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**Research Report**

Safe sanitation: Findings from the impact evaluation baseline survey in Orissa, India. Financial Inclusion improves sanitation and health - FINSIH Project

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Financial Inclusion Improves Sanitation and Health –  
FINISH Project

**Safe Sanitation:**

**Findings from the Impact Evaluation Baseline Survey  
in Orissa, India.**

Britta Augsburg

April 2011

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# 1. Overview

## 2.1. Introduction

FINISH – Financial Inclusion Improves Sanitation and Health - is a joint undertaking of a wide range of actors that came together to address the challenges of micro finance, insurance and sanitation and health. **The overall goal of the project itself is to built 1 million safe toilets (possibly sanitation systems), financed through microfinance loans.**

The actors involved are: Waste (Dutch sanitation and waste NGO), SNS Real (Dutch listed insurance-banking group), TATA-AIG LIFE Insurance Co Ltd, BISWA (Tier 1 Microfinance Institution in Orissa, India) and UNU/Merit (United Nations University, The Netherlands).

The microfinance institutions BISWA is involved in the design of the project as well as the sanitation system delivery, but it is actually a number of MFIs that will offer the sanitation loan to reach together the target of building a million safe sanitation systems.<sup>1</sup> The participating MFIs are stimulated to do so through long term structural relations established between TATA-AIG. They are further incentivized to increase sanitation coverage loan products using the World Bank developed Output Based Aid (OBA) model, whereby small subsidies are paid to MFIs if they reach their targets. This money is raised from donors, i.e. the Dutch government approved Euro 4.5 million for this.

Figure 1 below shows the FINISH project area as of April 2009.

Figure 1: FINISH project Area (as of April 2009)



North:

- Gwalior, Madhya Pradesh (SAMBAV)
- Rajasthan (IIRD)

West:

- Maharashtra (WOTR/ SAMPADA)
- Gujarat (SEWA)

East:

- Orissa (BISWA)

South:

- Tamil Nadu (BHARATI)

<sup>1</sup> Within the first phase of the project, these MFIs (besides Tier 1 MFI BISWA) are Tier 2 MFIs ESAF and IIRD as well as Tier 3 MFIs BWDC, SAMBAV.

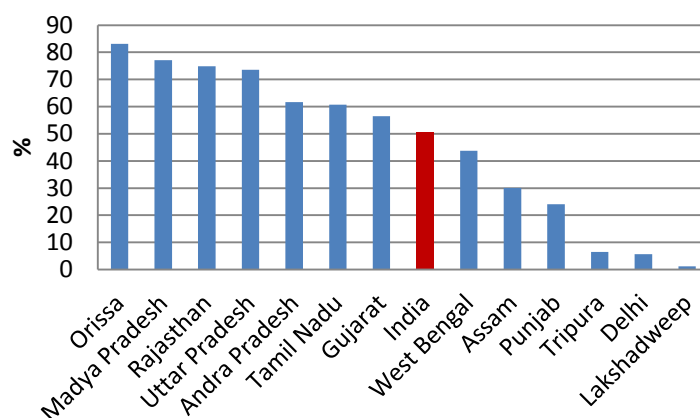
## 2.2. Project Background

India has 135 million financially excluded households according to a report of the Boston Consultancy Group (2007)<sup>2</sup>. The report states further that 17 million households should have entered the financial markets thanks to income growth by last year, 2010, and 30 million could have entered thanks to innovative banking business models. It is estimated that such 30 million households represent a bottom of the pyramid business worth Rs 10,000 crore (about US\$ 2.5 billion) for banks and Rs 20,000 crore (US\$ 5 billion) for insurance companies. Inclusion of the 'excluded' segment represents surely not only a social reality but also an economic opportunity. Nevertheless, these economic opportunities require redesigning of business models. More specifically, in order to be successful, business models need to take into account Bottom of the Pyramid market characteristics.

A major concern for inclusion of the bottom of the pyramid into financial markets is their erratic, uncertain and low income streams. Incidental data from Micro Finance Institutions hint that around 25 - 30% of their clients disposable households' income is not realised due to poor health. Major cause of such frequent illnesses is poor sanitation<sup>3</sup>. If the markets can target this, their client base can be broadened – due to higher and less uncertain income, income growth and new business models.

Recent reports by UNICEF observe that 50 % of households in rural India still practice open defecation, with some states even having figures of up to 80 % (see Table 1 - 1). No or poor sanitation is a principle cause of the death – estimated at 1,000 children in India every day<sup>4</sup>. The diarrhoea death toll of children alone is 386,600 per year<sup>5</sup>. This loss of life could be averted by simple interventions such as improved sanitation and handwashing.

**Table 1 - 1 Percentage of households practicing open defecation**



Source UNICEF October 2010

<sup>2</sup> Sinha, Janmejaya & Arvind Subramanian. Boston Consultancy Group (2007). 'The next Billion Consumers: A Roadmap for Expanding Financial Inclusion in India'.

<sup>3</sup> Bartram J, Cairncross S (2010). Hygiene, Sanitation, and Water: Forgotten Foundations of Health. PLoS Med 7(11): 1000367; Hunter PR, MacDonald AM, Carter RC (2010) Water Supply and Health. PLoS Med 7(11) : e1000361; Mara D, Lane J, Scott B, Trouba D (2010) Sanitation and Health. PLoS Med 7(11): e1000363; Cairncross S, Bartram J, Cumming O, Brocklehurst C (2010) Hygiene, Sanitation, and Water: What Needs to Be Done? PLoS Med 7(11): e1000365

<sup>4</sup> UNICEF/WHO (2009). Diarrhoea: Why Children are still dying and what can be done.

<sup>5</sup> Ibid.

In this context socially responsible investment in sanitation refers to financial outlays by organizations towards lowering such unhealthy practices that only degrade the environment, lower the dignity of the women in the community and act as one of the barriers to social development. Investing organizations can range from financial intermediaries (Banks / micro finance institutions (MFIs)) to public agencies (Government /Bilateral and multilateral donors), community enterprises (SHGs) and civil society groups (NGOs).

Grant based interventions in sanitation have had limited success in creating sanitation densities and social change due to several factors – some of them being: (a) the quantum of grant being inadequate to construct an acceptable yet functional sanitation system; (b) the grant beneficiaries in the population i.e. families living below the poverty line being ambiguous, resulting in low sanitation densities in the zone concerned with insignificant improvements in health status; (c) lack of financial stake of the beneficiary households in the intervention that somehow have failed to act as an incentive for usage and habit change; and (d) the sustainability of such interventions given the resources and the potential implementation leakages.

Among the different forms of socially responsible investment, microcredit through SHG bank linkages and Joint-liability Group based MFI interventions are growing the fastest. Microcredit essentially directs capital from investors and lenders to communities that are financially excluded. While traditional microcredit refers to provision of access to credit, equity and capital, i.e asset side banking products to facilitate immediate consumption or livelihood enhancement, new financial packages need to be developed under microcredit that combine creation of awareness, building of capacities and access to credit that develop communities and promote a better quality of life for beneficiaries. The resultant of the above i.e *Socially Responsible Investments*, will ensure that microcredit remains a financial inclusion tool serving the needs of development.

Financial packages can for instance link a sanitation loan to lowering of healthcare insurance premiums and that way incentivize social change in ways beneficial to all stakeholders. FINISH is a program that is trying to do just that – it is trying to diffuse microfinance packages that are tied to investment in an asset that low-income communities need but do not demand – namely SAFE toilets. This is a very big challenge as research clearly shows that safe toilets are a product for which ‘effective demand’ needs to be created in rural areas – even though there is a need.

### 2.3. Project Components

Any financial scheme supporting a social investment program has to satisfy three conditions: (1) It must be economically sustainable for all organizations on the supply side of the ‘financial loop’. (2) It must be demanded by the beneficiaries on the borrowing side of the ‘financial loop’ and the delivery platform has to be scalable so that development impact is realized across the community. And (3) it must be socially responsible – i.e. it must be viable for the beneficiaries to pay-back without incurring catastrophic debt burdens and the outcome must not involve damage to the environment or increase social tensions.

To meet these three conditions, the FINISH Project employs a two prong strategy of [i] providing access to credit through Micro Finance Institutions which are joined as partners in the Project and [ii] generation of demand for sanitation through creation of awareness.

As for the former point [i], project partners believe that Microfinance Institutions which have wide base in rural areas and which provide service to the rural population at their doorsteps are the best alternative as the commercial Banks cannot be expected to handle such activities for want of reach and penetration. Care is taken by FINISH to ensure that only those NGOs /MFIs are taken as partners in the project which have [a] strong base in the rural area,[b] have some experience of financing and supervising construction of toilets and [c] which show inclination to allot at least 10 % of their loan portfolio for sanitation promotion.

