

**The implications of a household sanitation subsidy scheme for future work in  
Antananarivo, Madagascar**

**Camila Garbutt  
September 2010**

**Abstract**

At the current rate, the world will not achieve the Millennium Development Goal of halving the number of those without access to improved sanitation. Supply driven approaches have in the past been favoured by time-limited donor-funded projects but have not enabled implementation at scale. In peri-urban Antananarivo (Madagascar) Water and Sanitation for the Urban Poor (WSUP) sold heavily subsidised latrines at three different prices depending on the households' socio-economic status. With 2092 latrines built, 65% of the target, WSUP plans to change its program: moving away from hardware subsidies towards a market-based self-sustaining system of improved sanitation provision within the same communities.

This research evaluated the impact of the initial project on the community, exploring issues such as transparency of allocation, the households' sense of ownership and dependency on subsidies. It looked at the implications of these findings on WSUP's future strategy and then assessed the feasibility of future financing options under a sanitation marketing approach. This was achieved through in-depth household interviews (both those who had and hadn't received a subsidy), key informant interviews, focus group discussions and observations.

The study found that open defecation is still practised, posing a great risk to public health in WSUP's project areas. A comparison between the socio-economic status and the amount of subsidy received showed limited targeting accuracy. Monthly expenditures on mobile phone credit and electricity give an indication of an ability to pay for latrines in small monthly instalments. An expectation of future assistance demonstrates the dependency on subsidies and combined with competing household priorities results in low demand for improved sanitation. Therefore the highest priority of WSUP's future strategy should be to invest in a community-led approach with two main objectives of eradicating open defecation and raising demand for improved latrines.

## Contents

Abstract	1
1. Introduction	2
1.1 Context	2
1.2 The WSUP project	2
2. Literature Review	4
2.1 Subsidising sanitation	4
2.1.1 Aspects of a sanitation programme that require funding	4
2.1.2 The public/private debate	5
2.1.3 Types of subsidies applicable to peri-urban onsite household sanitation	6
2.2 Previous studies of motivations and barriers to uptake of sanitation	7
3. Methodology	8
3.1 Purpose of research	8
3.2 Use of research	9
3.3 Time dimension	9
3.4 Data collection	9
3.5 Sampling strategy	10
4. Results and Discussion	11
4.1 Impact of subsidies programme	11
4.1.1 Allocation of subsidies	11
4.1.2 Household sense of ownership	13
4.1.3 Dependency on subsidies	14
4.1.4 Trust	15
4.2 Current sanitation situation	15
4.2.1 Information networks	15
4.2.2 Health information networks	16
4.2.3 Issues to be addressed and household motivations for sanitation marketing	17
4.3 Financing sanitation	18
4.3.1 Willingness and ability to pay	18
4.3.2 Facility of payment	20
5. Conclusions and Recommendations	20
Acknowledgements	22
References	23
Appendices	26

### **List of Tables**

Table 1:	Summary of the subsidies available for the 3 poorest household types
Table 2:	Household monthly expenditures and willingness to pay for a monthly instalment towards a latrine.

### **List of Figures**

Figure 1:	Map of Madagascar
Figure 2:	Comparison of subsidy allocation with socio-economic data collected
Figure 3:	Sampled household understanding of the different subsidies available.
Figure 4:	Unfinished type III latrines
Figure 5:	Sampled households' (both beneficiaries and non-beneficiaries) perception of which community based organisations are involved with sanitation.

### **Notation**

CLTS	Community Led Total Sanitation
WHO	World Health Organisation
WSUP	Water and Sanitation for the Urban Poor
WTP	Willingness to pay
UN	United Nations
UNICEF	United Nations Children's Fund

This thesis has been prepared in the format used for scientific papers appearing in the International Journal of Environmental Health Research. Additional information is available in the Appendix and the paper includes an extended literature review.

## 1. Introduction

The number of those lacking access to improved sanitation is predicted to rise from the 2008 figure of 2.6 billion to 2.7 billion in 2015 (UN, 2010a). The world will not achieve the Millennium Development Goal of halving the number of those without access to improved sanitation unless we can find a much more effective and sustainable provision approach.

Water and Sanitation for the Urban Poor (WSUP) is a not-for-profit organisation based upon a partnership between NGOs and the private sector\*. WSUP currently works in the urban centres of five developing countries and has projects planned for a further three†. In Madagascar, where only 15% of the urban population have access to improved sanitation (WHO/UNICEF, 2010), WSUP has supported projects to improve water and sanitation conditions in urban and peri-urban areas in the capital, Antananarivo.

### 1.1 Context

Recently Madagascar has been subject to political instability, and outbreaks of violence are not uncommon. This has had a harmful effect on livelihoods and affected the donor funding of many development projects.

Antananarivo is split into 21 communes of which the central area is managed by “Commune Urbaine d’Antananarivo” and the peri-urban regions are managed by the Fiftama. WSUP’s sanitation program has been implemented in four communes within the Fiftama. Each commune is composed of smaller regions (Fokontany), there are usually between five and twenty Fokontany per Commune. Each Commune is governed by a mayor (“maire”) and each Fokontany has a Fokontany office and democratically elected Chief.



Figure 1: Map of Madagascar

### 1.2 The WSUP project

A segmentation study (WaterAid, 2009) found that the households in WSUP’s project area could be categorised into five types. A list of criteria was given to the Chief of the Fokontany so they could decide how to allocate the construction of subsidised latrines

---

\* WSUP members include: WaterAid, Unilever, Halcrow, Cranfield University, United Nations Development Program, International Water Association, CARE, Borealis and Borouge, WWF and Thames Water.

† These countries are Bangladesh, India, Kenya, Mozambique and Madagascar. WSUP is also developing projects for implementation in Zambia, Mali and Ghana.

to the poorest three types of households. These criteria included the ratio of the household income to number of residents, ownership of certain assets (e.g. TV, radio), stated ability to pay for a new latrine and the state of their current latrine. Households were then asked if they wanted to take part and their contribution required is shown in Table 1.

Type of Subsidy	Latrine price to household		Cost to program (USD)	Pit provided	Concrete sanplat provided	Structure provided (~40 USD)
	(MGA†)	(USD)				
I	2000	0.9	61.9	N	Y	Y
II	4000	1.8	61	N	Y	Y
III	5000	2.3	17.5	N	Y	N

Type I = poorest †MGA = Malagasy Ariary (local currency)

Table 1: Summary of the subsidies available for the 3 poorest household types

To support the implementation of the project WSUP’s partner, WaterAid, supported local stakeholders to establish CCWASH (Communal Committee for Water, Sanitation and Hygiene), a water and sanitation committee at the Commune level, who had representatives from each of the Commune’s Fokontany. Sanitation clubs were set up in each Fokontany, to relay information from CCWASH and support local project implementation.

As is the nature of donor-funded projects there was a limit on the time available for the implementation of the project. With 2092 latrines built, WSUP have reached only 65% of their target, and are developing a contract for a no-cost extension with WaterAid to continue the work in the same communities. WSUP plans to change its approach moving away from hardware subsidies towards a more sustainable system of provision that can provide improved sanitation on a larger scale. Hardware subsidies have often been used in past programs to artificially raise demand for improved sanitation. Projects of this form are similar to the supply driven programs of the 1960s. The ability of community members to decide to apply to the scheme means that there is an element of demand leading the implementation of the program. However, the design of the sanitation technology was decided by the project providers and with the price of the latrine as low as one dollar, this means the program was largely supply-driven.

A variety of approaches to sanitation provision and subsidy options are described and critiqued in the literature review. The barriers and motivations to adoption of improved sanitation are explored and illustrated with case studies of previous work. This research will contribute to an understanding of the impact of a sanitation subsidy scheme on a community, including both beneficiaries and non-beneficiaries of the scheme, which is an underexplored area of research. It then found the implications for future work in the same communities, where heavy subsidies will not be available. Specific objectives included measurements of the accuracy of allocation of targeting, the sense of ownership of subsidised latrines and the dependency on subsidies. Information

networks within the communities and household motivations for investing in improved sanitation were assessed to make recommendations for future sanitation promotion. An evaluation of willingness and ability to pay by a variety of methods was used to assess the feasibility of future financing options.

## **2. Literature Review**

### **2.1 Subsidising sanitation**

#### **2.1.1 Aspects of a sanitation programme that require funding**

The Water Supply and Sanitation Collaborative Council (WSSCC, 2009) state that the funding required for a sanitation programme can be split up into five categories and below they are applied to the WSUP project.

1. Creating an enabling environment by capacity building and improving information networks between all stakeholders.
2. Activities to promote hygiene behavioural change.
3. Sanitation marketing which includes activities to create demand such as advertisements and community-based activities, carrying out market assessments and intervening to support the development and supply chain of appropriate products.
4. Public infrastructure and services, both capital and operational. For example, the construction of latrines in local schools.
5. Capital and operational private infrastructure and service costs of household sanitation hardware (e.g. material costs, labour costs for construction and pit-emptying).

