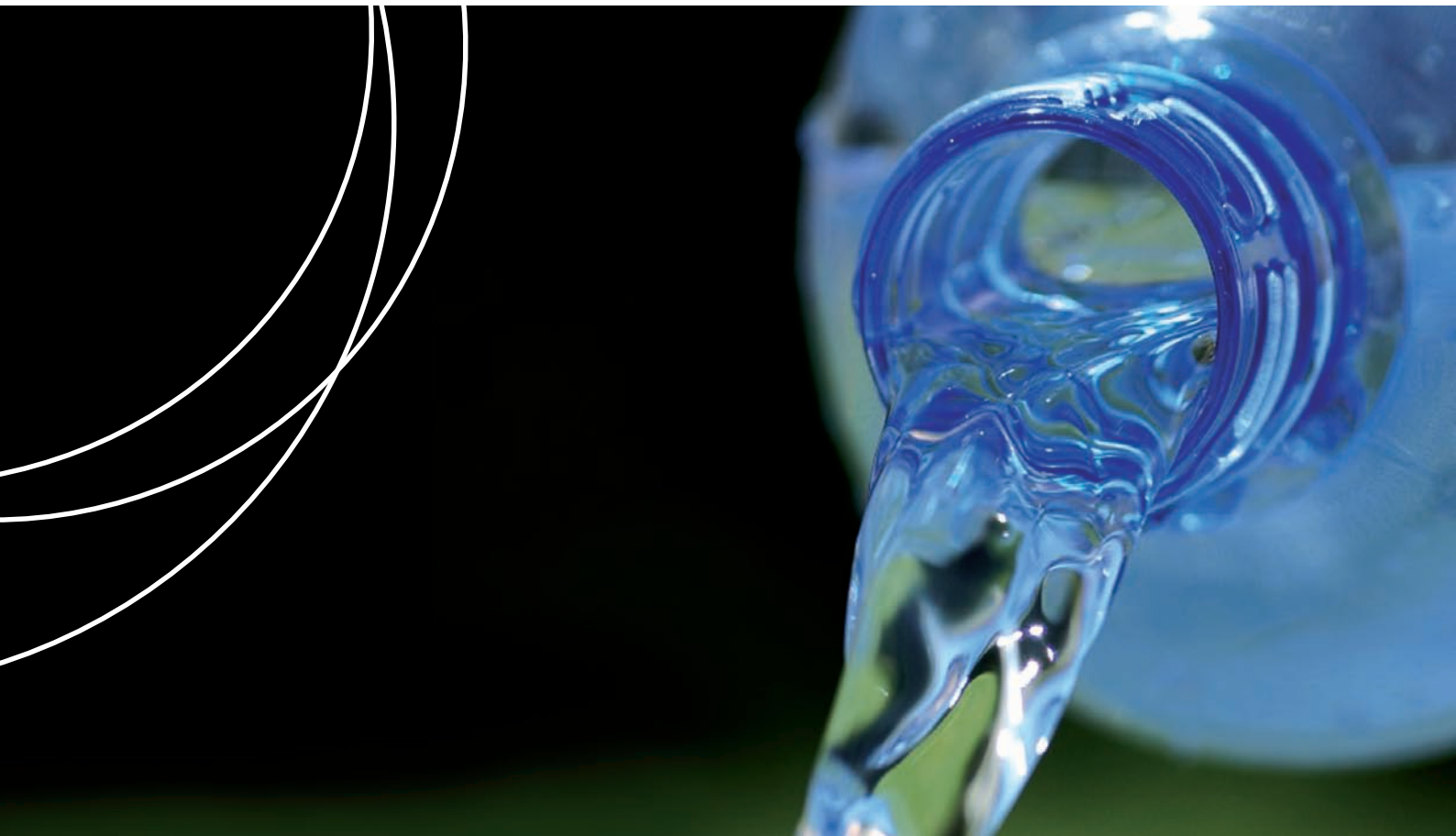


Water Business Kit Kenya

A guide to starting your own water treatment
and vending business

March 2013



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The Aquaya Institute (Aquaya) is a not-for-profit organization dedicated to improving global child health by increasing access to safe drinking water. We focus on research and technology development in the areas of water quality management, service delivery, and impact assessment. We also provide consulting services to support public and private safe water efforts.

This Water Business Kit is published jointly by IFC and Aquaya. It is intended to provide small and medium enterprises and entrepreneurs with a step-by-step guide to developing a water treatment and vending business in Kenya. Such businesses have been observed to serve customers in many parts of the world with high-quality, treated drinking water. These businesses represent the efforts of independent, local entrepreneurs to meet consumer demand for treated drinking water. Although the kit is based on research and information collected for Kenya, the guidance may be relevant to businesses in other countries.

The Water Business Kit is the result of 18 months of business research in Kenya, which included support for the establishment of nine demonstration water treatment and vending businesses. The work was commissioned by IFC under the auspices of the Sanitation and Safe Water for All program. SSAWA is managed under IFC Sustainable Business Advisory department. Aquaya also received support for this initiative from the Mulago Foundation and Google.org.

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The Water Business Kit Kenya and all materials described within are available for free download at: www.waterbusinesskits.org and www.ifc.org/ssawa

In addition, readers may be interested in the SME Toolkit Kenya. The SME Toolkit is a product of IFC that offers free business management information and training for small business owners on accounting and finance, business planning, human resources, sales and marketing, operations and information technology.

It provides a wide range of how-to articles, business forms and templates, business software, on-line training, self-assessment exercises and other resources to help entrepreneurs, business owners, and managers in Kenya start, finance and grow their businesses.

Please visit www.kenya.smetoolkit.org



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INTRODUCTION

Small-scale water treatment and vending businesses serve customers safe, treated drinking water that meets internationally accepted drinking water quality standards. These businesses operate profitably and sustainably in many parts of the world, and are particularly popular in Southeast Asia and Latin America. Recently, this business model has begun to emerge in Kenya.¹

Water treatment and vending businesses are a local entrepreneurial response to consumer demand for safe drinking water that is lower-priced than traditional bottled water. These businesses have thrived where municipal water supplies are unreliable and/or potentially unsafe to drink. They treat raw water that they collect from different sources (springs, deep boreholes, tanker trucks, and municipal supplies) using state-of-the-art technologies that require minimal pre-existing technical expertise to operate.

They then package and sell the treated water in reusable, sealed bottles. Most businesses are located within the neighborhoods that they serve, and offer consumers convenience at an affordable price. Shops typically operate as 'cash and carry' operations although some shops also offer delivery services.

1. Additional information on Kenya's industry is available in *The Market for Water Treatment and Vending Enterprises in Kenya*, a market brief published by Aquaya and IFC. This report is available for download at www.ifc.org/ssawa

Why should you open your Water Treatment and Vending Business?

Small-scale water treatment and vending is a proven, profitable business model in many countries. Water shops throughout the world are run by independent entrepreneurs just like you. These businesses can be very profitable, as the data from a sample Kenyan business in the table below illustrates.²

2. The exchange rate at time of publication is approximately US Dollar 1 = Kshs. 85.

Kenyan Water Treatment And Vending Business Sample Financial Results		
	Monthly	Annually
Revenues	400,000	4,800,000
Fixed Costs	110,000	1,320,000
Variable Costs	161,000	1,932,000
Capital Costs	18,000	216,000
Total Costs	289,000	3,468,000
Earning Before Taxes	111,000	1,332,000

Table 1: The table shows approximate earnings data measured in Kenyan shillings (KShs) for a water treatment and vending business in Kenya in its second year of operations. Capital costs of approximately KShs.1.1 million have been amortized over 60 months (five years). Earnings in the first year of your business are likely to be significantly lower. Your individual business results may vary substantially from the costs and earnings of this business.

The traditional bottled water market in Kenya is thriving with sales estimated at KShs.12 billion per year and over 100 brands in the market (Githinji, 2010). While this data is indicative of significant competition in traditional bottled water, it also shows that there is consumer demand for high-quality drinking water and a business opportunity for businesses that can offer comparable quality water at a lower price. This market data is reinforced by consumer demand research among middle-income households in Nairobi which shows further evidence of demand for treated drinking water in Kenya (Aquaya, 2011).

With the Kenyan water treatment and vending industry just beginning to emerge, there is an opportunity for entrepreneurs to enter the market now. Entrepreneurs who act quickly are likely to be rewarded. In other countries where these businesses have emerged, it is the early movers who have earned the greatest profits and, in some cases, been able to open a network of successful shops.

The Water Business Kit

It is organized into four parts:

1. Keys to Business Success.
2. Planning Your Business.
3. Setting up Your Business.
4. Running Your Business.

This Water Business Kit is the product of previous research in Southeast Asia by Aquaya and work in Kenya establishing and supporting water treatment and vending businesses. The kit is designed to provide you, the entrepreneur, with a step-by-step guide to opening and operating a successful water treatment and vending retail business in Kenya.



I – KEYS TO BUSINESS SUCCESS

1. Driving Business Success

In this section you will find some of the most important things to remember when establishing a water treatment and vending business in Kenya.

1.1 Location, Location, Location

Your business location is very important to your chances for success. It is worth spending time to understand consumer demand for treated drinking water near your prospective location. In addition, think about the visibility and convenience of your shop space (Is it easy to get to? Is it easy to see?)

The location selection checklist in Section 4.8 provides a more comprehensive list of things to think about when looking for shop locations.

1.2 The Race is on to Launch Your Business

From the day you sign your lease, the race is on to get your shop open for business. Each day your shop is not open is a day that you are paying rent and possibly other expenses without taking in revenues. Your business can easily go too far into debt because it takes too long to prepare the shop space, buy and install water treatment equipment, and get the correct permits and licenses. While this may seem obvious, it has proven to be a problem for many businesses.

1.3 Profits Driven by Volume

Small-scale water treatment and vending is a volume-drive business characterized by high fixed costs and low variable costs. The most successful businesses observed in Kenya, and elsewhere, sell large amounts of water at relatively low prices. This does not mean they do not make a sizeable profit per liter sold, but the businesses earning the greatest profits in absolute terms often charge some of the lowest prices for water refills.

