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INITIAL ASSESSMENT OF EXISTING PRIVATE WATER SERVICE PROVIDERS IN CAMBODIA

TASK ORDER NO. 04

MAY , 2009

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CAMBODIA MSME 2/BEE PROJECT

**INITIAL ASSESSMENT OF EXISTING PRIVATE WATER SERVICE
PROVIDERS IN CAMBODIA**

TASK ORDER NO. 04

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Annex 1 – Phone Survey Questionnaire

Annex 2 – In-Depth Survey Questionnaire

1- Background

The USAID-funded Cambodia MSME project plans to help expand access to safe water by working with existing private Water Service Providers (WSPROs) to expand and replicate their businesses.

To understand the nature of these businesses and the challenges they face, the Cambodia MSME project awarded a Purchase Order to KOSAN Engineering to conduct a rapid assessment of the private WSPROs with greatest potential for expansion, located within the 12 provinces targeted by the Cambodia MSME project.

2- Desk Review

The first task assigned to the subcontractor was to conduct a brief desk review of existing studies. The following main documents have been collected and reviewed by the subcontractor:

- Small-Scale Private Service Providers of Water Supply and Electricity
Survey and Mapping Initiative
CAMBODIA – COUNTRY REPORT – VOL 1 + VOL 2
by Economisti Associati (November 20, 2006) – World Bank
The objective of the study is to identify, characterize, map and quantify the role of small-scale private service providers of water supply (and electricity).
- Water Supply and Sanitation Project in Small Towns of Cambodia
by BURGEAP-GRET (December 9, 2005) – AFD
The study was intended to assist the RGC and the MIME to establish an enabling environment that best leverages public funds in a manner that maximizes private sector investments in small-scale water supply systems.
- Strengthening Domestic Private Sector Suppliers of Drinking Waters in Cambodia
by Jan Willem Rosenboom +GRET+WSP (September 2007 – WSP)
This Design Note lays out the background and requirements for the establishment of a capacity development program for private suppliers of piped drinking water in rural areas of Cambodia.
- Design of a Capacity Development Program for Small Scale Domestic Private Service Providers
Consolidated Training Needs Assessment Report
by VBNK (August 2008 – WSP)
The purpose of this TNA was to assess ten (10) WSPROs and identify training needs related to technical/operational, managerial and financial issues.

In addition to these documents, several lists of Water Service Providers have been made available to the subcontractor.

From this document review, it appears that a comprehensive assessment of the WSPROs operating in Cambodia is already available though the “Survey and Mapping Initiative” conducted in 2006 by Economisti Associati (EA). A lot of information was collected, in such a way that EA were able to define reliable “trends” and average figures.

Instead of replicating previous reports with large data collection, the proposal here was to conduct a very detailed “in depth” survey aimed at clarifying, among several issues, the following:

1. Are the WSPRO really satisfied with their business?

A majority of WSPROs declare being fairly satisfied or even very satisfied with the current (financial) conditions of their business (EA, pg 22). They are even announcing a profit margin in excess of 20%.

How many of these WSPROs are really able to calculate the actual profit margin of their business? Small/medium WSPROs have limited knowledge of standard practices in finance and accounting. They do not integrate depreciation of assets. What are the real figures?

A less optimistic view was given by the WSPROs during a workshop by the MIME (62 WSPROs in 2005)¹, where the most frequent issues or concerns raised were as follows:

- high operating costs (energy, staff, licenses)
- low income potential (water tariffs are low, and hard to change. Low connection rates. Poor consumers)
- payment issues (non payment by poor consumers as well as powerful individuals).

2. What is the volume of water produced, sold, and lost by the WSPROs?

According to EA survey², meters are systematically installed by 76% of respondents. The average system losses are in the order of 24%, with 44% reporting losses of 30% or more, and only 28% reporting losses less than 10%.

However, a recent survey conducted by the subcontractor of 10 WSPROs indicates that the majority do not have a head water meter, which measures the volume of water produced at the treatment plant. Several do not have a head meter at all. Of the 10 surveyed, only 1 WSPRO was controlling the water production through an accurate device. This WSPRO is an operator that is contracted by an investor, who wants to control the production.

Controlling production, losses, and consumption are important for improving business. Without an accurate metering device at the treatment plant, it is difficult to calculate volumes of production. Combining this with the fact that many use cheap household meters, which are usually very inaccurate. It is hard to understand how a leakage rate can be determined.

¹ Project Design Note - WSP - 2007

² EA-Vol 1, pg 19

3- Identification of WSPROs with greatest potential for expansion.

3.1 Introduction

The proposed “in depth” survey was conducted among the WSPROs with greatest potential for expansion, which includes willingness to grow and readiness to invest.

Actual willingness to expand a business is not easy to determine. If asked, many WSPROs will give a positive answer.

- Are they planning to expand their business, or simply replace/upgrade some construction or equipment?
- What is the main priority for the proposed investment? (e.g. increase the quantity or the quality of the water)
- Do they have the capacity (financial, technical, operational, etc.) for such an expansion?
- When expanding their business, can they reasonably reach more clients?

3.2 Phone Survey

Based on WSPROs lists already available at the MIME, the subcontractor conducted an initial “phone survey” aimed at quickly identifying those water entrepreneurs with greatest potential for expansion.

Beyond the expected positive willingness to expand, the “phone survey” collected the following information:

- Business situation:
A small unlicensed WSPRO surrounded by several other licensed water business has less capacity for expansion
- Satisfaction of the entrepreneur towards the water business:
A very much frustrated entrepreneur is less likely to expand his business
- Amount that the entrepreneur intends to invest in 2009:
Is it worth supporting a WSPRO willing to expand his business by only a small percentage?
- Finance Sourcing:
Are those sources reliable, especially in the current credit crisis?
- Planned investment:
Is the WSPRO expanding the business or simply replacing some facilities?

Based on the “Phone Survey Questionnaire” (see [Annex 1](#)), a total of 64³ WSPROs were interviewed across 9 provinces. 7 WSPROs indicated that they have no intention to expand and 3 expressed that they may expand in the future. WSPROs with a very low number of household (HH) connections (less than 150) were not considered for further inquiry.

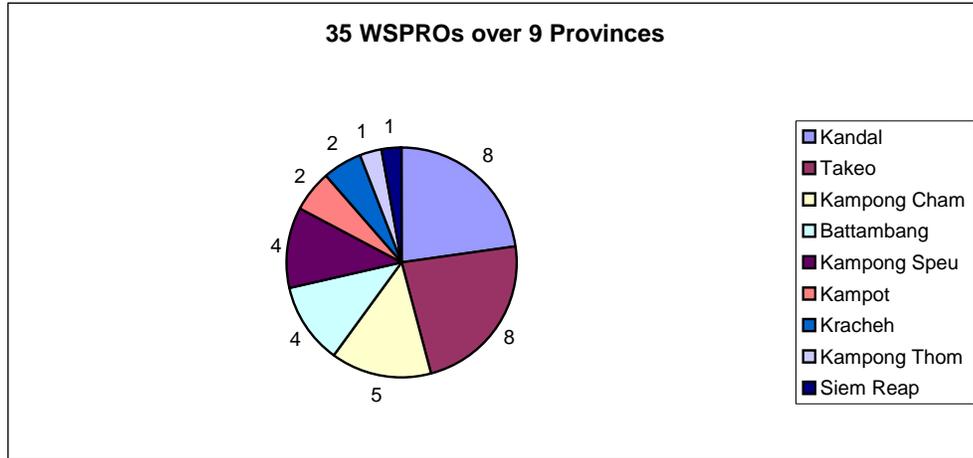
The amount of the proposed investment was taken into consideration.

- A too small amount was taken to indicate that the water provider was probably confused between an investment for expansion, and a simple maintenance/replacement operation.
- A too big amount in relation with the current number of connections was considered as unreliable.

³ From the lists provided by MIME and WSP, only 64 WSPROs could be reached by phone

As a result of the “Phone Survey”, 35 WSPROs with actual willingness to significantly expand their business have been identified.

These 35 WSPROs are located across 9 provinces, but with significant concentration in Kandal, Kampong Cham and Takeo provinces, where WSPROs are more numerous according to the MIME lists.



4- In-Depth Survey

Upon completion of the first phase, an in-depth survey was conducted over the 35 WSPROs identified as having the most potential for expansion.

4.1 Questionnaire

The in-depth survey questionnaire is shown in Annex 2. Several groups of information were collected:

- Business data
- Description of the business installation
- Quantity of water produced
- Quantity of water lost
- Quality of the water
- Sales
- Collection of the money from the households (Piped system)
- Expenses
- Amounts invested so far and investment sources
- License and water concession
- Profitability & Satisfaction of the water investor(s)
- Perceived value of the asset
- Business expansion and required assistance

In line with the scope of this study, the objective is to identify those WSPROs with sound financial situation and best potential for expansion.

4.2 Results of the In-Depth Survey

Preliminary Remarks

- With some exceptions, the in-depth survey was conducted by interviewing the owner (or the main shareholder) of the water business. However, in the case of large companies where the owner was unavailable, the general manager for the WSP provided the information.
- In some cases, the results of this survey vary widely on the size of the WSPROs. For this reason, the following WSPROs categories have been defined:
 - SMALL: From 125 to 450 HH connections
 - MEDIUM: From 450 to 950 HH connections
 - LARGE: More than 950 HH connections

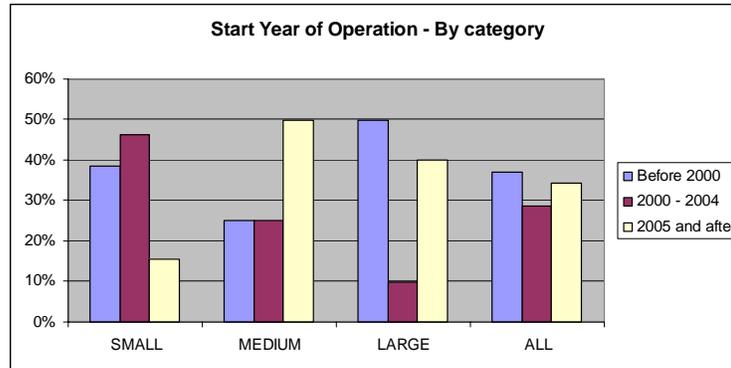
Out of the 35 surveyed WSPROs, 13 belong to the first category, 12 to the second one and 10 to the third category. It has to be noted that, within the third category, the size of 3 WSPROs is significantly higher than the other ones, leading to some distortion of the survey results.

Table 1: Surveyed WSPROs – By category and by Province

		SMALL	MEDIUM	LARGE
Nine Provinces	Kandal	2	1	5
	Takeo	5	2	1
	Kampong Cham	2	2	1
	Battambang	-	3	1
	Kampong Speu	2	-	2
	Kampot	1	1	-
	Kracheh	1	1	-
	Kampong Thom	-	1	-
	Siem Reap	-	1	-
		13	12	10

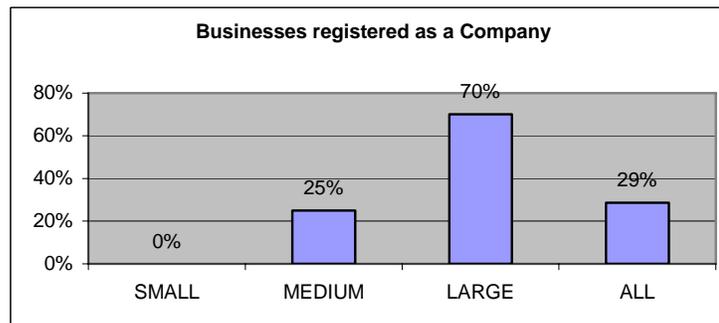
Business Data

1. Start year of operation



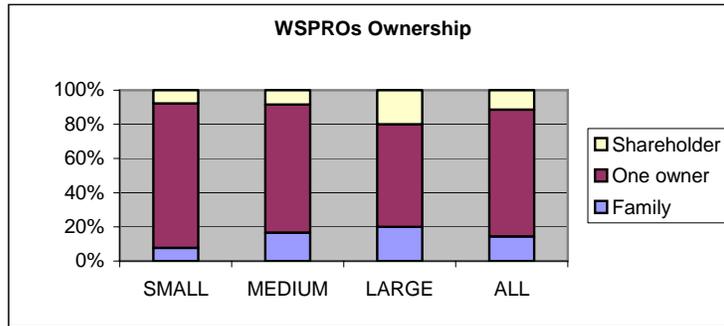
- Very few SMALL businesses have been created after 2004;
- The majority of the MEDIUM businesses started operation recently (2005 or after).
- Most of the LARGE WSPROs started operation either a long time ago, or recently.
- As an average, one third before 2000 and one third recently (2005 or after).

2. Businesses registered as a company

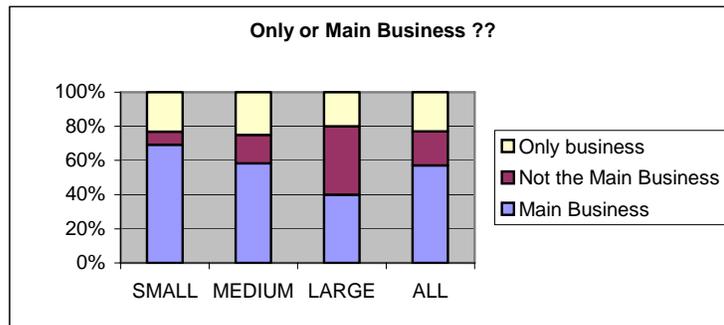


- None of the SMALL are registered as a company.

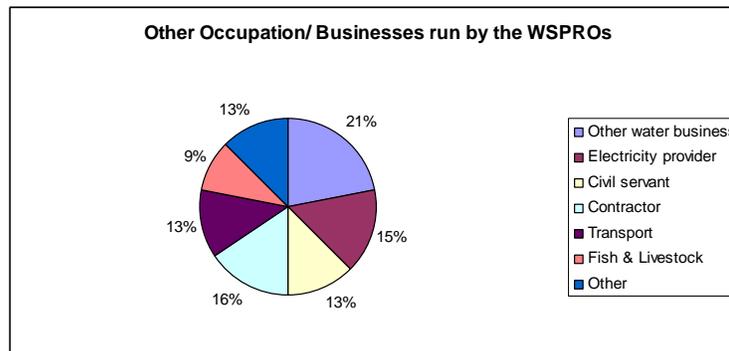
3. Ownership & Occupation



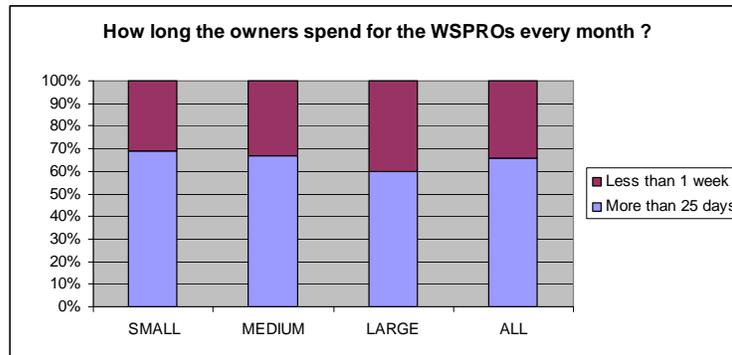
- “Family” and “Shareholder” ownerships are more common with large businesses.
- But the majority of these activities belong to only one person, the “owner” (75% as an average for all categories).



- For very few owners, their water business is the only one (23% as an average)
- With more cases from SMALL to LARGE, this is sometimes not even their main business (40% of the owners of a LARGE unit declare that this business is not the main one)

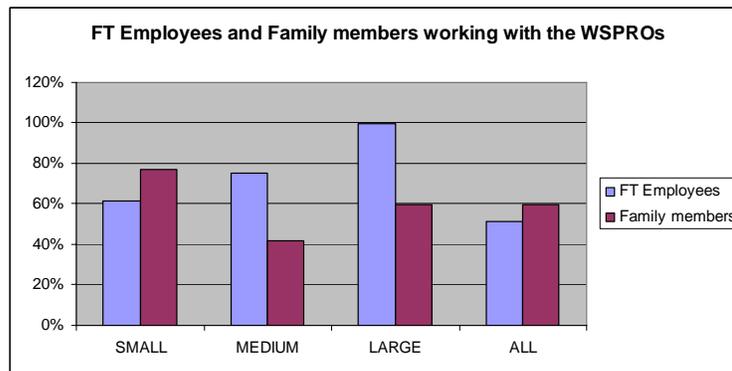


- Actually, many other activities run by the WSPROs are still related with delivery of water & electricity services to the population.