Investments in software such as activities to promote hygiene behavioural change and community mobilisation do not provide easily measurable results compared to hardware subsidies which are favoured by donors. However there has been a shift, with research demonstrating that promotion of hand-washing is one of the most cost effective health interventions (World Bank, 2000; Borghi et al., 2002; Fisher, 2005) and Objectively Verifiable Indicators for software activities as part of the Logical Framework Approach are regularly used by international agencies. Therefore the international community has realised the importance of a holistic approach to reducing diarrhoeal disease transmission, as opposed to hygiene promotion or improved sanitation provision alone. As part of a six country review of sanitation subsidies Tremolet et al. (2010) found that Mozambique's urban Improved Latrine Programme suffered a rapid decrease in uptake when software support was withdrawn. Furthermore, the heavy investment of the Total Sanitation Campaign in Maharashtra (India) and the DISHARI project in Bangladesh in software to support targeted subsidies resulted in some of the highest numbers of latrines constructed per 1000USD of public funding invested in the project (Tremolet et al., 2010). This agrees with Mjoli's (2010) statement that after

many years of supply driven programs focused on hardware subsidies, it wasn't until the implementation of a Community Led Total Sanitation (CLTS) approach that significant gains in access to sanitation were achieved. However, the previous supply driven programs may have at least raised awareness in communities and therefore contributed to the success of the CLTS approach.

### **2.1.2 The public/private debate**

There are a variety of opinions expressed by authors with regard to the amount the public should commit to funding household sanitation (Cairncross, 2003; Jenkins and Sugden, 2006; WSSCC 2009). Strong moral arguments include a responsibility to promote equal opportunities and to empower the most vulnerable in society through improvements in their standard of living. Richer households generally have easier access to sewerage connections whereas the poorest often live far from the networked areas. Furthermore, an investment in household sanitation has a significant impact on public health. This has been demonstrated by the 16-fold reduction in mortality caused by gastrointestinal diseases as access to sanitation was improved as part of Thailand's Rural Environmental Sanitation program (Luong et al., 2000). Therefore there is a financial argument as these health benefits decrease public health costs and increase economic productivity (Jenkins and Sugden, 2006).

The benefits of the investments made in the first four categories are mostly public so it is therefore justifiable to use national public funds, for example from government or NGOs, or WSUP in this case. However, WSUP is internationally funded. This year, the United Nations General Assembly (UN, 2010b) voted to adopt a resolution which recognises access to clean water and sanitation as a human right, thereby obliging the international community to support sanitation programs such as WSUP's. Furthermore, the international community has signed up to supporting the Millennium Development Goals, which include increasing access to improved sanitation. Furthermore, Lenton et al. (2005) have documented the positive impact of improved sanitation on many of the other goals. However a supplier advertising its own product would come under the third category (sanitation marketing) and would usually use private funds. The WSSCC (2009) states that using the logic that investments bringing public benefits can use public funds, investments bringing private benefits, such as the convenience of household latrines, should have some private funding. Cairncross (2003) goes as far as saying that latrines are consumer items that must be sold privately. However, as well as improvements in public health, the environmental benefits such as reduced contamination of water sources and damage to ecosystems (Jenkins and Sugden, 2006) mean that an investment in a household's sanitation has benefits for all society. These benefits to society tend not to be considered by an individual who is therefore likely to want to invest a lower amount in sanitation than its value to society. If the amount an individual is willing to invest is less than the cost of available sanitation technologies then subsidies can be used to close the gap. This gap could be closed by providing a hardware subsidy

for the cost of the latrine but could also be decreased by funding activities, for example education campaigns, that increase the individual's willingness to pay.

### **2.1.3 Types of subsidies applicable to peri-urban onsite household sanitation**

The different forms of subsidies applicable to this situation of peri-urban onsite sanitation are described and critiqued below.

The WSUP program used **infrastructure subsidies** to finance most of the construction of pit latrines which successfully overcame the significant cost barrier for the household. As in the WSUP case, donor projects are usually time-limited and the focus tends to be on increasing coverage of sanitation. However Mjoli (2010) found that this approach can be unsustainable if hygiene promotion and community mobilisation are not considered. Subsidies of this form can distort the supply chain, as they reduce incentives to cut costs and can cause the overdesign of latrines increasing long-term maintenance costs and pricing out those in the community who did not receive a support. Although Jenkins and Sugden (2006) state that a household may become dependent on future subsidies for the replacement of a subsidized latrine, this expectation could also be expanded to the other members of the community who did not take part in the programme and prevent decisions to improve their sanitation. Furthermore, when the project ends support structures such as sanitation clubs and easy access to trained masons tend to dissolve. The impact of infrastructure subsidies on future sanitation programs in the community has received very little research.

**Output based subsidies** applicable to the WSUP programme could be payments to community based organisations when the community achieves open defecation free status. These payments could then be used to build improved sanitation for the local school, or other projects that help to develop the community. It was effectively used in Maharashtra's Total Sanitation Campaign in India. Tremolet et al. (2010) reported a rapid increase in coverage and a high investment of private funds per \$1000 of public funds. However the sustainability is uncertain as there were some cases of open defecation in communities after they had achieved the open defecation free status. Furthermore, communities may have insufficient funds for promotional activities to achieve the status and could therefore require financial support from WSUP.

**Subsidies to small-scale independent providers** can be effective in subsidising start up costs, for example materials for concrete sanplat production, but can encourage "slack thinking" (Cairncross, 2003) which could lead to higher long-term production costs, higher prices and therefore the possibility of the limited access for the poorest. This could be overcome by contractual agreements between WSUP and the businesses to provide services or products at pre-determined quality standards and target prices.

**Subsidised credit** decreases the cost of a loan for households to invest in sanitation through providing the guarantee and funding the interest on micro-finance loans to



households. Combined with sufficient access to market information the household is empowered to decide for themselves between the different sanitation options whilst avoiding the distortion of the supply market. Although the method of payment for a latrine is easier for the household, this form of subsidy does not decrease the final cost of the latrine, and the full price of the loan can be more than the cost of the latrine if the interest rates are not fully subsidised. An easier method of payment can not be assumed to increase demand for sanitation and therefore software promotional activities must also receive funding. Furthermore the size of payments by the household to the micro-finance agency must be small and flexible enough that the poorest are not excluded. The Three Cities Sanitation Project that provided subsidised credit in urban Vietnam successfully mobilised household investment to the extent that 20 dollars of private funding was spent for every 1 dollar provided by the programme and has been proven to be financially sustainable as funds have revolved many times (Tremolet et al., 2010).

## **2.2 Previous studies of motivations and barriers to uptake of sanitation**

It is crucial to explore and determine the barriers to households investing in sanitation so that funds of sanitation programmes can be accurately targeted. Addressing the barriers alone will have a limited effect on increasing demand and an analysis and understanding of household motivations to improve sanitation is required for effective promotion and marketing.

The main argument for improving sanitation is the associated significant improvements in health, but many authors have found that reducing disease is not the main driver for households to improve their sanitation facilities (Fuertes et al., 2008; Jenkins and Scott, 2007; Jenkins and Curtis, 2005). Sanitation promoters have often assumed health benefits to be the largest motivation which can result in unconvincing promotion campaigns. The CLTS approach, implemented widely across South Asia, has successfully used the sense of disgust to change sanitation practices. Its effectiveness could partly be explained by Curtis' (2007) exploration into the relationship between disgust and human health which found that humans are hardwired to take actions to prevent disease as a reaction to this feeling. Commonly associated with disgust, Cairncross (2003) found that the prevention of flies and bad smells were a significant motivation for adoption of improved sanitation.

Jenkins and Curtis' (2005) study of drivers for households to install a latrine in rural Benin found that these drives came under three categories: prestige-related, well-being and situational. The prestige-related drive agrees with Cairncross' (2003) finding that households stated that a benefit of an improved latrine was to avoid embarrassment with visitors. An association with an aspirational lifestyle could be achieved by ensuring the richer members of the community have improved sanitation and the technologies are not only associated with the poor, which can sometimes result from targeted latrine provision programs. Cairncross (2003) also found that previous use of an improved

latrine was an effective motivator. This could be utilised in WSUP's case by constructing latrines in schools and other public institutions. Well-being motivators include health benefits which, as discussed, have a limited effect on decision making, but it also includes convenience which agrees with Allan's (1997) study of improved sanitation demand in Accra (Ghana). Situational drivers include increased rental income which can be harmful for the poorest in society whose rent may increase when sanitation facilities are improved (Jenkins and Curtis, 2005).

The affordability of available sanitation technologies is often assumed to be the greatest barrier and, as in the WSUP case, has led to hardware subsidies to reduce the price to the household. Many studies agree with the importance of both the initial and maintenance costs (Cairncross, 2003; Allan, 1997) but these studies have found many other barriers usually overlooked by program providers. In "The Mystery of Capital", Hernando de Soto (2004) writes that the uncertainty of land tenure prevents households from making long-term investments in their property which applies to improved sanitation investments. As previously discussed, landlords can benefit from improved sanitation by increasing rent but they can also act as a barrier against tenants achieving access (Allan 1997). Tenants often feel that they do not have the power to make decisions (Rheingans et al., 2009), and when combined with a lack of awareness of landlords of the importance of improved sanitation, can entirely prevent a household from upgrading.

### **3. Methodology**

The highly complex nature of social research can be simplified by dividing the research process into four dimensions (Neuman, 2000). These dimensions are explored and applied to the context of this thesis research in the following four sections.

#### **3.1 Purpose of research**

Neuman divides the different purposes of research into exploratory, descriptive and explanatory. The purpose of this study is to provide an assessment of the impact of the sanitation subsidy scheme on the community, evaluate future financing options and provide recommendations for improving sanitation conditions in the same communities. There has been little research into this area and the limited knowledge of the importance of the different areas within this topic, means that it initially fell under Neuman's 'exploration' research. However as the research progressed it was able to provide a description, followed by an explanation. Robson (2002) proposes a divide in data collection of fixed or flexible designs. The exploratory nature of this research required a flexible approach. Data was analysed throughout the fieldwork period, therefore allowing a continuous adaptation of the theory.