The Project also provides capacity building in the form of assistance for training of Animators Technical Personnel and the Project Coordinators from the MFI Partners and the Masons to ensure best design in conformity with the requirement of the terrain and local culture.

Furthermore, in order to achieve sanitation densities, the MFI Partners are assured output based aid, namely a payment of small incentives for crossing certain prescribed thresholds of sanitation coverage.

To ensure demand generation (point [ii] of its strategy), FINISH follows a bottom-up approach, the main aim of which is to get in touch with the community and remove their doubts and misgivings.

The main aim to achieve this is through the MFI partners.

The partners get financial support and training to engage animators whose specific task it is to develop contacts with the members of the community. The animators are usually above-average literate females with good communication abilities and generally from the same area.

The project partners are also provided IEC material and audio visual aids for better communication of ideas. The Project also provides for the engaging of Project Coordinators by the MFIs

## **2.4. Specificities of FINISH with BISWA**

BISWA plays a dual role in the FINISH project. On the one hand, they joined the other partners from inception and were involved in the creation of FINISH and are now an active board member. On the other hand, BISWA is one of the implementing microfinance institutions. Their goal within FINISH is to mobilize funds from end-users to build 500,000 sanitation systems. BISWA recognizes the challenge this target implies - building this amount of toilets by largely mobilizing funds from the end-users themselves instead of providing sanitation as a 'charity commodity', free of charge. Nevertheless, BISWA believes that complete sanitation coverage is necessary for sustainable development and improvement of the quality of life –and that this holds especially true in Orissa.

Orissa is a state that presents great challenges and opportunities. With a population of 36.7 million (88 per cent living in rural areas), the State ranks 11th in size in India and covers an area of approximately 155,700 square kilometres comprising of 30 districts; 314 blocks; 6,234 Gram Panchayats; and, 134,850 habitations. The state has the lowest social and human development indicators in the country; infant mortality in Orissa stands at 87/1000 live births much higher than the national average of 63/1000 births. Over 47 percent of the population lives below the poverty line.

BISWA is covering 290 Gram Panchayats under FINISH and concentrates within these on the aim of ensuring a maximum of 90% sanitation coverage.



The main activities under the project are:

1. Training of office and field staff
2. Awareness creation through
  - a. Film Viewing
  - b. IEC material distribution
3. Loan disbursement

Training of office and field staff is done through the FINISH project and so does not differ for BISWA.

BISWA's specific approach in the field on the other hand is described in what follows. (Responsibilities of other than field-staff are described in Box 1).

**Box - 1: Roles and Responsibilities of BISWA staff under FINISH**

<b>Manager, Water and Sanitation</b> <ul style="list-style-type: none"> <li>- Identification of potential household</li> <li>- Preparation of annual plan and allocation of funds</li> <li>- Resource mobilization from Government subsidy and other sources for hardware and the software components</li> <li>- Train and build the capacities of down line staff</li> </ul>
<b>District Co-ordinator</b> <ul style="list-style-type: none"> <li>- Liaise with the District Administration for co-ordination and smooth grant of work orders to BISWA SHGs</li> <li>- Authority for verification of sanitation loans received from the BISWA SHGs</li> <li>- Managing, co-ordinating and monitoring the ADC staff for proper implementation of the programme</li> </ul>
<b>Assistant District Co-ordinator (ADC)</b> <ul style="list-style-type: none"> <li>- Liaise with the Block Administration for co-ordination and smooth grant of work orders to BISWA SHGs</li> <li>- Authority for verification of sanitation loans received from the BISWA SHGs</li> <li>- Assisting the Cos in conducting trainings and guiding their day to day functioning</li> </ul>
<b>Area Co-ordinator (AC)</b> <ul style="list-style-type: none"> <li>- Close follow up of the loans disbursed and timely recovery</li> </ul>
<b>Community Organiser (CO)</b> <ul style="list-style-type: none"> <li>- CO is the field level staff working closely with the communities for their overall development</li> <li>- Conducting 4 SHG meeting a day and discussing the relevant issues</li> </ul>

BISWA utilises its existing administrative structure for the implementation of FINISH, which means that programmes are delivered through Self Help Groups (SHG). These are groups of 16 women that meet once a month to discuss issues of interest to them and the community. The SHGs are organised and lead by local women or men, the *Community Organisers (CO)*, who have been carefully selected and trained in community relations by BISWA for the purpose. Each CO used to be responsible for 25 such SHGs (approximately 400 women), spread over 2-3 villages. BISWA now changed this policy and planned for 40 SHG per CO covering 4-5 villages, one of which is usually her home town. Under FINISH, these community organisers take the additional role and responsibility of toilet demand

generation. For this purpose, FINISH supports 14% of the COs salary and becomes the 'FINISH animator'.

Given their close contact with the SHGs, these groups become the main delivery mechanisms for sanitation related knowledge and information to the target villages as well as for capital provision for toilet construction. The groups can avail a loan for toilet construction either in addition to an existing loan they received previously from BISWA or as a first loan to the group.

On average, there are two such groups in each intervened village, implying that a maximum of 30 households can be covered. This implies that in order to achieve 90% sanitation coverage in the targeted villages, BISWA needs to ensure construction of toilets with its beneficiary base as well as with other households in the village. The strategies to achieve this are as follows:

- (1) Formation of New SHGs in the villages. BISWA increased the number of SHGs per CO from its usual 25 to 40 for this purpose. This change makes it possible for BISWA staff to form SHGs for FINISH without sacrificing their already existing groups. These newly formed groups take act the same as previous groups and are hence allowed to take loans for sanitation and other purposes.
- (2) Collaboration with the Village Water and Sanitation Committee, a registered body at village level. BISWA disburses loans to this committee. The repayment is then the committee's responsibility rather than the one of the individuals constructing toilets from this fund.
- (3) Distribution of individual loans. BISWA decided to give loans outside their SHGs in order to be able to cater to two types of households. For one, rich families who are typically not willing to join SHGs as well as families below the poverty line, who can avail subsidy funding through the Total Sanitation Campaign. The loan by BISWA is in this latter case typically a very small loan which for example allows constructing a super-structure, of which the costs cannot be covered through the subsidies funds from the government.

Households can choose between a twin pit toilet and ECOSAN. The loan size for a twin pit toilet is either Rs. 4,500 (~USD 98.50<sup>6</sup>) or Rs. 6,500 (~USD 142), for each of these loans a household contribution of Rs. 500 (~USD 11) is required. This contribution could be in the form of own labour, equity or locally available construction material. The interest rate, which is a reducing rate of interest, is 19% and the repayment structure is monthly over 12 months. An ECOSAN toilet requires a loan size of Rs. 14,500 (~USD 317). It also requires a household contribution of Rs. 500, the interest rate is also 19% but the repayment period is 24months.

Households below the poverty line can avail a government subsidy of Rs. 2,200. This money is used as a deduction to the principle amount.

The construction of the toilet chosen by the household is then organised by the SHG members themselves, in collaboration with the Community Organiser, or the FINISH animator. At the time of the loan generation, the CO/Animator and the Assistant District Co-ordinator<sup>7</sup> discuss with the SHG members regarding the availability of raw materials, locally available construction materials (like sand, stones for pit, etc) and the masons. If there is any difficulty with respect to any of these inputs,

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<sup>6</sup> Using the following exchange rate: 1 INR =

<sup>7</sup> Each branch of BISWA is headed by an Assistant District Co-ordinator (ADC) who is responsible towards developing a micro plan for their geographical area and for implementing the same. More specifically, an ADC is responsible for preparing the village intervention strategy, generation of loan document along with the Community Organiser and monitoring the construction, loan recovery and toilet usage.

BISWA provides the necessary assistance through its Mama Construction Pvt Limited, a sister concern of BISWA. In other words, BISWA ensures that the software components create the necessary motivation in the communities for the sustainability of the intervention.

BISWA targets completion of the toilet construction work within 60 days of loan disbursement.

Repayment is targeted not to fall under 100%.

BISWA also applied successfully to the FINISH Social Investment Fund (SIF) to implement a pilot intervention, targeted at 100% ECOSAN coverage within two villages in the coastal district of Puri in Orissa. Presently, BISWA has completed the construction of 47 ECOSAN toilets in the first village (Churali). Five additional households need to be equipped with their private ECOSAN toilet to reach the set aim of 100% coverage. Churali is the first village in Orissa where ECOSAN has been experimented. As a pilot, the households took a loan of Rs. 3,400/-. The remaining costs of Rs.11,100 per ECOSAN toilet were covered by the funding from the SIF. Main objectives of this pilot are to test the hardware structure and its suitability for the region, its usability and to test the affordability of the loan size.

