. CONTAINER USED TO STORE WATER

	Wobulenzi	Lugazi
Jerricans/other Small Containers	97.7	92.5
Tanks/other Large Containers	2.3	7.5

Table 5.16. COST OF TANK/LARGE CONTAINER OF THOSE WHO STORE WATER

	Wobulenzi n = 1	Lugazi n = 6
Mean	16,000 shillings (US\$ 13.01)	512,500 shillings (US\$ 417)
Median		250,000 shillings (US\$ 203)

Firms with improved water supply may also realize savings if the need for water treatment diminishes. The lessened need for water treatment implies time savings for individuals. In Wobulenzi, 63.6% of firms treat their water whereas in Lugazi, 74.6% of firms do (Tables 5.17, 5.18). Although there are other confounding factors affecting the decision to treat water, such as and individual's perceptions of water quality and fluctuations in the quality of other water supplies, within Wobulenzi, fewer users treat their water now (63.6%) than before the introduction of the piped water system (69.4%) (Table 5.18). The time savings

associated with less water treatment by firms is also factor which, in effect, reduces costs of production for firms. Additionally, as many firms treat the water by boiling it, savings can also result from decreased use of fuel.

Table 5.17. WOBULENZI: PERCENTAGE OF RESPONDENTS WHO TREAT WATER

	Kiosk	Vendor	Other Sources
No	28.2	42.1	38.9
Yes	71.8	57.9	61.1

Table 5.18. LUGAZI: PERCENTAGE OF RESPONDENTS WHO TREAT WATER

	Vendors	Spring	Rainwater
No	27.4	15.4	33.3
Yes	72.6	84.6	66.7

However, if we look at who is treating water in Wobulenzi, we see that a greater percentage of kiosk users are treating their water as compared to vendors and others. This implies that instead of decreasing the need for treatment, the kiosk system has actually increased the need for treatment and therefore, as increased costs associated with treatment. This is, however, is not unsurprising. The kiosk system was met by some opposition by individuals who had access to the Luzzi piped water system. These individuals were using a small piped water system in a small section of the town. The water obtained through this system was free, however, when the water authority took control of the Luzzi system, it was closed because of negative cost recovery. As a result, affected users began a campaign against the piped water system claiming the new system provided water of poor quality. Many respondents believed these claims and although many still use the kiosk system, a high percentage treat the water they obtain. Therefore, although more kiosk users treat their water as compared to users of other sources, perhaps, in time, less people will receptive to these rumors and adjust their usage accordingly.

5.5. Quantity of Output

As water supply costs have decreased for firms in Wobulenzi, expenditures for firm production have also decreased as water is a necessary input for most of the firms surveyed. This lower total cost function for firms in the long-run can generate savings which they can use to invest in new technologies or to decrease the prices of their goods. These impacts can allow for future growth for the firms. An increase in quantity of output produced by these

firms also have similar positive impacts on the firm. In order to assess the effects of water supply improvement on the quantity of output, respondents were asked about improved reliability of their water sources and the impact of the improved water supply on the probability of firm shutdowns.

When asked if the reliability of their water supply has improved since the project, 56% of the respondents in Wobulenzi indicated that it had. However, the percentage of businesses surveyed that were forced to shut down their businesses for any period of time due to a lack of water within the last year was 5.9% in Lugazi and 8.0% in Wobulenzi (Table 5.19). Additionally, the average number of business days lost was 3.6 days in Lugazi and 6.8 days in Wobulenzi (Table 5.20). Although it has been discussed that the water supply is better in Wobulenzi, the reliability of the kiosk system is inextricably linked to the electricity supply in the town. The machinery used to pump the groundwater for the kiosk and private connection system is dependent on electricity. Because the electricity supply is highly unreliable in Wobulenzi, the water supply is vulnerable to fluctuations in service. This relationship between water supply and electricity emphasizes the risk of evaluating infrastructure investments in an isolated manner. Therefore, instead of increasing the reliability of firms' water source, the piped water system has made it more difficult for firms to increase their quantity of output.

Table 5.19. PERCENTAGE OF RESPONDENTS WHO HAVE HAD TO SHUT DOWN THEIR FIRM BECAUSE OF A LACK OF WATER

	Wobulenzi	Lugazi
Yes	8.0	5.9
No	91.9	94.1

TABLE. 5.20. OF THOSE RESPONDENTS WHO HAVE HAD TO SHUT DOWN THEIR FIRM, THE NUMBER OF DAYS THEY WERE REQUIRED TO DO SO

	Wobulenzi	Lugazi
Mean	6.8	3.6
Median	2.5	3.5

Another way in which firms can increase their production is by adjusting their inputs and investing in technologies that will allow them to expand their production capacity. Although our ability to measure this type of expansion was limited, respondents were asked about their intentions to undertake such expansions. In Wobulenzi, 63.8% of the respondents who

indicated that they were planning to expand their firms responded that they would increase their production of existing products. In Lugazi, 56% indicated they would do so (Tables 5.21, 5.22).