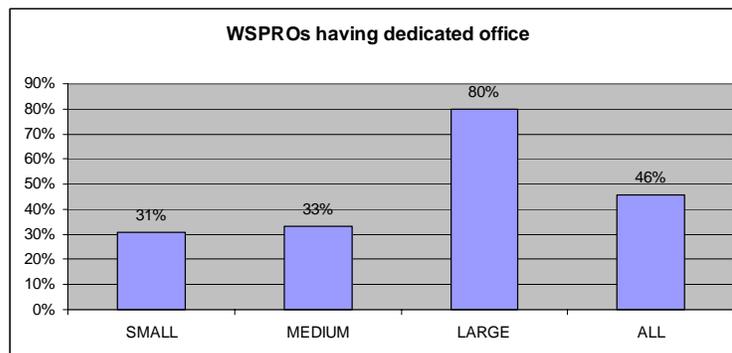
- For all categories, despite of having other activities, the majority of the owners visit/control their business in person more than 25 days per month.

4. Who works for the WSPROs?



- A significant portion (more than 60%) of the SMALL businesses have Full Time (FT) employees
- This percentage goes higher with the size of the business (100% for LARGE)
- Even LARGE businesses rely on the family members workforce (for management)

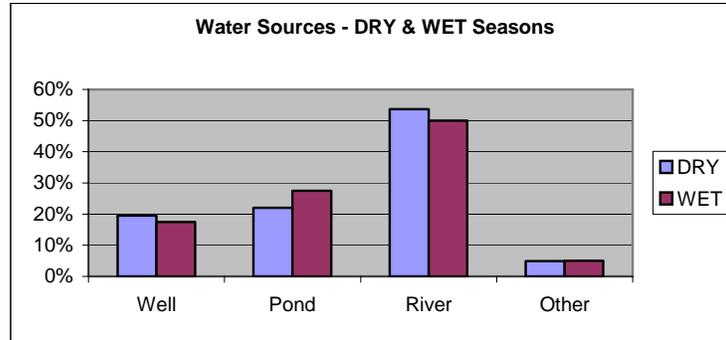
5. Is there a Dedicated WSPROs office ?



- Even LARGE businesses are not all equipped with a dedicated office

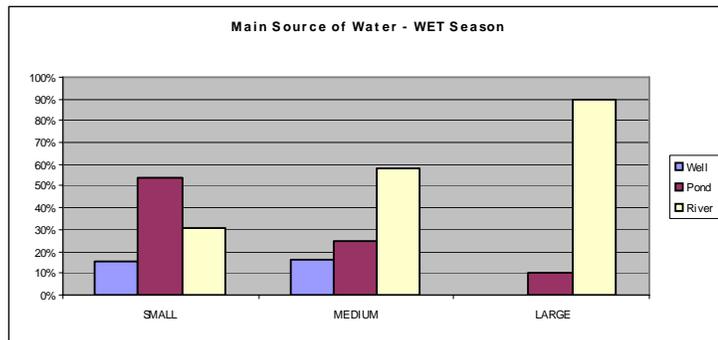
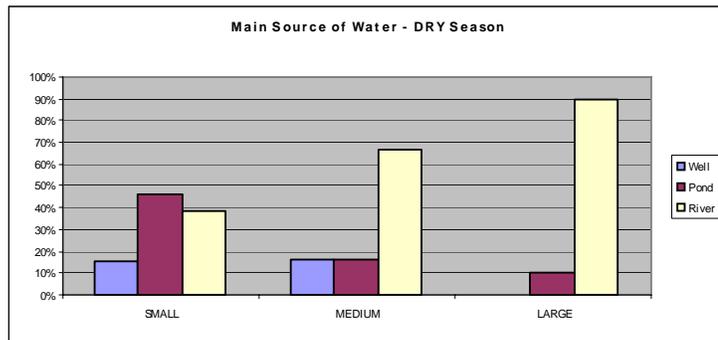
Description of the Water Business Installation

6. What are the water sources?



- Water sources are not very much different from DRY to WET season.
- The majority of the WSPRO take water from the nearby river.

7. What are the MAIN water sources – by Category?

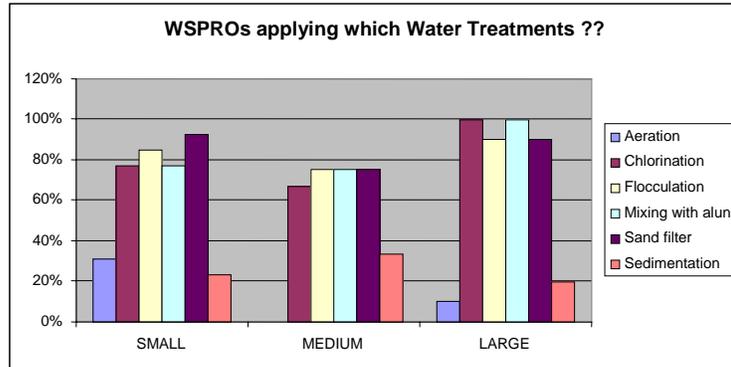


- The main water sources are not very much different from DRY to WET season.

With long extended piped systems, LARGE businesses rely almost exclusively on pumping from the river. SMALL businesses do not always have the river option, so they rely more on locally excavated ponds. Lack of availability of raw water can be a significant constraint to expanding the business.

8. Water Treatment

With exception of only two (1 SMALL and 1 MEDIUM),
all WSPROs declare to treat the water before delivery to households.

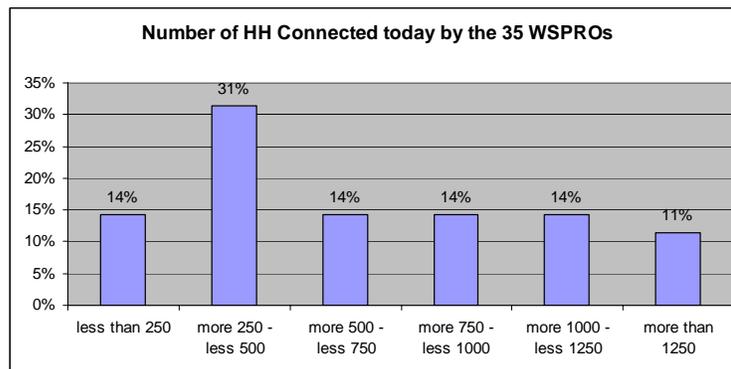


- Almost all LARGE units declare having a “Chlorination” and “Alum Mixing” treatment.
- On this water treatment issue, the SMALL businesses are far from being left behind.

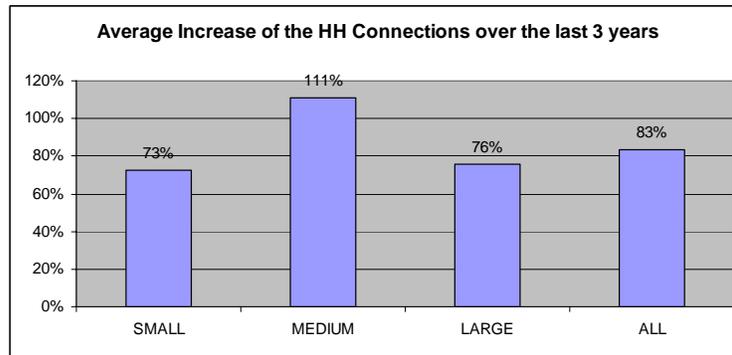
9. Water Distribution to the Clients

All WSPROs declare that the MAIN distribution system to the Clients
 is the **Piped System** (with connection to HH).

10. Number of HouseHold Connections TODAY

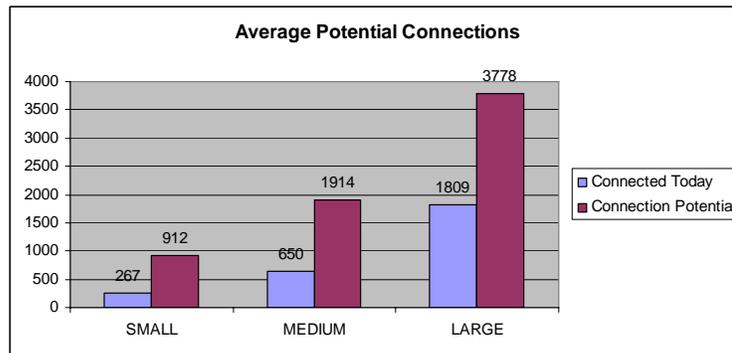


- Number of connections range from 125 to 5,000.
- All quarters are equally covered, but the 250-500 quarter is predominant: 31% of the surveyed WSPROs where all others are about 15%.



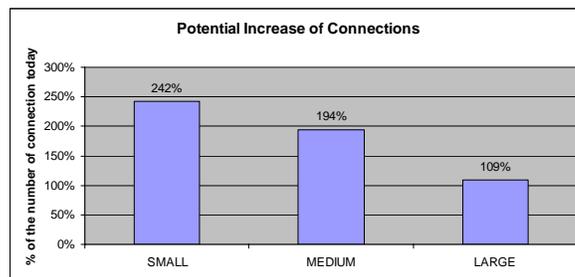
- For all categories, as an average, about 80% HH connections has been added.
- The MEDIUM category seems to have been even more active in getting more HH connected.

11. Number of New HouseHold Connections Potential



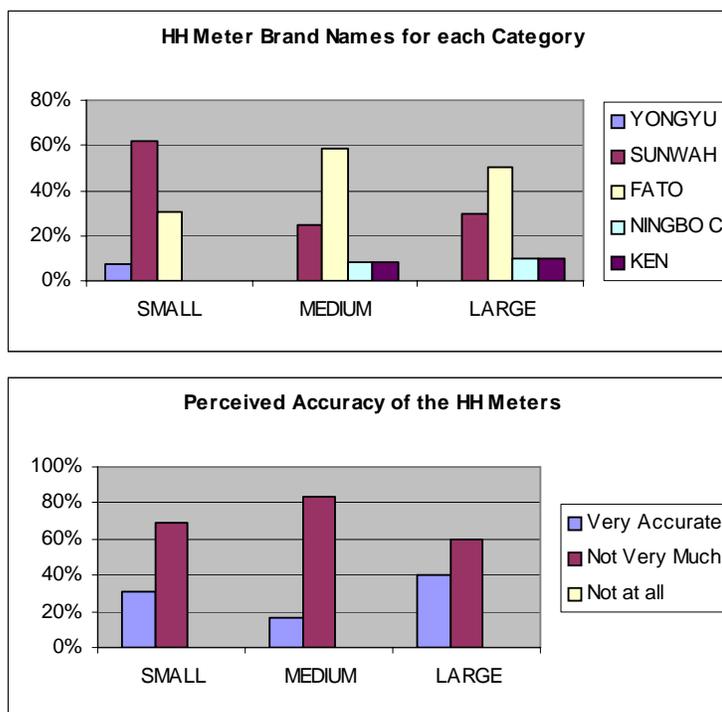
- As reflected in the above chart, the potential for more connections seems to be very high for almost all categories of WSPROs.

These figures are based on the declarations of the WSPROs only. At this stage, there has not been an independent review or verification to confirm the actual capacity of the provider, the potential of the water sources or the market.



- As a minimum, all category of WSPRO consider that they can duplicate the output of their business by expanding the piped system and resizing the water sources.

12. Household Meters



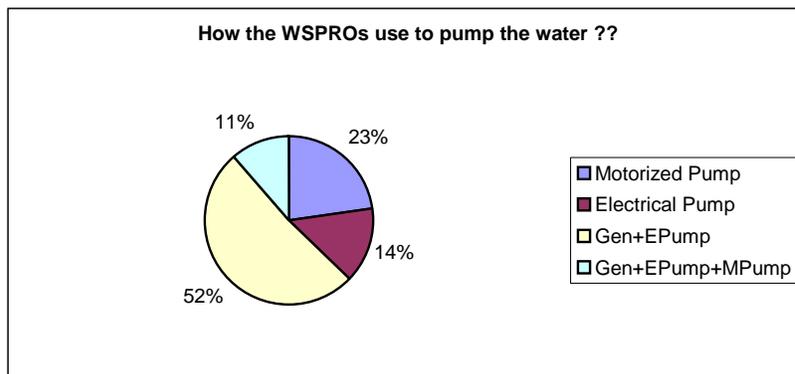
- All WSPROs have a poor opinion about the accuracy of the HH meters.
- Situation is a little bit better for the LARGE category since they were able to impose the use of more accurate (and therefore more expensive) household meters.

These meters are usually provided by the WSPRO, but paid by the client within his connection package fee. Poor people are reluctant to pay for a more expensive meter.

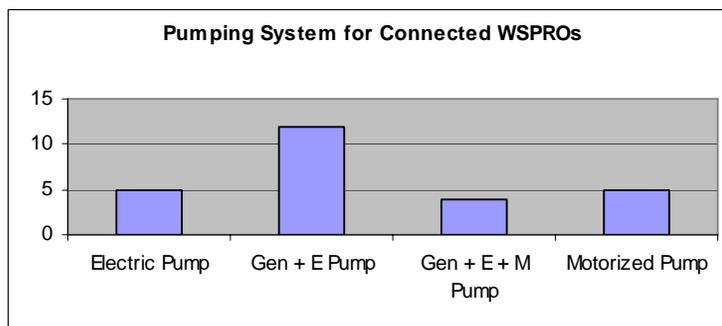
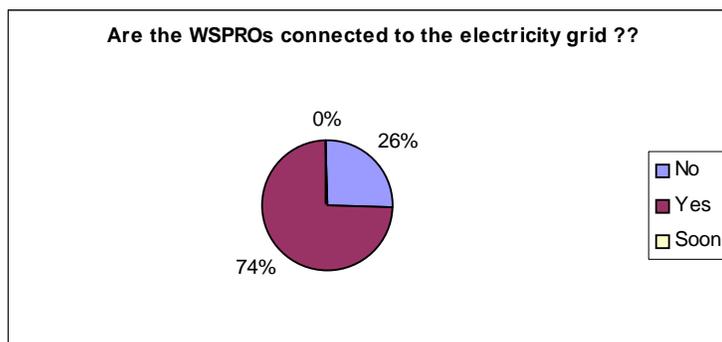
In the above chart, SMALL water businesses seem to have a more positive opinion about their HH meters. This is probably due to the fact that several interviewed WSPROs (6 out of 13) have been supported in the past by the MIREP project, where the provision of acceptable HH meters was strongly encouraged.

SUNWAH meters (from Thailand), are very common here among the SMALL businesses (see above charts) and are perceived as more accurate than FATO meters (from China).