### **3.2 Use of research**

This research aims to advance general academic knowledge of the impact of sanitation subsidy schemes but is also designed to provide context-specific information which will be useful for WSUP's future strategy. Therefore, this project is highly relevant to both 'basic' and 'applied' uses of research.

### **3.3 Time dimension**

Due to the fieldwork period of six weeks the research is limited in recording the development of the situation over time and therefore is categorised as 'cross-sectional', as opposed to 'longitudinal' research.

### **3.4 Data collection**

Neuman divides the possible data collection techniques into qualitative and quantitative. In development research, quantitative methods have been more widely used due to the pressure on development agencies to meet statistical targets such as the Millennium Development Goals (Mayoux, 2006). Quantitative research has its origin in the natural sciences and is typically aimed at obtaining an exact (usually numerical) measurement of a theory which can then be rolled out on a large scale. Qualitative methods originate from the social sciences and can provide a holistic appreciation of many factors that influence a situation. This detail limits the possible scale of research when there is a restricted time period for fieldwork. Quantitative data was required for parts of this research, for example willingness to pay or socio-economic information. However a holistic understanding was the main focus of the research and therefore 40 in-depth semi-structured household interviews were carried out alongside key informant interviews. These were chosen over questionnaires as the latter do not provide the amount of depth as that given in a conversation.

The descriptive nature of qualitative data collection under a flexible design requires particular effort to adopt a scientific attitude (Robson, 2002). This can be achieved by Robson's scientific principles of systematic, sceptical and ethical research. Techniques such as a well defined sampling strategy, a checklist to record observations (see Appendix A), an ability to critique the results as the research develops and triangulation of results by a variety of data collection methods worked to uphold the systematic and sceptical principles. Where applicable, triangulation was achieved by comparing data given in household and key informant interviews, focus group discussions, secondary data (e.g. previous reports), observations of latrines and observational walks to assess general water, sanitation (including evidence of open defecation) and drainage conditions as well as the characteristics of the different Fokontany within WSUP's project area.

Ethical considerations such as asking for informed consent, ensuring confidentiality, and care taken to avoid inappropriate behaviour and language meant the research was undertaken in a sensitive manner. To establish trust and make the participants feel more open to discussion, project staff or other community members were not present in the interviews and it was emphasised that their opinion and not their knowledge was being studied. Key informant interviews and a pre-test provided an initial insight into Malagasy culture. They were used to develop questions, to find out locally appropriate terms and to explore subject areas for the semi-structured interview guide (provided in Appendix A).

Both translator and researcher were female which avoided uncomfortable gender issues when interviewing women alone in their households, and all male participants were perceived to be open to discussion. Furthermore, an awareness of the researcher's own culture, where the importance of a toilet is taken for granted, was crucial in maintaining a non-judgemental attitude.

### **3.5 Sampling strategy**

The research took place over two Communes, composed of seventeen and five Fokontany respectively and ten were chosen at random. Four household interviews were conducted in each Fokontany, two which had a received a subsidised latrine and two which either hadn't or their subsidised latrine was unusable. Within these categories the households were chosen at random. Triangulation of the collected data was pursued to cross-check information to ensure reliability. Therefore key informant interviews were conducted with the Fokontany chief, CCWASH members and other community leaders in each Fokontany.

Rheingans et al. (2009) found that in the vast majority of cases the women of the households within WSUP's Antananarivo project area had the responsibility for cleaning and general maintenance of the latrine as well as responsibility for most domestic tasks. However, it was men who tended to make the financial decisions within the household, so the final decision to purchase a concrete slab would be left to them. Therefore both genders were represented in the sample with household interviewees being 68% female and 32% male.

## 4. Results and Discussion

Due to the qualitative nature of much of the results, the results are presented alongside a discussion to avoid repetition and logically guide the reader through key issues.

### 4.1 Impact of subsidies programme

#### 4.1.1 Allocation of subsidies

Subsidies had been allocated by using a checklist that contained: property of family (e.g. television and radio), the ratio of the household income to number of residents, stated ability to pay for a new latrine and the state of their current latrine. In order to assess the allocation of subsidies, the following socio-economic data was gathered by the researcher on each household interviewed:

- presence of television or radio
- stated ability to pay for a new latrine
- household monthly expenditure on mobile phone credit
- household monthly expenditure on electricity

Each of the above categories were weighted equally and the average of a household's score (see appendix B for calculations) was used to categorise the households into five socio-economic groups. The poorest group are represented in the lightest blue in Figure 2 which shows the comparison between the socio-economic status measured by the research and the type of subsidy allocated.

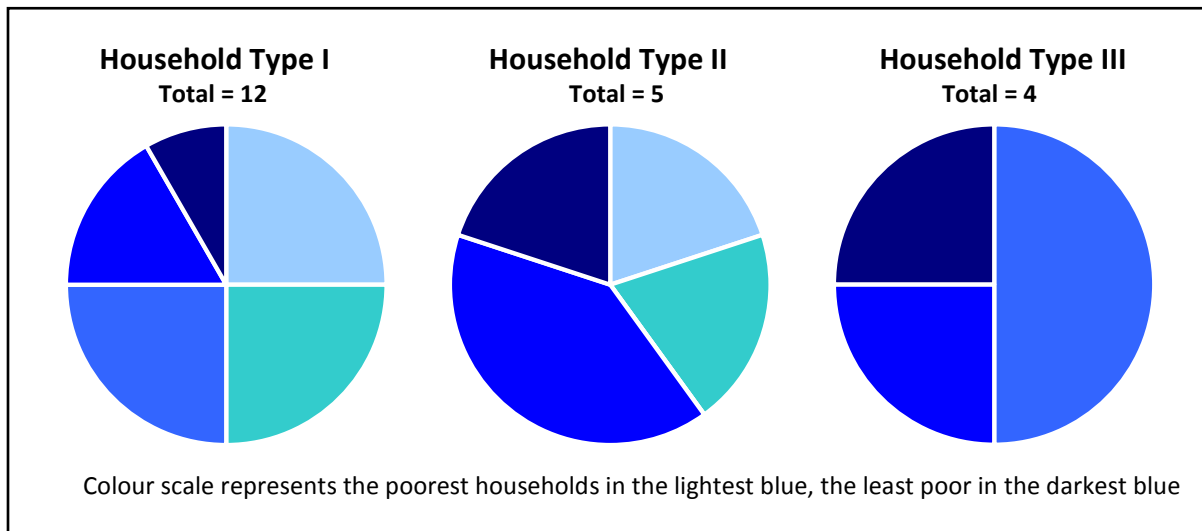


Figure 2: Comparison of subsidy allocation with socio-economic data collected

Although the sample size for this quantitative study is small, Figure 2 shows an indication of a correlation that households of a higher type tend to have a higher socio-economic status measured in this research. However, it must be noted that even the

richest categorised in this research are still very poor and Figure 2 shows that there is socio-economic heterogeneity within each type. This is further compounded by a lack of job security and highly fluctuating income levels reported by all household types when asked their willingness to pay for an improved latrine.

Demographic and socio-economic information of each household interview code are provided in Appendix C.

*HH18: "Sometimes we have work but sometimes not, if we do 45,000Ar"*

*HH41: "No idea but if I find some work to do I can find 20000Ar but we don't get that often."*

*HH43: "We can't afford any of that because we do not have a fixed salary"*

From general observations and informal talks with community members it became apparent that the socio-economic status of each household is dependent on a complex range of income generating activities and social networks which can not be understood by a simple checklist. As shown in Table 1, there was a large decrease in what was provided for the type III households compared to the type I and II. This research has found that the large decrease has not been justified by a large increase in socio-economic status of those households categorised as type III.

As there was a limit on the number of latrines the Chief could allocate, not all members of the Fokontany benefitted from the scheme. This was shown by general observations and key informant interviews. Furthermore, the average of the socio-economic status of the sampled households who received a subsidy is approximately equal to that of the sampled households who did benefit from the program.

Many community leaders reported feelings of discontent from the population, and there were some cases of arguments over the allocation of the different types of subsidies.

The number in brackets corresponds to each Fokontany, Fokontany names are not provided to ensure anonymity.

*Chief of Fokontany (10<sup>‡</sup>): "The main problem was classification of the population in three types because in general every people here have the same level of life ... some people asked why there are some people who got the subsidy type II and some other were type III and it brought such confusion into the population and us."*

---

<sup>‡</sup> The number in brackets corresponds to each Fokontany, Fokontany names are not provided to ensure confidentiality.

Chief of Fokontany (8): “People were confused when they saw they were classed as different types even when they live in the same area and were confused about why they didn’t have the same amount to pay.”

Figure 3 and the quotes above demonstrate the lack of understanding of the households interviewed about whether households had to pay different amounts for the latrines and for what reason. Therefore the transparency of the allocation of subsidies was limited.