Table 5.21. PERCENTAGE OF RESPONDENTS WHO PLAN TO EXPAND THEIR BUSINESS IN THE NEXT YEAR

	Wobulenzi	Lugazi
No	45.5	47.4
Yes	54.5	52.6

Table 5.22. OF THOSE RESPONDENTS WHO PLAN TO EXPAND THEIR FIRM, HOW THEY PLAN TO EXPAND
(multiple responses allowed, percentage of respondents)

	Wobulenzi	Lugazi
Open another location	16.7	13.1
Hire more workers	12.9	6.6
Increase production (more of existing products)	63.8	56.0
Expand production (new products)	14.9	23.1

Within Wobulenzi, respondents were asked to assess the direct impacts of the improved water supply on increasing their sales and production and on their ability to expand their production. Eighteen percent of respondents indicated that they have been able to increase the sales or production of their products due to the improved water supply. Additionally, 8% have indicated that they have been able to expand production or sales to new products (Table 5.23). Although the percentage of firms in both cases are relatively small, the fact that firms feel they have been able to take such actions as a result of the improved water supply is significant.

Table 5.23. PERCENTAGE OF RESPONDENTS WHO INDICATED THAT THE RTWSP HAS DIRECTLY AFFECTED THEIR FIRMS BY THE INDICATED IMPACTS

	Increased Reliability	Increased Production	Expanded Production	Increased Demand	Reduced Costs
No	44.0	82.0	92.0	84.4	44.2
Yes	56.0	18.0	8.0	12.6	55.8

5.6. Increased Price of Product

Our ability to assess the impact of improved water supply on increasing the demand for firms' products in Wobulenzi is inherently limited due to the relatively short time firms have been able to use the new water supply. Firms were, however, asked whether or not they thought the improved water supply situation has led to an increased demand for their goods and services. Of the respondents that were in Wobulenzi both before and after the project, 12.6% indicated that they felt that the demand for their goods and services has increased as a result of the water supply project. This is an important indication of the potential impacts of improved water on MSEs on improving demand for the goods and services of these MSEs due to households' lower costs of water. Although 87.8% of respondents said they could not observe such an increase in demand, the long-run effects are still yet to be observed.

5.7. Willingness to Pay: Lugazi

Respondents, in addition to reporting the observable impacts of the water system, were also asked to evaluate their willingness to pay for improved levels of water supply service. The objectives of the willingness to pay evaluation were to assess the feasibility of a piped water system in Lugazi and also to examine the worth of water for MSEs. In Wobulenzi, respondents were asked about their willingness to pay for a private water connection, an option that is currently available to them but is not being taken advantage of. These respondents were asked why they had not applied for a private water connection and at what prices they would be willing to do so.

In Lugazi, participants were surveyed about their willingness to pay for private water connections and a kiosk system. The questions asked were three-fold. We established a willingness to pay for private connections, a kiosk system (modeled after the one in Wobulenzi) and then respondents' preference between the two. In Lugazi, respondents who owned the property on which their firms were located were asked if they would be willing to pay a connection fee either up front or over time in addition to a monthly usage charge based on the volume of water used. For the purposes of this question, respondents were given an average monthly usage charge based on a cost of approximately 20 shillings per jerrican or 1,000 shillings per 1,000 liters. The results indicate that 56% would be willing to obtain a private connection (Table 5.24) for a price of 250,000 shillings (US\$ 203, based on

previous cost assessments). Of those that would, 60% would pay the money up front and 40% would pay over time. This is highly indicative of a strong demand for a improved water supply. Fifty-Six percent of the respondents are willing to pay US\$ 203 for a private water connection, which is less than the amount firms are spending on average per year on water (US\$ 234.05) and is also an amount that would likely cover the costs of providing this level of service in Lugazi. As these connection costs are lower and the monthly fee for water is much lower than what they are currently paying, the feasibility of firms obtaining private connections at full cost is rather high as indicated by their responses.