## 2.5. Extension to FINISH with BISWA - SIMAVI

In addition to FINISH, BISWA is implementing an intervention under HARNESS – “Health and Hygiene Awareness in Rural areas for Nurturing and Establishing Sanitation Systems”, which is supported by SIMAVI, a Dutch public health organisation. (Project time: May 2010 to April 2012)

The main goal of the intervention is to ensure the construction of 25,000 individual household toilets. Contrary to FINISH, these toilets will be exclusively promoted and built through the Self Help Group (SHGs) network. Other than this, the intervention under HARNESS can be seen as FINISH PLUS. We will elaborate on the additional activities below.

The objectives of the intervention are to:

1. create awareness across 500 villages on health and hygiene aspects with direct linkage to sanitation and safe drinking water programmes,
2. To establish backward and forward linkages with the water and sanitation intervention. These are basically establishing sanitation related micro enterprises, facilitating construction materials, engineers, extending loan for water and sanitation, facilitating release of subsidy, etc – and hence include FINISH.
3. To adopt a participatory and inclusive methodology for ensuring speedy and smooth implementation of sanitation programme through micro finance. This aim is in line with the FINISH goals.
4. To ensure coverage of 25,000 beneficiary across 500 villages within 2 years.

There are a number of activities, mainly related to awareness creation and knowledge dissemination which are specific to this intervention and *not* included under FINISH.

These are:

1. Community organisation and participation: A number of activities are conducted to involve communities and especially influential community members and institutions.
  - Liaison with members of the Panchayati Raj Institution (PRI)

- Sanitation Hygiene and Scheme implementation Orientations with the PRI members
  - Village sensitisation meetings through Village School Teachers
  - Focus Group Discussions of the Anganwadi Workers (AWW) with the SHG members and target beneficiaries
  - Participatory Rural Appraisal
  - Village Water and Sanitation Committee Formation and follow up
2. Health Education and Training
    - Training to 1000 SHGs on hygiene promotion and environmental sanitation
  3. Promotional Activities
    - Exposure visits for the School teachers, AWW and PRI members
  4. Institutional Capacity Building
    - Exposure visits for the staff

## 2.6. The FINISH Evaluation Study

The FINISH *project* will test whether the use of microfinance for rural sanitation can be implemented at scale, in order to: accelerate access by the poor to demand-led sanitation, resulting in health, economic, and social impact; and greater sustainability in sanitation service delivery.

The United Nations University (UNU/Merit) together with the Institute for Fiscal Studies (IFS, UK) is responsible for the evaluation of the programme interventions; programme partners believe that the impact of sanitation on various levels including health, income, and general well being needs to be demonstrated at local levels and on a sufficient scale. For example, generally the rural poor do not yet regard sanitation as an income generating activity. Though, if their sanitation situation improves, their (sanitation related) health expenditures should decline and their free disposable income will increase. Such hypothesis will be tested through a rigorous impact evaluation study.

To verify the impact the UNU/Merit/IFS conducts a randomized control trial with three implementing agencies, implying an impact evaluation in three different states of India. The chosen institutions are:

- (1) Bharat Integrated Social Welfare Agency (**BISWA**) in Orissa (Eastern India)
- (2) Bharathi Women Development Centre (**BHARATHI**) in Tamil Nadu (Southern India)
- (3) **Sambhav** in Madhya Pradesh (Northern India)

The general evaluation design is the same in all areas and is elaborated on in the next section. A few particularities and differences exist between the surveys which will be flagged in the discussion to follow.

The goal of this impact evaluation to measure in how far this ‘mainstreamed approach’ leads to desired health, economic, and social impact.

We are interested in the effect on outcomes that can be categorized in five different groups:

- (1) health
- (2) economic conditions (including costs),
- (3) social conditions
- (4) behavioural change, and

(5) demand.

More details on these are given in Section **Outcome Indicators** 2.3.

The improved evidence to come out of this evaluation study, will support development of large-scale policies and programs, and will inform donors and policy makers on the effectiveness and potential effects of providing microfinance loans for the purpose of constructing safe sanitation systems on a set of relevant outcomes. The study is designed in such a way that we will gain a deeper understanding how effects vary according to each state's programmatic and geographic contexts, and generating knowledge of relevant impacts.

## 2. Methodology

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### 2.1. Randomization

The evaluation will be based on a randomised control trial (RCT).

Randomisation is important because it ensures that treatment and control individuals are, on average, statistically the same in terms of observable *and unobservable* characteristics<sup>8</sup>. In other words, randomisation removes selection bias (i.e. pre-existing differences between the treatment and control groups, such as different levels of education, that might make one household more likely to follow hygiene practices than another). In theory, this should ensure that when we compare the outcomes of treatment and control the only difference is due to the receipt of the FINISH intervention and not due to any unobserved differences between them. It allows one to obtain unbiased effects of the treatment on poverty.

While the need for randomisation is clear from a methodological point of view, one should also take its ethical implications into account. In particular, during the period of the experiment (approximately one to two years) some areas will be excluded from the FINISH implementation areas although they would qualify to be covered in principle. Here it should be noted that implementing agencies would not be able to roll-out the FINISH programme across all of areas of operation within the time of the evaluation. In practice, implementing agencies work in phases – covering one area, and then extending to another and so forth. We simply exploit the existing capacity constraint during the expansion phase of the programme to define the control groups. We come in the second of the implementing phase, assuring that initial implementing problems are minimized.

#### 2.1.1. The randomization Design:

The project consists of an experimental set up in which some households will gain access to the FINISH intervention (treatment group), and some households will not for a limited period of time (control group).<sup>9</sup>

In terms of the nature of the randomisation, there are essentially two possibilities: to randomise the programme across a geographical unit (such as a village or gram panchayat) or across households within such a unit. The option of randomizing across households for this study was excluded from the start. The reason for this is that the FINISH project is designed to build dense sanitation pockets, rather than built sanitation systems loosely spread over a large area. The rationale behind this approach is the hypothesis that a health impact can only be achieved if a certain percentage of households use sanitation systems. If for example one household has a toilet but the neighbours

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<sup>8</sup> The terminology ‘treatment’ and ‘control’ stems from the medical literature – where the treatment group are those individuals or areas that are given a treatment (or covered under a programme) and the control group are subjects or areas that do not receive active ‘treatment’.

<sup>9</sup> The exact amount of time will depend on loan take-up. Implementing institutions agreed that within a period of about one year, 50% of households should own a toilet. We plan the follow-up survey once this threshold has passed in order to have at least half of the sample ‘treated’ with sanitation infrastructure. The exact time of the follow-up survey therefore depends on loan take-up.

continue to defecate in the open, drinking water of the household with a toilet might still be contaminated and so health effects not achieved.

The choice of a geographical unit was – in Tamil Nadu and Orissa – between the village or the gram panchayat. We decided to go for the latter for two main reasons: First, it is administratively and politically much easier to manage the randomisation across gram panchayats than villages. It would have been very impractical and difficult to exclude some villages in a gram panchayat whilst offering loans to other villages, most likely close-by. Second, and more importantly, the FINISH intervention in a village could have effects on villages in that same gram panchayat who do not receive the intervention (spillover effects), invalidating the comparison between treatment and controls.

In total approximately 2,000 respondents are interviewed in each of the survey areas twice: once before the randomisation ('baseline survey') and once about a year later ('follow-up survey').<sup>10</sup> The size of the geographical area these households live in differs depending on the operation area of the institution in general as well as operation area for FINISH of the institution in particular

On the basis of the survey results, the potential impact of FINISH in a number of outcomes (to be discussed below in more detail) will be estimated by comparing the outcomes of households participating in the intervention with those not participating. We will run regressions of the following type:

$$(1) \quad y_{ij} = \alpha + \beta T + \gamma X + v_j + \varepsilon_{ij}$$

where  $y_{ij}$  is the outcome of household  $i$  in gram panchayat (GP)<sup>11</sup>  $j$ ,  $T$  is a dummy variable taking the value 1 if the individual lives in a treatment GP and 0 otherwise,  $X$  is a vector of observed household and GP characteristics,  $v_j$  is a cluster-specific unobserved effect, and  $\varepsilon_{ij}$  is a random error term. It will be important to take into account that the error term may not be independent across households. This is because households living in the same GP cannot be considered as independent observations as they will be affected by similar events. In other words, observations from the same GP are likely to be much more like one another than observations from different GPs. So in computing the standard errors of the estimate of  $\beta$  from the above, we will use formulae that control for the presence of clusters (GPs in our case). This inflates the variance over and above what it would have been in the independent case.

Controlling for the baseline values of covariates likely to influence the outcome will not affect the expected impact, but a baseline survey is important for the following reasons. First, to check that observed characteristics of treatment and control households are not statistically different from each other. This is like a diagnostic test to check if randomisation has been successful. Second, the baseline values can be used to improve the precision of the estimates. This is the case when baseline characteristics and values of the outcome variables are sufficiently strong determinants of the final outcomes. And third, they are important to analyse and understand second-round attrition. Non-response is likely to be more of an issue in the second round (as individuals have received the loans or not, and may be more or less inclined to participate in the study; moreover it may be difficult to track people who have moved far away, though we will put considerable effort into this) so it is good to collect as much information on background characteristics as possible at the baseline.