13. Energy



- Among all surveyed WSPROs (connected or not to the grid), the predominant solution is the Diesel Engine + Generator + Electrical pump

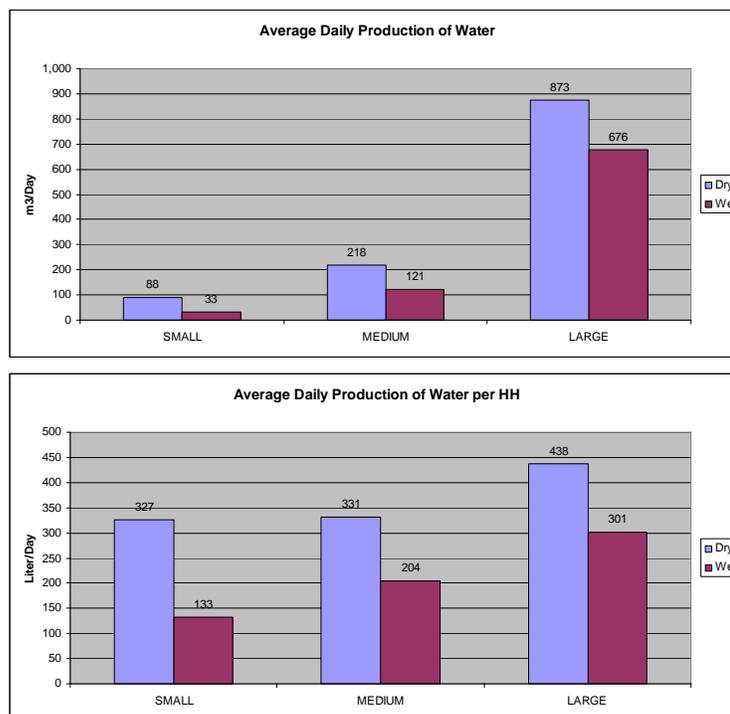


Even for the WSPROs connected to the grid, the predominant solution is the Generator + Electric Pump. This is probably due to the fact that the grid capacity is unreliable while the Gen + EPump is a very flexible solution⁵.

But this solution is also an expensive one since the diesel engine has first to move a generator before electrical pump can be operated. And the “Energy” is the biggest component when analyzing the typical operating cost of this water business. (see Para 25)

⁵ According to the price of the grid against the price of the Diesel, the Gen+EPump energy source allow the operator to easily switch from/to the grid to/from his generator.

14. Quantity of Water Produced



- As an average, for one HH connection, a LARGE WSPROs produces (and therefore sells) more water than a SMALL one: **438 liters** in the dry season for a LARGE water producer, against **327 liters** for a small one.

This could be explained by the fact that the water produced by a LARGE producer is sold at a lower price (see Para 20):

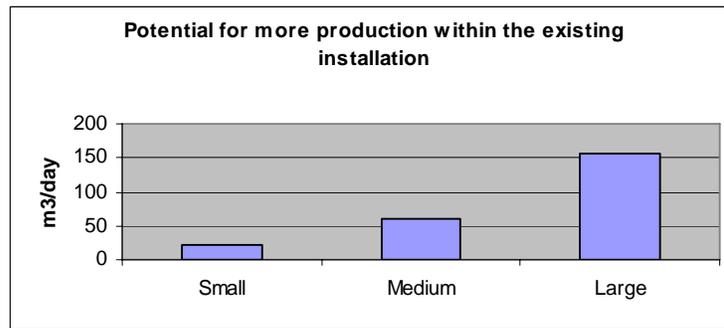
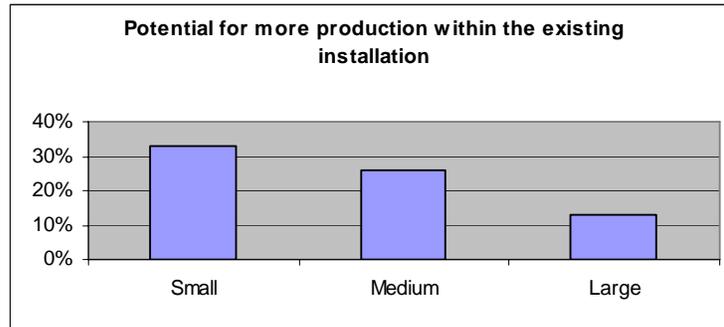
1,971 Riels per cum for a LARGE producer, 2,562 Riels for a SMALL one⁶.

Another explanation would be that SMALL water businesses are usually located in more rural areas, where people use other water sources (jars collecting rain waters, wells in the garden, a small nearby pond or stream, etc).

It is common for all water service providers to experience higher sales during the dry season when there are fewer sources of water available to the people.

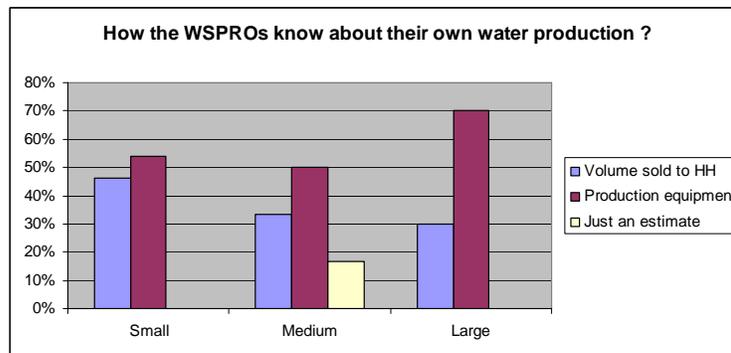
⁶ In fact, average money spent every day for 1 household is (almost) the same: **863 Riels (L)** against **838 Riels (S)**

15. Production Capacity



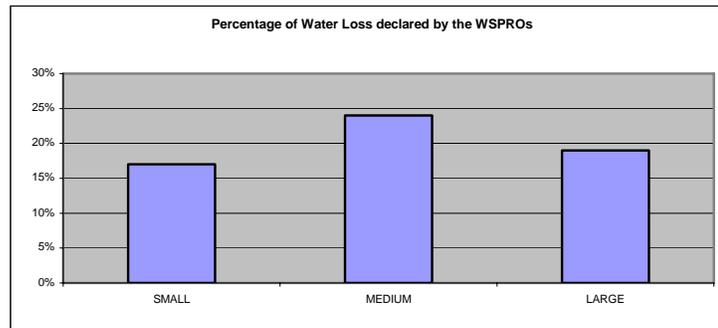
- There is only a slight potential for more production within the existing installation. By knowing that this business has experienced a 100% increase over the last 3 years, further investments are required.

16. Production Metering



- Many WSPROs rely on the volume sold to estimate their production. This indicates that many WSPROs may have an inaccurate figure of their own production volumes.

17. Water Loss

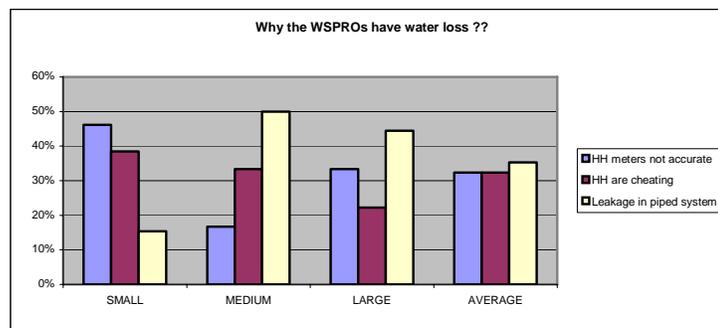


All WSPROs admit having water loss in their piped system and most consider this issue as a very important one. Only 2 have declared that Water Loss is not “that” important.

However, water loss figures given by WSPROs (as shown above) are questionable since most of the WSPROs have only an “idea” of their own production level. Good quality head meters is a key investment before entering the “water loss battle”.

Note:

As explained in para12, the better perception of the SMALL businesses towards their own water losses can be explained by the fact that several SMALL WSPROs have been supported in the past by the MIREP project.

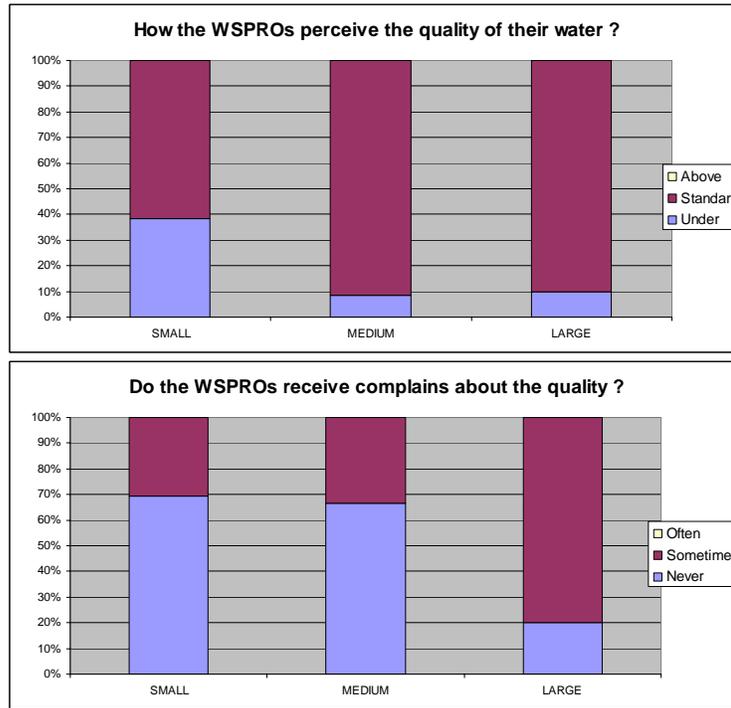


- From one category to the other, water loss may have different causes. But, at the end, as an average, all three causes have the same weighting.

In addition to more accurate meters, the LARGE water businesses have a more “commercial”⁷ approach towards their clients. This is a reason why the “HH Cheating” is less invoked as a cause for water loss.

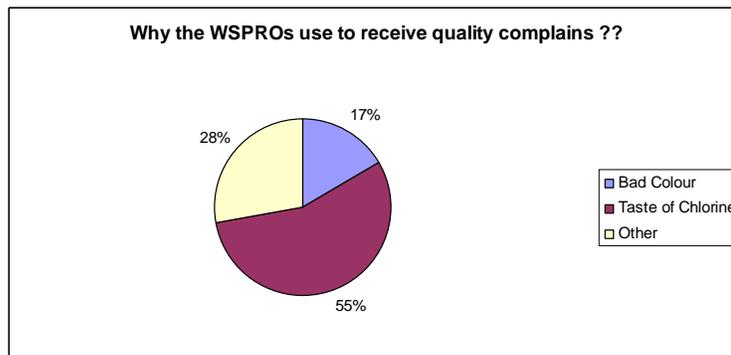
⁷ A more “commercial” means also that the WSPRO are more apt to cut the HH connection in case of problems related with water metering.

18. Quality of the Water Produced



There is a contradiction between the fact that, on one hand, a LARGE producer has a better opinion of the quality of the water he produces and, on the other hand, he receives more complains from his clients.

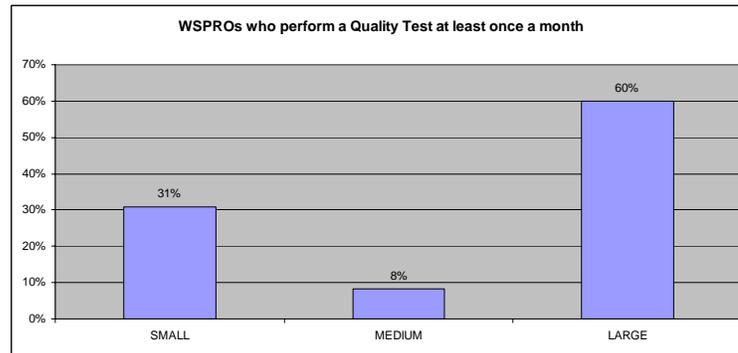
This is maybe due to the fact that LARGE water businesses chlorinate their water. “Taste of chlorine” is the main reason why people complain to the WSPRO.



- Khmer consumers are not used to the taste of chlorine and most complain about this. Complaints about the taste of chlorine push the WSPROs to stop this particular water treatment, which potentially creates subsequent problems regarding public health.

19. Quality Testing

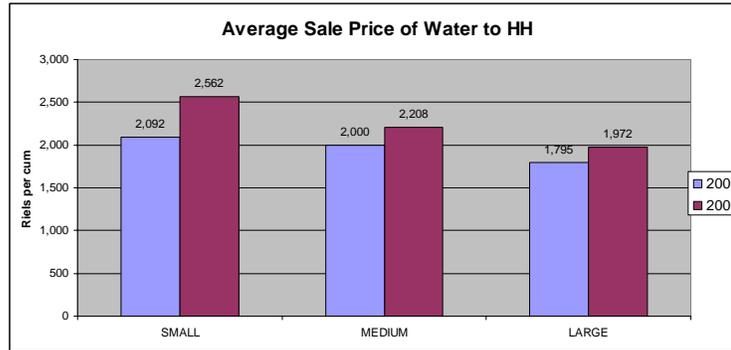
- Almost all licensed WSPROs are being controlled by the MIME every 3 months, usually with good results.



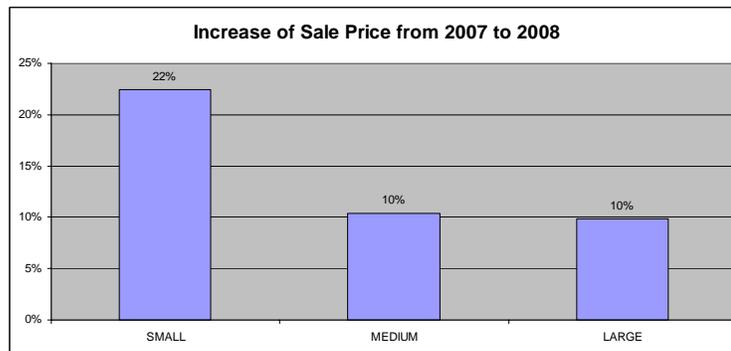
- For SMALL and MEDIUM categories, only a few producers conduct their own water quality test at least once a month.
- Situation is better for LARGE producers, but not fully satisfactory.

Situation for the SMALL businesses seems to be better than the medium one. Again, this is probably due to the fact that several SMALL producers have been supported by the MIREP project in the past.

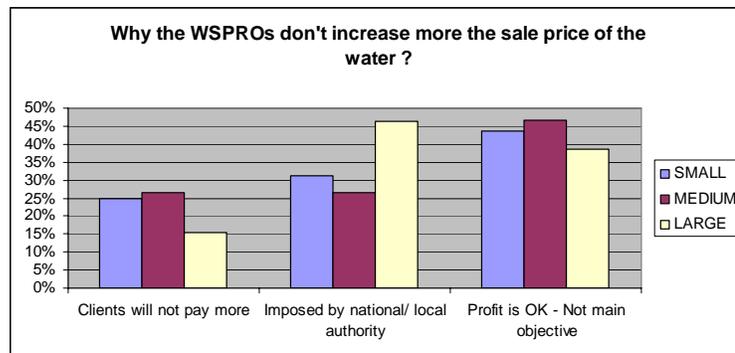
20. Water Sale Prices



- An important finding is that water produced by a LARGE producer is being sold at a cheaper price than the water sold by a SMALL (less 23%) or a MEDIUM (less 10%) producer.



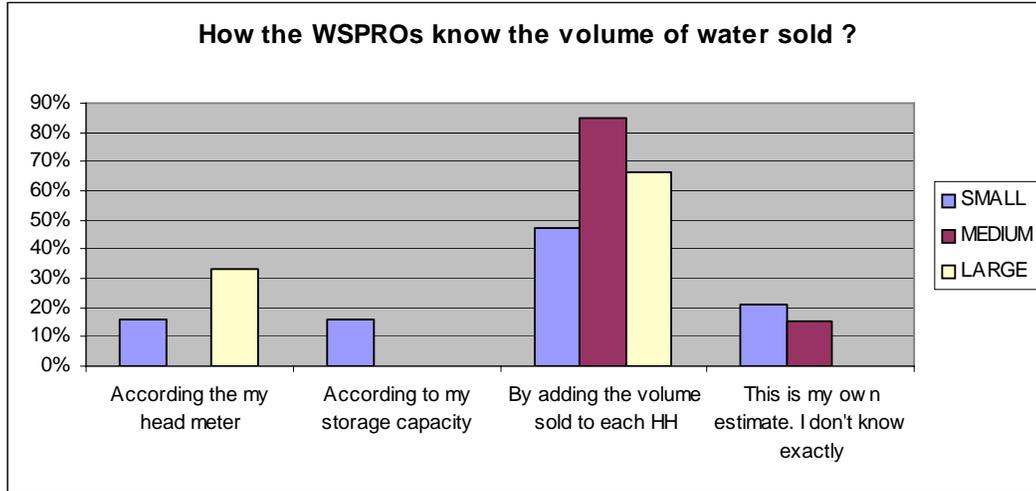
- Water Price increase between 2007 and 2008 was smaller for LARGE and MEDIUM producers than for SMALL ones.