Table 5.24. PERCENTAGE OF OWNERS WILLING AND ABLE TO PAY 250,000 SHILLINGS (US\$ 203) FOR A PRIVATE WATER CONNECTION

No	Yes
44.0%	56.0%

Renters were asked if they would be willing to pay a monthly fee (in the form of higher rent) for the use of a private water connection if the property owner were willing to pay most of the connection costs. Over all prices, 56% of respondents indicated that they would not be willing to pay for this use. A majority indicated they would be willing to use the private connection at a fee of 3,000 shillings per month but this number dropped significantly as the fee increased to 11,000 shillings per month (Table 5.25). Firms are currently paying 9,000 shillings per month (US\$ 7.32), on average, for water. As such, many of the firms would be paying less for water if they were able to use a private water connection at the indicated prices and would be able to obtain greater quantities of water at more convenience. Since 40% of firms indicated that they would not use the private connection because it was too expensive, perhaps if they were better informed about their own expenditures, more of them would be willing to pay for the use of a private connection.

Table 5.25. PERCENTAGE OF RENTERS WILLING AND ABLE TO PAY FOR THE USE OF A PRIVATE CONNECTION AT THE INDICATED PRICES

Monthly Payment	No	Yes
3,000 shillings (US\$ 2.44)	40.9%	59.1%
7,000 shillings (US\$ 5.69)	52.5%	47.5%
11,000 shillings (US\$ 8.94)	83.7%	16.3%

For all Lugazi respondents (renters and owners), a willingness to pay for a kiosk system was determined by describing the current kiosk system in Wobulenzi and then asking respondents (1) If they would use such a system; and (2) At what prices would they be willing to use such a system. As we expected, the willingness to pay for the use of a kiosk system fell as the price rose from 25 to 125 shillings per jerrican. However, the demand for a kiosk system is high; 76.3% of respondents indicated they would use the system over all prices (Table 5.26). Although the indicated prices per jerrican of the water at the kiosk system are lower than what most users are currently paying, those who indicated that they would not use the system indicated so mainly because of their perceived inconvenience of the kiosk system.

Table 5.26. PERCENTAGE OF ALL RESPONDENTS WHO WOULD BE WILLING TO USE A KIOSK AT THE INDICATED PRICES

Price	No	Yes
25 shillings (US\$ 0.02)	14.5%	85.5%
75 shillings (US\$ 0.06)	18.3%	81.7%
125 shillings (US\$ 0.10)	40.0%	60.0%

Respondents who indicated that they would be willing to pay for both a private connection and the use of a kiosk system were asked which system they would prefer if given a choice. Although a private connection was preferred (59.3%), many also chose a kiosk system (Table 5.27).

Table 5.27. OF THOSE WHO INDICATED THAT THEY WOULD USE BOTH A KIOSK AND A PRIVATE CONNECTION, THE SYSTEM THEY WOULD PREFER

Private Connection	Kiosk
59.3%	40.7%

The results of the willingness to pay questions in Lugazi indicate that there is indeed a high demand for improved water supplies. More importantly, many of the firms would prefer a private water connection and are willing to pay prices similar to the ones offered in Wobulenzi.

5.8. Willingness to Pay: Wobulenzi

In Wobulenzi, where a kiosk system is already available to firms, the willingness to pay questions were based solely on the respondent’s willingness to pay for a private connection. The purpose, then, is to determine why so few businesses have private connections and whether financing of connection costs would affect their demand for this level of service. Our findings suggest that the biggest obstacle for these businesses is indeed the up-front cost of the private connection.

For the six owners of the business property, all said they would be willing to obtain a private connection if they were able to pay for the connection costs over time (Table 5.28). This indicates a high demand and ability to pay for a private connection but a lack of up-front resources to pay for installation.

Table 5.28. PERCENTAGE OF OWNERS WILLING AND ABLE TO OBTAIN A PRIVATE CONNECTION AT THE INDICATED PRICES

Monthly Payment <i>(shillings)</i>	Time Period <i>(years)</i>	No <i>(frequency)</i>	Yes <i>(frequency)</i>
8,500 (US\$ 6.91)	3	0	1
12,500 (US\$ 10.16)	2	0	2
25,000 (US\$ 20.33)	1	0	3
Total Respondents		0	6
% Within Category		0%	100%

However, for renters, a majority of the respondents (60%) indicated that they would not pay for a private connection if given a choice. Additionally, many have not applied for a private connection nor do many believe that they would obtain one within the next two years (Table 5.29). As many are satisfied with the kiosk and vending systems, use of a private water connection is not a priority for firms.

Table 5.29. PERCENTAGE OF RENTERS
WILLING TO OBTAIN A PRIVATE CONNECTION
FOR INDICATED MONTHLY CHARGE

Monthly Payment	No	Yes	Don't Know
3,000	57.5	40.0	2.5
7,000	58.1	38.7	3.2
11,000	62.8	27.9	9.3
Total	59.6	35.1	5.3

Overall, it seems that firms in Wobulenzi are quite satisfied with their current sources. As a result, the demand for private water connections is not as high as for those firms in Lugazi. The exception, however, are the owners, who overwhelmingly indicated that if financing were available, they would obtain private water connections. The respondents' request for financing, therefore, emphasizes the need for micro-credit services and the importance of water for firms.