1.4 Establish the Quality of Your Product

If customers are going to pay for drinking water from your business, you need to establish that your product is as good as brands found in supermarkets (Section 9.2.2). This is particularly true if you are selling water at a lower price point to boost sales volumes. Otherwise, some customers may think that you are selling your product at a low price because it is of low-quality. One effective way of doing this is to display your water quality test results and Kenya Bureau of Standards (KEBS) certificate in the shop where they can be easily seen.

Another common practice is to show your treatment process and explain to customers how it is very similar to that used by larger, more recognized bottled water brands. In addition, some businesses give customers a free cup of water so that they can check it tastes good.

1.5 Market and Sell Your Water

Prepare to advertise and market your business before the doors open. Once your business opens its doors to customers, you have to make customers aware that you are open for business, inform them of what you are selling, and be effective in marketing and selling your product (Section 9).

Employees should be properly trained to give their sales pitch to customers and to respond to customer questions. Motivating employees to sell water can also be an advantage. Several businesses have effectively used sales incentives to further motivate their employees to drive sales (Section 8.2).

1.6 Control the Big Costs

Manage your business costs using the tips below to improve the chances for success:

- Start with a smaller water treatment system that can be expanded later. Scale up your system once your business approaches the limits of its treatment capacity (Section 5.3.2).
- Do not spend too much money on things that you might not need until demand justifies it. These include optional capital expenditures such as automated bottle cleaning equipment, refrigerated coolers, etc.
- Think about putting your shop in the same space where you already have a business or combining treated water sales with sales of other items. This will lower rent and employee costs, and will maximize sales per square foot of shop space (Section 8.1).

1.7 Opening Additional Shops

Successful water treatment and vending businesses in Kenya and elsewhere have elected to open additional stores. Expansion offers a business owner the opportunity to achieve economies of scale and therefore increase profits. Typically, the experience of having operated one shop is a tremendous advantage in opening additional shops, often leading to reduced start-up time, reduced input costs, and a shorter payback period on capital investments.

However, expansion increases the importance of good management, accurate record-keeping, and strong water quality and financial control procedures. These business characteristics are increasingly critical the greater the geographic separation between the shops. For businesses that lack these traits, expansion may be a curse instead of a benefit.

II – PLANNING YOUR BUSINESS

If you want to start your own water treatment and vending business, developing a business plan and projecting cash flows are important steps to ensuring your business is successful. In addition, some lenders may require these materials prior to approving a business loan. Remember, however, that the quality of your business plan will depend on your planning and estimates for costs and revenue. During this process you should research your target business location and gather information from potential suppliers. When thinking about revenue assumptions, you should be conservative and realistic in your estimates. The purpose of the cash flow model is to allow you to estimate whether your business is likely to be profitable. It is an important part of planning for your business.

To support your planning, a business plan outline and a cash flow model template designed for water treatment and vending businesses are available for download at www.waterbusinesskits.org

2. Developing Your Business Plan

Table 2 will assist you in compiling information for the cash flow model for your business. It provides some guidance on the appropriate range of costs for each business expense, the expected frequency of each expense, and the key factors that determine the expense. Table 2 also notes sections of the Water Business Kit that discuss specific expense items in detail.

It is strongly recommended that most new businesses try to minimize their large item expenses from day one (as discussed in Section 1.6). Table 2 provides ranges of revenues and expenses sourced from a variety of businesses. No single business consistently incurs the low or the high amounts for each line item. As a result, subtracting total expenses from total revenues does not generate a meaningful estimate of profitability. Tables 1 and 3 are better indicators for the costs and potential profits of any single business. To better forecast the profitability of your business, please use the cash flow model (available at www.waterbusinesskits.org) or another method based on your individual estimates.

Key Business Plan inputs

Item	Observed Range		Key Determining Factors	Covered in
	Low	High		
Monthly Revenues				
Revenue	20,000	400,000	Price per liter, liters sold	Section 4.1
Total Revenues	20,000	400,000		
Monthly Operating Expenses				
Rent	10,000	35,000	Location, size of premise, co-location with another business	Section 4
Salaries, Wages, and Commissions	3,500	86,000	Number and type of salaried staff, cross-staffing, incentive structure	Section 8
Electricity	600	14,000	Type of water treatment system, volume of water sold	Section 5
Water	300	23,000	Cost of input water, quality of input water, type of water treatment system, volume of water sold	Section 5
Phone and Internet	0	3,000	Sales calls, customer service level	N/A
Bank Fees	0	1,500	Choice of bank	N/A
Security	0	2,500	Location	Section 4
General Office Expenses (for example, stationery, pens, etc.)	0	2,500	Personal choice	N/A
Marketing and Labels	200	5,000	Quality and quantity of marketing materials	Section 9
Bottles, Caps, and Seals	3,000	90,000	Volume of sales	Section 10
Water Quality Testing	750	2,500	Frequency of testing	Section 12
Monthly Operating Expenses	18,350	265,000		
Annual Expenses				
KEBS Standardization Mark	31,900	31,900	Fixed	Section 11
City Council Permit	5,000	45,000	Location, business size	Section 11
Public Health Department Permit	1,000	7,000	Location, number of staff	Section 11
Excise Tax License	50,000	50,000	Fixed	Section 11
Annual Expenses Total	87,900	133,900		
Financing Expenses				
Loan Interest	0	14,000	Source of start-up capital	Section 3.1
Finances Expenses Total	0	14,000		
Total Monthly Expenses	106,250	412,900		

Table 2: The table shows key business plan inputs, including a suggested range for each item. It is intended as a quick reference guide for the business planning process.

3. Securing Start-Up Capital

Most of the existing small-scale water shops in Kenya needed between 600,000 and 2 million Kenyan shillings to start.

This gave them enough money to pay for their start-up expenses and initial working expenses. Your start-up costs will be determined by three main factors:

- 1. Water Treatment System** – The cost of a water treatment system depends on both the type of treatment technology and how much treated water the system can produce (see Section 5.2 for a discussion of specific types of water treatment systems). Existing business have spent between 175,000 and 700,000 Kenyan shillings on water treatment equipment.
- 2. Store Buildout Expenses** – You will likely need to change some parts of your shop so that you can efficiently treat water and serve customers in the same location. The expenses to make these changes will vary based on the suitability of the shop space for the specific needs of the business (as discussed in Section 4.6) and on the target customers. Businesses that serve lower-income households should spend less on shop design and cosmetic features than businesses serving higher-income families.
- 3. Initial Working Expenses** – Based on experience, sales are likely to start slowly so you should plan to have enough cash on hand to cover three to six months of expenses. Typical monthly operating expenses range from 40,000 to 100,000 Kenyan shillings, with an average of about KShs.75,000 per month.

Sample Set Up Costs for a Kenyan Small-Scale Water Treatment and Vending Business

Item	Cost per Item	Unit	Quantity	Cost
Capital Costs and One-Time Expenses				
Shop Buildout	80,000	Shop Buildout	1	80,000
Water Storage Tanks	75,000	5,000 L	1	75,000
Water Treatment Equipment System	500,000	System	1	500,000
Shop 'Goodwill' (if required by landlord)	100,000	Unit	1	100,000
Shop Security Deposit (3 months rent)	60,000	Unit	1	60,000
Initial Bottle Inventory	25,000	Unit	1	25,000
Capital Costs and One-Time Expenses Subtotal				840,000
Annual Expenses				
Licenses and Permits	105,000		1	105,000
Annual Expenses Subtotal				105,000
Six Months Estimated Working Capital				
Rent	20,000	Monthly	6	120,000
Salaries, Wages, and Commissions	20,000	Monthly	6	120,000
Electricity	3,500	Monthly	6	21,000
Water	3,000	Monthly	6	18,000
General Office Expenses	2,000	Monthly	6	12,000
Marketing and Labels	3,500	Monthly	6	21,000
Six Months Estimated Working Capital Subtotal				312,000
Sample Set Up Costs Total				1,257,000

Table 3: The table shows approximate start-up costs and working capital requirements for a sample business. The costs of your business may vary and not all line items may be relevant to your business. You should develop your own estimates based on the particular nature of your business.

Sources of business financing include banks, family loans, or personal savings.

Banks will look very closely at your personal finances and your existing business (or businesses), if applicable, before approving a loan (see Box 1). In general, it is unlikely that you will be able to obtain a bank loan if this is your first business. Banks prefer to work with established entrepreneurs with existing businesses.

Items Typically Required for a Bank Loan

- Business plan with cash flow projections
- Company registration documents
- Personal identification documents for all company directors
- Company financial statements (audited if available)
- Current bank statement(s)
- Board resolution approving the loan
- Utility bill in your name or that of the business

4. Choosing Your Location

Choosing the location for your business is probably the most important decision in the business development process.

This section guides you through the key questions you should think about when looking for potential locations: the market for your product, your source of water, the convenience of your location to potential customers, and how much modification is required in the shop space.

4.1. Who is Buying Your Product?

To ensure business success, customers should live and work close to your shop. If customers have to spend lots of effort to reach your shop or if it costs you lots of money to bring the product to their homes, it will be hard for your business to compete with neighborhood stores that sell bottled water.