Another explanation for the cheaper LARGE producer is the fact that they are more “targeted” by local authorities wanting to control the sale price of the water.

SMALL businesses are more dependent on the price of energy, so they must increase their price in 2008 more than the others.

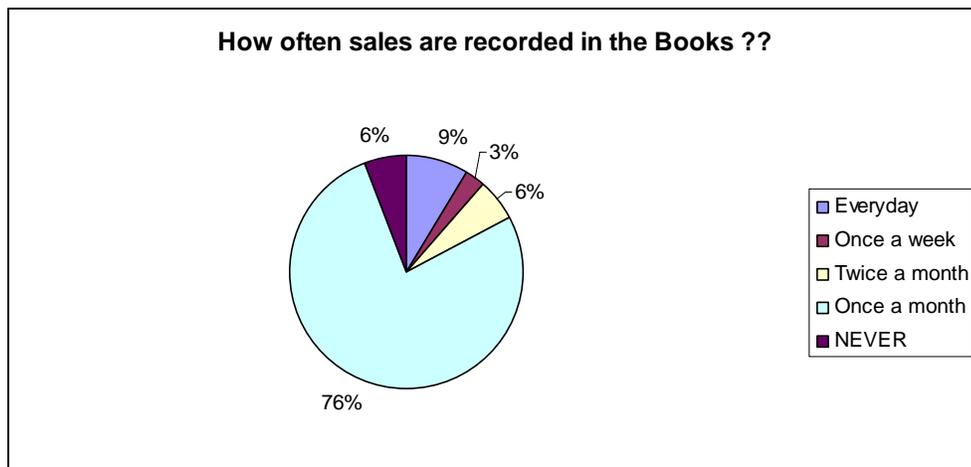
21. Water Sale Metering



- The WSPROs calculate the volume of water sold mainly by adding the volume sold to each household.

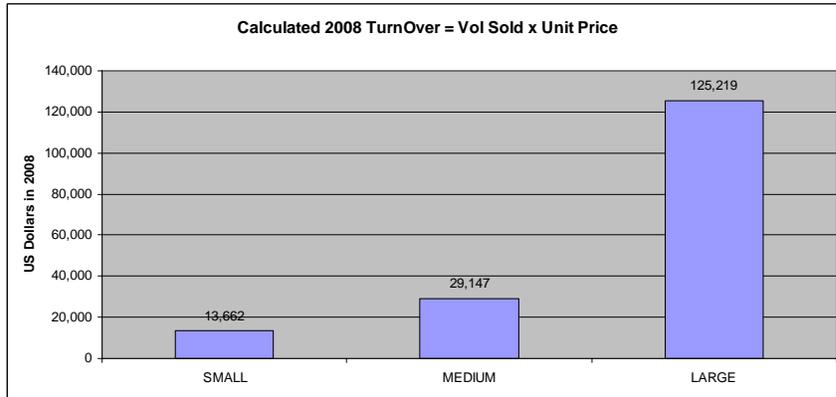
This is the correct procedure, but with unreliable results since these HH meters are not perceived as accurate.

In summary, the WSPROs have an inaccurate figure of their production, an inaccurate figure of their sale (by volume), and therefore just an idea of their water loss.

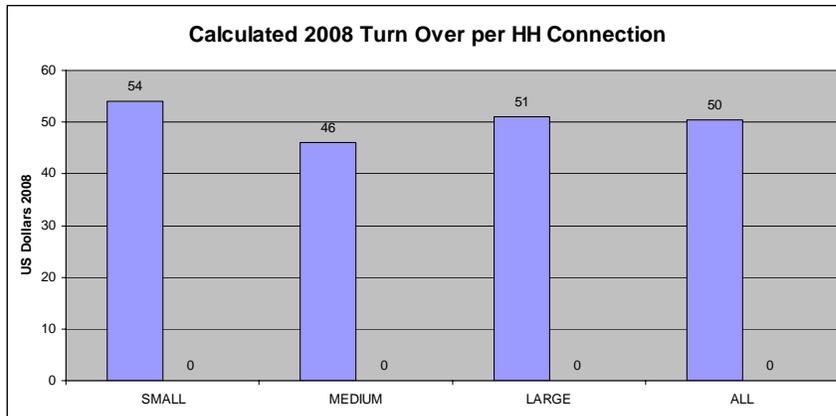


22. Calculated Turnover

For reasons that every entrepreneur would easily understand, the turnover amount was never asked to the WSPROs during the survey. Instead, this turnover was calculated here by multiplying the declared “**Volume Sold**” by the declared “**Unit Sale Price**”.



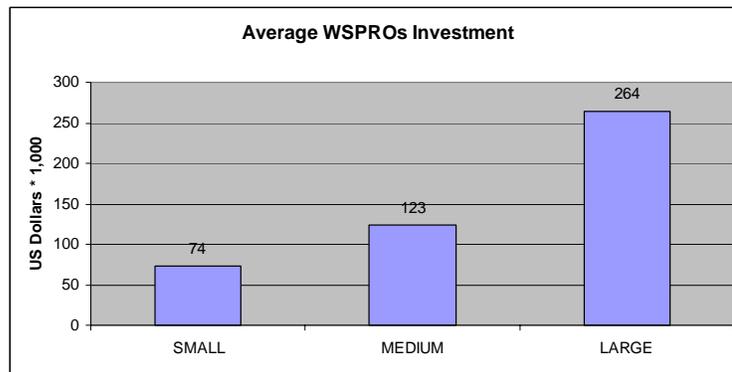
- The 3 figures are the average Calculated Turn Over in 2008 for a WSPRO belonging to the SMALL, MEDIUM and LARGE category.



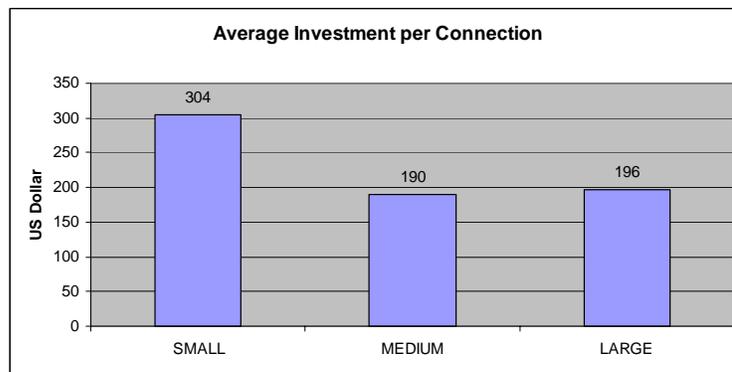
Across all categories (SMALL, MEDIUM and LARGE), the 2008 Turn Over per HH Connection is rather constant. As an average, its value is **US\$50 per HH**.

This figure is a good tool to anticipate the turn-over variation in case of further investment to increase water production and sale.

23. Investment

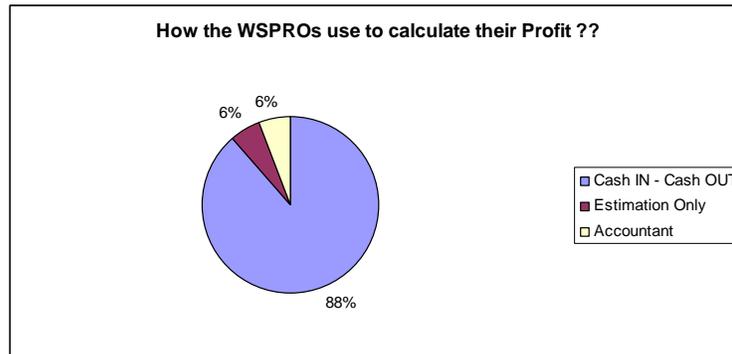


- As an average, till date, a SMALL water provider has invested US\$74,000, a MEDIUM one US\$123,000 and a LARGE one US\$264,000. Land investment is included in these figures.



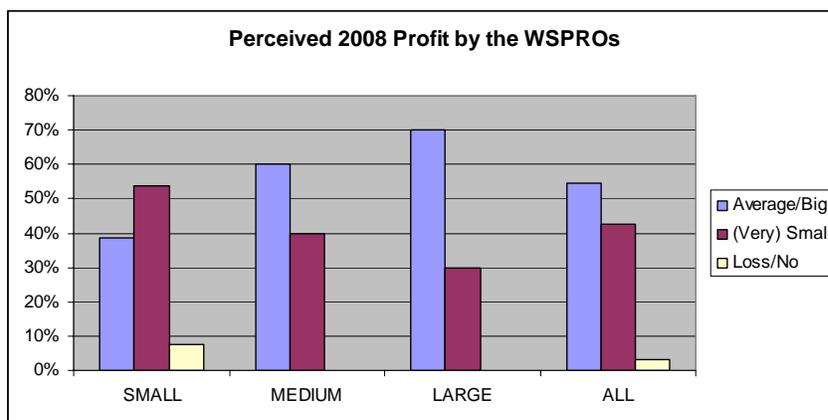
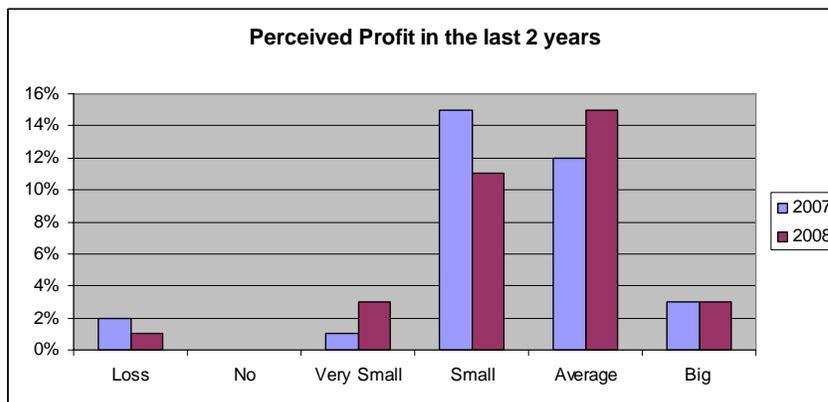
The average investment per HH Connection is lower for a LARGE water business than for a SMALL one.

24. Perceived Profit



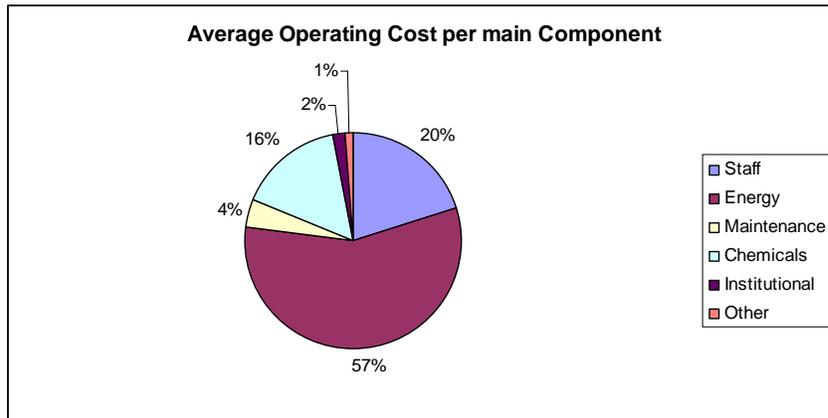
The above chart shows that the vast majority of the WSPRO do not integrate depreciation and other liabilities when evaluating their profit. Here, a “profit” is more in line with the amount of money they have in hand at the end of the month.

For further development, this profit shall be called “Perceived Profit”, different from the “Calculated Profit” that integrates depreciation of assets.

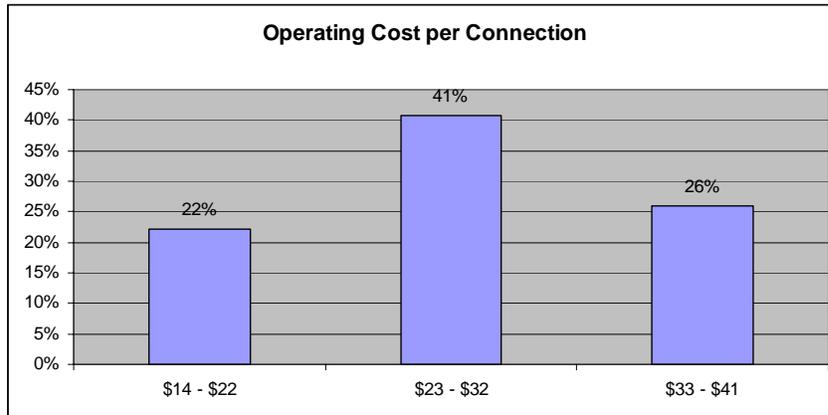


- The above chart shows that LARGE water producer have more positive perception of their profit than the MEDIUM and SMALL ones.

25. Operating Cost



- Energy is the main Operating Cost component for all WSPROs, whatever the category.



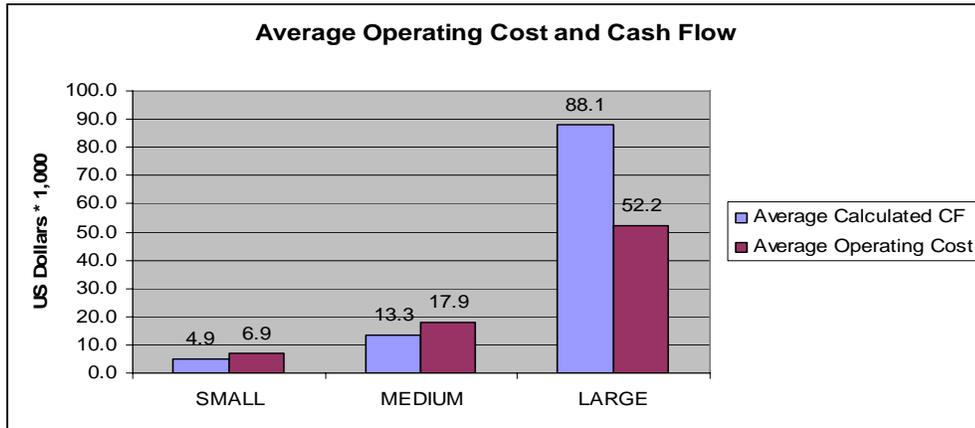
- The above chart shows that the majority of the Annual Operating Expenses (calculated per HH Connection) are comprised between **US\$23 and US\$32** for the year 2008.
- Minimum figure is **US\$14.-** while maximum is **US\$41.**

Operating Cost analysis is not an easy task because of some unreliable information provided by the surveyed WSPROs. This is sometimes caused by a very specific situation (for instance: cost of staff is declared as 0 when only family members run the business).

As a result, only 23 WSPROs⁸ were retained for further Operating Cost and Calculated Profit analysis.

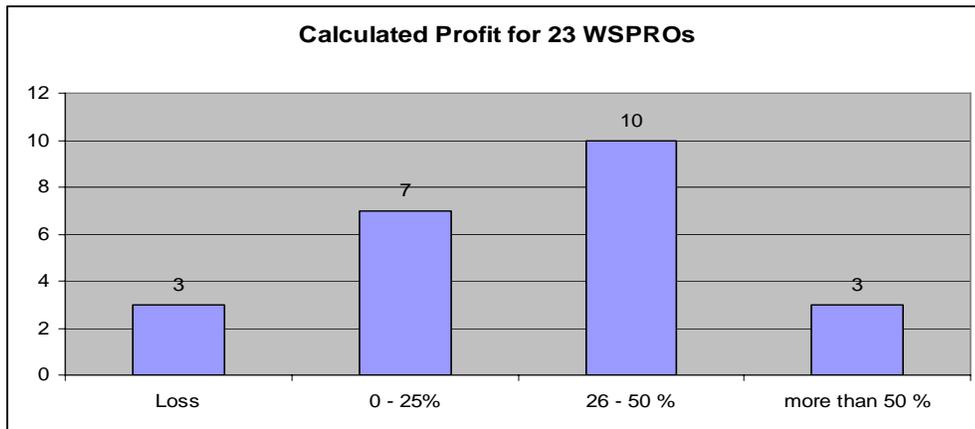
⁸ 10 SMALL, 7 MEDIUM and 6 LARGE

26. Calculated Profit



➤ All figures are average for 1 SMALL water business, MEDIUM and LARGE one.