Table 5.30. WOBULENZI: SATISFACTION WITH CURRENT WATER SOURCE

	Kiosk	Vendors	Other
Mean	1.6	1.8	1.3
Median	1.0	1.0	1.0

Table 5.31. LUGAZI: SATISFACTION WITH CURRENT WATER SOURCE

	Vendors	Springs	Rainwater
Mean	2.4	2.2	2.0
Median	2.0	2.0	2.0

5.9. Discussion

The improved water supply in Wobulenzi has, indeed, greatly enhanced the firm's ability to pursue other investments. The decrease in prices for water for firms in Wobulenzi, as compared to Lugazi, and as compared to before the new water system, is a significant impact that reduces a firm's costs of production. Such a decrease in cost, combined with reduced expenditures on water treatment and storage, directly decreases the costs of production in the short-run and may allow them to adjust their production in the long-run to a new cost-minimizing level and to also invest in new, more efficient, technology. However, this important reduction in costs is mitigated by the increased unreliability of the water supply in Wobulenzi. The relationship between electricity and water adversely affects the potential impacts of the new piped water system on firms' ability to expand their production.

Nonetheless, a number of firms have been able to observe an increase in demand for their goods and services. This increased demand should lead to an increase in the prices firms are able to charge for their products and thus increase their profitability. Although the number of firms indicating such a change is small, the long-run effects are still to be observed.

Firms in Wobulenzi seem to be quite satisfied with the options of water currently available to them, whereas in Lugazi, there seems to be an acute need for improved water supplies and a willingness of firms to pay for such improvements.

Through this analysis, we have shown that improved water supplies can have a significant effect on the profitability of firms. Lower cost functions, increased output and increased demand are all desirable effects that have been observed in Wobulenzi. Although the degree to which these impacts will affect firms in the long-run are still unobservable, given some of the short-run impacts we have seen, the positive impacts are not only feasible but likely.

Uganda has undergone an incredible transformation in the past decade. A country torn by civil strife and economic instability has risen to become one of the fastest growing economies in recent years. This remarkable progress has been supported through structural adjustment programs aimed at creating macro-economic stability. These programs, at the behest of multi-lateral aid agencies, such as the World Bank, have focused on creating a long-term equilibrium where indigenous resources and investments can be better allocated and used more efficiently. Moreover, they encourage overall higher rates of savings, investments and learning in firms so as to provide a stable ground from which growth can be sustainably encouraged (Biggs, 1996). Among the policies adopted to create and encourage such economic stability has been one focused on encouraging the creation and sustained growth of micro and small enterprises. MSEs have been identified as an important and rapidly growing sector that should continue to be supported in order to both provide poverty alleviation and encourage strong economic growth. As 90% of total non-farm private sector workers, approximately 1.5 million people, in Uganda are employed in MSEs, the GoU has mobilized resources for policies and projects that promote the success of MSEs. This research provides an opportunity to evaluate some of these policies, in particular, the policies drafted by the MSEPU, based on empirical evidence obtained from MSEs in two secondary towns. The research has been focused on identifying some of the obstacles firms face to their growth, as well as the effects of an improved water supply on firm productivity.

6.1. Constraints to Growth

There has been a rapid proliferation of the number of MSEs in Sub-Saharan Africa over the last ten years and this has also been the case in Uganda (Mead, 1994). With an annual growth rate of 20%, the MSE sector in Uganda has become a significant factor in economic growth within the country. However, although there is ease of entry within in the MSE sector, the growth of already established firms has been negligible. In order to learn more about why this growth has been weak and to better formulate policies regarding the encouragement of MSE growth, firms were surveyed about their obstacles to growth. Among the most

important obstacles to growth for firms interviewed in Wobulenzi and Lugazi, Uganda are taxes and regulations, access to financing, electricity supply and water supply.

The firms surveyed in these towns expressed that the largest obstacle to their growth is the amount of taxes they are billed. Although the amount of taxes billed to these firms is relatively small compared to their total business expenditures, the taxation system is one that is perceived as biased and arbitrary. In order to dispel this perception, the GoU must take steps to introduce and implement a more transparent taxation system based on clear rules for establishing tax levels for firms of different size and sector. However, there also needs to be a concurrent education of the firms in keeping records of their expenditures and revenues. Without such education, a better taxation system will be inherently limited in its effectiveness. The GoU, by being increasing their capacity to collect higher levels of taxes, could also look towards MSEs as a source of funding for other initiatives designed to help MSEs grow. The policy document adopted by the MSEPU does indeed propose a more transparent tax system; however, it seems to be unaware of the perception of firms that the tax collection system is unfair. Through better training, both of URA officials and firm operators, perhaps this perceived obstacle can be mitigated.