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<sup>10</sup> See footnote 2 for discussion on timing between the two survey rounds.

<sup>11</sup> For simplicity, we will refer to the sampling unit as GP although this is not correct for the survey area in Madhya Pradesh. Here, one should read 'slum/village' instead of 'gram panchayat'.

## 2.2. Sampling Size and Strategy

As elaborated on above, the main unit of analysis is the gram panchayat in Tamil Nadu and Orissa and the slum in Madhya Pradesh. The selection of the gram panchayats or slums to be included in the survey was done by the implementing agencies. They were instructed to draw up a list of areas they would consider covering under the FINISH project, were they not resource constraint. This list was then used and a subset of areas randomly allocated to a control group, to be covered in the next expansion phase to take place after the follow-up survey is conducted.

The evaluation team gave no other instructions to the implementing agencies for selection of survey areas. This does not imply that the institution itself has not a certain set of guidelines and requirements for selection of areas of operation. And, as explained above, some criteria were given by the FINISH project itself.

The selection of survey households within the survey area was done on a purely random basis. Since one of the project goals is to reach dense sanitation pockets with high coverage, rather than building one million toilets spread all over India, no certain part of the population is the main target group. This can also be seen in the fact that FINISH gives incentive for implementing institutions to reach 100% coverage in villages. We therefore aimed to get a representative sample of the population were the implementing agencies chose to work.

The precise sampling lists were drawn-up as follows: A predetermined number of random numbers was created for each gram panchayat/slum, the random numbers ranging from 1 to maximum the number of households within the area. The interviewers then went with this list to the gram panchayat office and matched the random numbers to the corresponding household in the area population list. It should be noted that this list includes plots that are not inhabited, temples or other buildings. Interviewers were instructed to copy information on the next entry if this was the case. Since these lists available at the gram panchayat or area office are usually not 100% up to date, a set of back-up numbers and households was provided, which were to be covered in case a household had moved, or died.

## 2.3. Outcome Indicators

Poor sanitation has many actual or potential adverse effects on populations as well as national economies. Conversely, measures for improving sanitation mitigate those negative impacts, hence stimulating economic growth and reducing poverty. Based on available evidence, the major anticipated impacts of poor sanitation are on health and water resources. Nevertheless, as described above, FINISH is a complex intervention that concentrates on providing safe sanitation, but issues such as sustainability and delivery mode are of crucial importance. We therefore expect impacts on a number of additional margins, which we will be elaborated on in this section

As mentioned above, we are interested in the effect on outcomes that can be categorized in the following five groups: (1) health, (2) economic conditions (including costs), (3) social conditions, (4) behavioural change, and (5) demand.

*(1) Health Impact Indicators:*



Poor sanitation has a number of documented adverse impacts leading to disease and premature death, polluted water resources... Some population groups – children, women and senior people – are particularly vulnerable to some of these impacts, which considerably affect their quality of life. According to the 2006 UNICEF Human Development Report “In countries with high child mortality rates, diarrhoea accounts for more deaths in children under five years of age than any other cause of death – more than pneumonia and more than malaria and HIV/AIDS combined. [...] The largest single cause of these deaths is an unsafe and unhygienic environment: over 90 per cent of diarrhoeal deaths are attributed to poor hygiene, sanitation, and unsafe drinking water.”

Given such available evidence, we assume some of the major impacts of improved sanitation through FINISH on health indicators.

Indicators to be considered are premature deaths, costs of treating diseases; productive time lost due to people falling ill, Percentage of children aged <3 years who had diarrhoea in the past 2 weeks, per capita daily water use, self-rated health...

Nevertheless, the problems with recall data about issues such as diarrhoea are well known. We therefore do not want to rely on self-reported health outcomes only and collect additional, more objective measures, namely anthropometrics and, in some of the project areas also measure of anaemia and worms.

The anthropometrics will be used to construct a measure of nutritional status (weight for age), linear growth (height for age - stunting), and a measure of acute or short-term exposure to an unhealthy environment (weight for height - wasting). We also collect the arm circumference (AC) to construct AC for age and AC for height, which are additional measures to determine the nutritional status of a population.

The stool samples undergo a stool ova & parasites test, which is done to detect the presence of intestinal parasites. Different forms of parasites are checked for, depending on their structures, life stages, and transmission forms. A parasite may still be an egg (ova), of immature form (larvae) or of mature form (worm). Within the mature form, there are two diagnostic life-cycle stages commonly seen in parasites - the cyst and the adult trophozoite stage. Especially worms in children are a serious concern since they take the nutrients of the child leading to malnourishment. Some worms can also cause serious problems like intestinal obstruction.

The stools are furthermore checked for colour, consistency, the presence of mucus, and its pH.

The blood tests are taken to measure anaemia. The rationale to look at anaemia is nicely summarized by the WHO, stating that “Anaemia is common throughout the world. Its main cause, iron deficiency, is the most prevalent nutritional deficiency in the world. Several infections related to hygiene, sanitation, safe water and water management are significant contributors to anaemia in addition to iron deficiency. These include malaria, schistosomiasis and hookworm.”<sup>12</sup>

More details on the collection of the anthropometrics and medical tests are given in section 2.4 Instruments for Data Collection below.

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<sup>12</sup> [http://www.who.int/water\\_sanitation\\_health/diseases/anemia/en/](http://www.who.int/water_sanitation_health/diseases/anemia/en/). Accessed 1.02.2011, 18:47.

## *(2) Economic Indicators (Microfinance Sanitation Loan):*

The second focal issue of the academic evaluation will be to quantify the effect of a microfinance loan for sanitation. The question of interest is how households can cope with the burden of a non-income generating activity (given that the loan is used for the intended purpose, which will have to be captured in the survey). Outcome indicators for this analysis are therefore mainly economic ones, but also stress indicators will be considered. The latter is based on a study in South Africa which found a significant effect of having a loan on female's stress level. It is hypothesised that the stress level will be increased when the loan is not invested in an activity offering monetary return.

The financial impact of this sanitation loan is expected to have two opposing effects, which we aim to quantify: Firstly, as mentioned above, the sanitation loan is a loan for a non-income generating activity. Households will therefore have to divert some of their income into paying back the instalments which, given the poverty status of targeted households, can result in a reduction of consumption expenditures and/or an increase in labour supply - possibly of children which will in turn affect school attendance... On the other hand, improved sanitation facilities in combination with behavioural change should result in improved health, which in turn is hypothesized to positively influence productivity<sup>13</sup> and hence the above mentioned economic indicators.

It is of interest to quantify which of these effects dominates in order to judge whether a non-income generating loan is indeed a "non-productive loan" or can actually be seen as "productive" in the traditional meaning of the word.

We should be mindful that we cannot expect very large effects, particularly in the short run. This is why data collection includes information on consumption expenditures, which reflects among other household's longer term expectations. Furthermore, it is crucial to emphasize that the collection of follow-up information not only a year after the introduction of the intervention is of utmost importance to measure economic impacts in the context of this intervention.

## *(3) Indicators for Social Conditions:*

Improved sanitation facilities are expected to have positive effects on privacy, safety as well as status and prestige. Especially women are beneficiaries in terms of these indicators. Closed toilets give them privacy and a private toilet spares them to walk to public toilets or open defecation sites during the night.

But, it is also households in general that benefit. Having a private toilet is generally associated with an increased status in the village. This is for example due to the fact that people with house toilets often play key roles in arranging important ceremonies such as funerals.

## *(4) Behavioural Change:*

It is widely known that simple hygiene behaviour, practices for cleanliness such as hand-washing and the use of soap, are key to improving health. Behavioural change of the targeted population in a sanitation intervention has therefore been recognized as an essential part of any successful intervention. This is highlighted in a conclusion drawn by the Bremen Overseas Research and Development Association (BORDA) about a Community Based Sanitation – Decentralized Wastewater Treatment System (CBS-DEWAT) project:

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<sup>13</sup> It has been shown that a high incidence of water-related diseases contributes significantly to low productivity.

“The first Health Impact Assessment (HIA)-field results from (CBS-) DEWATS-project areas in India reveal that despite the provision of clean sanitary infrastructure, incidences of water and vector borne-diseases are still at unacceptable levels and the project’s impact on hygiene behavioural change has been much less than expected.”<sup>14</sup>

Several studies reveal that promotion of hygienic behaviour does indeed induce change in people’s practices. Nevertheless, little is known about which interventions are more likely to encourage change and result in breaking of old habits, implying a change that is sustained over time and not dependent on for example the regular visit of program staff (or an interviewer for that matter).