Ask yourself the following questions about a potential location:

1. *Who are my target customers? (for example, what is their likely household income?)*
2. *Do my target customers live nearby or do they work nearby?*
3. *What is the demand for treated drinking water in the area? (see Box 2 for an example)*

Water treatment and vending is a volume-driven business; to be successful, a shop must be able to sell tens of thousands of liters each month. To make a rough estimate of demand, we suggest the following process:

- a) **Calculate the total estimated size of the primary market.** You can do this by multiplying the number of homes within 1 km of the location by the number of people living in each home (four people in each home is a reasonable estimate for Nairobi, based on our surveys). Then multiply that number by the number of liters of drinking water consumed per person per day (1-1.5 liters per day). Then multiply that by the number of days per month.
- b) **Next, estimate what percentage of these people treat their drinking water or want to pay for treated drinking water.**

Aquaya conducted a survey to find out this percentage in Nairobi. Our survey results indicate that in middle-income neighborhoods 95-100 percent of consumers either treat their water at home (for example, filtering, boiling, addition of chlorine, in-home treatment system) or purchase bottled water. Customers who currently buy bottled water or who treat their water at home have demonstrated that they value treated drinking water and will be the easiest consumers to convert to purchasing water from your shop. Customers who do not currently purchase treated water or treat water at home will require more education and effort to convert and are best targeted after sales at your business are better established.

- c) **Then estimate the percentage of these people who you think would come to your shop.** Based on our experience working with entrepreneurs, you

should estimate carefully and conservatively. Expect to start with low levels of sales that grow over time.

Upon opening, the businesses we have worked with have captured approximately 1 percent of the estimated market in their surrounding areas within the first couple of months of operation. However, these businesses later experienced high sales growth rates averaging between 20 and 60 percent growth per month over the first six full months since they opened. Almost all of the business owners we have worked with overestimated their first month sales.

The sales volume required to achieve profitability is a function of the price you charge customers for your water and the costs incurred by your business and may vary greatly from one business to another. Most businesses have had to sell between 7,500 and 15,000 liters per month to be profitable and the most profitable businesses often sell in excess of 25,000 liters per month.

Box 2

Example: How to Estimate Market Demand

a) *Calculate total size of primary market:*

If there are 5,000 households (HH) within 1 km of the shop, then the total market for water for consumption would be:

$5,000 \text{ HH} * 4 \text{ people per household} * 1.5 \text{ liters per day} * 30 \text{ days per month} = 900,000 \text{ liters per month.}$

b) *Estimate percentage of market willing to pay for treated water:*

If we conclude that 95 percent of the people in the area are treating their drinking water, then the market size is: **$900,000 \text{ liters per month} * 95 \text{ percent} = 855,000 \text{ liters per month.}$**

c) *Estimate percentage of market your business is likely to capture:*

If we estimate that we will capture 1 percent of the market in our first month of operations, this results in estimated sales of: **$855,000 \text{ liters per month} * 0.01 = 8,550 \text{ liters of sales in the first month.}$**

4.2. Finding Your Water Sources

Your business must have access to a reliable, consistent water supply. Running out of water is potentially disastrous for any water treatment and vending business. You have three potential water sources: tap water, ground water, and surface water. Most of the existing water treatment and vending businesses in Kenya get their water from tap water provided by the municipal council (the city) or from groundwater supplied by private boreholes and wells. All water sources must be tested to determine the kinds and levels of contaminants that must be removed by your shop's water treatment equipment. Water treatment equipment is discussed in detail in Section 5 of this kit.



4.2.1. Tap Water: The most cost effective

Municipal tap water is almost always the most cost-effective source of water for businesses, because it is usually much cheaper to use and treat than other water sources. As the water quality provided by water utilities is generally of a higher standard, tap water may only require minimal treatment to remove possible microbial contamination (bacteria, viruses, and other parasites) (water quality is discussed in more detail in Section 5). The biggest challenge with using municipal tap water is that there may be supply disruptions during which you have no water supply from the tap. Another challenge is that if your store location does not have a connection to the water line, making a new connection might be difficult and/or expensive.

4.2.2. Ground Water (Boreholes and Wells): More expensive

Private boreholes and wells can offer an independent, consistent supply of water to a business. In some cases the building landlord can supply this private water source; in other instances, entrepreneurs need to reach a supply agreement with a private borehole owner in the immediate area. Make sure that your water source is properly licensed and that the connection is secured before committing to a lease.

In almost all cases, drilling a borehole or digging a well for small-scale water treatment and vending businesses is so expensive that sales from the business will never pay back the expense (it is cost prohibitive). The average charge for drilling a borehole in Kenya is KShs.6,500 per meter and the average borehole depth in Nairobi is 200 to 220 meters. At this rate the average charge for drilling and finishing casing a Nairobi borehole is KShs.1.365 million. Add to this about KShs.500,000 for average pump, control panel, and piping costs and the total is KShs.1.865 million. For most businesses this is much more than all other start-up costs combined. At a price point of KShs.10 per liter, a business would have to sell approximately 3,100 additional liters per month for 60 months in order to cover the cost of the borehole. This represents roughly 15 to 25 percent of the water sold per month by most demonstration businesses. Drilling a borehole or digging a well for commercial use also requires an abstraction permit from the Water Resources Management Authority (WRMA) and a license from the

National Environment Management Authority (NEMA). Obtaining these licenses often takes a lot of time and effort (see Section 13 for additional details).

4.2.3. Surface Water: Contaminants a potential concern

Surface water refers to springs, ponds, lakes, streams, and rivers. Microbes are usually the main contaminants in surface waters, although, there may be additional chemical contaminants in urban settings.

Using surface water also requires an abstraction permit from WRMA and a license from NEMA.

4.3. Consider the Reliability of Your Water Supply

Regardless of your water supply, you must take steps to ensure you do not run out of water. When you are researching various locations, consider the reliability of the water supply. Water storage tanks are useful to protect your business against supply disruptions (when there is no water available), so determine if possible shop locations have enough space for the storage tanks. The exact amount of storage space a business requires will depend on the projected sales volumes you calculated in Section 4.1 and the reliability of supply in the area. In addition to speaking with the landlord, it is important to check with neighboring businesses (who do not have a financial interest in your relocating to the area) to get an opinion from someone else on any problems with the water supply in the area. Water storage is discussed in greater detail in Section 7.

4.4. Your Competition: Any Other Safe Drinking Water

In choosing your location, you should broadly consider the level of the competition in the area. You are selling safe drinking water and your competition is any other water that customers perceive is safe to drink. This could consist of traditional bottled water whether it is purchased at supermarkets or delivered, other water treatment and vending businesses, good-quality municipal supply, water treated at home (for example, treatment by boiling or using chlorine or filters).

Competition can be beneficial to your business because it increases public awareness of the water treatment and

vending business model. That fact aside, there are few benefits to the business owner to competing directly with another business for the same customers. It is advisable not to locate your shop too close to another water treatment and vending business.

The level and type of competition will also inform your marketing message as discussed in Section 9.

4.5. Consider Convenience for Your Customers

At 1 kg per liter, water is heavy and expensive to transport over long distances. Investing in delivery vehicles is too expensive for most new businesses. So, when selecting a location you should think about how easy it is for your customer to get to your shop and look for delivery services that already exist in the area.

4.6. Choosing a Shop Space: Limit Renovation Costs

In evaluating retail space options, determine the readiness of specific shop locations for your water treatment and vending business. The amount of money you will have to spend to start the business will strongly depend on how much of the space needs to be changed before you can open the business. The specific factors affecting the appropriateness and readiness of a space for business are detailed in Table 4 below.

Compare the estimated costs of preparing your shop for business before signing a lease. Start-up costs that you did not plan for can kill your business before it opens its doors.

In some cases, it may be more economical to pay a higher monthly rent and/or goodwill for places that are ready for business than to pay several months of rent while your shop is still being prepared.

4.7. Signing a Lease

You should not sign a lease until you have all the money required to cover all start-up expenses. Otherwise, you run the risk of paying several months of rent for an empty shop as you wait for the rest of your start-up capital.

Some landlords require new tenants to pay “goodwill” at the lease signing. This is typically in the form of a one-time cash payment to the landlord. The amount can almost always be negotiated and is not charged by all landlords. Businesses have received requests for “goodwill” as high as KShs.500,000. Large “goodwill” payments can dramatically increase your start-up capital requirements and, possibly, the amount of time it will take to pay-off your business debt. You should carefully consider these effects before settling on a retail space requiring a “goodwill” payment.

4.8. Location Selection Checklist

The checklist below (Table 4) is designed as a reference tool for you to use when evaluating possible business locations. In addition to the items we have identified below, you may wish to add items you feel are personally important in identifying and selecting a good business location to this list.

Water Treatment and Vending Shop Location Selection Checklist				
General Location				
1	Is the site easily visible to a passerby?	YES	NO	
2	How much foot and vehicular traffic is around the site?			
3	Are there other prominent retailers in the immediate vicinity?	YES	NO	
4	How many households do you estimate are within 1 km of the shop?			
5	What type of neighborhood is it?			
5a	Income Level?			
5b	Security?			
6	How accessible is the site? Is it easy for customers with heavy water bottles to enter and exit the store?	YES	NO	
7	Is there any/adequate parking available?	YES	NO	
8	Is there a place for you to have a signboard or place other signage to drive business to your shop?	YES	NO	

Table 4

Checklist continued on next page (11)

Retail Space				
1	What size is the shop (square feet or square meters)?			
1a	Dimensions?			
2	Will you need to set up any partitions or otherwise reconfigure the shop space?	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
3	Do you believe the shop would need to be repainted?	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
4	Do you believe the floor would need work or painting to be in satisfactory condition?	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
5	Is the current lighting in the shop adequate?	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
6	Are there bathrooms on site for employees? (This is a requirement for the Public Health License)	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
Water Source and Reliability				
1	Is there existing access to water within the shop space? (If yes, skip to question 2)	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
1a	If not, can a water connection be established?			
2	What is the primary source of water?			
3	Are there any secondary water sources available?	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
3a	If yes, what is it?			
4	If municipal supply, how frequent is the supply? (You may wish to ask neighboring businesses and residents in addition to the landlord)	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
5	Are there any existing water tanks or is there a place to put a water tank(s)?	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
5a	If yes, how big a tank will fit in the space (keep in mind the size of doors/windows to physically get it into the shop?)			
6	Is there proper drainage from the shop? Note: this is particularly important if using a Reverse Osmosis system (see Section 4.2)	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
7	Do you have reason to believe there will be need for significant plumbing work (either for water supply or drainage)?	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
Utilities and Services				
1	Is security included in the rent?	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
2	What is the type of electric supply (single phase or three-phase)? Note: some water treatment requires three-phase power and converting from single phase to three-phase can cost KShs.80,000 or more			
3	How reliable is the electric supply?			
4	Is there a backup generator on site?	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
4a	If there is a generator, is it capable of powering your water treatment system?	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
5	If needed, is there a space to place your own generator?	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
6	Are there motorcycles, <i>mikokoteni</i> (carts), tuk tuks, pickups, cars, or bicycles for hire close by that could be used to deliver water?	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
Costs				
1	What is the rent per month?			
2	What are the payment terms (monthly, quarterly)?			
3	What is the amount of the required security deposit?			
4	Is the landlord requiring you to pay "goodwill"?	YES	<input type="checkbox"/>	NO <input type="checkbox"/>
4a	If yes, in what amount?			
Competition				
1	Thinking broadly, who are your competitors in the local drinking water market? For example, are there supermarkets selling bottled water? Bottled water delivery available? Other water treatment and vending businesses?			
2	Where do people currently get their water (for drinking and for household use)?			
3	What are the costs/prices of any existing options?			
4	What is the quality of any existing drinking water options?			
5	How convenient are existing options to consumers?			