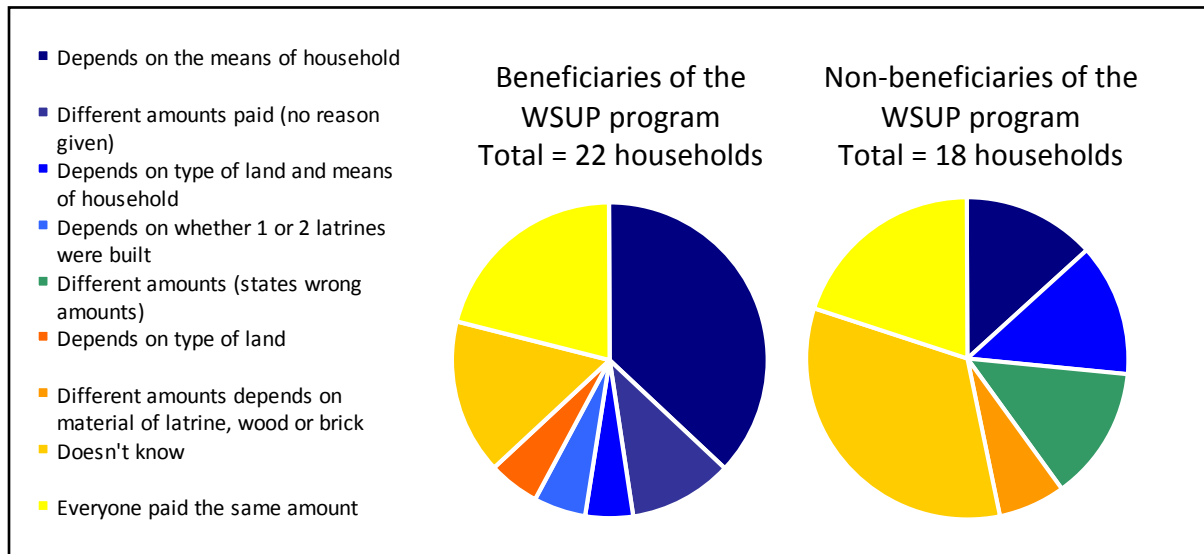


Figure 3: Sampled household understanding of the different subsidies available

#### 4.1.2 Household sense of ownership

A side-effect of heavily subsidising latrines is that it can cause beneficiaries to not value its worth which can result in disuse, neglect of required maintenance and latrines will eventually fall into disrepair (WHO, 2010). Therefore the sense of ownership felt by the beneficiaries an important factor to research the sustainability of the WSUP program. However, of 19 responses from those who had received a subsidised latrine, 89% had an idea of what they would do when the latrine filled up (mostly digging a new hole and moving the slab) and just 11% did not know. This planning for the future shows some sense of ownership. This was confirmed by a triangulation with an observational assessment of the household’s latrine as 68% of the 22 program-built latrines in use were found to be moderately clean or very clean. Although the remaining 32% were classed as dirty, none were unusable.

The type III households had to dig the pit and build the superstructure themselves, and only received a subsidised concrete sanplat and “poutrelles” (concrete supports) and help with their installation. Of the 6 type III households assessed, 4 were unfinished and unusable. A limited sense of ownership, due to the cheap price of the sanplat and

supports and a high amount of assistance for their installation, could have prevented some type III households from finishing their latrines. This agrees with Jenkins and Sugden (2006) statement that subsidies and high levels of assistance can cause households to believe that building a latrine is not their own responsibility. However, the poor communication and lack of transparency of decisions to allocate the different types of subsidy could have caused confusion over whether type III households were to receive future help therefore delaying decisions to finish the construction.



Figure 4: Unfinished type III latrines

#### 4.1.3 Dependency on subsidies

Out of 30 responses 47% thought that the program was continuing or were waiting help in the future and a further 13% were unsure about the status of the program.

*HH13 (subsidy): "When I saw that every latrine had been fully built I thought that maybe the program had finished."*

*HH39 (no subsidy): "People have told me that it's not finished and I have to wait."*

The perception of possible help in the future, combined with the low household priority of sanitation in Antananarivo (Rheingans et al., 2009) prevents households from taking the initiative to save for their own latrine. The influence of the presence of the researcher is shown in a response to this section of the interview, when asked if the program is going to continue HH24 said *"I don't know but as you two are here I think it is going to restart."* Care was taken to provide information about the current state of the



program, but this demonstrates how community members can be very sensitive to the presence of outsiders in their Fokontany.

#### **4.1.4 Trust**

Trust that the program would be realised was a key issue that prevented many households applying and paying their subsidised amount. Although the established local structure was effectively used to implement the program, demand suffered because of previous schemes promoted through the same structure were not realised. The impact of previous projects demonstrates the high influence WSUP's initial program will have on the community members' decision to take part in any future scheme.

*Chief of Fokontany (7): "At the beginning of the program not many people applied to it because they didn't think it would really happen... If we tell these people that they have to pay 2000Ar per month they will think that they will get the same latrine as during the program, and it would be difficult for us to explain that they are just getting the sanplat"*

*CCWASH member (10): "just a few people did apply to it is that they didn't think that it would really happen"*

*Chief of Fokontany (6): "It was a very good project but the problem was that before there were projects that were promised to people but didn't happen and people thought that it wasn't going to happen as well. So at first not many people applied but then afterwards a lot of people asked at the Fokontany Office."*

## **4.2 Current sanitation situation**

### **4.2.1 Information networks**

Across the ten Fokontany of the research area there was a great variety of available infrastructure due to the highly rural or urban nature of the communities. Of the most remote of the Fokontany, despite having a small school and a very small shop selling not much more than soft drinks and a couple of baguettes, it had no public transport connection to the capital. The nearest urban centre was about two hours walk, half of it along a pot-holed dirt track. Even within the urban communities the poorest were often isolated as they showed limited knowledge about the local microfinance agency (OTIV), Fokontany activities and shops that sold materials required for latrines.

The research found that there was a variety of leadership and social structures between the different Fokontany, even within the same Commune. However what they all shared in common was a Fokontany office with a male Chief and a varying number of staff, and some form of social committee. The social committee also had a variety of roles within the community, household understanding of their role ranged from "keep the peace" and "represent the Fokontany at funerals" to "check if the areas are dirty"

and “do sensitisations”. As stated earlier, a sanitation committee had been set up in each Fokontany to oversee the local implementation of WSUP’s program. However, these have not had a lasting impact on the communities as 19 households said there wasn’t a sanitation club and a further 11 were not sure.

The perception of who is involved with sanitation varied not only between the different Fokontany but also between the households within them. Figure 5 shows that the community based organisations most perceived to be associated with sanitation are the Fokontany Chief and staff, the social committee and the “Quartier Mobil” who is responsible for security.

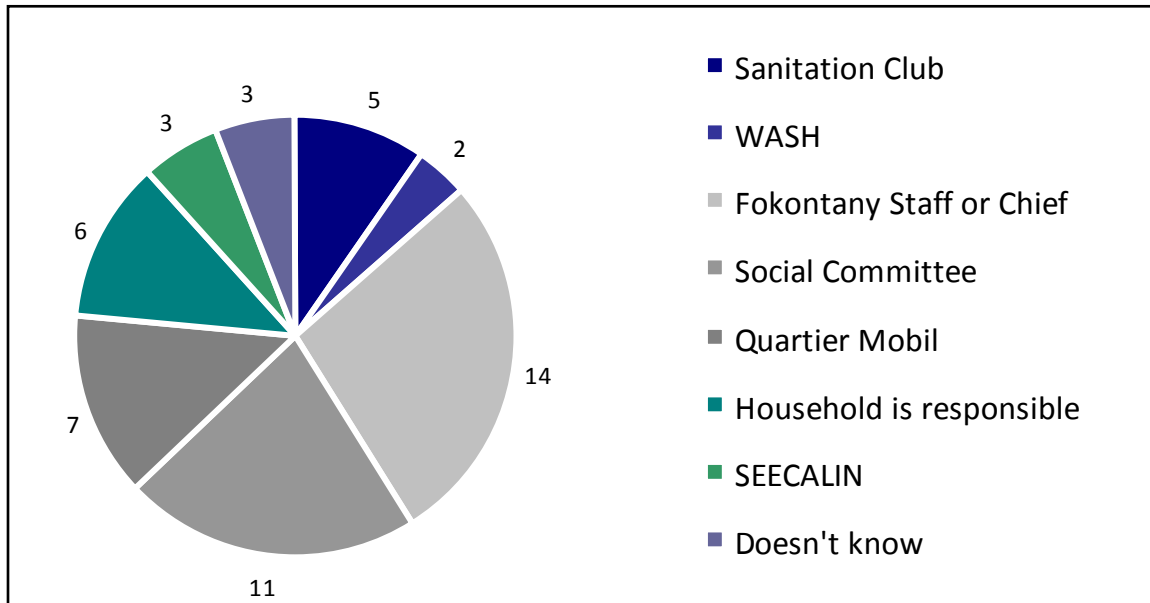


Figure 5: Sampled households’ (both beneficiaries and non-beneficiaries) perception of which community based organisations are involved with sanitation.

#### 4.2.2 Health information networks

A variety of sources were mentioned by households as where they obtained their health information from and how they would prefer to learn about ways to “keep clean and stay healthy”.

- Household visits were most often cited as the preferred option, but as many heads of households work far from the Fokontany during the daylight hours, it is important to time these visits well. Most women said that they are normally around the house in the afternoon, and men said that the best time was on Sundays after church.
- Meetings at the Fokontany office were often mentioned but some households stated that this wasn’t a preferred method because some people don’t take discussions seriously and disrupt the meeting.
- Only 5 of the 40 households interviewed had a television and this was not mentioned as a preferred way to receive health information.