On a simplified way, Cash Flow (CF⁹) was calculated as follows:
Calculated Turn Over – Operating Expenses = Calculated Cash Flow

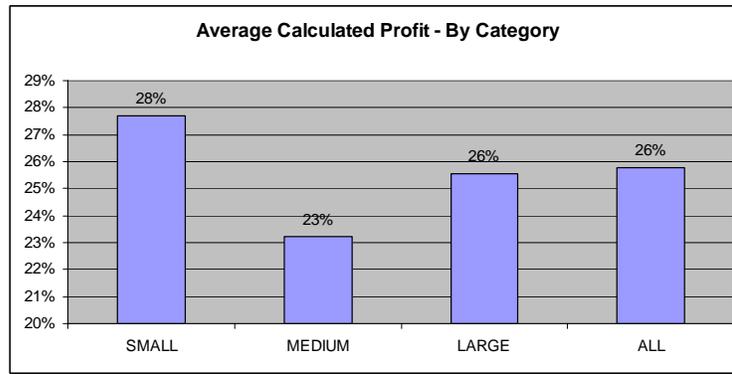


➤ The Calculated Profit is expressed as a percentage of the Calculated Turn Over. Out of the retained 23 WSPROs, 3 businesses have experienced in 2008 a **loss**, and 3 others a Calculated Profit **over 50%** of their Turn Over.

On a simplified way as well, Calculated Profit was established as:
Calculated Cash Flow – Depreciation of Assets = Calculated Profit

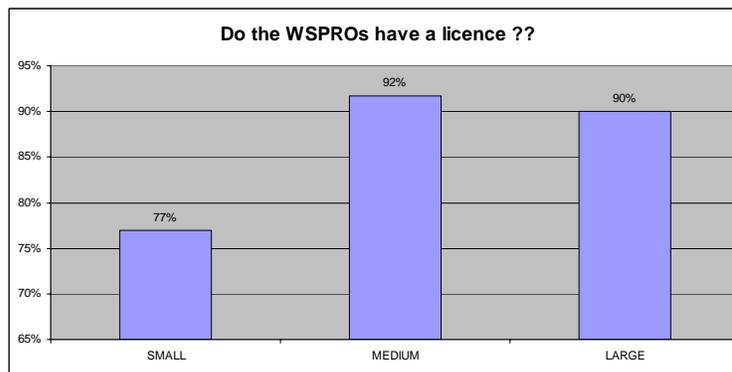
The good news here is that the majority of the retained WSPROs have experienced a (sometimes big) profit in the last year 2008.

⁹ CF is somehow an approximation of the money that the WSPROs would retain in hand at the end of the year, before any investment.

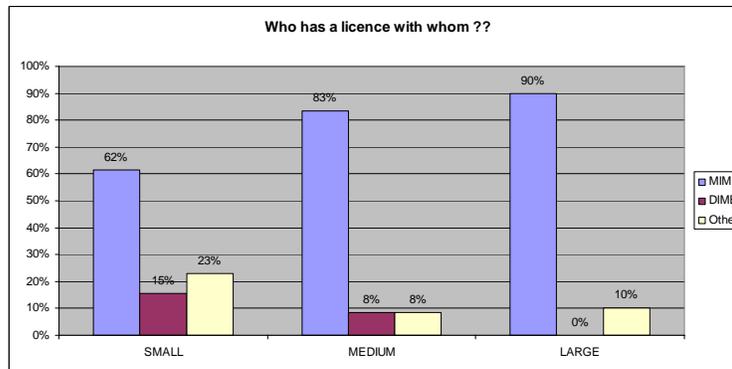


- There is no clear variation of the Calculated Profit rate from one category to the other ones. Average is 26%, a quite reasonable figure in the Cambodian business environment.

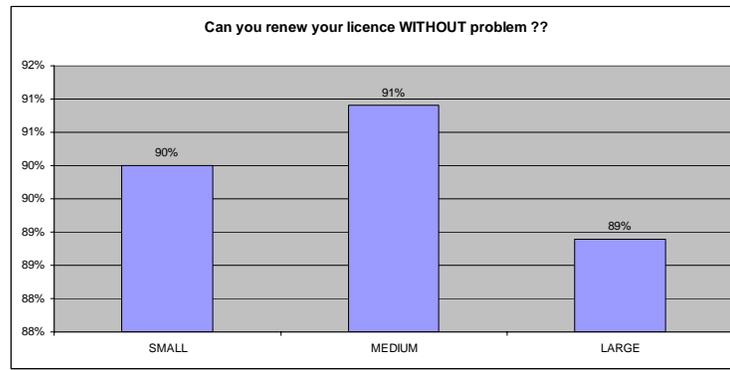
27. License and Water Concession Contract



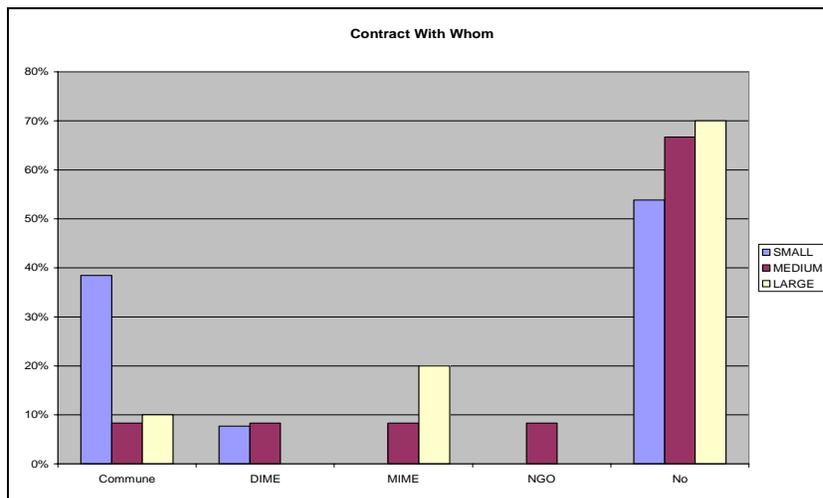
- The majority of the WSPROs have a license, even the SMALL ones.



- Almost all LARGE businesses have a license with MIME (only 60% for the SMALL ones) SMALL businesses are a local operation, so they would think that DIME license is sufficient.
LARGE businesses need the MIME license to protect their potential expansion.

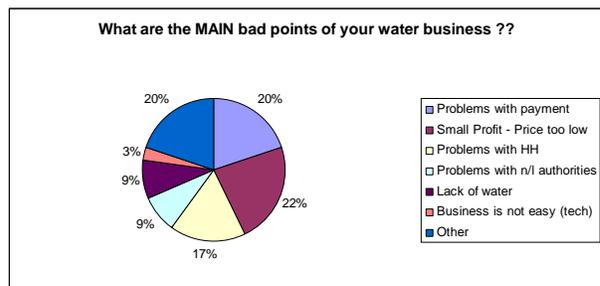
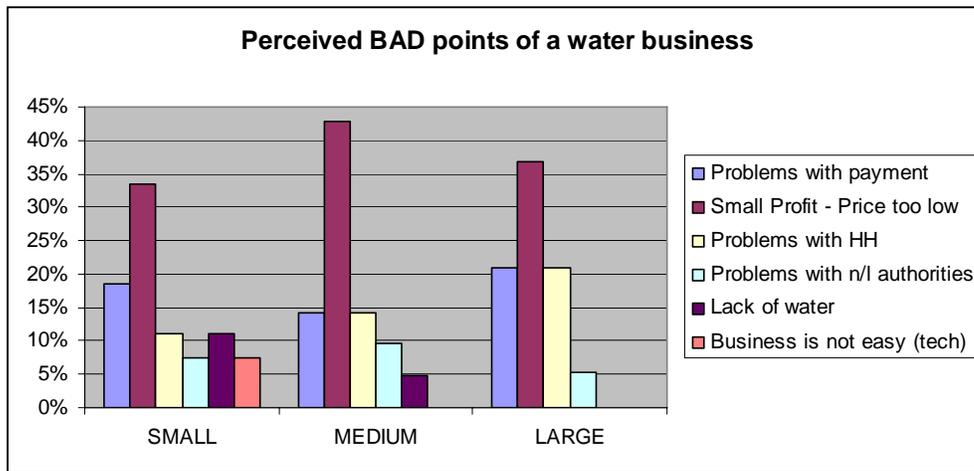
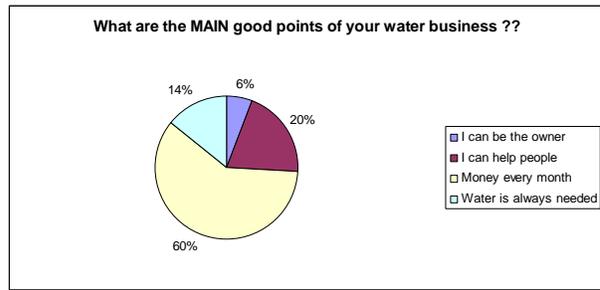
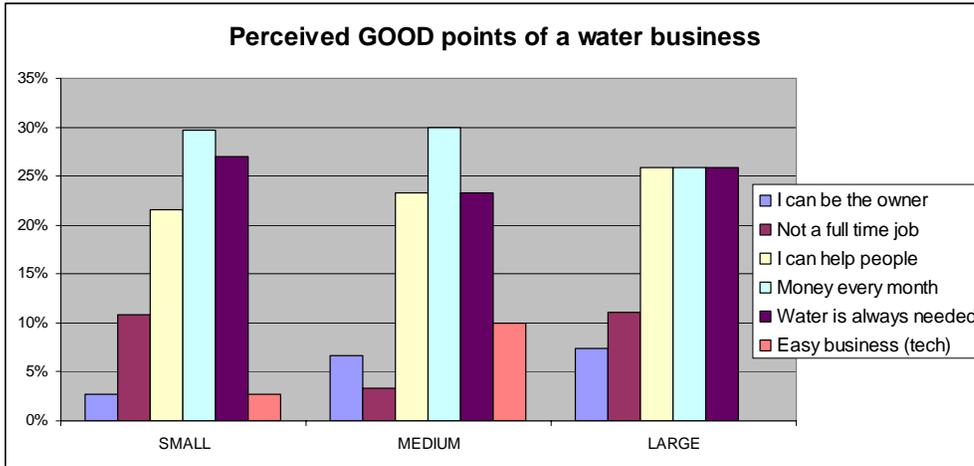


- Most of the licensed WSPROs think that they can renew their license without problems.

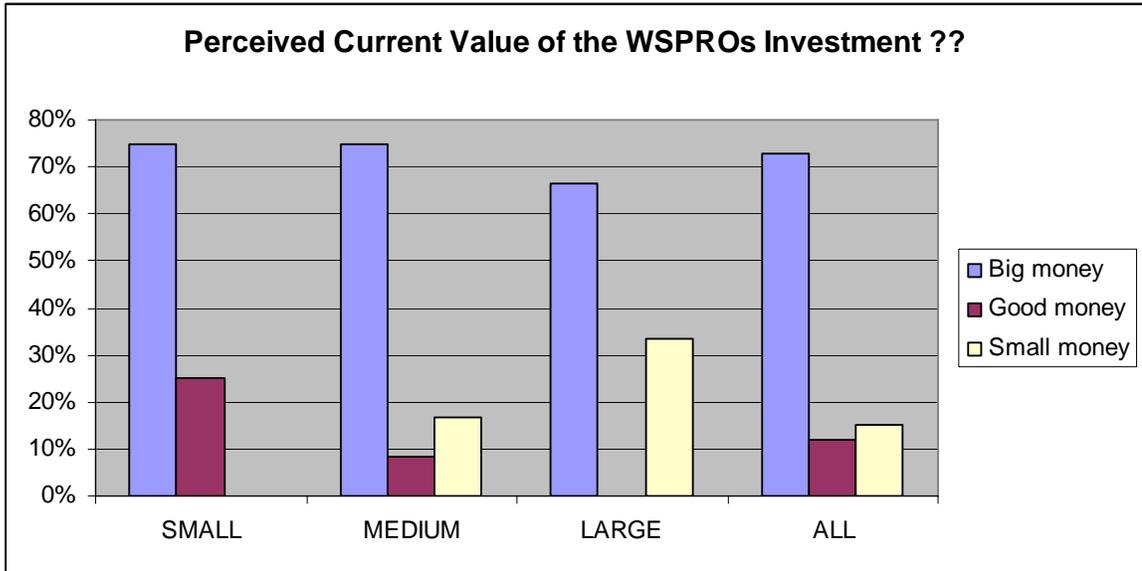


- Nearly 40% of the SMALL water businesses have contracts with the commune.
- Majority of LARGE and MEDIUM businesses do not have a contract and operate under a license only.

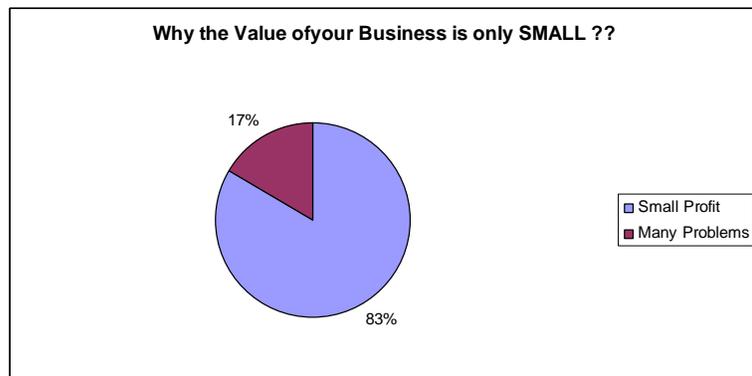
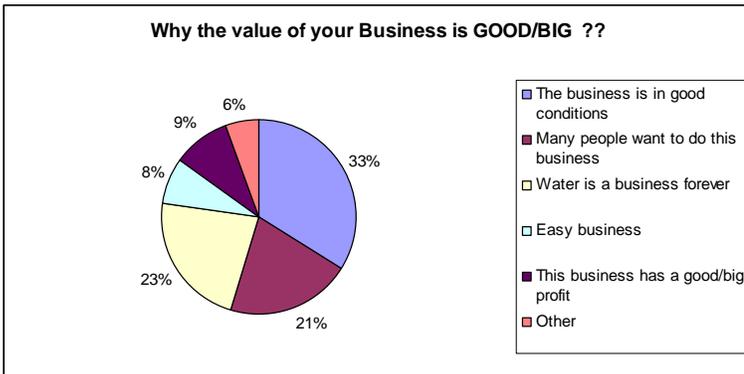
28. Why the WSPROs are (un)happy with their business?