As discussed above, the FINISH Intervention incorporates such promotional activities. Furthermore, it is envisioned to work with NGOs in certain intervention villages that concentrate on educating women with respect to sanitation. Women are typically seen as key players in the promotion of hygiene and sanitation behavioural change as more often than not they are the ones caring for the children and preparing food – both matters where hygiene is of utmost importance. Nevertheless, especially in South Asia, it is foremost men who show reluctance to use toilets and break their old habits, preferring to defecate in the fields.

#### *(5) Demand Drivers:*

Based on previous studies in Asia (such as the WHO’s “Health Impact Assessment (HIA)” and World Bank surveys), the following factors are issues considered as important by rural household with respect to sanitation facilities and can hence be seen as demand drivers: a reduction of smell and flies, cleaner surroundings, privacy while defecating and taking shower, less embarrassment when friends visit, and reduction of diarrhoea/ill-feeling. Changes with respect to these indicators will hence give an indication of demand for services and we collect data on these.

## **2.4. Instruments for Data Collection**

The baseline survey included a household questionnaire, a questionnaire for the main woman in the household, if applicable, a community questionnaire, anthropometrics and blood and stool samples in some of the survey areas.

*Household questionnaire:* The household questionnaire was administered by a male or female interviewer. If available, the household head was questioned, otherwise another knowledgeable household member. One or more household members could be present during the interview. The questionnaire comprises of XX Sections, namely:

- A** Household Roster, General Household Characteristics, Education, Economic Activity, Children’s time Allocation
- B** Characteristics of Dwelling
- C** Sanitation, Bathing facilities, Water
- D** Household Consumption
- E** Health Care – outpatient & hospitalization
- F** Assets
- G** Household income
- H** Risk Perception

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<sup>14</sup> <http://www.borda-net.org/modules/news/article.php?storyid=102>

*I Shocks*

*J Credit, Savings and Insurance*

*K Observations by the interviewer*

*Woman questionnaire:* The woman questionnaire was administered to the main woman in the household (if applicable). This was exclusively done by female interviewers due to the sensitivity of some of the questions. Emphasis was put that the interview was conducted in private. The following sections make up the woman questionnaire:

*A Background and status*

*B Hygiene practices – food hygiene & personal hygiene (bathing, toilet, menstruation)*

*C Children – babies & children 1.5-16 years of age*

*D Knowledge*

*Community questionnaire:* The community questionnaire (slum or village) was administered by one or more interviewers, often as a first step when entering a new village, as part of meeting the community head or other important personalities in the community. Information was usually collected from more than just one person and on consecutive days. Sections of the questionnaire are:

*A Population & area/location*

*B Transportation*

*C Infrastructure*

*D Sources of water & sanitation*

*E Community activities*

*Anthropometrics:* Anthropometrics were collected from all kids up to the age of 16 as well as the main woman in the household. Five measures were taken, namely height, weight, and arm circumference.

*Blood and stool samples* (if applicable): Prior permission from the district and/or state government was obtained before collecting blood and or stool samples.

The collection and analysis was done differently in the survey areas. This is described in more detail in Section **Error! Reference source not found...**

Blood testing was done through a prick blood test, and the blood was tested for anaemia. Blood was taken from the main woman in the household, where applicable. This is the household head or the spouse of the household head – this should be the same woman who responded to the women questionnaire. Altogether, a maximum of 2,000 samples will be collected (one from each household).

Stool samples were collected in a clean container and then sent to the laboratory. Laboratory analysis included microscopic examination, chemical tests, and microbiologic tests. Stool samples were taken from the main woman as well as children between the age of five and ten years. A complete examination was undertaken, looking at Ova, Cyst, Trophozoite, Flagella, RBC, Pus, reaction and colour.

## 2.5. Specifics for Study in Orissa with BISWA

The previous sections described the general set-up of the FINISH evaluation. While these generalities are the same in all three survey areas, specificities remain, just as with the particular FINISH implementation details outlined in section 0 Any financial scheme supporting a social investment program has to satisfy three conditions: (1) It must be economically sustainable for all organizations on the supply side of the 'financial loop'. (2) It must be demanded by the beneficiaries on the borrowing side of the 'financial loop' and the delivery platform has to be scalable so that development impact is realized across the community. And (3) it must be socially responsible – i.e. it must be viable for the beneficiaries to pay-back without incurring catastrophic debt burdens and the outcome must not involve damage to the environment or increase social tensions.

To meet these three conditions, the FINISH Project employs a two prong strategy of [i] providing access to credit through Micro Finance Institutions which are joined as partners in the Project and [ii] generation of demand for sanitation through creation of awareness.

As for the former point [i], project partners believe that Microfinance Institutions which have wide base in rural areas and which provide service to the rural population at their doorsteps are the best alternative as the commercial Banks cannot be expected to handle such activities for want of reach and penetration. Care is taken by FINISH to ensure that only those NGOs /MFIs are taken as partners in the project which have [a] strong base in the rural area,[b] have some experience of financing and supervising construction of toilets and [c] which show inclination to allot at least 10 % of their loan portfolio for sanitation promotion.

The Project also provides capacity building in the form of assistance for training of Animators Technical Personnel and the Project Coordinators from the MFI Partners and the Masons to ensure best design in conformity with the requirement of the terrain and local culture.

Furthermore, in order to achieve sanitation densities, the MFI Partners are assured output based aid, namely a payment of small incentives for crossing certain prescribed thresholds of sanitation coverage.

To ensure demand generation (point [ii] of its strategy), FINISH follows a bottom-up approach, the main aim of which is to get in touch with the community and remove their doubts and misgivings.

The main aim to achieve this is through the MFI partners.

The partners get financial support and training to engage animators whose specific task it is to develop contacts with the members of the community. The animators are usually above-average literate females with good communication abilities and generally from the same area.

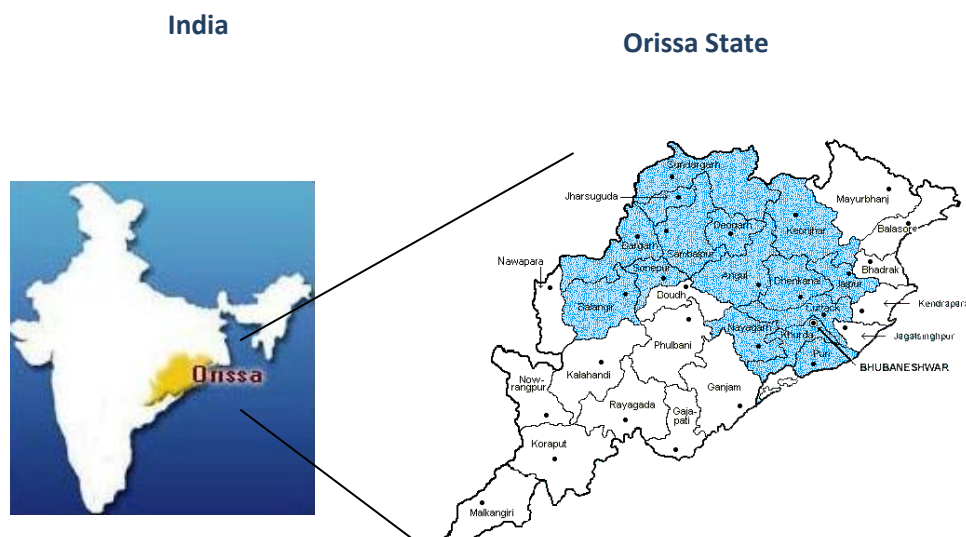
The project partners are also provided IEC material and audio visual aids for better communication of ideas. The Project also provides for the engaging of Project Coordinators by the MFIs

### Specificities of FINISH with BISWA.

In Orissa, the survey is conducted in 100 gram panchayats spread over 15 districts. BISWA excluded districts in the South as the areas were perceived to be too dangerous for interviewers to travel on their own (especially female ones) at the time of the data collection. They also restricted the GPs in East and West Zone for better co-ordination in terms of geography. Figure 2 shows a map of India as well as Orissa, indicating in blue the districts that were chosen for the second phase of BISWA.

The list of gram panchayats was finalized by BHARATHI in December 2009 and randomization of treatment and control areas done successively. The list of gram panchayats included in the survey is displayed in Appendix A.1 and also includes the outcome of the randomization.

**Figure 2: Survey Area, BISWA**



The baseline survey started on the 22<sup>nd</sup> of April 2010 and the final and 1899<sup>th</sup> interview was collected on the 15<sup>th</sup> of June 2010.

Given the size of the survey area, the survey in Orissa posed a number of challenges that were not as pronounced in the survey undertaken in Tamil Nadu and in Madhya Pradesh. It was therefore decided to hire two survey managers - one with a greater presence in the field (arranging logistics, coordinating with BISWA field offices, arranging sleeping possibilities for interviewers, guiding interviewers in the field...) and the second with a greater presence in the office (allotting the interviewer teams to survey areas, arrangement of payments, maintenance of attendance...). In addition, both managers made field visits to check the quality of the interviews. These roles were taken on by Renuka Kumar and Brajaraj Mohapatra from BISWA, under the guidance of Ninu Nair. They managed a team of 38 interviewers.