- 33 households had a radio and it was often cited as a source of health information. However, the literature has shown that although mass-media broadcasts can provide information to a large section of society it is expensive and the most effective hygiene behavioural change programs use an integrated approach including community-based promotion (Borghetti et al., 2002; WSP, 2002; Waterkeyn and Cairncross, 2005).
- A high level of illiteracy in some areas, shows that although posters can be easily made, they will have a limited effect on changing sanitation practices.

There was no distinct source that was proven to be the most effective for knowledge transfer as there was no strong correlation between where participants learned their health information and their knowledge of how diarrhoea is transmitted.

#### **4.2.3 Issues to be addressed and household motivations for sanitation marketing**

- Of the 40 households, 70% reported open defecation being practised in the community when asked the question “where do people in the community go to defecate?”. This poses a high risk to public health in WSUP’s project areas (UN, 2010a). Furthermore, no tippy tap or other hand-washing facilities were found near to the latrine of any of the 40 houses visited and only 3 households mentioned hand-washing when asked how to prevent the transmittance of diarrhoea.
- Of all the households interviewed, their latrine was shared between an average of 2.8 households, which means that decisions to make improvements are usually delayed as financial, labour and maintenance agreements are more complex compared to households who don’t share a latrine. Household and key informant interviews showed that many people rent their house, and there were some cases of insecure land tenure where houses were at risk of being demolished.

*HH39: “I rent my house and we are many people who share the latrine so I didn't have the power to make the decision to apply.”*

Furthermore, it was suggested in a focus group discussion with just landlords that installing an improved latrine could allow an increase rent. A focus group discussion with just tenants showed that uncertainties over land ownership and the power to decide to build an improved latrine were significant barriers. However, the cost of construction to the landlord was thought to be more likely to prevent tenants from getting an improved latrine.

- The quotes below demonstrate a cognitive connection between home improvement and latrine improvement. This is in agreement with Jenkins and

Curtis' (2005) finding in Benin that latrines make people feel "good" and "complete" in their home.

*HH9: "We wanted one when we finished building this house and at the same time heard about the program."*

*HH26: "We planned to build an improved latrine before the program, and also to build a shower."*

- When asked about recent changes in hygiene practices, two of the program beneficiaries stated that now their children felt safe to use the latrine.

*HH33: "We all use it because the concrete latrine is safe so we don't need to worry about the children falling in."*

- Some interviewees did not have an understanding of the danger of groundwater contamination where pit latrines are built in areas with a high water table.

*HH41: "The materials you got depended on the area where you live. If you live in the field you had wood because there is water underneath. So the pit is already filled up with some water and it will fill up quickly. So you have to have a wood structure instead of brick because it is movable."*

### **4.3 Financing sanitation**

#### **4.3.1 Willingness and ability to pay**

A discrepancy in the triangulation of information given by the Fokontany Chiefs and households, leaves some uncertainty over the ability and willingness to pay (WTP) for improved sanitation. When discussing ideas with the Chiefs about how to support a system for households to invest in their own latrines without any hardware subsidies, many Chiefs were very negative about its feasibility for the poorer members of the Fokontany, often saying that they could not afford anything.

*Chief of Fokontany (7): "now there is a crisis so it is difficult for people to afford the latrine." Researcher suggests sharing payment with other households over several months. "Just a few people can afford to do that." Do you have any ideas for ways we could do this? "The project must care first about the poorest, and for them it is not possible"*

*Chief of Fokontany (10): "People here are just able to find 3,000 MGA per day, but all of that money goes to the food first, so I think that when they would know the cost of the sanplat, they wouldn't even try to save for it."*

However, it is important to consider the potential bias in these statements. The Fokontany Chief is democratically elected by the Fokontany population. Popularity could be gained by overseeing a new project as the community could perceive the Chief as being responsible for bringing it to the Fokontany. Therefore, their statements of ability to pay could be an underestimate, to try and get more financial assistance for the community members.

The statements that poorer members of the Fokontany are unable to pay anything do not agree with the WTP of household interviewees, which was estimated using the Contingent Valuation method (Samson et al., 2004). Amongst all households the WTP towards an improved latrine is averaged at 21,788MGA (approximately 10USD), the median is 15,000MGA (approximately the local price of a concrete sanplat and supports) and there is a high range of all the options given 0-45,000MGA. Although care was taken to hold interviews in private, bias must be taken into account as the presence of the researcher and the topic of the interview prior to the Contingent Valuation part, was largely based on sanitation. Therefore there is the possibility of an overestimate of a WTP, so as not to lose face in front of a foreigner.

To triangulate this further, monthly household expenditures on mobile phone credit and electricity were collected to give an indication of each household's disposable income, and therefore an ability to pay (Table 2). When asked to rank the importance of an improved latrine, electricity and a mobile phone, of the 33 replies, 76% stated that the improved latrine was the most important. However, this is subject to the same bias as before and in comparison to the stated ability to pay for a latrine, the expenditures are much lower. Furthermore key informant interviews demonstrated the scarcity of money, which was confirmed further by the household semi structured interviews when asked if they had ever saved for something expensive.

*CCWASH member (10): "a lot of people didn't apply for it because they couldn't afford the amount to pay"*

*HH16: "Usually we can not save because our salary is just enough for our everyday life. As we grow some crops, if they grow well we can sell them and could get enough money to sell."*

*HH22: "We have never wanted to buy something expensive ... I have never saved or had to pay for something little by little."*

Combining the reported scarcity of money, the potential for bias in the household's statements of WTP, the small sample size for this quantitative study and the willingness to pay result being much lower than current expenditures on electricity and mobile phone credit justifies the need to expect that the actual willingness to pay is lower than the stated average.

	Household monthly expenditure	
	MGA	USD
Credit for mobile phone	3813	1.8
Electricity	4763	2.2
Willingness to pay for improved latrine	21788	10

Table 2: Household monthly expenditures and willingness to pay for a monthly instalment towards a latrine.

### 4.3.2 Facility of payment

When asked where interviewees would like to pay the installments for an improved latrine 59% of households preferred to pay at Fokontany and 35% at a local microfinance agency called OTIV. As stated in the previous section many households stated that they did not have the habit of saving as any money earned was spent on their daily requirements. However, with a significant proportion of households spending small amounts of money on non-essential items, this demonstrates a small disposal income that could fund household payments for improved sanitation if it was considered a daily requirement. Any money saved at home was often spent and key informant interviews suggested that there would have to be some way of enforcing households to make their regular payments.

*HH30: “We have saved, but often we spend this money because sometimes my husband can not find a job so we spend all of it on food.”*

*HH37: “I would prefer to pay it at the Fokontany, because if we were to save it at home the money would be spent.”*

*Chief of Fokontany (8): “It depends on each household but I think it is better to give a deadline so that people will have to afford to pay, and if they can not they will pay what they can.”*

Key informant interviews have demonstrated that culturally it is a negative reflection on a person to have a loan. Many interviewees demonstrated significant apprehension about having a loan with OTIV as they were worried about the regulations. Only one reported to having ever had a loan and that was in 1972. However most respondents rent their house and key informant interviews found that renting is common throughout the capital and not an uncomfortable issue.

## 5. Conclusions and Recommendations

A number of motivations other than health benefits were found in this study. These included the cognitive connection to an improved home and cleaner lifestyle and the increased safety of children to use the latrine. Barriers other than cost included the lack of power to make the decision as the household's current latrine was shared or they rented their house. Also cases of insecurity of land tenure could prevent households from making long-term investments.

*Recommendation: Promotion for improved sanitation should market these motivations and capacity building of local community based organisations to support community members who feel that other households or landlords are preventing them from upgrading. Promotion of the ability of the sanplat and superstructure to be moved could persuade households with uncertain land tenure that they would keep most of their investment if they had to leave their current house.*

General observations found that the WSUP project covers both rural, peri-urban and urban areas with a high variance of local infrastructure. Subsidies to small-scale independent providers will have a limited effect on improved sanitation coverage as the remoteness of many of the Fokontany gives little sustainable incentives for latrine providers to set up sales outlets in these areas. However, people in these communities often commute long distances to work in the city, where many of the service providers are currently based.

*Recommendation: To promote sanitation providers give current market information to the Chief of each Fokontany so they can pass it on to households.*

The WSUP program used existing structures such as the Fokontany Chief and staff for the implementation of the project. However, they also set up sanitation clubs without an understanding of the varying roles of other community based organisations between the different Fokontany. For example the social committee often has the responsibility to do health sensitisations. As a result, very few sanitation clubs remain.

*Recommendation: Capacity building of the existing structure, such as the social committee and the Fokontany chief, to support a community-driven approach.*

The range of income generating activities and complex social arrangements means socio-economic status is difficult to measure. Monthly expenditures on mobile phone credit and electricity give an indication of an ability to pay for latrines in small monthly instalments, but fluctuations in income levels must also be considered.

*Recommendation: Avoid large jumps in provision between the different levels of poverty. Future systems should allow small enough payments, which are agreed with each household individually, so that no household is excluded.*

The average of the willingness to pay of households is enough to pay for a concrete sanplat and supports at the current market price after one month of saving, but not enough for a full improved latrine. However a discrepancy in the triangulation of this data, and the scope for bias means that this is likely to be an overestimate. Furthermore, there was a high range in stated willingness to pay and the sample size was small.