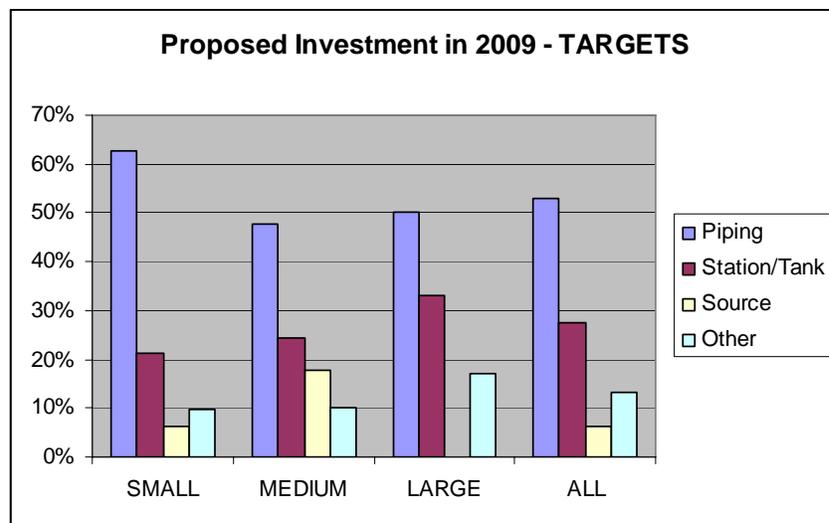
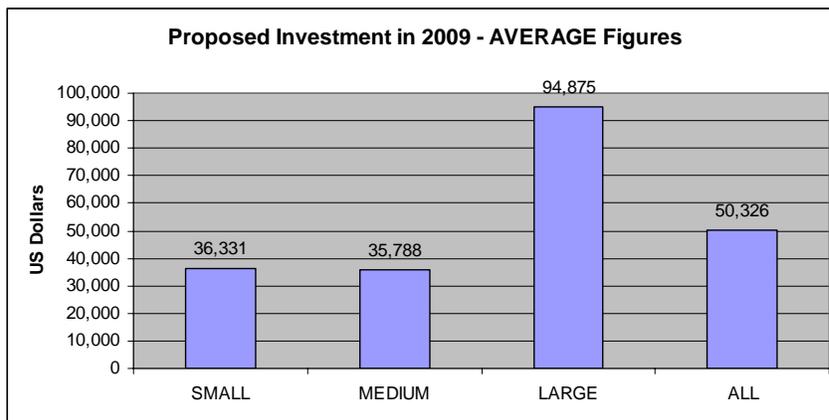
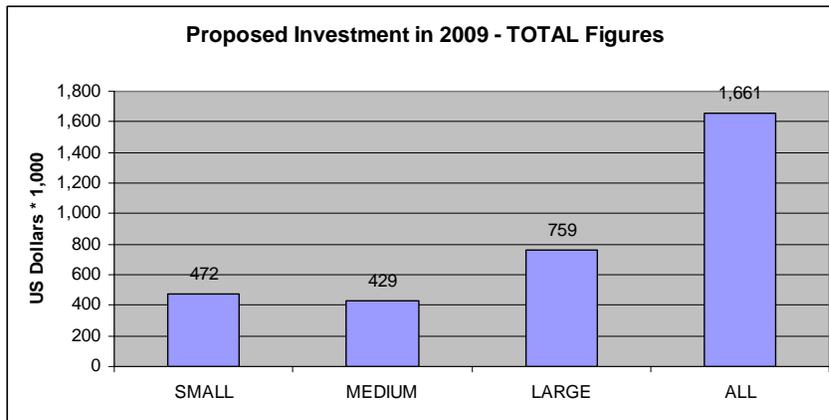
29. How the WSPROs perceive the VALUE of their business??



➤ The owners of LARGE water production units seems to be more pessimistic about the value of their business.

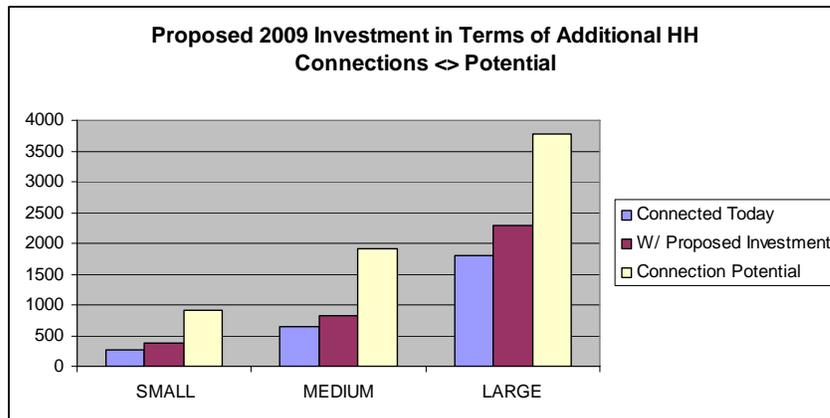
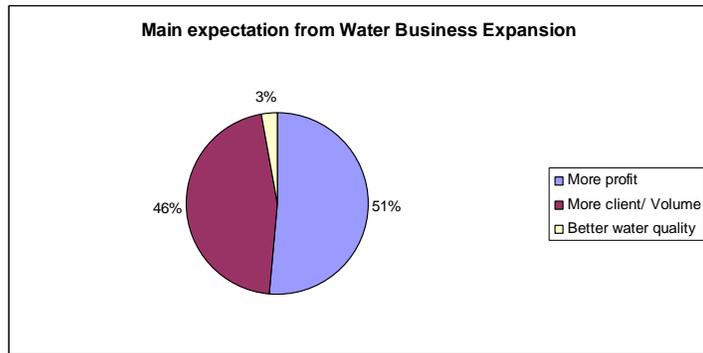
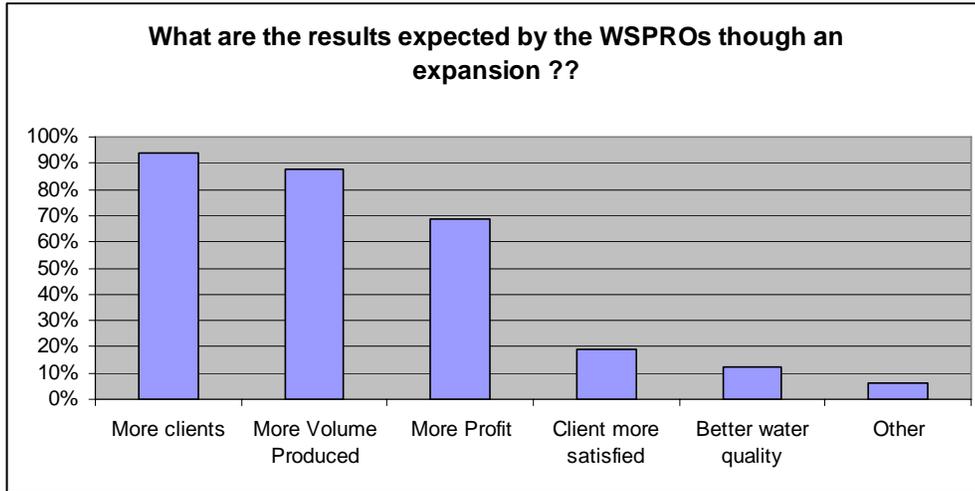


30. Business expansion investment scheduled by the WSPRO for 2009



- Piping is the main target investment (to reach more customers – see Para 31)
- LARGE businesses do not have to invest for water source since they all rely on river (see Para 6)

31. Business expansion

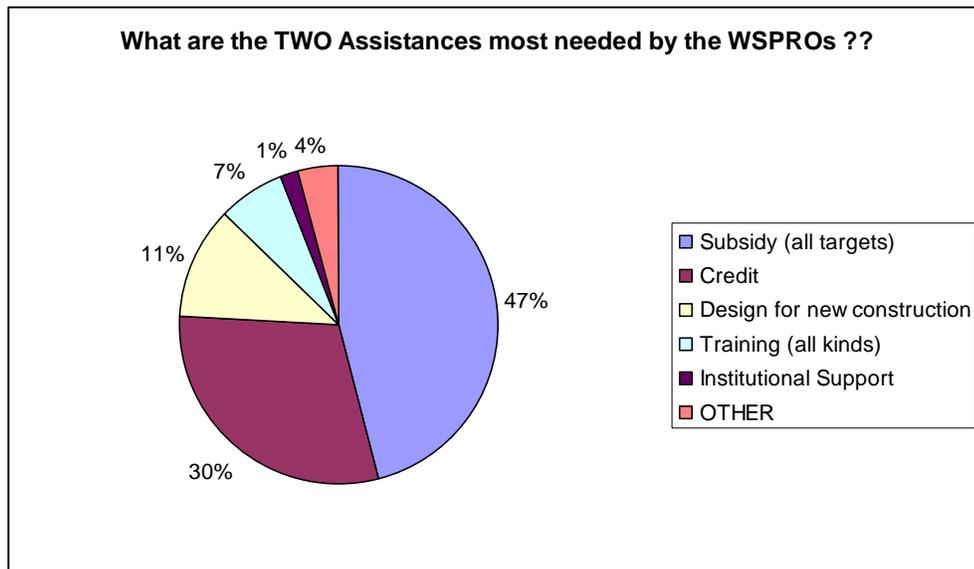
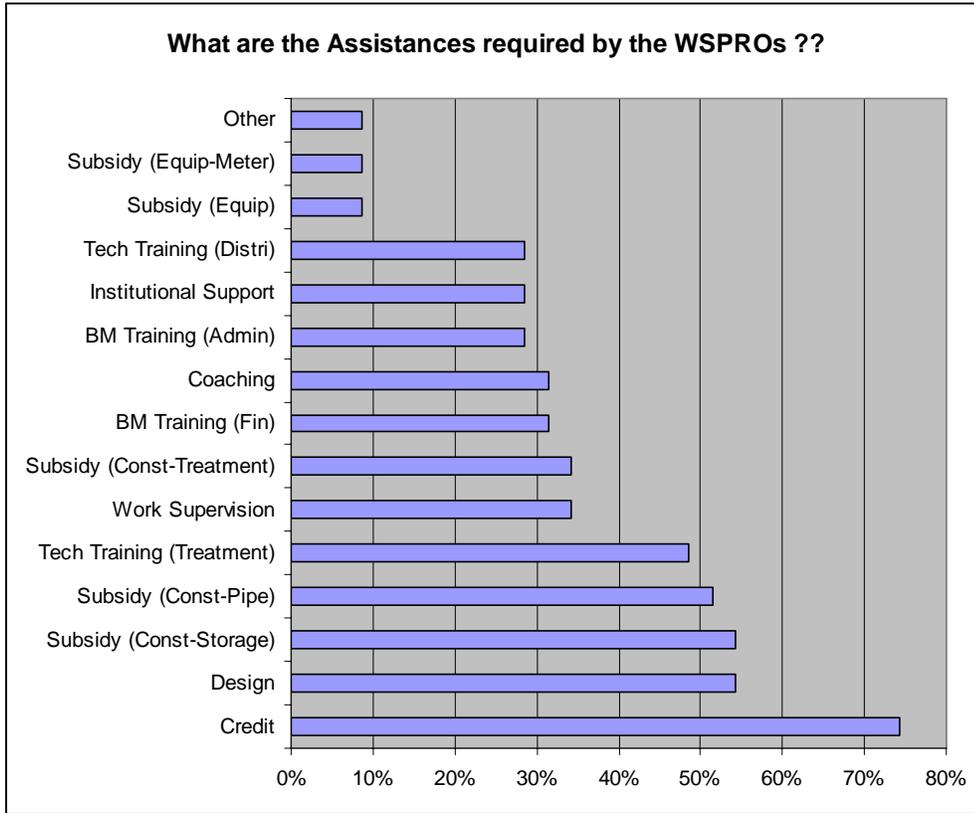


Taking the Investment ratios defined at Para 23¹⁰ for the investment to date, and assuming that similar ratios will be in force for future investments¹¹, the chart above indicates that the proposed investment in 2009, as an AVERAGE, is still far below the declared capacity of the WSPROs, for all 3 categories.

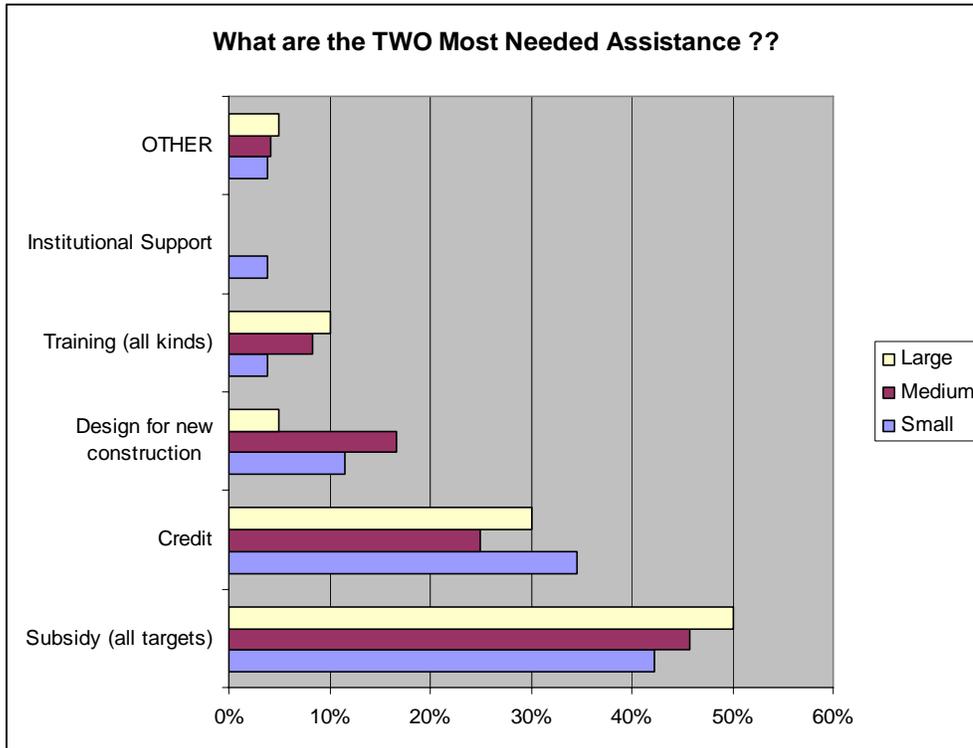
¹⁰ **US\$300** per HH for SMALL businesses, **200US\$** per HH for MEDIUM and LARGE ones.

¹¹ See Para 30

32. Assistance required by the WSPROs to facilitate expansion



Financial support is the most needed assistance and then Design and Training. Institutional Support (assistance for license, concession contract, etc.) is not a requirement.



Design assistance required for LARGE WSPROs is less than for MEDIUM and SMALL businesses, since they may have their own Design Department.

Training is not a major required assistance, especially according to SMALL WSPROs statements.

Only SMALL businesses may require some Institutional Support assistance.

5- Conclusions

Several general conclusions can be drawn from the results of this “In-Depth” survey:

➤ NET PROFIT

The water business in Cambodia appears to be **profitable**. Figures calculated at Para 26 show an average profit rate of 26% compared with the calculated turnover, which is in line with the expected profitability of a business in Cambodia.

It should be noted that this high rate is only a GROSS figure. The above calculation did not take into account taxes and other hidden costs (owner salary, water to be delivered for free to local officials, bills that will never be recovered since the client is too poor or too rich etc.).

A NET average profitability ranging from **15 to 20 percent** of the turnover seems to be a fairly good and conservative approximation of the reality.

The profit as “perceived” by the interviewed WSPROs was less optimistic. For the majority of the WSPROs, (see Para 24), the profit in 2007 and 2008 was small or just “average” with a better perception in 2008 compared with 2007.

To be noted as well is the fact that an accurate calculation of the profit is difficult since the WSPROs have only an approximation of the quantity of water they produce. This approximation is sometimes based on the volume of water sold (see Para 16).

The installation of accurate head meters for all WSPROs is a key factor towards a better management for this activity.

➤ INVESTMENT PER ADDITIONAL CONNECTION (IAC)

The investment required for one additional connection is hard to evaluate based only on the results of this survey. Only a detailed feasibility study conducted over the targeted WSPROs would allow a fair estimation.

As an approximation for the purposes of this study,
the IAC figures shall be the same as those calculated at Para 23:

US\$300 per HH for SMALL businesses,
200US\$ per HH for MEDIUM and LARGE ones.

On one hand, actual figures should be much lower since investment already done will cover also the future connections. But, on the other hand, these future connections may require much higher piping investment since the closest households are simply already connected. To expand, the WSPROs now have to reach other villages, some of them far away.

In addition, as shown in Para 15, the WSPROs are today mobilizing almost the full capacity of their installation. More volume of water to be produced means more investment at the production level as well.