Firms' ability to obtain financing for investments is also another important constraint perceived by the firms surveyed. Access to credit for these firms is quite limited and although the MSEPU recognizes this need as an acute one, there is still a need for firms to learn more about their abilities to obtain loans and the ways in which they can better position themselves in order to receive them. In this respect, land tenure is an important component in the acquisition of loans that many firms may be unaware of. Firms in both Wobulenzi and Lugazi ranked land tenure as not a very large obstacle to their growth. However, the relatively large firm expenditures on rent and its bearing on access to credit again emphasizes the lack of cognizance on the part of the firms in knowing in what ways they can improve their own enabling environment.

Infrastructure is perhaps one of the most considerable obstacles faced not only by firms but by the GoU as well. The acute need for infrastructure investments seems to be always a priority, but given that resources are limited and that MSE promotion is an important goal

for the government, prioritization of infrastructure investments must occur. In our analysis, we have found that firms in these towns are not as constrained by transport as they are by unreliable electricity and water supplies.

It is critical that Uganda improve the reliability of its electricity supply. Firms need electricity as an important input in their businesses and the fluctuations in service, especially in Wobulenzi, and its relationship with other infrastructure such as the water supply, make it difficult for these firms to operate efficiently. An important finding we have made in our survey work is the importance of looking at infrastructure investments in a way that is not sectorally isolated. The dependence of the piped water supply on an unreliable electricity system has had a negative effect on the potentially positive impacts of the improved water system in Wobulenzi. Discovering and understanding these types of relationships between infrastructure investments is crucial for the GoU not only to fully realize the impacts of the investments but to efficiently enhance the enabling environment of MSEs.

6.2. The Rural Towns Water and Sanitation Programme

The introduction of the piped water system in Wobulenzi has mitigated an important constraint for firms. The impacts of improved water supply has given firms the opportunity to lower their costs for a vital input and thereby lower their production costs, and has also allowed firms to increase their total output. Additionally, some firms have witnessed an increase demand for their goods or services as a direct effect of the improved water supply. These important impacts testify to the importance of water for MSEs and the potential impacts of improved infrastructure investments on MSE productivity. The empirical evidence provided will hopefully encourage increased investment in learning about the effects of improved water supplies on MSEs, an area that has been previously unexplored, and also serve to support future water supply investments.

6.3. Recommendations

Based on the above findings, the following recommendations are being made to the MSEPU:

1. Prioritize investments in infrastructure aimed specifically at encouraging MSE growth rather than relieving barriers to entry.
2. Continue efforts in implementing a transparent taxation system and increase training for URA officials so they better understand MSE concerns and can alleviate some of the flaws inherent in the current tax collection system
3. Increase training and education of firm proprietors so that they understand the tax collection system and the importance of keeping records of their firms' transactions.
4. Continue efforts to improve micro-credit services to MSEs
5. Provide information to MSEs regarding the different factors involved in access to credit, in particular, the importance of land tenure.
6. Create more opportunities for MSEs to acquire land tenure.
7. Increase knowledge of the interdependence of various infrastructure investments and especially of the importance bundled investments.
8. Increase knowledge of the direct effects of infrastructure investments on productivity at a more micro-level. Specifically, more research is needed on how investments affect firms of different age, business type, location, and available resources.

The empirical evidence obtained has resulted in an increased understanding of the enabling environment of MSEs and the effects of the improved water supply on MSE productivity in Wobulenzi. While these findings cannot be generalized to all MSEs in Uganda, let alone to other developing countries, they do indicate the need for governments and donors to learn more about how MSEs operate, what specific relationships exist between MSEs and their enabling environment and what the daily struggles are for the people employed in the MSE sector. Without such efforts, it would seem difficult to sustain the 20% growth witnessed in the MSE sector in Uganda which has facilitated in making Uganda one of the fastest growing economies in the world.