*Recommendation: Further research into the willingness to pay is required to validate this result. Sanitation promotion is needed to raise the willingness to pay.*

Households often stated that they were not used to saving, none had any recent experience of having a loan and there was limited knowledge of the local microfinance agency. Most interviewees would prefer to pay at the Fokontany office,

*Recommendation: Even if a microfinance agency is used, saving accounts or loans should be organised through the Fokontany.*

Local culture dictates that it is a negative reflection on a person to have a loan but many people rent their house and the idea of renting is not as culturally unacceptable.

*Recommendation: WSUP should consider a payment system promoted as renting an improved latrine until the full cost of construction is covered. This could be included in household rent but requires the cooperation of landlords. Promotional activities should target all of the community, not just the poorest, so that landlords can be convinced to provide improved sanitation for their tenants.*

An expectation of future assistance, by both beneficiaries and non-beneficiaries of the program, demonstrates the significant dependency on subsidies. This result, combined with competing household priorities and other barriers explored in this research prevent households from taking the initiative to invest and build their own latrine. An intensive information campaign is required to explain the change of program and raise demand for improved latrines. However, the study also found that open defecation is still practised, which causes a great risk of faecal-oral transmission of diarrhoeal disease. The public health risks are increased further by the lack of hand-washing facilities near any of the latrines observed. Therefore the benefits to human health, the main driver behind WSUP providing improved sanitation, are lost.

*Recommendation: WSUP's future strategy should prioritise not only raising demand for improved latrines but also eradicating open defecation and promoting hand-washing.*



## References

- Allan, J. B. (1997), Household demand for improved sanitation. In: *23<sup>rd</sup> WEDC Conference*, Durban, South Africa.
- Borghi, J., Guinness, L., Ouedraogo, J. and Curtis, V. (2002), "Is hygiene promotion cost-effective? A case study in Burkina Faso", *Tropical Medicine and International Health*, Vol. 7, p960-969.
- Cairncross, S. (2003), "Sanitation in the developing world: current status and future solutions", *International Journal of Environmental Health Research*, Vol. 13, S123-131.
- Curtis, V. (2007), "Dirt, disgust and disease: a natural history of hygiene", *Journal of Epidemiology and Community Health*, Vol. 61, p660-664.
- De Soto, H. (2000), *The Mystery of Capital*, Black Swan, London.
- Fisher, J. (2005), *WELL briefing note 14: Making hygiene promotion cost effective*, available at: <http://www.lboro.ac.uk/well/resources/Publications/Briefing%20Notes/BN14%20Hygiene.htm> (accessed 31<sup>st</sup> August 2010).
- Fuertes, P., Baskovich, M. R., Zevallos, M. and Brikke, F. (2008), "The private sector and sanitation for the poor: a promising approach for inclusive markets in Peru", *Waterlines*, Vol. 27, p307-322.
- Jenkins, M. W. and Curtis, V. (2005), "Achieving the 'good life': Why some people want latrines in rural Benin", *Social Science & Medicine*, Vol. 61, p2446-2459.
- Jenkins, M. W. and Scott, B. (2007), "Behavioural indicators of household decision-making and demand for sanitation and potential gains from social marketing in Ghana", *Social Science & Medicine*, Vol. 64, p2427-2442.
- Jenkins, M. W., & Sugden, S. (2006) *Rethinking sanitation: lessons learned and innovation for sustainability in the new millennium*. Sanitation Thematic Paper, UNDP Humand Development Report 2006, UNDP HDRO, New York, January 2006.
- Lenton, R., Wright, A.M. and Lewis, K. (2005), *Health, dignity, and development: what will it take?*, Earthscan, London.
- Luong, T. V., Chanacharnmonkol, O. and Thatsanatheb, T. (2000). Universal sanitation – Thailand experiences. In: *26<sup>th</sup> WEDC Conference water, sanitation and hygiene: challenges of the millennium*, Dhaka, Bangladesh, 2010.

Mayoux, L. (2006), "Quantitative, Qualitative or Participatory? Which Method, for What and When?", in: Desai, V. and Potter, R. B. (editors), *Doing Development Research*, SAGE, London.

Mjoli, N. (2010), *Review of sanitation policy and practice in South Africa from 2001-2008*, report number 1741/1/09, Water Research Commission, Pretoria, South Africa.

Neumann, W. L. (2000), *Social Research Methods: Qualitative and Quantitative Approaches* (4<sup>th</sup> ed), Allyn and Bacon, Boston.

Rheingans, R., Dreibelbis, R. and McMahon, S. (2009), *The Social and Behavioural Determinants of Water and Sanitation Practices in peri-Urban Antananarivo*, WSUP, Antananarivo, Madagascar (unpublished report).

Robson, C. (2002), *Real World Research* (2<sup>nd</sup> ed), Blackwell, Oxford, UK.

Samson, K., Franceys, R., Njiru, C., Kayaga, S., Coates, S. and Chary, S. (2004), *Serving all urban consumers: A marketing approach to water services in low- and middle-income countries (Book 2: Guidance notes for managers)*, Water, Engineering and Development Centre, Loughborough University, UK.

Trémolet, S., Kolsky, P. and Perez, E. (2010), *Financing on-site sanitation for the poor: A six country comparative review and analysis*, Water and Sanitation Program, The World Bank, Washington.

UN (2010a), *The Millennium Development Goals Report 2010*, United Nations, New York.

UN (2010b), *Sixty-fourth General Assembly Plenary, 108<sup>th</sup> Meeting (AM): General assembly adopts resolution recognizing access to clean water, sanitation as human right, by recorded vote of 122 in favour, none against, 41 abstentions*, available at: <http://www.un.org/News/Press/docs/2010/ga10967.doc.htm> (accessed 3<sup>rd</sup> September 2010).

Water Supply and Sanitation Collaborative Council (2009), *Public funding for sanitation: The many faces of sanitation subsidies*, Water Supply and Sanitation Collaborative Council, Geneva.

Water and Sanitation Program (2002), *Hygiene promotion in Burkino Faso and Zimbabwe: New approaches to behaviour change*, Water and Sanitation Program – Africa Region, The World Bank, Nairobi.

WaterAid (2009), *Fieldwork paper: Document de capitalisation sur la segmentation sociale*, WaterAid, Antananarivo, Madagascar (unpublished report).

Waterkeyn, J. and Cairncross, S. (2005), "Creating demand for sanitation and hygiene through Community Health Clubs: A cost-effective intervention in two districts in Zimbabwe", *Social Science & Medicine*, Vol. 61, p1958-1970.

World Bank (2000), *The handwashing handbook: A guide for developing a hygiene promotion program to increase handwashing with soap*, The World Bank, Washington.

World Health Organisation (2010), "In the market for improved sanitation", *Bulletin of the World Health Organisation*, Vol. 88, p167-168.

World Health Organisation and United Nations Children's Fund (2010), *Progress on sanitation and drinking-water: 2010 update*, WHO Press, Geneva.

### **Map Credit**

BBC (2010), *Madagascar country profile*, available at:  
[http://news.bbc.co.uk/1/hi/world/africa/country\\_profiles/1063208.stm#facts](http://news.bbc.co.uk/1/hi/world/africa/country_profiles/1063208.stm#facts)  
(accessed 22<sup>nd</sup> August 2010).

### **Acknowledgements**

This research has only been made possible by the support of the WSUP Madagascar staff and my translator Nicole. I would also like to thank my supervisor James Webster and Alison Parker for their encouragement and advice.

## Appendix A

### Semi-structured interview guide for the 40 household interviews

The number next to each question corresponds to the topic being explored listed in the interview transcripts provided on the CD.

#### Impact of Information, Education and Communication

1.1.2 How can diarrhoea be transmitted?

Inona avy no mety ampiparitaka ny aretim-pivalanana?

1.1.1b If mentioned, when are the most important times to wash your hands?

Inona avy ireo fotoana tsy maintsy anasanareo tanana?

1.1.3 Have you and your family changed your hygiene practices recently? Why/Why not?

Nisy fiovana nataonareo ve teo amin'ny lafin'ny fahadiovana tato ho ato?

1.1.4 Why do you have a latrine?

Inona no nahatonga anareo hampiasa lavapiringa?

1.1.5 Do you know what an 'improved latrine' is?

Fantatrareo ve izany atao hoe lavapiringa manara-penitra izany?

1.1.6 What are the benefits of a concrete sanplat?

Inona no tombontsoa azo avy amin'ny fampiasana lavapiringa manara-penitra?

1.1.7 Where do people go to defecate? Do you feel uncomfortable talking about this?

Aiza no toerana fanaovan'ny olona maloto? mahasadaikatra anao ve ny miresaka an'izany?

#### Community perceptions of subsidy scheme

1.2.1 Have you heard about the latrine program and subsidies in your commune?

Fantatrao ve ireo atrik'asa fanampiana sy fampitaovana lavapiringa ao amin'ny fokontaninao?

1.2.2 Why was there a scheme?

Inona no nahatonga an'io tetik'asa io?

1.2.3 How could households apply for a subsidy?

Ahoana no ahafahan'ny mponina mangataka an'io fanampiana io?

1.2.4 What was the process for deciding who got the subsidy and for how much?  
Ahoana no nanapahana ny hevitra momban'izay ahazo na tsia ny fanamboarana ny lavapinga sy ny hoe ohatrinona avy no hoalohany?

1.2.4a Did everyone have to pay the same amount?  
Nitovy daholo ve ny vola nalohan'ny tsirairay?