➤ ESTIMATED TOTAL POTENTIAL FOR MORE INVESTMENT

According to the opinion of the WSPROs, the potential for more HH connected (and therefore more volume of water delivered) is very much significant:

AVERAGE FOR 1 WSPRO	SMALL	MEDIUM	LARGE
Potential for MORE connections ¹² :	645	1,264	1,969
Investment per Additional Connection (US\$) ¹³	300	200	200
<u>Potential for more investment (US\$):</u>	<u>193,500</u>	<u>252,800</u>	<u>393,800</u>

➤ **WATER PRODUCTION INCREASE**

The full mobilization of the above estimated investment would increase the annual production of water by:

AVERAGE FOR 1 WSPRO	SMALL	MEDIUM	LARGE
Current Annual Production of Water for 1 HH (m ³) ¹⁴	83	95	135
<u>Potential for more Production of Water (m³/Y)</u>	<u>53,535</u>	<u>120,080</u>	<u>265,815</u>

➤ **INVESTMENT RATIO**

Based on the above figures, the ratio “*Investment required for 1 additional m³ of water delivered*” would be:

	SMALL	MEDIUM	LARGE
<i>US\$ to invest per additional m³ of water:</i> ¹⁵	3.6	2.1	1.5

The above figure shows that LARGE WSPROs would require a much smaller investment (**1.5 US\$ per m³**) to increase production when compared with the average amount required for a MEDIUM water business (**2.1 US\$ per m³**) or for a SMALL one (**3.6 US\$ per m³**).

Further to the higher investment ratio, another constraint is attached to the SMALL and MEDIUM water businesses expansion: the capacity of their water sources.

SMALL businesses rely mainly on **ponds**, with limited storage capacity, for their water sources while almost all LARGE ones take water all year long from rivers.

➤ **PROPOSED INVESTMENT BY THE 35 WSPROs FOR 2009**

35 WSPROs have been selected for the “in-depth” survey because of their declared willingness to invest and expand their business. As indicated at Para 30, the average proposed investment for 2009 was as follows:

AVERAGE FOR 1 WSPRO	SMALL	MEDIUM	LARGE
Proposed Investment for 2009 (US\$)	36,331	35,788	94,875

¹² As declared by the surveyed WSPROs – See Para 11

¹³ See above explanation related to the IAC

¹⁴ Calculated based on the charts at Para 14

¹⁵ = (Potential for More Investment) divided by (Potential for more Annual Production of Water)

By applying the ratios previously calculated, the proposed investment would allow the following increase of water production and HH connections:

AVERAGE FOR 1 WSPRO	SMALL	MEDIUM	LARGE
Water production Increase (m3/Year) ¹⁶	10,090	17,040	63,250
HH connection increase (unit) ¹⁷	121	180	468

A full mobilization of the proposed investment for all the 35¹⁸ surveyed WSPROs would allow the following total increase figures:

FOR ALL 35 SURVEYED WSPROs	SMALL	MEDIUM	LARGE
Water production Increase (m3/Year)	131,170	204,480	632,500
HH connection increase (unit)	1,573	2,160	4,680

Equivalent to the following overall figures:

Total Annual Water Production Increase: 968,150 m3
Total HH Connection Increase: 8,413 connections

➤ **INTERNAL RATE OF RETURN (IRR)**

Based on the above IAC figures, the IRR of the proposed investment was calculated based on the following turnover figures:

AVERAGE FOR 1 WSPRO	SMALL	MEDIUM	LARGE
2008 Turnover (US\$)	13,330	32,500	90,450
2010 Turnover, after Investment (US\$)	19,330	41,245	113,950

The IRR figures are shown at the below table:

Table 2: Calculated IRR – By category and for 2 Profit Rates (15% and 30%)

¹⁶ SMALL: 3.6 US\$ per m3; MEDIUM: 2.1 US\$ per m3; LARGE: 1.5 US\$ per m3

¹⁷ SMALL: 1 HH = 83 m3 per year; MEDIUM = 95 m3 per year; LARGE = 135 m3 per year

¹⁸ 13 SMALL + 12 MEDIUM + 10 LARGE

	SMALL		MEDIUM		LARGE	
	Investment till date	74,000		123,000		264,000
Proposed 2009 Investment	36,000		35,000		94,875	
<i>With a Profit Rate of:</i>	15%	30%	15%	30%	15%	30%
Annual Net Income						
Today	2,000	4,000	4,875	9,750	13,567	27,135
After 2009 Investment	2,902	5,800	6,187	12,375	17,092	34,185
Internal Rate of Return						
8 Years	-	-12%	-17%	-4%	-17%	-4%
15 Years	-3%	6%	2%	12%	2%	12%
25 Years	6%	12%	9%	17%	9%	17%

Note:

The IRR figures for MEDIUM and LARGE categories of WSPROs are the same because the estimated IAC figures are the same: **200 US\$** per additional connection.

➤ **REVISED “INVESTMENT for ADDITIONAL CONNECTION”(IAC) FIGURES**

All the above figures will be affected if the IAC figures are modified. For the below IAC figures, the resulting figures would be as follows:

AVERAGE FOR 1 WSPRO	SMALL	MEDIUM	LARGE
Potential for MORE connections ¹⁹ :	645	1,264	1,969
Revised Investment per Additional Connection (US\$)²⁰	200	150	130
<u>Potential for more Investment (US\$):</u>	<u>129,000</u>	<u>189,600</u>	<u>255,970</u>
<u>Potential for more Production of Water (m3/Y)²¹:</u>	<u>53,535</u>	<u>120,080</u>	<u>265,815</u>
US\$ to invest per additional m3 of water²²	2.4	1.6	1.0
Proposed Investment for 2009 (US\$) ²³	36,331	35,788	94,875
<u>Water production Increase (m3)²⁴:</u>	15,138	22,367	94,875
<u>HH connection increase (unit)²⁵:</u>	182	235	702

Equivalent to the following revised overall figures:

(Revised) Total Annual Water Production Increase: 1,414,00 m3
(Revised) Total HH Connection Increase: 12,206 connections

¹⁹ (No change) As declared by the surveyed WSPROS – See Para 11

²⁰ 200 instead of 300 for SMALL; 150 instead of 200 for MEDIUM; 130 instead of 200 for LARGE

²¹ (No change) SMALL: 1 HH = 83 m3 per year; MEDIUM = 95 m3 per year; LARGE = 135 m3 per year

²² (No change) = [Potential for More Investment] divided by [Potential for more Production of Water]

²³ (No change) As declared by the surveyed WSPROS – See Para 30

²⁴ SMALL: 2.4 US\$ per m3; MEDIUM: 1.6 US\$ per m3; LARGE: 1.0 US\$ per m3

²⁵ (No change) SMALL: 1 HH = 83 m3 per year; MEDIUM = 95 m3 per year; LARGE = 135 m3 per year

6- Recommendations

The results of the “in-depth” survey and conclusions should lead to one basic recommendation:

All (financial) support to Water Service Providers should be orientated mainly towards the water businesses having at least (today) **950 HH connections²⁶**.

Reasons would be as follows:

- The yield of the investment (in terms of water volume) is higher:
To increase the production by 1 m³ of water, a LARGE WSPRO would need to invest only **1.5 US\$**, against **2.1 US\$** for a MEDIUM one and **3.6 US\$** for a SMALL one²⁷.
- As shown at Para 20, the LARGE water businesses use to sell the water at a cheaper price: **1,972** riels per m³, against **2,208** riels for a MEDIUM one and **2,562** riels for a SMALL one.
- LARGE water suppliers report performing internal water quality test.
(see Para 19)
- Almost all LARGE suppliers take the water from a nearby river, with as a consequence little concern regarding the water source capacity during the dry season.

But rivers suitable for a WSPRO water source all year long cannot be found everywhere in Cambodia, and piping network of LARGE businesses cannot be expanded without limits.

Wherever needed, the expansion of SMALL and MEDIUM water service providers can be supported since only locally established water businesses can provide a solution for areas out of reach of LARGE systems that use to pump water from all-year-long rivers.

A strategic long-term plan for increasing access to safe water in Cambodia would be helpful. It could identify areas that can be served by large public or private systems and which areas are best served by small and medium WSPROs. This would facilitate public and private investment in complimentary areas to better meet the needs of the population.

²⁶ That means all WSPROs that belong to the “LARGE” category of the in-depth survey

²⁷ With Revised IAC figures: 1.0 for LARGE, 1.6 for MEDIUM and 2.4 for SMALL

Annexes

Annex 1 – Phone Survey Questionnaire

What is your name ??

Age: Gender:

Other phone number (maybe more easy to contact you):

Who ??

Are you the MAIN owner/shareholder of the water business ?? Yes No Family Business

If NO: Who is the main owner ?? Name:

Can we contact him directly ?? Phone Number:

Goodbye !!

We continue the question if we are sure that the person on the phone is the owner or the main shareholder.
(no need to speak with another person)

Where the water come from ?? River Well Lake Pond WSupplier Other:

How many connections/households ?? Today: 5 years ago: At start:

Year:

Do you treat water ?? Yes No In your opinion, your water today is: Under Standard Above

Are you satisfied with the current situation of your business ?? Yes No If NO, why ?

IN YOUR OPINION, IS IT POSSIBLE FOR YOU TO EXPAND YOUR WATER BUSINESS NOW, IN 2009 ?? Yes No Yes, but later

If NO:

Why NO ?? I have no more money to invest, even with external support

I cannot have more client because: Village too small

Already other water business in the same area

Difficult to find more water (dry season)

Other:

If YES:

What is your **FIRST** priority ?? to increase...

(one answer only) QUANTITY QUALITY

of the water.

In your opinion, how much money you need to invest in 2009 to expand your business ?? US\$:

To do what ?? NEW distri piping Treatment Station Water Tower Pond Well

REPLACE piping Good Meters Water Quality Tools

Where the money shall come from ?? Bank Family Friends Own money (savings)

Can we meet at the site of your place to speak about how we can support the expansion of your business ?? Yes No

If YES: Thank you !! We will call you back to confirm the date.

Place of meeting

When are available ?? Always Not in January Not in February

Phone number to confirm ?

Annex 2 – In-Depth Questionnaire

WSPRO ID and Name:	<input type="text"/>	<input type="text"/>	Name of the person who answered the question:	<input type="text"/>
Interviewer Name:	<input type="text"/>		Phone Number:	<input type="text"/>
Date:	<input type="text"/>		Title:	<input type="checkbox"/> Owner <input type="checkbox"/> Shareholder <input type="checkbox"/> General Manager
			OTHER:	<input type="text"/>
MIME ID:	<input type="text"/>			
Province:	<input type="text"/>	Commune:	<input type="text"/>	
District:	<input type="text"/>	Village:	<input type="text"/>	

Business Data

01 What year did you start to operate your water business ?

02 Business registered today as a company ?? Yes No

IF YES Name of the company:

Date of registration of the company:

03 Ownership ??

<input type="checkbox"/> One owner	<input type="checkbox"/> Family	<input type="checkbox"/> Shareholder	<input type="checkbox"/> Other
------------------------------------	---------------------------------	--------------------------------------	--------------------------------

04 Main owner ?

Name: Gender:

Age: Phone number:

05 **FOR OWNER ONLY:** This is the only business you have ?? Yes No

IF NO What are your other business and/or activities ??

Activity 1:

Activity 2:

Activity 3:

Water supply is your main business ?? Yes No

IF NO What is your main business ??

How many days per week you use to work for your water business ??
(as an average)

06 BESIDES THE OWNER, who works in this water business ??

<input type="checkbox"/> Employee	<input type="checkbox"/> Wife	<input type="checkbox"/> Family	<input type="checkbox"/> Friends	<input type="checkbox"/> Nobody
-----------------------------------	-------------------------------	---------------------------------	----------------------------------	---------------------------------

Full Time: (? many) _____ (who) _____ (? many) _____ (? many) _____

Part Time: (? many) _____ (who) _____ (? many) _____ (? many) _____

07 Do you have a dedicated office for this business?? Yes No
This is a office outside the water production site

Description of the water business installation

What are the water sources ?? (one or several answers)

08 In DRY season:

River/Stream	Pond	Well (any kind)	Water Supplier	Other

IF MORE THAN 1 SOURCE Main source ?

09 In WET season:

River/Stream	Pond	Well (any kind)	Water Supplier	Other

IF MORE THAN 1 SOURCE Main source ?

10 After pumping, do you store water at your site ?? Yes No

IF YES

Water Tower	m3= _____	H= _____
	m3= _____	H= _____
Pond	m3= _____	Dim= _____
	m3= _____	Dim= _____
Basin	m3= _____	Dim= _____
	m3= _____	Dim= _____

OTHER

11 Treatment of water ?? Yes No

IF YES

What treatment ?
(one or several answers)

- Aeration
- Sand filter
- Mixing with alum
- Chlorination
- Flocculation
- OTHER ??
- Sedimentation

What is the capacity of your Treatment Process ??
(one or two answers)

<input type="text"/>	m3/hour	<input type="text"/>	m3/day	<input type="text"/>	Don't know
----------------------	---------	----------------------	--------	----------------------	------------

How do you know the capacity of your TProcess ??
(one or two answers)

- based on the capacity of my pump
- based on the a meter
- I did some test
- This is my estimate
- OTHER

IF NO Why ??

- No money to build the system
- No time
- I think that the water quality is already good
- Customer are OK with the water today
- The cost of the water will increase, but the price still the same
- Customer not happy with taste of treated water
- I don't know how to do
- OTHER

12 How do you distribute the water to the clients ??
(one or several answers)

Piped system	Water carts	Bottled water	OTHER
<input type="checkbox"/> to households	<input type="checkbox"/> own carts	<input type="checkbox"/> to houses	
<input type="checkbox"/> to water points	<input type="checkbox"/> other people	<input type="checkbox"/> to shops	
<input type="checkbox"/> to ice factory(ies)		<input type="checkbox"/> at site	
<input type="checkbox"/> to restaurant(s)			

13 What is the MAIN system ??

IF PIPED SYSTEM TO HH

How many Households are connected ??

today ??

3 years ago ??

at start of the business ??

Existing Piping networks:

MAIN pipes:

Diameter ? (mm)

from:

to:

Length ? (meters)

NEW:

OLD:

First SECONDARY pipes:

Diameter ? (mm)

from:

to:

Length ? (meters)

NEW:

OLD:

Sec- SECONDARY pipes:

Diameter ? (mm)

from:

to:

Length ? (meters)

NEW:

OLD:

How many **more** HHs you can connect in the future ??

connections

How many **more** PIPES you can install in the future ??

meters

Are the households equipped with meters ??

(only one answers)

Yes, all

The majority, but not everybody

Few of them

None

IF METERS:

Type and brandname of the meters ?

Majority:

Some others:

Who paid for the meter ?

Household

Water supplier

Who provided the meter ?

Household

Water supplier

Are the meters accurate ??

(only one answers)

Yes

Not very much

Not at all

14 How do you pump the water ??

Generator+Electric Pump

Motorized Pump

Electric Pump

15 Connected to the electricity grid ??

Yes

No

Soon

Yes	No	Soon
-----	----	------

Quantity of water produced :

	DRY SEASON	RAINY SEASON
16/17 <u>What is the AVERAGE production of your water business ??</u> <i>(AVERAGE means NORMAL production)</i>	<input type="text"/> m3/day or <input type="text"/> m3/month or <input type="checkbox"/> I don't know	<input type="text"/> m3/day or <input type="text"/> m3/month or <input type="checkbox"/> I don't know
18 <u>What is the MAXIMUM production of your water business ??</u> <i>(producing full speed 12 hours a day)</i>	<input type="text"/> m3/day or <input type="text"/> m3/month or <input type="checkbox"/> I don't know	
19 <u>How do you estimate/calculate the capacity of your water business ??</u> <i>(one or several answers)</i>		<input type="checkbox"/> based on the capacity of my pump <input type="checkbox"/> based on the head-meter <input type="checkbox"/> I did some test <input type="checkbox"/> This is my estimate <input type="checkbox"/> OTHER
<input style="width: 100%; height: 20px;" type="text"/>		

Quantity of water lost :

(Water lost = Volume water produced - volume water invoiced to client)

20 Do you have water loss ?? Yes No Not sure

IF YES What is the quantity of the water loss ?? m3 every month
or
 m3 every year
or
 % of water produced
 I don't know exactly

Why water loss ??
(one or several answers)

Leakage in piped system
 HH meters not accurate
 HH are cheating
 I must deliver some water for free
 OTHER

What is the main reason (s) ??
(only one answer)

IF NOT SURE Why not sure ??