Appendix One:

Table A1. PERCENTAGE OF RESPONDENTS WHO INDICATED INDICATED FACTOR WAS A CONSTRAINT TO GROWTH

Lugazi	Shortage of Qualified Workers	Quality of Roads	Cost of Transportation	Quality of Water Supply	Cost of Water Supply	Insufficient Waste Disposal	Lack of Inputs	Lack of Access to Land
Very Big Obstacle	18	19.2	12.5	36.2	32.2	26.7	12.5	24.4
2	3.4	12.4	9.7	15.3	29.4	19.9	10.8	9.7
3	4.5	11.3	19.9	9.6	13	9.7	11.9	9.7
4	5.6	29.4	27.3	19.8	9.6	24.4	15.3	15.3
Not an Obstacle at All	68.5	27.7	30.7	19.2	15.8	19.3	49.4	40.9
Wobulenzi								
Very Big Obstacle	12.6	15.8	13.7	2.2	2.2	29.7	13.1	25.1
2	9.8	11.5	9.8	2.7	7.1	14.3	9.3	15.3
3	4.9	13.1	12	6.6	7.7	13.2	12	4.4
4	8.7	23	25.1	14.8	17	11	24	14.8
Not an Obstacle at All	63.9	36.6	39.3	73.8	65.9	31.9	41.5	40.4

Table A.2. AVERAGE STANDARDIZED SCORES FOR THE TOWN

	Shortage of Qualified Workers	Lack of Inputs	Quality of Water Supply	Cost of Transportation	Quality of Roads	Cost of Water Supply	Lack of Access to Land	Insufficient Waste Disposal
Wobulenzi	0.55	0.37	0.87	0.35	0.24	0.73	0.13	-0.11
Lugazi	0.77	0.61	-0.05	0.46	0.38	-0.24	0.39	0.05

Table A.3. PERCENTAGE OF RESPONDENTS WHO INDICATED INDICATED FACTOR WAS A CONSTRAINT TO GROWTH

Lugazi	Level/Amount of Taxes Billed	Insufficient Demand	Quality and Reliability of Electric Service	Inflation/Price Instability	Cost of Electric Service	Lack of Access to/High Cost of Financing	Tax Regulations
Very Big Obstacle	59.7	53.4	36	42.4	34.3	45.2	24.3
2	26.1	22.5	18	19.2	27.3	19.8	25.4
3	6.8	13.5	15.1	15.8	15.1	5.6	25.4
4	2.3	6.2	11.6	11.3	12.2	7.9	11.3
Not an Obstacle at All	5.1	4.5	19.2	11.3	11	21.5	13.6
Wobulenzi							
Very Big Obstacle	47.8	48.1	66.7	40.1	38.5	35.9	16.5
2	30.8	16.4	7.1	28	18.7	16.6	30.8
3	7.7	18	3.3	12.1	6	6.1	15.4
4	5.5	9.3	8.7	9.9	14.3	13.8	12.6
Not an Obstacle at All	8.2	8.2	14.2	9.9	22.5	27.6	24.7

Table A.4. AVERAGE STANDARDIZED SCORES FOR THE TOWN

	Level/Amount of Taxes Billed	Insufficient Demand	Quality and Reliability of Electric Service	Inflation/Price Instability	Cost of Electric Service	Lack of Access to/High Cost of Financing	Tax Regulations
Wobulenzi	-0.75	-0.63	-0.72	-0.58	-0.31	-0.22	-0.11
Lugazi	-0.76	-0.63	-0.24	-0.35	-0.39	-0.30	-0.11

Appendix Two:

Table A.1. LUGAZI: PERCENTAGE OF SOURCE USERS THAT ARE OF THE FOLLOWING BUSINESS TYPE

	Vendor	Springs	Rainwater
Retail: Dry Goods	32.3	46.2	21.4
Retail/Wholesale: Dry Goods	2.4	0.0	0.0
Wholesale: Dry Goods	1.2	0.0	0.0
Retail: Food	26.4	30.8	25.0
Retail/Wholesale: Food	3.6	0.0	0.0
Wholesale: Food	0.6	0.0	3.6
Services	12.6	7.7	14.3
Clinic/Pharmacy	9.0	0.0	21.4
Restaurant/Lodge	10.2	15.4	3.6
Petrol Station	1.8	0.0	10.7

Table A.2. LUGAZI: PERCENTAGE OF RESPONDENTS WHO USE:
(multiple sources allowed)

Vendors	94.4
Springs	7.4
Rain Water	16.2

Table A.3 LUGAZI: PROPORTION OF WATER USED FOR BUSINESS
(percentage)

	Vendors		Springs		Rainwater
	Dry Season	Rainy Season	Dry Season	Rainy Season	Rainy Season
All	94.0	80.6	57.1	58.3	22.2
2	4.8	4.2	0.00	8.3	33.3
3	0.6	5.5	0.00	0.00	25.9
4	0.0	2.4	14.3	0.00	3.70
Almost none	0.6	7.3	28.6	33.3	14.8

Table A.4. LUGAZI: PERCENTAGE OF RESPONDENTS WHO USE WATER FOR BUSINESS PURPOSES

	Vendors		Spring		Rainwater	
	Business	Production	Business	Production	Business	Production
Yes	97.0	59.9	100	61.5	96.4	53.6
No	3.0	40.19	0.0	38.5	3.6	46.4