III – SETTING UP YOUR BUSINESS

5. Selecting and Purchasing Water Treatment Equipment

For most shops, water treatment equipment represents the single largest expenditure they will make. Most businesses spend between 175,000 and 700,000 Kenyan shillings on water treatment equipment.

All businesses should commission a full microbiological and chemical analysis of their intended source water. Often this water quality analysis can be arranged through a water treatment equipment supplier. Businesses should then select their water treatment systems based on two key factors:

1. The types of contaminants found in their source water (what problems are there with the quality of the water?)
2. The water treatment capacity required to meet their projected sales volumes (How much clean water do you need to produce in order to meet your sales goals?)

In this section, we first describe the main classes of water contaminants and then explain how these contaminants are effectively removed by water treatment technologies. We conclude with an analysis of the typical costs involved with setting up and operating different water treatment options.



Entrepreneur Antony Kamotho at his shop



5.1. The Main Classes of Water Contaminants

The main classes of drinking water contaminants that make drinking water unsafe are described below:

1. **Microbes.** Waterborne microbes are small organisms that can be harmful to human health. They are divided among three main classes: bacteria (for example, those causing typhoid, cholera, and dysentery), protozoan parasites (such as *Giardia* and *Cryptosporidium*), and viruses (such as rotavirus and norovirus).

Water contaminated with microbes can cause disease among consumers within a few days of drinking. This can be very dangerous for infants and children. Microbes are likely to be found in all surface waters and shallow groundwater, as well as in poorly operated and maintained municipal water systems. It is rare to find microbes in borehole water, but if the borehole is connected to a poorly managed storage facility or piped network, the water can be contaminated with microbes during storage or distribution.



Giardia seen under a microscope

2. **Suspended solids.** These are basically earth or dirt that is in the water. Suspended solids affect how the water looks, giving it a cloudy or muddy appearance (known formally as “turbidity”). In addition, other contaminants may be attached to the suspended sediment particles, including both microbes and chemical contaminants such as the agricultural and industrial pollutants described below. Suspended solids are mainly a problem in surface waters such as rivers, earth pans, and unprotected springs.



Turbid water that is unfit for drinking

3. **Salinity.** This refers to how salty the water is by measuring the amount of major salts such as sodium, potassium, calcium, magnesium, chloride, sulfate, and carbonate. Salinity is also known as TDS (for “total dissolved solids”). Water with high salinity is not suitable for drinking. Salinity is usually low in surface waters but can be higher in groundwater, particularly along the coast.



Any freshwater located near this marsh would require treatment

4. **Naturally occurring trace contaminants.** These include chemicals such as arsenic and fluoride that are harmful for human health when consumed over long periods. High fluoride levels are often found in groundwater in Central, Nairobi, and Rift Valley Provinces.



Rift Valley in Kenya

5. **Industrial contaminants.** These include both heavy metals such as mercury, lead, and cadmium as well as many of the chemicals used in fuels, manufacturing, and processing. They also include lightweight organic compounds often used as solvents (known collectively as volatile organic compounds (VOCs), petroleum hydrocarbons, benzene and related compounds (known as BTEX, for “Benzene, Toluene, EthylBenzene, and Xylene”), and heavier compounds such as PCBs (polychlorinated biphenyls), which tend to be found in sediment. Industrial chemicals are more likely to be found in groundwater but also may be found in rivers adjacent to or downstream of zones of heavy industry.



Industrial pollution pouring into water source

6. **Agricultural contaminants.** The agricultural materials of concern for human health are pesticides, herbicides, and fungicides. These contaminants generally are not immediately dangerous, but if people drink them in high concentrations over long periods of time, they may increase the likelihood of some diseases, including cancers. Agricultural contaminants are primarily found in groundwater from intensively farmed regions and in rivers that are downstream of these areas.



Contaminated creek next to farmland

There is a broad range of water treatment technologies developed to remove or kill different contaminants. Identifying the types of contaminants that are present in your source water is essential for selecting appropriate water treatment equipment. Before purchasing your water treatment equipment, you should have water quality testing done on your source water. Contact information for a list of laboratories that specialize in water quality analysis is provided in Section 12. A reliable water treatment equipment vendor can assist you in interpreting the laboratory results. It is recommended that you share the laboratory results and obtain quotations from at least two equipment vendors in order to avoid being sold unnecessary equipment.

5.2. Water Treatment Technologies

The type of water treatment system you will need will depend on the types of contaminants found in your source water. To remove or kill the different classes of contaminants, water treatment and vending businesses rely on three levels of water treatment:

1. *Physical Filtration.*
2. *Ultraviolet (UV) Irradiation.*
3. *Reverse Osmosis (RO) Membrane Filtration.*

How these three levels of water treatment remove or kill contaminants are described below:

5.2.1. Physical Filtration

Almost all water treatment systems include some form of physical filtration, which removes suspended solids and sediment (sand and dirt). The suspended solids and sediment levels in your source water will determine your requirements for physical filtration.



A carbon water filter

Sand filters or mixed media filters, either packaged in large columns or in smaller pressurized vessels (called pressure sand filters, or PSFs) are required to remove large particles. Column filters and PSFs can be backwashed to maintain their performance.

If your source water has low levels of suspended solids and sediment, you may only require particle filters with small pore sizes that remove low levels of turbidity. These particle filters cannot be backwashed and need to be replaced on occasion.

In some cases a water treatment equipment supplier may also recommend passing source water through activated carbon filters. Activated carbon can reduce the levels of industrial and agricultural contaminants. Activated carbon filters will also require replacement according to your equipment supplier's recommendation.

5.2.2. Ultraviolet Irradiation

Ultraviolet (UV) irradiation, which exposes source water to ultraviolet light, is very effective for killing pathogenic microbes; however, UV irradiation will not remove any of the other classes of contaminants. Physical filtration + UV irradiation, therefore is only an effective treatment system for water sources that do not contain naturally occurring trace contaminants, industrial contaminants, and agricultural

contaminants. Usually the only place to find this kind of water is through the municipal supplier or from protected surface waters, such as natural springs, that are not contaminated with agricultural or industrial run-off waste. In Indonesia, for example, many water treatment and vending businesses obtain their source water from protected mountain springs, which they then treat with a combination of physical filtration and UV irradiation.



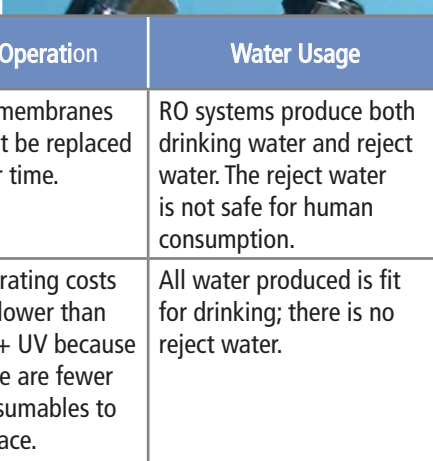
A typical UV Irradiation System

5.2.3. Reverse Osmosis Membrane Filtration

Reverse Osmosis (RO) membrane filtration uses pressure to 'push' water through filters with extremely small pores. These filters trap a large number of all classes of water contaminants, including microbes, naturally occurring trace contaminants, industrial contaminants and agriculture contaminants. These contaminants are discarded in 'reject water', which is the water that does not pass through the RO membrane. Physical filtration + RO membrane filtration is commonly used by water treatment and businesses that rely on source water that is contaminated with trace, industrial, and agricultural contaminants.



Reverse Osmosis Treatment



Treatment Technology	Benefits	Purchase Cost (KShs)	Operating Costs (KShs)	Operation	Water Usage
Reverse Osmosis + UV Irradiation	Effectively removes microbial, chemical, and mineral contamination.	350,000-700,000	0.43-2.08 per liter	RO membranes must be replaced over time.	RO systems produce both drinking water and reject water. The reject water is not safe for human consumption.
UV Irradiation	Effectively removes microbial contamination. Only appropriate for treating water with acceptable chemical and mineral content.	50,000-350,000	~ 0.38 per liter	Operating costs are lower than RO + UV because there are fewer consumables to replace.	All water produced is fit for drinking; there is no reject water.

Table 5: A quick reference guide to choosing the appropriate water treatment system for your business.

5.3. Other Factors to Consider

5.3.1 Ease of Use

For entrepreneurs just starting out in water, the idea of operating water treatment systems can be intimidating. However, you can buy complete and simple systems that are made for small-scale water treatment and vending businesses. You do not have to be an expert to use these systems on a daily basis. Almost all water treatment equipment suppliers will provide you and your employees with training on how to operate the equipment as part of their sales package. Many equipment suppliers will also offer equipment maintenance services. Check with the water treatment equipment supplier regarding training and maintenance before making an equipment purchase.