I never control this... I have no idea
 I'm not sure about the volume of water that I PRODUCE
 I'm not sure about the volume of water that I SELL (INVOICE)
 OTHER

21 Is it important for you to know about the water loss of your business ??

Yes, very important
 Not so important

Quality of the water

22 In your opinion, how is the AVERAGE QUALITY of the water you distribute ??

Under	standard	Above
-------	----------	-------

23 Do you receive complaints from your clients about quality ??

Never	Sometimes	Often
-------	-----------	-------

IF COMPLAINTS Why ?
(one or several answers)

- | | |
|--|-------------------------------------|
| <input type="checkbox"/> Taste of chlorine | <input type="checkbox"/> Bad smell |
| <input type="checkbox"/> Bad taste | <input type="checkbox"/> Bad colour |
| <input type="checkbox"/> OTHER | |

24 Is the quality of your water checked by some Authority ??

Yes	No
-----	----

IF YES Who ?
(1 or more answers)

- MIME
- DIME
- Local
- OTHER

How often ?
(only one answer)

- every month
- every 3 months
- once a year
- sometimes

Results?
(only one answer)

RECENTLY

- Good
- Not so good
- Don't know

BEFORE 1 YEAR

- Good
- Not so good
- Don't know

25 Do you perform yourself water quality test at your site ?

Yes	No	Sometimes
-----	----	-----------

IF YES What kind of test ??
(one or several answers)

- pH measurement
- Residual chlorine (with test kit)
- Turbidity with test equipment
- Arsenic test kit
- Jar test
- Incubator for microbiological testing
- OTHER

How often ??
(only one answer)

- | | |
|--------------------------------------|--|
| <input type="checkbox"/> Every day | <input type="checkbox"/> Once a month |
| <input type="checkbox"/> Once a week | <input type="checkbox"/> 2 or 3 times a year |
| <input type="checkbox"/> Other: | |

IF NO Why ??
(one or several answers)

- no need to check quality
- no time to do so
- no equipment
- nobody knows how to do
- OTHER

Sales

26 What is unit price of the water ??

	2008	2007
To households (piped distribution)	<input type="text"/> Riels/m3	<input type="text"/> Riels/m3
To big customer	<input type="text"/> Riels/m3	<input type="text"/> Riels/m3
To watercarts	<input type="text"/> Riels/m3	<input type="text"/> Riels/m3

27 Why you don't increase the price ??
(one or several answers)

- imposed by national/local authority
- clients will not pay more
- I don't want to increase. I have enough profit with this
- I don't want to increase. This is a social activity (I don't do this for profit)
- Other:

28 Do you sell water every month of the year ??

Yes	No
-----	----

IF NO: What are the months you sell NO (or almost NO) WATER ?

1 - 2	3 - 4	5 - 6
7 - 8	9 - 10	11 - 12

Why ??

- I have no more water to sell in the dry season
- very few people buy water during the rainy season
- Other:

29 What is the volume of water sold to the clients recently ??

2008	2007
<input type="text"/>	<input type="text"/>

- I don't know very well
- I don't know very well

30 How do you calculate the volume sold by your water business ??
(one or several answers)

- by adding the volume sold to each client/household
- according the my head meter
- according to the capacity of my water tank (or) water tower
- this is my own estimate. I don't know exactly
- OTHER

31 Do you write your sale (VOLUME) in a book ??

Yes	No
-----	----

IF NO Why ??

- Too busy, no time to do this
- Not necessary. No need a book
- I don't want other people to know about the volume I sell
- OTHER

IF YES How often ??

- Every day
- Once a week
- Once a month

Collection of money from the households (Piped system)

32 How do you collect the money from your HH ??
(one or several answers)

People go to my office to pay the bill

The money is collected at every household

Household paid to the bank

OTHER

IF COLLECTED AT EVERY HOUSEHOLD:

Who collects the money ?
(one or several answers)

- Employee
- Wife / Family member
- Owner
- OTHER

33 How often do you collect the money for your water business ??
(one or two answers)

- every week
- every 2 weeks
- every month
- OTHER

34 What document you give to household ?
(only one answer)

- Bill
- Receipt
- Nothing
- Other:

35 How do you calculate the amount to be paid ??
(only one answer)

- According to the size of the house
- Volume measured by meter
- The same for everybody (flat fee)
- OTHER

36 Do you write your income (Riel or US\$) in a book ??

Yes	No
-----	----

IF NO Why ??

- Too busy, no time to do this
- Not necessary. The money is in my pocket. No need a book
- I don't want other people to know about my income
- OTHER

IF YES How often ??

- Every day
- Once a week
- Once a month

37 Do you provide some water FOR FREE ??

Yes	No
-----	----

IF YES To whom ??

- Family, friends
- Local authorities
- School, health center
- OTHER

	cum/year
	cum/year
	cum/year
	cum/year

Expenses (operating cost)

38 Can you estimate the total amount of expenses you have spent in 2008 for your water business ??

Yes	No
-----	----

IF YES What is the amount paid ?? (IN 2008)
(Riels or US Dollars)

	US Dollar	Riels
Staff (Employee, Family workers, Guards,...)		
Energy: Electricity:		
Gas/Diesel:		
Other:		
Buy Water:		
Chemicals:		
Licence: National		
Local		
Repair damage (piping & equipment)		
Rental:		
Concession fee:		
Taxes:		
OTHER OPERATING COSTS OVER THE YEAR 2008:		

IF NO Why ??
(one or several answers)

- I know only the money I spend month by month, but not over the full year
- I have no records of my expenses
- Not necessary for me to know this
- OTHER

Expenses (Replacement of old or fully broken equipment that cannot be repaired)

39 In the lasr 2 years did you replace old/fully broken distribution pipes ?? Yes No

IF YES

2008 How many mL ??

Total cost ?? US Dollar Riels

I don't remember exactly the cost

2007 How many mL ??

Total cost ?? US Dollar Riels

I don't remember exactly the cost

40 In the lasr 2 years did you replace old/fully broken equipment (pump, generator...) ?? Yes No

IF YES

2008 What equipment ?

Generator	Pump	for water treatment	Other
-----------	------	---------------------	-------

Total cost ?? US Dollar Riels

I don't remember exactly the cost

2007 What equipment ?

Generator	Pump	for water treatment	Other
-----------	------	---------------------	-------

Total cost ?? US Dollar Riels

I don't remember exactly the cost

Expenses (Investment for quantity/quality EXPANSION)

41 In the last 2 years, did you EXPAND your water business with NEW distribution pipes ?? Yes No

IF YES

2008 How many mL ??

Total cost ?? US Dollar Riels

I don't remember exactly the cost

2007 How many mL ??

Total cost ?? US Dollar Riels

I don't remember exactly the cost

42 In the last 2 years, did you EXPAND your water business with NEW/BIGGER WATER SOURCES ?? Yes No

IF YES

2008 What sources ?

New pond	Bigger pond	New well	OTHER
----------	-------------	----------	-------

Total cost ?? US Dollar Riels

I don't remember exactly the cost

2007 What sources ?

New pond	Bigger pond	New well	OTHER
----------	-------------	----------	-------

Total cost ?? US Dollar Riels

I don't remember exactly the cost

43 In the last 2 years, did you EXPAND your water business with NEW EQUIPMENT ?? Yes No
(not a replacement of old equipment - see above)

IF YES

2008 What equipment ?

Generator	Pump	for water treatment	OTHER
-----------	------	---------------------	-------

Total cost ?? US Dollar Riels

I don't remember exactly the cost

2007 What equipment ?

Generator	Pump	for water treatment	OTHER
-----------	------	---------------------	-------

Total cost ?? US Dollar Riels

I don't remember exactly the cost

44 In the last 2 years, did you EXPAND your water business with NEW CONSTRUCTION ?? Yes No
(not a replacement of old equipment - see above)

IF YES

2008 What constr/ion ?

Water Tower	Treatment Plan	Tanks	OTHER
-------------	----------------	-------	-------

Total cost ?? US Dollar Riels

I don't remember exactly the cost

2007 What constr/ion ?

Water Tower	Treatment Plan	Tanks	OTHER
-------------	----------------	-------	-------

Total cost ?? US Dollar Riels

I don't remember exactly the cost

Amounts invested SO FAR and investment sources

45 Since the very beginning of your business, what is the amount invested for your business ??

WARNING !!

NO OPERATING COST (staff, energy,...). ONLY INVESTMENT (Initial investment + Replacement + Expansion)

All amounts in US Dollars

	BY OWNER or SHAREHOLDERS	BY OTHERS
Land, fences, access roads,...	<input type="text"/>	<input type="text"/>
Construction of office and/or other buildings	<input type="text"/>	<input type="text"/>
Connection to electricity grid	<input type="text"/>	<input type="text"/>
Distri Pipe (pipes, fittings and meter) :	<input type="text"/>	<input type="text"/>
Construction for water (water tanks, tower, treatment station, ..)	<input type="text"/>	<input type="text"/>
Water sources (pond, water and piping)	<input type="text"/>	<input type="text"/>
Equipment (pump, generators,...)	<input type="text"/>	<input type="text"/>
OTHER:	<input type="text"/>	<input type="text"/>
OTHER:	<input type="text"/>	<input type="text"/>
OTHER:	<input type="text"/>	<input type="text"/>

46 CAN WE AGREE THAT THE TOTAL INVESTMENT SO FAR IS... ??
(all amounts in US\$)

BY OWNER or SHAREHOLDERS	BY OTHERS
<input type="text"/>	<input type="text"/>

47 Do you have other businesses on the same land ??

Yes	No
-----	----

IF YES

Which one ??

<input type="text"/>
<input type="text"/>
<input type="text"/>

Licences & Water Concession

48 Do you have a licence to run your business ??

Yes	No
-----	----

IF YES: Where from ??
(one or several answers)

- MIME
- DIME
- District
- Commune
- OTHER

Duration and Validity ??

Do you think that your licence shall be renewed ??

- Yes, without problem
- I don't know
- OTHER

49 Do you have a contract (water concession) to run your business ??

Yes	No
-----	----

IF YES: With whom ??
(one or several answers)

- MIME
- DIME
- District
- Commune
- OTHER

Duration and Validity ??

Do you think that your contract shall be renewed ??

- Yes, without problem
- I don't know
- OTHER

Profitability & Satisfaction of the water investor(s)

50/51 In your opinion, what was the profit margin of your business in recent years ??
 (only one answer for 2007, only one answer for 2008)

- | | |
|--|--|
| <p>2008</p> <p><input type="checkbox"/> Very Big</p> <p><input type="checkbox"/> Big</p> <p><input type="checkbox"/> Average</p> <p><input type="checkbox"/> Small</p> <p><input type="checkbox"/> Very small</p> <p><input type="checkbox"/> No profit - No loss</p> <p><input type="checkbox"/> Loss</p> | <p>2007</p> <p><input type="checkbox"/> Very Big</p> <p><input type="checkbox"/> Big</p> <p><input type="checkbox"/> Average</p> <p><input type="checkbox"/> Small</p> <p><input type="checkbox"/> Very small</p> <p><input type="checkbox"/> No profit - No loss</p> <p><input type="checkbox"/> Loss</p> |
|--|--|

52 How do you calculate your PROFIT over 1 year ??
 (only one answer)

- I compare the money I receive with the money I spend over the year
- The profit is calculated by my accountant (balance sheet)
- I only have an estimation of my profit
- I don't know about my real profit

53 What are the GOOD points in your water business ??
 (pls indicate maximum THREE good points)

- I can be the owner of this business
- I don't have to spend too much time, si I can do other business as well
- I receive some money every month
- I have a good profit for a small investment
- People always need water, so this business is for ever
- It is an easy business - No very specific technical knowledge is required
- I can help the people in this area - They are happy with me
- OTHER

What is the MAIN good point ??

54 What are the BAD points in your water business ??
 (pls indicate maximum THREE bad points)

- The business is not easy - You must be/have a water specialist
- The money I receive every month is too small
- Big investment for a small profit
- Many problems with national/local authorities
- Many complaints from the clients
- Price of the water is too low
- Small profit (income - expenses)
- Poor people don't pay
- Big people don't pay
- Authority can remove me from this business very easily
- OTHER

What is the MAIN bad point ??

55 If you have to sell everything tomorrow, what is the money you will receive from other investor ??

Small	good	Big
-------	------	-----

IF SMALL Why?

- This business has small profit margin
- Everything is already very old
- Too many problems with this kind of business
- Not many people they want to do this business
- Problem with licence
- OTHER

If GOOD or BIG Why?

- This business has big profit margin
- Everything is already installed, in good conditions
- All problems have been solved now... business is easy
- Many people are interested to do this business
- Water is a business for ever
- OTHER

Business Expansion and Required Assistance

During the phone survey, you have confirmed your willingness to expand in 2009 your water business.

For this expansion, your FIRST priority was to increase the QUANTITY - QUALITY of the water you produce.

You said that you have the intention to invest US\$ _____ for this expansion in 2009.

You said that the new investment will be aimed at:

NEW distri piping	Treatment Station	Water Tower	Pond	Well
REPLACE piping	Good Meters	Water Quality Tools	OTHER	

You said that the money will be made available from:

Bank	Family	Friends	Own money (savings)	
------	--------	---------	---------------------	--

56 Do you want to modify some points ??

Yes	No, I confirm what I have said before
-----	---------------------------------------

57 INVESTMENT DETAILS:

			Amount to be invested
IF NEW PIPING	Total length ??	<input type="text"/> mL	<input type="text"/> US\$
IF REPLACE PIPING	Total length ??	<input type="text"/> mL	<input type="text"/> US\$
IF TREATMENT STATION	Capacity:	<input type="text"/> m3/hour	<input type="text"/> US\$
IF WATER TOWER	Capacity:	<input type="text"/> m3	<input type="text"/> US\$
IF NEW POND	Capacity:	<input type="text"/> m3	<input type="text"/> US\$
IF POND EXPANSION	Capacity:	<input type="text"/> m3	<input type="text"/> US\$
IF WELL	Borehole or dug well ??		<input type="text"/> US\$
IF EQUIPMENT:	What ?	<input type="text"/>	<input type="text"/> US\$
	What ?	<input type="text"/>	<input type="text"/> US\$
	What ?	<input type="text"/>	<input type="text"/> US\$
IF WATER QUALITY TOOLS	What ?	<input type="text"/>	<input type="text"/> US\$
	What ?	<input type="text"/>	<input type="text"/> US\$
IF OTHER:	What?	<input type="text"/>	<input type="text"/> US\$
	What?	<input type="text"/>	<input type="text"/> US\$
	What?	<input type="text"/>	<input type="text"/> US\$

58 What are the results you are expecting from this expansion?
(one or several answers)

- More volume of water produced over the year
- Better quality of the water
- Clients more satisfied with the water service
- More clients
- More profit (\$) over the year for me
- I will know exactly what I produce and what I sell
- OTHER

What is the MAIN result you are expecting ??
(only one answer)

Business Expansion and Required Assistance (cont.)

The Project is able to provide some assistance for this expansion:

59 Do you agree to pay something for this assistance ??

Yes	No
-----	----

 1,000 USD
 5,000 USD
IF YES What is the value of the assistance you agree to pay ?? more than 5,000
(only one answer) less than 1,000

60 What would be the assistance most needed ?
(up to **FIVE** answers)

Training:

- Technical training for water treatment process
- Technical training for water distribution
- Business management training (financial & accounting)
- Business management training (administration)

Coaching:

- General support during the expansion period (technical & management advices)

Financial:

- Credit
- Subsidy for construction....
- Subsidy for equipment....
- Water tower / Storage tank
- Treatment station
- Distri Pipes
- Water pumps
- Generator
- Good quality headmeter
- Good quality household meters

Institutional:

- Support in getting licences & concession contracts

Construction:

- Design for new construction (water tower, treatment station, distri piping,...)
- Supervision of the construction works

OTHER:

What would be the MOST NEEDED assistance ??
(Maximum **TWO** assistances)