1.2.6a What is the role of CC WASH/Co SAN/Sanitation Club/Social Committee? What are their responsibilities?  
Inona no anjara asan'ny CC WASH/Co SAN/Sanitation Club/Social Committee? Inona no andraikitr'izy ireo?

1.2.6b Who is involved with CC WASH/Co SAN/Sanitation Club/Social Committee?  
Iza avy ireo miaramiasa ao amin'ny CC WASH/Co SAN/Sanitation Club/Social Committee?

1.2.7 Who has benefitted from the sanitation subsidy scheme? Why?  
Iza avy no nahazo tombontsoa avy amin'izany atrik'asa izany? Nahoana?

1.2.8a Why did some people not apply?  
Inona no mety nahatonga ny olona sasany tsy nisoratra anarana?

1.2.8b What did you think of the project?  
Ahoana no fahitanao ny fahombiazan'io tetik'asa io?

### **Dependency on Subsidies**

1.3.1 Has the subsidy program finished?  
Efa nahafantatra ve ianao hoe vita iny tetik'asa iny tlohan'ny natongavanay?

1.3.2 If the subsidy wasn't available, will this effect your decision to buy a latrine. How?  
Raha tsy afaka manatanteraka izany fanampiana izany ny WaterAid na ny ECA dia manova ny fanirianao hividny lavapinga manara-penitra ve izany? nahoana?

### **Feeling of Ownership**

Use Observation of Latrine

1.4.1 Who takes care of the latrine?  
Iza no mikarakara ny lavapinganareo?

1.4.2a Who will repair the latrine if it breaks?  
Iza no afaka manamboatra raha sanatria misy ny fahasimbana?

1.4.2b What will you do when it fills up?  
Inona no azonareo atao raha feno ilay lavapiringa?

1.4.3 Does all of your family use it all the time? Even your children?  
Mampiasa lavapiringa foana daholo ve ny fianakaviana? na ny ankizikele ary ve?

1.4.4 Did you want the latrine before the program?  
Taorian'ny tetik'asa ve ianao vao naniry ny hanana lavapiringa manara-penitra sa efa taloha?

1.4.5 What do you spend on maintenance for your latrine?  
\_\_\_\_\_ Ariary  
Ohatrinona no laninao amin'ny fikojakojana ny lavapiringa?

### **Affordability and Willingness to Pay**

3.1.3 Have you heard of OTIV or Secam? What do they do? What do you think of them?  
Fantatrao ve ny OTIV na ny SECAM? Inona no anjara asan'izy ireo? Ahoana no fahitanao an'izany tetik'asa izany?

2.1.1a When you want to buy something expensive, what do you normally do?  
Inona no ataonao rehefa mila zavatra lafolafo nefa tianao hovidiana ?

2.1.1b Have you ever had a loan?  
Efa nangombola ve ianareo?

2.1.2a How much money do you spend a week on credit for your mobile?  
\_\_\_\_\_ Ariary  
Ohatrinona ny vola laninao amin'ny fahana finday isambolana?

2.1.2b How much money do you spend a month on electricity?  
\_\_\_\_\_ Ariary  
Ary ny amin'ny jiro na erinaratra?

2.1.3 How important is having a concrete latrine compared to electricity or owning a mobile?

Latrine is        much more important  
                     more important  
                     equal  
                     less important  
                     much less important

Hatraiza ny fahatsapanao ny ilavanao ny lavapiringa manarapenitra mihoatra ny erinaratra na finday?

Ilaiko mihoatra lavitra  
mihoatra  
mitovy  
ihany  
tsy dia ilaiko loatra

2.1.4 Could you afford to buy a new latrine?

Yes No

Azonareo atao ve ny manamboatra lavapiringa amin'ny fahafahanareo?

Eny Tsia

2.1.5 If it costs 45,000 could you afford it after saving for a month?

If it costs 30,000 could you afford it after saving for a month?

If it costs 15,000 could you afford it after saving for a month?

Raha 45.000 novidiny, mahatahiry an'izany ve ianareo ao anatin'ny iray volana?

30.000

15.000

2.1.6 *If no to all of the above:* The concrete slab and poutrelles costs 15,000 Ar, how much could you pay after one month?

Raha tsia: Raha toa ka 15000 Ar no vidin'ilay dalle, ohatrinona no mety ho voatahirinao anatin'iray volana?

\_\_\_\_\_ Ar

2.1.7 So in order to save the rest (\_\_\_\_\_ Ar), would you be happy to have a loan or a saving account?

Yes No

Raha te hitahiry ny ambiny (\_\_\_\_\_ Ar) dia faly ve ianao raha hapindramina vola na hampadoavina tsikelikely?

Eny Tsia

2.1.8 How much could you pay into a saving account per month?

Raha handoa tsikelykely iano dia ohatrinona no afaka alohanao isam-bolana?

\_\_\_\_\_ Ar

So it would take \_\_\_\_\_ months to get a concrete slab.

Izany hoe afaka \_\_\_\_\_ volana vao ho voaloanao tanteraka ilay Dalle.

## Accessibility

2.2.1a How can you get an improved latrine?

Inona avy ireo fomba mety azahoanareo lavapiringa manara-penitra?

2.2.1b How easy is this process? Why?

Mora ve ny fanatanterahina izany? Nahoana?

2.2.2a Where can you buy the different materials you need?

Aiza avy no azo hividianana ny akora rehetra ilaina?

2.2.2b Where can you buy a concrete sanplat?

Aiza no ahafanareo mividy an'ilay dalle?

*If they don't know:* Do you think you could buy one near here if you searched?

Raha tsy fantany: Mety ahita an'izany akaikikaiky ve ianao na manodidina ny fokontany?

2.2.3a Who can construct a concrete latrine?

Misy olona fantatrareo manana traik'efa amin'ny fanamboarana lavapiringa ve?

### **Complications caused by sharing latrines with other households**

2.3.1a How many households use your latrine?

Not shared 1

Shared \_\_\_\_\_

Firy ianareo no mampiasa ny lavapiringanareo?

Tsy ikambanana 1

Mikambana —

2.3.1b How did you organise money between the households to pay for the construction?

Ahoana no nifanarahanareo mpiray tanana tamin'ny fanamboarana lavapiringa?

2.3.1c How will you organise money if it needs repairing?

Ahoana no afaka ifanamboaranareo raha toa ka misy ny fahasimbana?

### **Exploration of other barriers**

2.4.1 Other than the cost of building a concrete latrine, why else do some people not want to build their own concrete latrine?

Ankoatra nyvidin'ny fananganana, inona koa no mety ahatonga ny olona tsy hampiasa lavapiringa?

### **How to provide for the poorest**

3.1.1 Could you suggest any improvements for the provision of latrines in the commune?

Moa ve misy soso-kevitra azonao aroso hampitomboana ny isan'ny lavapiringa manarapenitra ety amin'ny fokotany?

3.1.2a How can we facilitate latrine acquisition without providing any subsidies?



Ankoatra ny fanampiana ara-pitaovana ahoana no fomba ahazoanay manampy ny ponina hampitombo ny lavapiringa manarapenitra ao amin'ny fokontany misy azy?

3.1.2b If you had to pay for something little by little, where would you prefer to pay it? OTIV or the Fokontany?

Raha misy vola tokony alohanao tsikelikely dia aiza no tianao kokoa andoavana izany?

### **Information networks**

3.2.1a How do people prefer to learn about ways to keep healthy?

For example: In their house

In discussion groups

Posters in the Fokontany

Radio

At school

Other

3.2.1b Why?

Aiza no tsara hampianarana ny olona momban'ny fahadiovana sy ny fitsinjovana ny fahasalamana?

3.2.2 Where did you get your health information from?

Ahoana no nahafantaranao izany?

3.2.3 How much time could you spend per week/month to learn about ways to stay healthy?

More than one hour a week

One hour a week

One hour every 2 weeks

One hour every month

Hafiriana isak'erinandro/ isam-bolana no ahafahanao mianatra bebe kokoa momban'ny fietsika azo atao itsinjovana ny fahasalamana?

Mihoatran'ny adin'iray

Adin'iray isak'erinandro

Adin'iray isakin'ny tapa-bolana

Adin'iray isam-bolana

Could we have a look at your latrine?

Yes No

-Azonay atao ve ny mitsidika ny lavapiringanareo?

## Observational assessment of household sanitation

An observational assessment of the individual's current sanitation facilities will use a checklist with the following criteria:

Type of latrine and slab:	No latrine Pit Latrine	No covering Wood very poor unusable condition Wood very poor usable condition Wood poor condition Wood good condition Concrete poor condition Concrete good condition	Dirty Mod. clean Very clean
	Flush latrine with septic tank Other		
State of pit:	Good Poor Collapsed		
Evidence of use:			
Type of superstructure:			
Condition of roof:			
General condition:			
Presence of lock on door:			
Cover on slab:			
Basket for papers:			

## Appendix B

The four indicators of socio-economic status were each given a maximum score of 1, so that they would be equally weighted. Using the range of answers given in the household interviews, each indicator was split into different possible scores. Table B1 shows the score given to each socio-economic indicator.