5.3.2 Treatment System Capacity

'Treatment system capacity' refers to the number of liters that a water treatment system is able to treat in an hour or a day. When you are trying to decide which treatment equipment to buy, you will have to balance treatment system capacity with the total cost of the equipment. At a minimum, you will want to ensure that your system is capable of treating sufficient volumes of water to serve the demand you estimated in Section 4.1.

Systems with greater treatment capacity are more expensive to purchase and more expensive to operate. For some businesses, it may be a better idea to start with a smaller system that can be expanded at a later date, than to spend a lot of money in the beginning on a bigger system. This allows businesses to reduce their start-up costs and then invest more money in equipment after the business is established and demand levels at a particular location are better understood.

5.4. How to Choose Equipment Vendors

There are many water treatment equipment suppliers in Kenya. When you are deciding who you should buy equipment from, you should ask for references of their past system installation experience. Contact information is provided for three water treatment equipment suppliers with which demonstration businesses have worked in the past. Vendors are provided in alphabetical order. This order does not indicate that one vendor is recommended over another (see Box 3 on the next page).



Contact Information for Water Treatment Equipment Suppliers

DavChem	Phone:	020.350.1738/6005 or 0722.719.796
	E-mail:	info@davechemeastafrica.co.ke
	Website:	www.davechemeastafrica.co.ke
Davis and Shirliff	Phone:	020.696.8000 or 0711.079.000
	E-mail:	d&s@dayliff.com
	Website:	www.dayliff.com
PureFlow	Phone:	020.236.7055/6 or 0715.626.413 / 0735.588.113
	E-mail:	info@pureflow.co.ke
	Website:	www.pureflow.co.ke

6. Be Clever about Shop Buildout

You should think about what changes need to be made to a shop space when you are comparing different locations for your business. Store buildout includes all of the expenses (partitioning, plumbing, electrical work, painting, etc.) required to prepare the shop for business.

As much as they can, entrepreneurs should keep their buildout expenses as low as possible while creating a functional, smart retail space. Spending less money in the beginning will help keep financial pressure down. Of course, an owner wants to present customers with a good-looking shop to support the quality and trustworthiness of his or her product, but many aesthetic improvements to the retail space can be postponed until you understand the local demand better and the business is able to use some of its profits to pay for these costs.

7. Plans for Storing Water: Keep a Backup Supply

Water storage tanks help protect a water treatment and vending shop when water from the main source is not available. Most businesses we have observed in Kenya have between 5,000 and 10,000 liters of raw water storage, but each business should make its own estimate of how much water it should store and how much space is available. If space is available, many businesses can start with a limited amount of storage in the beginning and add additional storage capacity when they need it in the future.

As there are many vendors producing tanks and there is a variety of designs, it is a good idea to shop around for the best deal and the right size for your needs. The best tanks for water storage are made with food grad plastic material. Tank prices have changed a lot in the past year, but a 5,000 liter tank costs between 70,000 and 80,000 Kenyan shillings, while a 10,000 liter tank sells for between 140,000 and 160,000 Kenyan shillings.. In terms of planning for storage space, 5,000 liter tanks are roughly 185 cm x 195 cm and 10,000 liter tanks are 220 cm x 286 cm. If you want to place your tanks on a roof or a stand, remember that the roof or stand needs to be strong enough to bear the heavy weight of the tank when full. A 5,000 liter tank contains 5,000 kg of water!

Water storage tank vendors that have been used by existing demonstration water treatment businesses are listed below in alphabetical order. This order does not indicate that one vendor is recommended over another.



Box 4

Contact Information for Water Storage Tank Vendors

Kentainers	Phone:	020.251.9098 / 9099
	E-mail:	info@kentainers.co.ke
	Website:	www.kentainers.com/kent/kentainers.html
PolyTanks	Phone:	020.20.500.4401 / 0721.378.629 / 0734.440.444
	E-mail:	zanillya@polytankskenya.com
		alphonc@polytankskenya.com
		manish@polytankskenya.com
	Website:	http://www.polytankskenya.com
Roto Moulders	Phone:	020.531.063 / 542.022 / 542.403
	E-mail:	info@rotomoulders.com
	Website:	www.rotomoulders.com
Top Tank	Phone:	020.393.9000
	E-mail:	mail@toptank.com
	Website:	www.toptank.com

8. Staffing your Business

Whether you intend to staff the shop yourself or to hire employees to run the shop, you will need sales, marketing, customer service, and technical skills. You should also think carefully about how many workers you will need ('staffing levels') and what you can do to make them productive (for example, motivation and incentives).

8.1. How Many People Should You Hire?

Most businesses start with one to three employees and grow over time as demand increases. It is always easier to employ more staff as business grows than to lay off extra employees. A single employee can usually operate most water treatment and vending shops until demand grows significantly. Due to this, most businesses hire a second employee so that one person can be focused on sales and marketing efforts while the other runs the store. In some cases, the business owner handles the sales and marketing responsibilities.

For entrepreneurs with more than one business interest, cross-staffing can reduce staffing costs. Cross-staffing is when two small businesses share the same premises and employees are able to work for both businesses at the same time. While cross-staffing in the water treatment and vending industry is not yet popular in Kenya, in Southeast Asia, many water treatment and vending businesses share locations and staff with restaurants, shops selling basic goods, laundry services, and other retail businesses. Cross-staffing helps maximize staff productivity and to allow the business to spread staffing costs across multiple revenue streams.

8.2. Sales Incentives for Employees

Sales incentives may motivate a shop's sales team. You can develop incentives that are connected to sales goals for individual employees or for a team of employees. One way is to connect sales goals to the level of sales at which the shop will be able to pay for its operating costs. For example, you could award an employee with 5 percent of all sales above the amount required to cover the operating costs of your shop.

You should also take care in making sales goals to achieve incentives – if an employee believes that the goals are unfair or too hard to meet, incentives might not be effective. Also, you have to check that sales are credited to the correct employee or employee team, and that the amount of the incentive is enough to make them want to try and sell more.



Employee cleaning refill bottles at a water treatment and vending business in Nairobi.



9. Marketing Your Product

An important step in the business planning and development process is creating a marketing plan and identifying the costs associated with marketing the business.

9.1. What to Sell

One of your most important decisions is what mix of products to sell at your shop. You must first decide whether to focus only on the sale of bottle refills or to offer both refills and new, complete bottle sales. After you make that decision, you can then decide the sizes of bottles to refill and/or package as new.

The majority of Kenyan businesses we have observed to date sell both refills and complete bottles. Usually a business will focus on refills for higher volume bottles (5, 10, and 18.9 liters) and new bottle sales in small volumes (500 ml and 1 liter).

However, we have seen that there is a market for refills of smaller volume containers as well. The most profitable shops we have observed refill all sizes of bottles over 1 liter. Low-priced small-volume refills make your product more affordable to customers from lower income groups and give customers a choice to refill when they want to buy water that they will drink immediately. Small volume refills also allow new customers to sample your product at a low-cost. Smaller volume bottles are not designed for reuse, so if you refill these containers ensure you have proper procedures and policies in place governing what constitutes an acceptable level of container quality (see Section 12 for further details).

9.2. Why Should Customers Buy From You

Your business's value proposition is about convincing your customers to purchase drinking water from your shop and not from your competitor's shop. You and your staff should be able to clearly and concisely express your value proposition to potential customers. For the value proposition, it is best to define your competition more broadly, such as all products that might satisfy a potential customer's thirst, rather than limiting the competition to other water treatment and vending shops.

You should tailor your message to your product, but there are some key components of the value proposition that apply to virtually all water treatment and vending businesses:

9.2.1. Price

The key advantage of the water treatment and vending model is that refilling bottles is cheaper than traditional bottled water alternatives (because it reduces the business's bottling costs). The price disparity can be easily conveyed to customers by showing a table comparing the price of your water to the retail price of popular brands of traditional bottled water.

9.2.2. Quality

Equally significant is that the quality of the water produced by water treatment and vending businesses is equivalent to that of traditional bottled water (but at a much lower price). Water sold by water treatment and vending businesses must comply with the same water quality standards and regulations that apply to traditional bottled water. The customer should be aware that there are significant health benefits to drinking reliable, clean, safe water from a source they can trust.

A related quality point is that most consumers find the taste of the water produced by water treatment and vending businesses as good as traditional bottled water and better than chlorine or chemical-based treatment alternatives.

Many businesses emphasize the quality of their water by prominently posting their KEBS certificate, permits, and/or recent water quality test results. Another way of convincing customers is allowing potential new customers to sample your water for free in a small cup. In conveying the health benefits to customers, you must follow the labeling and packaging guidelines discussed in Section 9.6.

9.2.3. Convenience

The decentralized nature of water treatment and vending businesses positions shops close to customers' homes and businesses. For customers this reduces the distance they have to carry their water. Many businesses offer delivery services (discussed in greater depth in Section 10), either providing them through third party delivery agents (for-hire motorcycle or taxi transport) or, for larger businesses, through company-owned delivery. Businesses that offer delivery should be sure their messaging to customers includes reference to the ease and convenience of this service.

9.3 Offering Delivery

Providing delivery services can increase the value and convenience you provide to your customers and can distinguish you from the competition. However, the costs and logistics of delivery services can be challenging.

9.3.1. Logistics

Providing convenient delivery services is difficult if your customers live in many places that are far apart from each other. Customers may have to wait a long time for their deliveries. Alternatively, the business may have to spend a lot of money on fuel and vehicle costs due to large numbers of trips. In addition, there are likely to be inefficiencies because it will take a driver time to learn the specific location of customers' homes or businesses.