### **Team formation**

The 38 surveyors were divided into smaller groups and were allotted to different districts for data collection. A team leader was selected from each group who was responsible to manage day-to-day logistics of the team and who provided daily reports to the survey managers.

### **Logistics arrangement**

The surveyors were staying in block offices of BISWA while they were covering interviews in that region (block). BISWA's staff in these offices was instructed to provide cooperation and support to the surveyors for transportation and data collection in their operational area.

Some of the challenges that arose are elaborated on in Appendix 0.

## Medical Tests and Anthropometrics

Due to problems with getting the State's permission to take stool and blood samples from our survey sample, also the collection of anthropometric data was delayed in Orissa. We therefore do not present these data in this report, but will write an Annex to it once the data will be available (this is expected to be end of June 2011).

The final sample sizes for each survey instrument is as follows:

Household questionnaire:	1899 interviewed households 10,029 household members
Woman questionnaire:	1879 interviewed women
Community questionnaire:	220 villages in 100 gram panchayats

## Data entry

Data entry was done within BISWA and was supervised by Sushanta Bishi.

## 2.6. Comparison between Treatment and Control

As explained above, the evaluation methodology will be based on the comparison of outcomes between gram panchayats identified as FINISH areas and where FINISH is implemented first and FINISH areas where the implementation is postponed. The potential impact of the intervention on areas such as health, household standards of living and poverty will be estimated by comparing the outcomes these two different groups.

In order to be able to attribute any effects to the microfinance program, it is imperative that the two groups being compared are similar in all respects. Randomisation is the best tool at our disposal for achieving this; the key is to conduct it properly. In particular, randomisation removes selection bias (i.e. pre-existing differences between the treatment and control groups, such as different levels of education that may influence the outcomes of interest, such as household income etc.). In theory, this should ensure that when we compare the outcomes of treatment and control individuals the only difference is due to the receipt of the loan and not due to any unobserved differences between them. It allows one to obtain unbiased effects of the treatment (provision of FINSH) on poverty. These key advantages can be compromised in a number of ways: a. because of non-random non-response (i.e. related to treatment allocation) in the selection of the sample from the eligible population (marginal clients who accepted to be part of the programme); b. non random attrition related to treatment status.

In part it is possible to test whether bias arises at each stage of the study: we compare the observable (pre-treatment) characteristics and test that there are no significant differences in their distribution in the treatment and control sample. If we accept the null, this can be taken as evidence that the samples are balanced in the unobservable dimension as well, given there has been randomisation in the first place. A similar test can be carried out on the follow up samples, based on variables that cannot be affected by treatment.

At baseline we can compare variables such as consumption, enterprise, assets and savings, as well as background characteristics that cannot be changed by the program such as age, sex, adult

education, and so on. **This is what we formally test in this report.** We present tables showing the average values of different variables for treatment and control households. We then conduct two-way comparisons between control and treatment households (as ultimately these will be the comparisons made in the impact evaluation), to see if any observed differences between the means are statistically significant at conventional levels.<sup>15</sup>

Before proceeding, note that in all of the tables that follow, we use the following format. The first column gives information on which variable is concerned. We then show the mean, standard deviation, minimum and maximum for the whole sample (treatment and control combined). The following two columns show the mean of the control and the treatment group separately.

The last column shows the two-way comparisons between treatment and control, showing the p-value of the test of statistical differences between control and treatment means. The null hypothesis being tested is that the mean of the variable of controls is equal to the mean of the variable of treated individuals. Note that throughout, the tests account for clustering of the standard errors at the gram panchayat level.

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<sup>15</sup> By a 'statistically significant difference' we mean there is statistical evidence that there is a difference between the average values of the two variables. We use a significance level of 0.05, which means that the average values we are comparing are only 5% likely to be different, given that the null hypothesis that the means are equal is true. A p-value below 0.05 leads us to reject the null hypothesis that the means are equal.



### 3. Findings – Households

In this section, we present summary descriptive statistics for key demographic, socio-economic, hygiene, health, and child development variables.

As described in the previous section, we provide here a formal statistical comparison between treatment and control units. Testing for the similarity between the two groups is very important for the impact evaluation that will follow approximately a year after programme implementation starts in the treatment survey area.

The second major aim of this section is to give a flavour of what our sample looks like. We will therefore not only present information on our outcome indicators but will go into more detail for certain areas of interest.

#### 3.1. General Household Characteristics

Table 3 - **1Error! Reference source not found.** provides information on the household's caste, religion, primary activity, and living status. The greater fraction of households in our sample in Orissa (36%) belong to the backward caste, The remaining households are relatively evenly distributed between forward caste (22%), scheduled caste (19%) and scheduled tribe (21%). 2% belong to the most backward caste. We can see from the last two column, that there is no significant difference between these proportions between the treatment and control areas (p-values are all above 0.05). The very similar means reflect this statistical insignificance. For example in the control area, 20% of households belong to the forward caste and in the FINISH treatment areas 24% do and in the SIMAVI treatment area, 21% do.

**Table 3 - 1 Household characteristics**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Caste (fraction)									
Forward caste	0.22	0.41	0	1	0.20	0.24	0.21	0.496	0.911
Backward caste	0.36	0.48	0	1	0.35	0.39	0.35	0.509	0.942
Most backward caste	0.02	0.15	0	1	0.02	0.02	0.03	0.992	0.464
Scheduled caste	0.19	0.39	0	1	0.18	0.19	0.18	0.877	0.983
Scheduled tribe	0.21	0.41	0	1	0.25	0.16	0.23	0.304	0.802
Religion (fraction)									
Hindu	0.97	0.17	0	1	0.95	0.99	0.97	0.107	0.455
Muslim	0.00	0.07	0	1	0.00	0.00	0.01	0.289	0.326
Christian	0.03	0.16	0	1	0.05	0.01	0.02	0.142	0.375
Main Activity (MA) of household head (fraction)									
Agricultural labourer	0.38	0.49	0	1	0.41	0.33	0.39	0.089	0.568
In agriculture	0.60	0.49	0	1	0.67	0.53	0.58	0.012	0.023
Construction worker	0.13	0.33	0	1	0.10	0.18	0.11	0.106	0.729
Professional	0.03	0.17	0	1	0.02	0.03	0.04	0.595	0.122
Government job	0.03	0.17	0	1	0.02	0.03	0.04	0.595	0.122
Other	0.38	0.49	0	1	0.41	0.33	0.39	0.089	0.568
Living (fraction)									
HHs lived in dwelling all their life	0.98	0.13	0	1	0.98	0.99	0.98	0.654	0.821

HHs lived in village all their life	0.99	0.09	0	1	1.00	0.99	0.99	0.272	0.567
HHs have plans to migrate	0.08	0.27	0	1	0.09	0.07	0.07	0.415	0.577

In terms of religion, the great majority of households are Hindu (97%), the remaining households are Christian (3%) and less than 1% (nine households in our sample) is Muslim.

Most of the households (60%) gain their primary income from agriculture, mainly agricultural labour (38%). For 15% of households in the sample, the primary income stems from construction work and 13% of households derive their main income from a professional activity (technical, managerial, executive, teacher...); 3% work for the government and the remaining ones fall within remaining categories, such as skilled labourers, dairy and the like. None of these general household characteristics differ significantly between the two evaluation groups.

Finally, we can see from Table 3 - 1 **Error! Reference source not found.** that most households lived in their dwelling as well as in the village all their lives (98 and 99% respectively). Nevertheless, about 8% of households have plans to migrate within the next two years.

We next describe the characteristics of the dwellings that our sample resides in. Again, we show average values for the whole sample and information on the mean in all control, and treatment (FINISH and SIMAVI) gram panchayats, along with p-values for differences between the means. These are shown in Table 3 - 2.