Table A.5. LUGAZI: COST OF WATER PER JERRICAN

	Vendors		Springs	
	Rainy Season	Dry Season	Rainy Season	Dry Season
Mean	145.2	157.8	29.0	49.0
Median	150.0	150.0	0.0	0.0

Table A.6. LUGAZI: AMOUNT OF WATER COLLECTED PER DAY

	Vendors		Springs		Rainwater
	Rainy Season	Dry Season	Rainy Season	Dry Season	Rainy Season
Mean	2.8	3.0	113.5	93.2	3.2
Median	1.0	2.0	2.0	2.0	1.0

Table A.7. LUGAZI: QUALITY OF WATER

	Vendors	Springs	
		Dry Season	Rainy Season
Very Good	7.7	27.3	30.8
2	62.5	45.5	30.8
3	23.2	27.3	23.1
Very Bad	6.6	0.00	15.4

Table A.8. LUGAZI: PERCENTAGE OF RESPONDENTS WHO TREAT WATER

	Vendors	Spring	Rainwater
No	27.4	15.4	33.3
Yes	72.6	84.6	66.7

Table A.9. LUGAZI: PERCENTAGE OF RESPONDENTS WHO BOIL WATER

	Vendor	Springs	Rainwater
No	0.8	0.0	5.3
Yes	99.2	100.0	94.7

Table A.10. LUGAZI: SATISFACTION WITH WATER SOURCE

	Vendors	Springs	Rainwater
Very Satisfied	9.6	33.3	29.6
2	59.0	33.3	48.2
3	16.3	16.7	18.5
4	9.0	16.7	3.7
Not Satisfied at All	6.0	0.00	0.00

Table A.11. TRIPS PER DAY TO THE SPRING

Mean	1.65
Median	2

Table A.12. AVERAGE DISTANCE TO THE SPRING

	Minutes	Meters
Mean	23	936.14
Median	15	1000

Table A.13. PERCENTAGE OF RESPONDENTS WHO COLLECT RAINWATER BY...

	Percent
Gutter along roof into a small container	7.1
Gutter along roof into a large, permanent storage unit	25.0
Bucket of other container under edge of roof	64.3
Other	3.6

Table A.14. PERCENTAGE OF RESPONDENTS THAT STORE WATER?

*All primary sources
(Kiosks, vendors, private connections, other)*

	Wobulenzi	Lugazi
Yes	53.70	53.14
No	46.30	46.86

Table A.15. APPROXIMATELY HOW MUCH WATER DO YOU HAVE STORED NOW?

	Wobulenzi	Lugazi
Mean	26.87	334.72
Median	20	20

Table A.16. CONTAINER USED TO STORE WATER

	Wobulenzi	Lugazi
Jerricans/other Small Containers	97.67	92.50
Tanks/other Large Containers	2.33	7.50

Table A.17. IF TANK/LARGE CONTAINER, THE COST OF THE CONTAINER:

	Wobulenzi	Lugazi
Mean	16,000.00	512,500.00
Median		250,000.00

*only one respondent gave an answer

Table A.18. HAVE YOU EVER HAD TO SHUT DOWN YOUR BUSINESS BECAUSE OF LACK OF WATER?

	Wobulenzi	Lugazi
Yes	8.02	5.90
No	91.98	94.10

Table A.19. IF YES, THE NUMBER OF DAYS SHUT IN THE LAST YEAR...

	Wobulenzi	Lugazi
Mean	6.77	3.6
Median	2.5	3.5

Table A.20. WOBULENZI: PRINCIPAL SOURCE OF WATER FOR BUSINESS

	Percent
Kiosks	46.7
Vendors	31.0
Do not use any water for business	11.4
Standposts	3.8
Boreholes (wells)	3.8
Private Connection (WC)	1.1
Private Connection (Neighbor)	1.1
Private Connection (Luzzi)	0.5
Surface Water	0.5

Table A.21. WOBULENZI: PERCENTAGE OF FIRMS USING INDICATED WATER SOURCE
(by enterprise type)

	Kiosk	Vendors	Other Users
Retail: Dry goods	25.6	28.1	35.0
Retail/Wholesale: Dry Goods	1.2	3.5	0.0
Wholesale: Dry Goods	2.3	0.0	0.0
Retail: Food	27.9	31.6	35.0
Retail/Wholesale: Food	2.3	1.8	0.0
Services	1.2	22.8	25.0
Clinic/Pharmacy	18.6	5.3	0.0
Restaurant/Lodge	20.9	5.3	5.0
Petrol Station	0.0	1.8	0.0