Entrepreneurs in Cambodia offer to deliver water to their customers

9.3.2. Costs

Investing in transport can be very expensive for businesses. Sometimes the purchase price of a vehicle is more than the amount of money invested in the shop itself. For new businesses, it is usually better to rely on for-hire transportation (for example, motorcycles, mikokoteni, pickup trucks, and taxis) to deliver to customers. This for-hire transport is usually cheaper than buying a new truck/car and can either be arranged directly by the business. If for-hire transport is available close to the shop, it can be arranged directly by the customer. While for-hire operators reduce the control a business owner has over the delivery service, they offer three significant potential benefits to a business:

1. The business can measure customer demand for water and delivery services before investing a large amount of money in a vehicle that may not be used enough and hiring another employee with driving skills to operate the vehicle.
2. For-hire transport drivers will already know where customers' homes and businesses are.
3. For some businesses, the for-hire transport operators can help advertise for the business by talking to some of their customers about the low-cost drinking water option in the area.

Most businesses charge their customers for delivery.

9.4 Setting Your Prices

To set effective, profit-maximizing pricing levels, you must balance variable costs (costs that change depending on how much you produce), fixed costs (costs that do not depend on how much you produce), projected sales volumes at various pricing levels (how much people want to pay for water depending on how much it costs), and your competition's pricing (how much other businesses are selling water for).

Existing businesses we have observed average KShs.2.9 per liter in variable costs, although this number can change a lot depending on the cost of parts that need to be replaced in your water treatment system and whether you pay for all or some of the delivery cost (as opposed to the sole responsibility of the customer). On refills, the variable costs consist of the following items:

- Electricity required by the treatment system.
- Input water.
- Amortized cost of the water treatment system consumables.
- Cap and seal.
- Label (if applicable – some shops choose to sell refills without labels).
- VAT.
- Delivery costs (only if you choose to offer delivery for free or at subsidized rates to your customers).

To calculate variable costs, first calculate these items on a per liter basis and then multiply as appropriate for the size of a given product.

For new, complete bottle sales, in addition to the variable costs listed above, shops must add the cost of the:

- Bottle.
- Label (if not included above).
- Excise tax.

All fixed costs (for example, rent, salaries) should be allocated over projected liters sold. This calculation will be challenging for many businesses at first, when sales volumes are uncertain, but will become easier as sales levels become consistent. Average fixed costs for new businesses are typically about KShs.5 per liter, but this decreases to KShs.2.8 per liter for mature businesses.

By estimating per liter fixed and variable costs, you can effectively calculate a minimum price for water that will allow for you to make as much money as you spend (break even).

You should add some profit margin to this minimum price. In theory, the lower the price, the greater the volume of water that will be sold. By lowering their prices, businesses will sell more water, and even though they are not making as much money per liter they might earn more money overall. You will likely need to experiment with pricing to reach your profit maximizing level. In general, it is much easier for a business to lower prices for a product than it is for it to persuade customers to pay more for the same product. As a result, you may want to use sales or other promotional language as you conduct pricing experiments in order to help customers understand that the price change is only temporary.

The competition also plays a role in finding the best pricing levels for a business. If there are other places to buy low-cost, high-quality drinking water nearby, it will be harder to change the prices.

You also must decide whether your business will pursue a high-volume low-margin or a low-volume high-margin strategy. For example, are you going to sell a lot of water at a low price or sell less water at a high price? In general, small-scale water treatment and vending shops are characterized by high fixed costs (relative to their variable costs) and low variable costs. This suggests that for many businesses the profit maximizing strategy may be to charge lower prices in order to attract more customers, thus allowing your business to spread its fixed costs across greater sales levels.

To date, we have observed shops charging between 6 and 17.5 Kenyan shillings per liter for refill water. Some of the most profitable shops we have observed have set prices at the low end of this price per liter range. Many of the businesses at the higher end of this range are targeting wealthy customers and are located in high rent locations. We fully expect that we will soon begin to see some shops charging below KShs.6 per liter in an attempt to boost water sales volumes (and thus be able to spread their fixed costs over greater total sales levels). Prices will also become lower as businesses move into lower rent neighborhoods and increasingly target middle- and lower-income consumers.

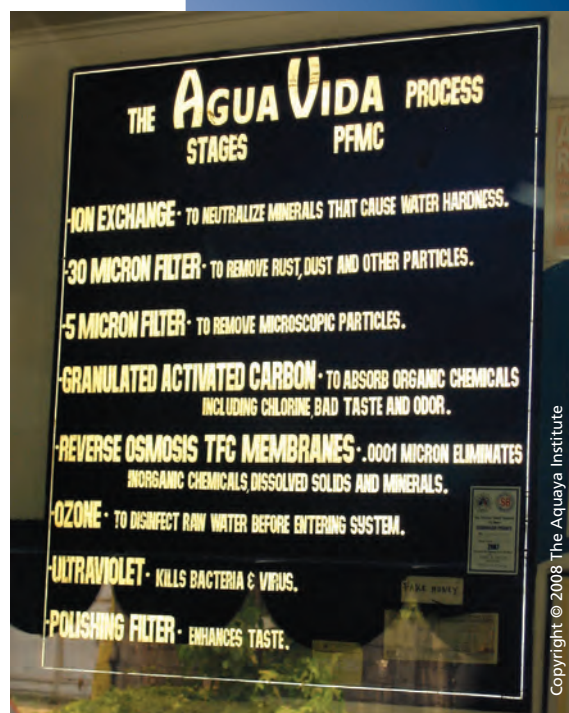
9.5. Signage and Branding

Signs and/or exterior branding are the first things many customers see identifying the business. It is important that a sign show the product and the service the business provides. Successful water treatment and vending businesses in Kenya have used both simple painted signs as well as more elaborate, backlit signs.

Before ordering signs or arranging for branding to be applied to the outside of the shop, it is important to check with the landlord of the retail space whether there are any restrictions on the type of signage and paint that may be used. Within the shop, branding and signs can be used to tell your customers about the product you are selling. Customers may not know about the water refilling concept or they might not trust the low prices of the refill water relative to premium brands available for sale in the supermarket. To teach customers about the quality and safety of refill water, most businesses do at least two things:

1. Display a copy of their KEBS standardization mark certificate and/or water quality tests results in an area where they are easily seen by customers in the shop.
2. Put up diagrams explaining the treatment process and showing that the way the water is treated in the shop is the same as the way that bottled water companies treat their water.

By explaining that the water produced by your business meets the same quality guidelines and is treated in the same way as other bottled water, you can address most of the quality concerns customers may have.

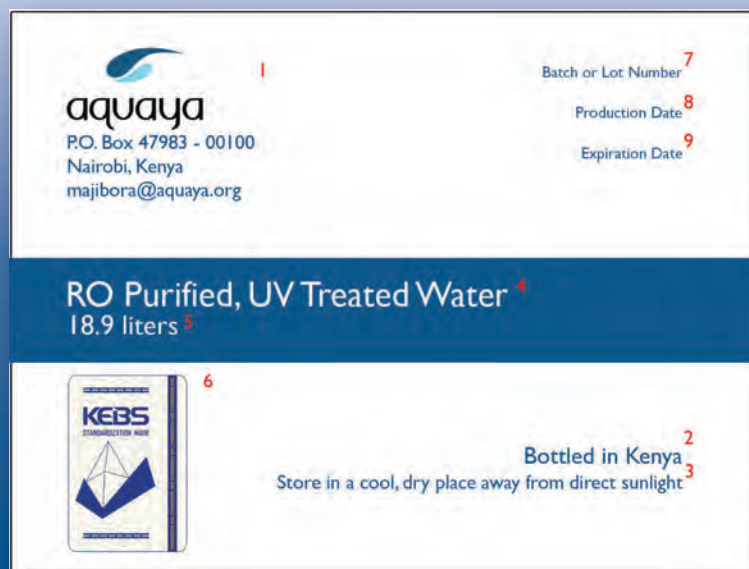


A water shop in the Philippines with a display explaining the water treatment process



9.6. Labels

Labels are required for all new bottle sales. The costs of labels can be very different depending on the quantity ordered and the design of the label (number of colors, size of the label, whether it is self-adhesive). We have seen label costs ranging from 1 to 10 Kenyan shillings per label. There is no evidence that more expensive labels lead to greater sales, although some minimum level of quality (for example, label is professional in appearance, colors and writing do not run, even when wet, label stays stuck to the bottle even when chilled, KEBS guidelines are followed) is essential.



Label sample

Per KEBS guidelines (KEBS, 2007), labels must include

1. Physical location and contact information of the business.
2. Specify that the water is “Bottled in Kenya”.
3. Specify the instruction that the consumer should “Store in a cool, dry place away from direct sunlight”.
4. Treatment process used (for instance, RO purified, UV treated).
5. Specify the volume of the product in metric units.
6. Space for the KEBS standardization mark to be applied.
7. Space for the batch number or lot number.
8. Space for the manufacturing/production date (some businesses elect to also use the date of production as their batch number).
9. Space for expiration date (one year from the date of production) to be marked.
10. If the water is bottled from a public or private tap water distribution system, but has not undergone further treatment that would modify its original composition, the wording “from a Public or Private Distribution System” must appear on the label along with the name of the product on the principal display panel.

One way of lowering your labeling costs is to use the same label size and design for multiple bottle sizes and then use another, small sticker or an ink stamp that shows the volume of each bottle.

KEBS guidelines (KEBS, 2007) also place some limits on what can appear on labels, specifically:

- The use of the term “Natural Drinking Water” is prohibited for water that has been treated.
- No claim can be made concerning medical (preventative, alleviative, or curative) or other beneficial effects relating to the health of the consumer.
- Labels may not use any statement or pictorial device which may create confusion in the mind of the public about the nature, origin, or properties of the drinking water.
- The use of more than one brand name for similar products bottled from the same water source is prohibited.

9.7. Brochures and Fliers

At start-up, most businesses distribute fliers or letters to customers in the surrounding area that explain their product, value proposition, pricing, and business location. As with labels, prices for producing these materials vary with the quantity produced, whether the materials are printed in color, and the quality of the paper used. Typical prices are 1 to 20 Kenyan shillings per flier. As with labels, there is no evidence to suggest that more expensive fliers lead to greater sales, although there are some basic quality standards (labels must appear professional and be easy to read) that must be met. Businesses can distribute fliers to likely customers using either shop employees or casual hires made specifically for the purpose.