Socio-economic indicator	Result from household	Corresponding score
TV	Yes	0.5
	No	0
Radio	Yes	0.5
	No	0
Stated willingness to pay for improved latrine	0 MGA	0
	<15,000 MGA	0.25
	15,000 MGA	0.5
	30,000 MGA	0.75
	45,000 MGA	1
Household monthly expenditure on mobile phone credit	0 MGA	0
	<5,000 MGA	0.25
	5000-9,999 MGA	0.5
	10,000-14999 MGA	0.75
	15,000-20,000 MGA	1
Household monthly expenditure on electricity	0 MGA	0
	<5,000 MGA	0.25
	5000-9,999 MGA	0.5
	10,000-14999 MGA	0.75
	15,000-20,000 MGA	1

Table B1: Corresponding scores of each socio-economic indicator

Table B2 shows the scores of each household for each socio-economic indicator and the sum of the scores to give each household's total.

Household number	Type of subsidy received	Sum of radio and TV score	Stated ability to pay	Monthly expenditure on mobile phone credit	Monthly expenditure on electricity	Total score
HH5	I	0.5	0.25	0	0	0.75
HH6	III	1	0.75	0	1	2.75
HH9	II	1	1	0.75	0.5	3.25
HH10	I	0.5	0.5	0	0	1
HH13	I	1	1	0.25	1	3.25
HH14	II	1	1	0.25	0.5	2.75
HH15	III	1	0.75	0.25	1	3
HH17	I	0.5	0.75	1	0	2.25
HH18	I	0.5	1	1	0	2.5
HH19	III	1	0.5	0	0	1.5
HH21	I	0.5	0.5	0	0.75	1.75
HH22	I	0	0	0.5	0	0.5
HH26	I	1	0.5	0.25	0.75	2.5
HH27	II	1	0.5	0.25	0.75	2.5
HH30	II	0.5	0	0	0	0.5
HH33	III	0.5	0.75	0.5	0	1.75
HH34	I	0	0.5	0.5	0	1
HH37	I	0	0.75	1	0	1.75
HH38	II	0.5	0.5	0.25	0	1.25
HH41	I	0	0.5	0	0	0.5
HH42	I	0	0.5	0	0	0.5

Table B2: Household scores for each socio-economic indicator

The households were then categorised into 5 groups depending on their total score of the socio-economic indicators, shown in table B3.

Total score for household	Corresponding group
<0.75	A
0.75-1.49	B
1.5-2.24	C
2.25-2.99	D
3-3.74	E

Table B3: Corresponding group of the possible household scores.

Table B4 shows the number of households in each group in comparison to the type of subsidy they received.

Type of subsidy received	Group	Number of households in group
Type I	A	3
	B	3
	C	3
	D	2
	E	1
Type II	A	1
	B	1
	C	0
	D	2
	E	1
Type III	A	0
	B	0
	C	2
	D	1
	E	1

Table B4: The number of households in each group for each type of subsidy

### Appendix C: Socio-economic and demographic data of households

Household code	Type of subsidy received	Commune	Fokontany	Gender	Occupation	Age	Literate
PHH1	I	Pretest	Pretest	Female	Housewife	46	yes
PHH2	I	Pretest	Pretest	Female	Seller	60	yes
PHH3	no	Pretest	Pretest	Female	Clothes washer	28	no
PHH4	I	Pretest	Pretest	Female	Unemployed	70	yes
HH5	I	1	1	Male	Carrier/porter	44	yes
HH6	III	1	1	Female	Housewife	50	yes
HH7	no	1	1	Female	Street Seller	51	
HH8	no	1	1	Female	Maid	41	
HH9	II	1	2	Male	Driver	42	yes
HH10	I	1	2	Female	Hay mattress maker	38	
HH11	no	1	2	Female	Retired	63	
HH12	no	1	2	Female	Clothes washer	34	
HH13	I	1	3	Male	Carpenter	32	yes
HH14	II	1	3	Female	Library assistant	30	yes
HH15	III	1	3	Female	Farmer	51	
HH16	no	1	3	Male	Mason	37	yes
HH17	I	1	4	Male	Mason	31	yes
HH18	I	1	4	Female	Dressmaker	32	yes
HH19	III	1	4	Female	Street Seller	30	
HH20	no	1	4	Female	Farmer	55	
HH21	I	1	5	Female	Clothes washer	66	no
HH22	I	1	5	Female	Clothes washer	48	
HH23	no	1	5	Female	Seamstress	34	
HH24	no	1	5	Male	Security guard	48	yes
HH25	no	1	6	Male	Farmer	69	no
HH26	I	1	6	Male	Carpenter	33	no
HH27	II	1	6	Female	Street Seller	42	yes
HH28	no	1	6	Female	Farmer	46	yes
HH29	no	1	7	Male	Mason & Farmer	66	yes
HH30	II	1	7	Female	Carpet maker	38	
HH31	II	1	7	Female	Seamstress	36	
HH32	no	1	7	Female	Housewife	58	yes
HH33	III	1	8	Male	Farmer & Mason	48	yes
HH34	I	1	8	Female	Clothes washer	40	yes
HH35	no	1	8	Female	Cleaning Lady	30	yes
HH36	no	1	8	Male	Errand man	29	yes
HH37	I	2	9	Male	Errand man	40	yes
HH38	II	2	9	Female	Retired	61	yes
HH39	no	2	9	Female	Clothes washer	37	yes
HH40	no	2	9	Female	Farmer	36	yes
HH41	I	2	10	Female	Farmer	29	no
HH42	I	2	10	Male	Farmer	77	no
HH43	no	2	10	Female	Farmer	40	yes
HH44	no	2	10	Female	Farmer	50	no

Table C1: Household socio-economic and demographic information

Household code	Number of rooms	Material of roof	Material of walls	Material of floor
PHH1				
PHH2	2	corrugated iron		concrete
PHH3	1		mud	mud
PHH4	1	corrugated iron	mud	mud
HH5	1	plastic sheet	cardboard & wood	mud & plastic sheet
HH6	2	tiled	concrete	concrete
HH7				
HH8	1	corrugated iron	wood/cloth/corrugated iron	mud
HH9	2	grass roof	mud brick	concrete
HH10	2			mud & plastic sheet
HH11	2		chipped plastered brick	concrete floor
HH12	1	wood	cardboard & wood	mud
HH13	2	corrugated iron	plastered brick	concrete
HH14	2	tiled	plastered brick	rug on concrete
HH15		tiled	plastered brick	plastered brick
HH16	2	tiled	mud brick	mud
HH17	2	corrugated iron	mud brick	mud
HH18	1	corrugated iron	plastered brick	concrete
HH19	2	corrugated iron	chipped plastered brick	concrete
HH20	2	thatch/straw	mud brick	mud & large rug
HH21	1	corrugated iron	mud brick	plastic & mud brick
HH22	1	corrugated iron	mud brick	concrete
HH23	1	corrugated iron	mud brick	mudbrick & plastic
HH24	2	corrugated iron	mud brick	concrete
HH25		thatch/straw	mud brick	mud
HH26	1	thatch/straw	mud brick	mud
HH27	1	thatch/straw	mud brick	mud
HH28	1	thatch/straw	mud brick	concrete
HH29	2	thatch/straw	mud brick	mud
HH30	2	thatch/straw	plastered mud brick	concrete
HH31	1	thatch/straw	mud brick	mud
HH32		thatch/straw	mud brick	
HH33	2	thatch/straw	mud brick	mud
HH34	1	thatch/straw	mud brick	mud
HH35	1	corrugated iron	mud brick	mud
HH36	3	tiled	plastered mud brick	concrete
HH37	1	tiled	mud brick	plastic & mud
HH38	1	corrugated iron	plastered mudbrick	concrete
HH39	2	corrugated iron	plastered mudbrick	mud
HH40		tiled	plastered mudbrick	
HH41	2	tiled	plastered mudbrick	wooden boards
HH42	1	thatch/straw	mud brick	mud & wood
HH43	1	thatch/straw	plastered mud brick	mud brick
HH44	1	thatch/straw	plastered mud brick	concrete

Table C2: Description of house – material of roof, walls and floor and number of rooms

Household code	TV	Radio	Electricity	Mobile phone
PHH1	yes		yes	
PHH2	no	yes	no	no
PHH3	no	yes	yes	no
PHH4	no	yes	no	no
HH5	no	yes	no	no
HH6	yes	yes	yes	yes
HH7			yes	yes
HH8	no	yes	no	yes
HH9	yes	yes	no	yes
HH10	no	yes	no	no
HH11	yes	yes	yes	no
HH12	no	yes	no	no
HH13	yes	yes	yes	yes
HH14	yes	yes	yes	yes
HH15	yes	yes	yes	yes
HH16	no	no	no	yes
HH17	no	yes	no	yes
HH18	no	yes	no	yes
HH19	yes	yes	no	no
HH20	no	yes	no	yes
HH21	no	yes	yes	no
HH22	no	yes	no	yes
HH23	yes	yes	no	no
HH24	yes	yes	yes	yes
HH25	no	yes	no	yes
HH26	yes	yes	yes	yes
HH27	yes	yes	yes	yes
HH28	no	yes	no	yes
HH29	no	no	no	yes
HH30	no	yes	no	no
HH31	no	yes	no	no
HH32	no	yes	no	no
HH33	no	yes	no	yes
HH34	no	no	no	yes
HH35	no	yes	no	no
HH36	yes	yes	yes	yes
HH37	no	no	no	yes
HH38	no	yes	no	yes
HH39	no	no	no	no
HH40	no	yes	yes	no
HH41	no	no	no	no
HH42	no	no	no	yes
HH43	no	yes	yes	yes
HH44	no	no	no	yes

Table C3: Household possession of assets - TV, radio, electricity and mobile phone