Table A.22. WOBULENZI

	Kiosk		Vendor		Other Sources	
	Mean	Median	Mean	Median	Mean	Median
Number of Regular Workers	1.9	2.0	1.8	1.0	2.3	2.0
Days per Week	6.7	7.0	6.6	7.0	6.7	7.0
Hours per day	12.86	13.0	12.86	12.0	12.68	13.0

Table A.23. WOBULENZI: COST OF WATER PER JERRICAN

	Kiosk	Vendors	Other Sources
Mean	28.6	121.3	21.1
Median	25	100	22.5

Table A.24. WOBULENZI: AMOUNT OF WATER OBTAINED PER DAY
(jerricans)

	Kiosk	Vendors	Other
Mean	2.59	2.55	1.60
Median	2.0	2.0	1.75

Table A.25. WOBULENZI: WHAT PROPORTION OF YOUR TOTAL WATER USAGE COMES FROM THIS SOURCE?

		Kiosk	Vendors	Other
Rainy Season	All	55.95	68.42	66.67
	Almost All	9.52	17.54	16.67
	About half	3.57	3.51	5.56
	Some	15.48	0.00	11.11
	Almost None	15.48	10.53	0.00
Dry Season	All	62.35	75.44	72.22
	Almost All	21.18	21.05	27.78
	About half	10.59	3.51	0.00
	Some	2.35	0.00	0.00
	Almost None	3.53	0.00	0.00

Table A.26. WOBULENZI: PERCENTAGE OF RESPONDENTS THAT STORE WATER

	Kiosk	Vendors	Other
No	41.18	56.14	44.44
Yes	58.82	43.86	55.56

Table A.27. WOBULENZI: OF THOSE BUSINESSES THAT STORE WATER, THE AMOUNT STORED RIGHT NOW...

(liters)	Kiosk	Vendor	Other
Mean	26.24	26.64	29.2
Median	20	17	40

Table A.28. WOBULENZI: PERCENTAGE OF RESPONDENTS THAT HAVE SHUT DOWN THEIR BUSINESS BECAUSE OF LACK OF WATER

	Kiosk	Vendors	Other
No	92.94	91.23	94.44
Yes	7.06	8.77	5.56

Table A.29. WOBULENZI: OF THOSE BUSINESSES THAT HAVE SHUT DOWN DUE TO LACK OF WATER, THE NUMBER OF DAYS THEY WERE CLOSED IN THE LAST YEAR...

	Kiosk	Vendors	Other
Mean	8.83	2.8	19.0
Median	4	2	20

Table A.30. WOBULENZI: SATISFACTION WITH CURRENT WATER SOURCE

	Kiosk	Vendors	Other
Mean	1.63	1.77	1.31
Median	1	1	1

Table A.31. WOBULENZI: PERCENTAGE OF RESPONDENTS THAT USE WATER FOR BUSINESS PURPOSES

	Kiosk	Vendors	Other
Yes	91.76	98.25	100.00
No	8.24	1.75	0.00

Table A.32. WOBULENZI: PERCENTAGE OF RESPONDENTS THAT USE WATER FOR PRODUCTION PURPOSES

	Kiosk	Vendors	Other
Yes	60.00	66.67	55.56
No	40.00	33.33	44.44

Table A.33. WOBULENZI: PERCENTAGE OF RESPONDENTS WHO USED SOURCE PRIOR TO PIPED WATER SYSTEM

	Kiosk Users	Vendor Users	Other Users
Respondent was not in Wobulenzi	8.43	14.55	11.11
Luzzi Private Connection	0.00	0.00	5.56
Neighbor's Private Luzzi Connection	3.61	0.00	5.56
Standposts	25.30	10.91	22.22
Vendors	39.76	74.55	5.56
Surface Water	14.46	0.00	27.78
Boreholes	8.43	0.00	22.22
Total	100.00	100.00	100.00

Table A.34. WOBULENZI: PERCENTAGE OF TOTAL RESPONDENTS OF A PARTICULAR BUSINESS TYPE THAT USE ____ AS THE PRINCIPAL SOURCE OF WATER

	Kiosk	Vendor	Other
Retail: Dry goods	48.89	35.56	15.54
Retail/Wholesale: Dry Goods	33.33	66.67	0.00
Wholesale: Dry Goods	100.00	0.00	0.00
Retail: Food	48.98	36.73	14.28
Retail/Wholesale: Food	66.67	33.33	0.00
Wholesale: Food	100.00	0.00	0.00
Services	47.06	38.24	14.7
Clinic/Pharmacy	0.00	100.00	0.00
Restaurant/Lodge	81.82	13.64	4.55
Petrol Station	0.00	100.00	0.00

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