10. Purchasing Bottles, Caps, and Seals

Shop around for the best prices on bottles, as prices change often and prices will be different depending on how many are ordered. Four major companies based in Nairobi produce bottles (Fineline, General Plastics, Malplast, Safepak), caps, and seals. Shop around for the best prices on bottles, as prices change often and prices will be different depending on how many are ordered. In addition, stock-outs of various bottle sizes at multiple manufacturers are not uncommon.

Box 5

New bottles are required to be capped and sealed (KEBS, 1996). This is also good practice for refills as it provides protection against contaminants and demonstrates to customers that the water in the bottle has not been tampered with since leaving your shop.

Contact information for five bottle manufacturers used to supply existing demonstration businesses is provided (Box 5). These businesses are listed below in alphabetical order. The order does not indicate that one vendor is recommended over another.

Contact Information for Water Bottle Manufacturers

Dynaplast	Phone:	020.553.615
	E-mail:	kilu@flexopac.com
Fineline	Phone:	0726.991.999
General Plastics	Phone:	020.530.032
	E-mail:	mail@genplastkenya.com
Malplast	Phone:	020.201.6993
	E-mail:	info@malplast.co.ke
Safepak	Phone:	020.240.3222

10.1. Bottle Deposits

The high cost of a new 18.9 liter bottle stops many customers from purchasing new, filled 18.9 liter bottles. As a result, customers usually choose either 5 liter or 10 liter bottles.

In addition, the high cost of buying new refillable 18.9 liter bottles means that businesses will need a policy on exchanges of 18.9 liter bottles to make sure that any bottles exchanged are in good condition and can be re-sold. Some businesses have instead decided not to accept such bottle exchanges and instead are careful to sanitize (clean), refill, and then return the same bottle directly to the same customer.



Typical, refillable 18.9 L bottles.

11. Obtaining Necessary Licenses and Permits

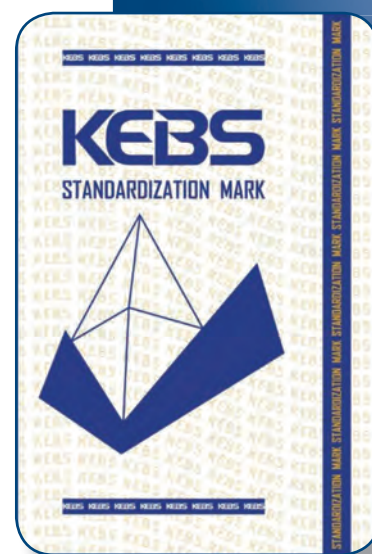
In order to comply with regulatory and taxation requirements, water treatment and vending businesses are required to obtain licenses and/or permits from a number of government agencies as discussed in the following sub-sections.

11.1. Kenyan Bureau of Standards

All water treatment and vending businesses must obtain a permit to use the standardization mark from KEBS. The law says you need to have the mark, but it also helps customers trust the quality of the business product if they can see it on the water bottles. Multiple business owners have reported customers asking to see their KEBS certificate and documentation. KEBS will only give you the standardization mark after the water treatment equipment has been installed at the shop and they can test the system's product water. As of late 2011, KEBS certification fees are KShs. 31,900 annually.

The standardization mark states that KEBS finds that the product meets KEBS standards. KEBS drinking water standards are based on World Health Organization guidelines. At present, KEBS treats all small-scale water treatment and vending shops as mini bottling plants (factories) and applies the following standards: Kenya Standard 459 parts 1 and 7 (KS-459-1 and KS-459-7) and the code of hygiene for both the premises and the operator (KSEAS 39). You can purchase these documents from KEBS.

KEBS issues a standardization mark separately for each site so if you package water at two separate store locations you will have to apply for two separate standardization marks.



All bottles of water that comply with KEBS guidelines receive a KEBS Standardization Mark.

Box 6

Contact Information for Kenya Bureau of Standards (KEBS)

Address:	Popo Road, Off Mombasa Road, behind Bellevue Cinema
Phone:	020.600.5490 / 0722.202.137 / 0734.600.471
E-mail:	info@kebs.org
Website:	www.kebs.org
Web Store:	webstore.kebs.org

11.2. City Council

City Councils are responsible for issuing business permits. These permits vary based on the municipality as well as the size of the business, but typically cost between 8,000 and 20,000 Kenyan shillings per year.

In addition, the City Council also regulates certain advertising and promotional activities, such as store branding and signage

and the distribution of fliers. These fees are typically several thousand shillings, but vary based on municipality, size of signage, and other factors determined by the Council.

11.3. Public Health Department

The public health department certifies that the shop location follows the law for health regulations and ensures that shop employees are in good health. The nominal cost of the public

health license is KShs.1,000 per year, but some businesses have recorded actual expenditures as high as KShs.7,000 to obtain this license. Employee health certification costs KShs.600 per employee.

11.4. Water Resources Management Authority

You will need an abstraction permit (official permission) from WRMA for the use of either ground or surface water (any natural water resource). Aside from businesses using municipal tap water, all businesses will be required to either have a WRMA permit themselves or to make sure that the owner of the source of their water (for example, the owner of a private borehole) has a permit.

11.5. National Environment Management Authority

Based on experience, almost all water treatment and vending businesses will not have to deal directly with NEMA. However, businesses that plan new construction of buildings, boreholes, or the abstraction of surface water require NEMA approval to ensure proper drainage and the mitigation of environmental impact.

11.6. Kenya Revenue Authority

Three taxes nominally apply to small-scale water treatment and vending businesses in Kenya: Value Added Tax (VAT), Excise Tax, and Corporate Income Tax or Turnover Tax.

Box 7

Contact Information for the Kenya Revenue Authority (KRA) Information Centre

Address: Office of the Commissioner General,
Times Tower, 30th Floor, Nairobi

Phone: 020.281.7700 or 020.281.7800

E-mail: cic@kra.go.ke

Website: www.kra.go.ke

11.6.1. Value Added Tax

All bottlers of water are required to register with KRA and charge customers 16 percent VAT on the sale of both new water bottles and on water refills. However, businesses can deduct VAT they pay on goods and services for the business from the amount they remit to KRA (Government of Kenya, 2009).

11.6.2. Excise Tax

Businesses must also obtain a license to manufacture excisable goods (Government of Kenya, 2010). The license costs KShs.50,000 per year. The excise tax on bottled water is set at the maximum of KShs.3 per liter sold or 5 percent of total water sales for the month. Excise tax collected in a given month must be remitted to KRA by the 20th day of the following month.

There is considerable variation in interpretation of and compliance with the excise tax law. Many businesses report remitting excise tax only on new, branded bottle sales, rather than on all refills. You may wish to seek further guidance and clarification on excise tax from KRA.

11.6.3. Corporate Income Tax or Turnover Tax

For resident, limited companies (almost all water treatment and vending businesses we have worked with or interviewed are this kind of business), the corporate income tax rate is 30 percent (KRA, Income Tax at a Glance, 2011-2012).

Small businesses, whose annual gross turnover (revenues) does not exceed KShs.5 million, can choose to pay a turnover tax of 3 percent instead of the corporate income tax (KRA, Turnover Tax, 2011-2012).

Brochures providing further detail on the corporate income tax and turnover tax are available for download on the Kenya Revenue Authority (KRA) website (www.kra.go.ke/index.php/downloads/dtd-brochures).

IV – RUNNING YOUR BUSINESS

12. Maintaining Water Quality

Small-scale water treatment and vending businesses are successful because they sell high-quality treated drinking water at a price that people can easily afford. A failure in the water treatment process, whether accidental or intentional, can make customers ill and can destroy the business's ability to make profit.

If customers think their illness is caused by contaminated water from a water treatment and vending shop, it will be almost impossible for the business to recover from this loss of trust. So, it is important that all businesses have strong water quality control and assurance procedures.

You should make sure to check the quality of incoming bottles. Bottles that have previously been filled with kerosene, petrol, or other chemicals should be rejected without exception (it is typically possible to check for these chemicals by doing a smell test). Similarly, do not accept bottles with a strange color or plastic that is losing its shape. All bottles for refill must be properly cleaned and sanitized with food grade sanitizer and rinsed with purified water before refilling them.

If you are not careful with these problems, your business's clean water can be contaminated by the customer's unclean bottle.

Registering and protecting the brand name of your water can also lower the risk of other people using your product's name. Low-quality goods can damage your business's reputation and lead to customer mistrust of your product. Businesses should quickly take action against any such behavior to protect their brand.

In addition to the required KEBS testing of your water quality, all businesses should test their own product water quality. Do microbiological testing at least once a month and chemical composition testing once every three months. Contact information for several water quality testing services is included below (see Box 8). These organizations are listed below in alphabetical order. This order does not indicate that one vendor is recommended over another.

Box 8

Contact Information for Water Quality Testing Services

AgriQ-Quest Kenya (Quest Laboratories Ltd.)

Address: Plessey House, Baricho Road
Phone: 020.551.988
Website: <http://nl.agriq.com/en/company#kenia>

Kenya Bureau of Standards (KEBS) Testing Laboratories

Address: Popo Road, Off Mombasa Road, behind Bellevue Cinema
Phone: 020.600.5490 / 0722.202.137 / 0734.600.471
E-mail: info@kebs.org
Website: www.kebs.org

Nairobi Water Conservation and Pipeline Corporation

Address: Dunga Road, Industrial Area
Phone: 020.653 1044 or 020.653.1046
E-mail: info@nwcpc.go.ke
Website: www.nwcpc.go.ke

SGS Kenya

Address: Victoria Towers, 2nd Floor Kilimanjaro Avenue, Upper Hill
Phone: 020.273.3690 or 020.273.3699
Website: www.ke.sgs.com

13. Implementing Financial Controls

Employee theft can reduce an owner's profits and even make it impossible for a business to meet its operating costs. While it is difficult to completely eliminate the risk of employee theft, it is important to take steps to guard against dishonest behavior and reduce the chances of and opportunity for an employee stealing from the company.