**Table 3 - 2 Information on the dwelling**

Variable	Whole sample				Control mean	Treatment		p-value T vs C	
	mean	sd	min	max		FINISH mean	SIMAVI mean	FINISH	SIMAVI
Owens dwelling (fraction)	0.98	0.13	0	1	0.98	0.98	0.98	0.866	0.897
Nr of rooms	2.8	1.55	0	30	2.91	2.72	2.76	0.165	0.308
<b>Dwelling structure (fraction)</b>									
Pucca house (strong structure)	0.22	0.42	0	1	0.23	0.23	0.19	0.939	0.404
Semi-pucca house (semi-strong)	0.14	0.35	0	1	0.15	0.13	0.15	0.515	0.879
Kutch house (weak)	0.63	0.48	0	1	0.62	0.63	0.66	0.721	0.382
<b>Material of walls (fraction)</b>									
Concrete/brick	0.26	0.44	0	1	0.27	0.28	0.24	0.754	0.489
Mud/brick/stone	0.26	0.44	0	1	0.26	0.26	0.25	0.968	0.755
mud/wooden plank	0.48	0.5	0	1	0.47	0.45	0.52	0.661	0.274
<b>Material of roof (fraction)</b>									
Cement/rcc or stone	0.22	0.41	0	1	0.23	0.23	0.18	0.884	0.25
Roofing tiles	0.24	0.43	0	1	0.22	0.23	0.26	0.808	0.495
Sheet/tin, thatch, other	0.4	0.49	0	1	0.4	0.36	0.46	0.54	0.367
<b>Material of floor (fraction)</b>									
Tiles	0.01	0.12	0	1	0.02	0.01	0.02	0.703	0.871
Cement	0.3	0.46	0	1	0.31	0.3	0.27	0.781	0.566
Stone, mud/earth	0.68	0.47	0	1	0.67	0.68	0.7	0.809	0.566
<b>Main fuel for cooking and lightning (fraction)</b>									
Cooking: firewood	0.88	0.32	0	1	0.86	0.89	0.9	0.527	0.307
Cooking: lpg, biogas, kerosene...	0.12	0.32	0	1	0.14	0.11	0.1	0.527	0.307
Lightning: electricity	0.43	0.5	0	1	0.46	0.47	0.37	0.844	0.187
Lightning: kerosene lamps, candle	0.57	0.5	0	1	0.54	0.53	0.63	0.844	0.187

One can see that the great majority (98%) of households own the dwelling they live in, which has on average approximately 2-3 rooms and is for more than half of the sample a kutchra house (weak structure); 14% live in a semi-pucca house (semi strong structure) and 22% in a pucca house (strong structure).

The typical house in the implementation area has walls of mud and wooden planks, a roof made of sheets or tin and the floor is simply mud or earth.

Only few households have dwellings made of stronger materials. For example only 26% of households have walls made of cement and brick, 24% have roofing tiles and 22% cement or stones as a roof and the floor is made of cement in 30% of the households.

All these dwelling characteristics are not significantly different between the control and the treatment areas.

Finally we look at the main fuel used for cooking as well as lighting. In the bottom panel of Table 3 - 2 we can see that most households cook over a woodfire (88%) and use a kerosene lamp (53%) or candles (3%) to light their place. 43% of the samples households have access to electricity to light their dwelling.

## 3.2. Household Members and the Household Head

We next look at some characteristics of our sampled households, the household head and individual household members.

We see from Table 3 - 3 that the typical household of our sample in Orissa has 5.3 household members, with slightly more males in the household. Each household has on average one or more children (0.4 children in the age range 0-5 and 1.16 children aged 6-14 years).

On average, 1.3 household members work for pay. We will discuss a bit more details on this labour supply further below.

It is to note that we observe no statistically significant differences across treatment and control areas – neither between FINISH and control areas or between SIMAVI and control areas.

**Table 3 - 3 Household composition**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Nr of hh members	5.29	2.1	1	18	5.26	5.41	5.19	0.428	0.389
Nr of male hh members	2.81	1.35	0	11	2.81	2.86	2.76	0.701	0.509
Nr of female hh members	2.48	1.36	0	10	2.45	2.56	2.42	0.439	0.532
Nr of kids 0-5 years of age	0.4	0.7	0	5	0.4	0.42	0.38	0.716	0.564
Nr of kids 6-14 years of age	1.16	1.24	0	9	1.12	1.26	1.1	0.137	0.673
Nr of male hh members >16 yrs	2.14	1.15	0	8	2.17	2.1	2.15	0.448	0.813
Nr of female hh members >16 yrs	1.88	1.01	0	9	1.86	1.92	1.84	0.598	0.575
Nr of hh members working for pay	1.13	1.15	0	8	1.12	1.16	1.1	0.836	0.875

The next Table ( the conventional level of 5% as can be seen in the last two columns of the Table.

Table 3 - 4) provides information on the household head of our sample households. A typical household head is male, 48 years of age, married and went to school up to grade V at most.

More specifically, 89% of all households are headed by a male, with an average age of 48 years. 92% of the household heads are married, 4% widowed and the remaining 4% have never been married. 29% have no formal education, 30% completed a grade up to grade V, further 15% went on completing grade VI, VII or VIII, 17% completed either grade IX or X, 4% grades XI or XII and further 4% completed a higher grade or vocational training. Despite the fact that 71% of all household heads underwent some education, only 32% claim to be able to read and understand a newspaper and 30% to be able to write a formal letter.

About a third of all household heads (32%) engage in paid work outside their family's or own farm as their main economic activity; 27% do paid work on their own farm and another 6% do unpaid work on their own farm. For 13% of household heads the main economic activity is unpaid work outside their own farm. Further 20% engage in an activity which no direct monetary income, such as being a homemaker (16%), being retired (2%), or having no activity due to illness (2%).

On average, household heads work 34 hours a week and earn Rs. 428 (~9.50 USD)

None of these variables differ on the conventional level of 5% as can be seen in the last two columns of the Table.

**Table 3 - 4 Information on the household head**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Gender (fraction female)	0.11	0.31	0	1	0.1	0.11	0.11	0.929	0.6
Age of household head	48	14	1	102	49	47	48	0.128	0.377
<b>Marital status of household head (fraction)</b>									
Never married	0.04	0.2	0	1	0.05	0.04	0.04	0.514	0.507
Married	0.92	0.27	0	1	0.92	0.92	0.92	0.905	0.73
widowed	0.04	0.19	0	1	0.03	0.04	0.05	0.361	0.081
<b>Educational Attainment of household head (fraction)</b>									
No formal education	0.29	0.45	0	1	0.28	0.27	0.31	0.731	0.301
Up to grade V	0.30	0.46	0	1	0.32	0.3	0.28	0.505	0.275
Grade VI-VIII	0.15	0.36	0	1	0.15	0.15	0.16	0.921	0.989
Grade IX-X	0.17	0.38	0	1	0.16	0.18	0.16	0.483	0.921
Grade XI-XII	0.04	0.2	0	1	0.04	0.05	0.04	0.838	0.594
> grade XII or vocational training	0.04	0.19	0	1	0.04	0.04	0.04	0.684	0.84
Able to read newspaper	0.32	0.47	0	1	0.3	0.31	0.35	0.867	0.339
Able to write formal letter	0.30	0.46	0	1	0.29	0.28	0.33	0.998	0.385
<b>Main Activity (MA) of household head (fraction)</b>									
paid work on family's/own farm	0.27	0.44	0	1	0.22	0.31	0.27	0.022	0.137
paid work outside family's/own farm	0.32	0.47	0	1	0.35	0.28	0.34	0.145	0.855
UNpaid work, family's/own farm	0.06	0.23	0	1	0.05	0.06	0.07	0.295	0.373
UNpaid work outside own farm	0.13	0.33	0	1	0.16	0.13	0.09	0.516	0.117
Homemaker	0.16	0.36	0	1	0.17	0.16	0.14	0.614	0.307
no main activity due to illness	0.02	0.15	0	1	0.02	0.01	0.04	0.192	0.191

retired	0.02	0.13	0	1	0.02	0.01	0.02	0.094	0.339
hrs worked by hh head, last week	34	25	0	118	35	33.68	33	0.624	0.427
Payment received, last week (Rs.)	428	617	0	9000	461	381.23	447	0.066	0.791

We repeat Table 3 - 4 below (Table 3 - 5), displaying the same information, separated for male and female household heads – the first columns give statistics for male household heads the following ones for female household heads. The last column displays p-values for the test of significant differences in the means for males and females.