One way to help stop theft is to install a water meter measuring how much water goes into the treatment system (or measuring the product water of an RO system) and another meter at the filling stand measuring the amount of water given to customers. You should calculate for rinsing of bottles and spillage, but the numbers of these two meters

can be matched on a daily basis with each other and also with daily sales receipts. If the meters and the sales receipts show that significantly more water is treated than sold, the business may have a theft problem.

14. Maintaining Good Business Records

Good recordkeeping also helps businesses to better understand both their customers and their own financial health. With this in mind, an Excel template has been developed that will help businesses track monthly sales by product, expenditures, tax payments, loan payments, and inventory levels. (see www.waterbusinesskits.org).

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Kenya Revenue Authority (KRA), 2011-2012. *Turnover Tax 2011-2012*. Nairobi. Accessed on the Kenya Revenue Authority website (www.kra.go.ke/index.php/downloads/dtd-brochures) on May 16, 2012.

GLOSSARY

amortization (or amortized cost)

The accounting practice of spreading out a large cost over a specific period of time, typically the useful life of the asset.

backwash

A way to clean Pressure Sand Filter (PSF) or ultrafiltration equipment when too much dirt or sand collects in the system. Water is pushed through the filter in the opposite direction than normal.

branding

Using labels, advertisements, and/or pictures to help people recognize your company. You are doing a good job of branding if you show someone a picture that you use a lot for your business and that person can say that this picture is from your business.

buildout

Changing a building or room so you can have your business there. Buildout costs will depend on many things: Do you have to build new walls? Do you have to put in a new water line? Do you have to replace the flooring?

business plan outline

This is a plan for how you will start and manage your business. You will look at your costs and how much you think you will earn over time. You will look at who will work for you. You will decide if you are going to deliver your water. You will look at how you will make money, who is your competition, what the risks are, and how you will handle those risks.

capacity

The amount that something can make or do. For example, machine X can make more water in a day than machine Y. So, machine X has a higher capacity than machine B.

capital costs

The cost of buying new equipment and machines (such as UV filtration systems, large storage tanks, transportation, etc.). These are big expenses that should last the business a few years.

casual hires

People that work for you on a short-term basis. For example, you want to put posters around the neighborhood, so you pay some people (who do not work for you everyday) to do that for one day.

contaminated

Dirty or not clean. Bacteria, viruses, salts, metals, and dirt can contaminate water. Some of these things can very dangerous if people drink them.

cost estimates

How much you think you will have to pay to have a business. Look at everything you will need including start-up costs, fixed costs, and variable costs. How much will you pay for rent? How much will you pay for new bottles and equipment?

cost prohibitive

When something is too expensive, so you cannot use it in your business. You might want to use trucks to deliver your water but buying a new one is too much. Buying a new truck for a new business is cost prohibitive, so you should think about different ways to deliver water.

cross-staffing

This can happen in one or more businesses at the same time. It means that one employee can do a few different jobs (selling, cleaning, stocking). Sometimes this will happen with two businesses. Employees who work for one business will work in another that is very close. A small shop that sells food can also sell water in a different business next door. The same employees can work in both shops.

demand levels

How much people want your product (refillable water). If it is very hot and dry, demand levels might go up. If people know that clean water is important, demand levels will go up. If the water from the city is very clean, demand levels might be low because people don't want to pay for refillable water.

deposit

A customer gives the business money for a bottle and for water. After the customer uses the water they bring the bottle back to the business. If the bottle has no problems they can exchange it for another bottle, which the business will then fill up with clean water (for a price). If the customer loses the bottle or the bottle is damaged, the business can use that money to buy a new bottle. This money is called a deposit.

drinking water standards

These are rules/laws that say how clean water must be for people to drink it.

durability

How much time a piece of equipment will last before you need to replace or repair it.

excise tax

An indirect tax on a product in addition to other taxes.

financial incentive

This is a reward or bonus you give to your employees if they do their job very well. This will help them work harder for the business. It is best if everyone agrees on percentages and sales levels required to earn the bonus.

fixed costs

These are costs that will not change if you produce more or less. For example, you must always pay rent and the amount of rent does not depend on how much you sell.

incentive

A reason to do something. Customers have an incentive to bring back a water bottle if they can get their deposit back. Employees have an incentive to work hard if they know that they will get some extra money from their boss if they sell a lot of product.

irradiation

A way to clean water that uses UV light to kill bacteria in the water.

issuing

To give out a special document. The city government issues business permits (documents that allow you to have a business).

limited company

Usually a larger company that has stock and shareholders. If the company fails the shareholders do not have to pay for the loss.

market

The potential customers that live in the area where your business is who are interested in buying your products.

marketing

Everything you and your staff do to attract and retain customers. You can do this with advertising and education. By teaching your customers about the benefits of drinking treated water, you are helping them stay healthy, and supporting your business. You might focus on different types of customers (mothers, workers, other businesses) or focus on different good things about your product (health, quality, price).

microbiological testing

Testing for organisms in the water such as bacteria, viruses or parasites.

mitigation

Making the effect of something less strong. For example, you can mitigate the risk of having no water (when the city turns off the water) if you keep water in storage tanks.

municipal

This is something from the city government. The municipal water system is the water and pipes that the city made for the people.

operating costs

How much it costs to keep a business running. This is a combination of fixed costs and variable costs.

partitioning

Building new walls to make new rooms. Sometimes you have to do this to make a shop space better for your business.

payroll

The money you spend to pay for your workers/employees.

profit margin

How much money you make one piece of product (a bottle of water, for example) compared to how much you spent to make the product (you should include all your costs such as: marketing, capital costs, payroll, fixed costs, and variable costs).

profit potential

How much money you can make in the future if you change something about your business. Will it make you more money in the future or will it be too expensive and cost you more money than you will make from it? You should think about profit potential before making new decisions with your business such as whether or not you should have a delivery service.

projected liters sold

How much water you think you will sell based on customer demand and the capacity of your equipment.

projected sales volumes

See: projected liters sold.

recordkeeping

Tracking all of your businesses sales revenues (turnover), costs, and liters sold provides you with a greater understanding of the performance of your business and it will help you make better decisions in the future.

regulate

To check on/be in charge of/make laws for.

reject water

The water that is not good for people to drink after some types of treatment. Reject water will have unhealthy things in it like bacteria and metals but can sometimes be used in different ways, like washing clothes.

remit

To send money for payment (for example, to pay the government for taxes).

revenue assumptions

How much you think you will make. You must think about who will buy your product, how much profit you will make from your product, and the cost of your product.

revenue stream

One way a business makes money. A business may have several revenue streams. For example, a business may make money from selling food and from selling mobile telephones.

revenues

Money collected from customers in payment for goods or services sold by your business. Revenue is used interchangeably with turnover.

run-off waste

Contaminated water that comes from farms or factories. If this water mixes with your source water it can be dangerous for your customers.

sales pitch

The things your employees will say to sell your water to customers. A good sales pitch will explain why the water is good for the customer. Employees can listen to customer needs and explain things about the product that will help them.

sales targets

The amount you want to sell in a day. Sales targets depend on your costs, revenues, time of year and other factors.

scale up

To grow your business or increase the size of the business with time. When you build a second store, or when you buy delivery trucks you are scaling up.

signage

Using pictures and signs to tell people where and what your business is. Good signage is easy to see and quickly tells customers what your shop is.

standardization mark

A small sticker or stamp that the Kenya Bureau of Standards (KEBS) issues to a business if its products meet water quality standards.

standards

The laws that tell you what clean water is. They are the rules that say what can be in the water and what can't be in the water. If your water is dirty it will not be "up to standard".

start-up capital

The money you will need to start the business. It will cover costs such as treatment equipment, a shop space, and signage.

start-up costs

The costs involved with setting up and launching your business.

subsidized rates

When the business pays for part of the cost rather than charging the customer more to cover that cost. For example, you might subsidize the delivery costs to make it cheaper for customers to buy your water. If you do not use subsidized rates for delivery the customer will pay for 100% of the delivery.

treat

To make water clean so people can drink it without becoming sick. There are many different ways to do this.

treatment system consumables

Parts of the treatment equipment that need to be replaced sometimes such as filters, light bulbs, or pump valves.

value added tax

A tax that must be paid when you make something more valuable by improving it or changing it. When a customer buys something at your shop, they must pay a percentage of the product's price in tax (it is 16 percent in Kenya). You will pay that money to the government. However, when you pay the money to the government you can deduct (take out) the amount in taxes that you paid on goods and services for the shop.

variable costs

These costs increase or decrease depending on how much you produce. If you produce more of a product, your cost will increase, but the cost per unit might decrease (or increase).

vendor

A person who sells something. This Water Business Kit is designed for vendors of treated water.

volume

How much there is of something. High volume water sales: you sell a large amount of something (usually at a low price). Low volume sales: you sell a small amount of something (usually at a higher price). The water vending business is usually high volume.

working capital

Working capital is how much money you have, compared to how much money you owe. If the company owes more money than it actually has, it may have some problems. This is because it may not have enough money to pay for future costs or to pay back money that it owes.

NOTES

NOTES

About IFC

IFC, a member of the World Bank Group, is the largest global development institution focused on the private sector in developing countries. We create opportunity for people to escape poverty and improve their lives. We do so by providing financing to help businesses employ more people and supply essential services, by mobilizing capital from others, and by delivering advisory services to ensure sustainable development. In a time of global economic uncertainty, our new investments climbed to a record \$18 billion in fiscal 2011. For more information, visit www.ifc.org

About Aquaya

Aquaya is dedicated to improving global child health by increasing access to safe drinking water. It focuses on research and technology development in the areas of water quality management, service delivery, and impact assessment. It also provides consulting services to support public and private safe water efforts. For more information, visit www.aquaya.org

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