The average female household head is slightly younger than the average male household head (45 compared to 48 years) and female household heads are less likely to be married. On the other hand, they are more likely to be widowed: 26% of female household heads are widowed compared to 1% of male household heads. Female household heads have also lower education (52% have no formal education at all, while the percentage for males is 26%). In line, less female household heads are able to read a newspaper and write a formal letter. In fact, only 20% state to be able to read a newspaper and 18% to write a formal letter. Also the type of work differs by gender of the household head: 63% of male household heads report to have a paid main activity compared to 34% of female ones. This reflects in the working hours and earnings: Female household heads work on average 22 hours less a week and earn about a third of what male household heads earn in a typical week (Rs. 126 as compared to Rs. 463)

**Table 3 - 5 Information on the household head – by gender**

Variable	Male				Female				p-value T vs C
	mean	sd	min	max	mean	sd	min	max	
Age of household head	48	14	17	102	45	15	1	82	0.00
<b>Marital status of household head (fraction)</b>									
Never married	0.04	0.19	0	1	0.07	0.26	0	1	0.01
Married	0.95	0.21	0	1	0.64	0.48	0	1	0.00
widowed	0.01	0.09	0	1	0.26	0.44	0	1	0.00
<b>Educational Attainment of household head (fraction)</b>									
No formal education	0.26	0.44	0	1	0.52	0.5	0	1	0.00
Up to grade V	0.31	0.46	0	1	0.23	0.42	0	1	0.03
Grade VI-VIII	0.16	0.37	0	1	0.09	0.28	0	1	0.01
Grade IX-X	0.18	0.38	0	1	0.11	0.31	0	1	0.01
Grade XI-XII	0.05	0.21	0	1	0.02	0.14	0	1	0.07
> grade XII or vocational training	0.04	0.19	0	1	0.03	0.17	0	1	0.49
Able to read newspaper	0.33	0.47	0	1	0.20	0.4	0	1	0.00
Able to write formal letter	0.31	0.46	0	1	0.18	0.38	0	1	0.00
<b>Main Activity (MA) of household head (fraction)</b>									
paid work on family's/own farm	0.29	0.46	0	1	0.08	0.27	0	1	0.00
paid work outside family's/own farm	0.34	0.47	0	1	0.19	0.39	0	1	0.00
UNpaid work on family's/own farm	0.06	0.23	0	1	0.07	0.26	0	1	0.43
UNpaid work outside family's/own farm	0.13	0.34	0	1	0.07	0.26	0	1	0.02
Looking for a job	0.01	0.09	0	1	0.00	0.00	0	0	0.21
attending school	0.00	0.05	0	1	0.00	0.00	0	0	0.47
Homemaker	0.11	0.31	0	1	0.52	0.5	0	1	0.00
no main activity due to illness	0.02	0.14	0	1	0.03	0.18	0	1	0.27

retired	0.02	0.13	0	1	0.01	0.1	0	1	0.56
hrs worked by hh head, last week	36	24	0	118	14	22	0	105	0.00
Payment received, last week (Rs.)	463	636	0	9000	126	271	0	2500	0.00

The final characteristics discussed in this section are the same ones as for the household head, this time for all household members above the age of 16. The information is displayed in Table 3 - 6.

We see that slightly less than half of the sample is female (47%), and the average age is 38 years. The majority (69%) of household members older than 16 years is married or has been married at some point (7%). 28% have no formal education, and 37% state that they can read a newspaper and 35% are able to write a formal letter. Most, 43% do paid work on their own or their family's farm and 20% are looking for a job.

Again, all of these variables are well balanced between our treatment and control areas.

**Table 3 - 6 Information on the household members**

Variable	Whole sample				Control	Treatment		p-value T vs C	
	mean	sd	min	max		FINISH mean	SIMAVI mean	FINISH	SIMAVI
Gender (fraction female)	0.47	0.5	0	1	0.46	0.46	0.48	0.814	0.161
Age of household head	38	17	16	102	38	38	39	0.783	0.709
<b>Marital status of household member (fraction)</b>									
Never married	0.28	0.45	0	1	0.28	0.28	0.27	0.894	0.428
Married	0.69	0.46	0	1	0.69	0.68	0.7	0.784	0.499
Separated, divorced or widowed	0.04	0.19	0	1	0.03	0.04	0.03	0.182	0.819
widowed	0.03	0.18	0	1	0.03	0.04	0.03	0.068	0.439
<b>Educational Attainment of household member (fraction)</b>									
No formal education	0.28	0.45	0	1	0.27	0.28	0.3	0.84	0.422
Up to grade V	0.22	0.41	0	1	0.23	0.21	0.21	0.474	0.36
Grade VI-VIII	0.15	0.35	0	1	0.15	0.14	0.15	0.631	0.876
Grade IX-X	0.23	0.42	0	1	0.22	0.24	0.22	0.399	0.869
Grade XI-XII	0.06	0.24	0	1	0.07	0.06	0.06	0.557	0.593
> grade XII or vocational training	0.05	0.23	0	1	0.05	0.05	0.06	0.918	0.627
Able to read newspaper	0.37	0.48	0	1	0.36	0.36	0.39	0.922	0.517
Able to write formal letter	0.35	0.48	0	1	0.35	0.34	0.38	0.925	0.606
<b>Main Activity (MA) of household member (fraction)</b>									
paid work on family's/own farm	0.12	0.32	0	1	0.1	0.13	0.13	0.075	0.104
paid work outside family's/own farm	0.20	0.40	0	1	0.2	0.18	0.21	0.476	0.87
UNpaid work on family's/own farm	0.05	0.21	0	1	0.04	0.05	0.05	0.488	0.287
UNpaid work outside own farm	0.06	0.24	0	1	0.08	0.06	0.05	0.536	0.212
looking for a job	0.03	0.16	0	1	0.02	0.04	0.02	0.031	0.711
attending school	0.05	0.22	0	1	0.05	0.05	0.05	0.658	0.641
Homemaker	0.44	0.5	0	1	0.44	0.44	0.45	0.944	0.792
no main activity due to illness	0.02	0.13	0	1	0.02	0.02	0.02	0.964	0.978
did not work	0.03	0.16	0	1	0.04	0.02	0.01	0.253	0.013
hrs worked by hh head, last week	19	25	0	170	20	18.32	19	0.16	0.36
Payment received, last week (Rs.)	234	503	0	9000	243	216.79	247	0.241	0.885

### 3.3. Sanitation & Bathing

In this section, we turn to the sanitation and bathing facilities of the household. We also look at hygiene practices since diarrheal disease is often the result of virus and bacteria propagation, keeping a clean and disinfected environment is crucial in its prevention.

Table 3 - 7 gives a broad picture of the sanitation and bathing situation in our survey area. As can be seen, only 12% of all households state to have a toilet either inside or outside their dwelling. A slightly lower percentage (10%) owns some type of bathing facilities.

While 96% of all households state to bathe daily (93% without fully undressing themselves), a slightly lower percentage reports to wash their hands (with soap and water) after going to the toilet. All these indicators are balanced between our two evaluation groups.

**Table 3 - 7 Sanitation & bathing facilities**

Variable (fraction)	Whole sample				Control	Treatment mean		p-value T vs C	
	mean	sd	min	max	mean	FINISH	SIMAVI	FINISH	SIMAVI
Own a toilet (inside or outside)	0.12	0.33	0	1	0.12	0.1	0.12	0.734	0.847
Usually wash hands after toilet	0.72	0.45	0	1	0.73	0.7	0.7	0.834	0.534
Own bathroom (inside or outside)	0.10	0.3	0	1	0.11	0.1	0.08	0.589	0.336
Bathe daily	0.96	0.19	0	1	0.97	0.95	0.97	0.51	0.872
Undress to bathe	0.07	0.41	0	3	0.07	0.1	0.09	0.674	0.83

The following tables in this section will give a more detailed picture, not considering the balance of the sample given that most descriptive shown are conditional, such as conditional on households having a toilet or not.

#### 3.3.1. Toilet Ownership

As we can see from Table 3 - 7, 12% of the sampled households have a toilet. 62% of households with a toilet have the construction outside their dwelling; the remaining 32% (88 households) have it inside their house. We will now go into more detail about this toilet and habits related to its use.

**Table 3 - 8a Type of toilet**

Households with toilet:		
	Frequ	%
<b>Type of toilet</b>		
Water seal	200	94.3
Dry toilet	12	5.7
<b>Where toilet refuse goes:</b>		
Single pit	103	47.9
Twin pit	16	7.4
Septic tank	62	28.8
To the fields	5	2.33
drainage	10	4.7

Not all of the 229 households that state to have a toilet give more details on its type. But, we can see from Table 3 - 7 that almost all privately owned household toilets are stated to have a water seal (94%), the remaining ones are dry toilets (6%). This low percentage of dry toilets is not surprising given the decision of the FINISH project to start their work in areas where water scarcity is not a major problem.

About half of the toilets (48%) are single pit and almost a third is stated to be septic tanks.<sup>16</sup>

<sup>16</sup> Please note that these might not actually be septic tanks. From experts' observations in the field we know that many so-called septic tanks do actually have an outlet or a pipe, which automatically declassifies it as a septic tank.



Table 8b shows that most of the households that have a toilet arranged the construction on their own (86%) and also used their own money and savings to do so (85%). About 14% of households constructed it through the TSC and availed funding through them.

Three households state to have taken a loan from a formal financial institution to construct the toilet.

We also asked households for their motivation to build a toilet. There does not seem to be one overarching reason why households decided to construct a toilet. As can be seen from Table 8c, the most common reason (stated by 24% of households) is more convenience. This is closely followed by a better hygiene due to the constructed toilet (24%). Other popular reasons are greater safety (18%), an expression of need by female household members (15%) and also the status in the village played a role for 13% of households.

We asked more specifically whether the household believes that their social status in the village increased after they had built the toilet and 89% of households stated that their status indeed increased due to having constructed a toilet.

A further 95% claim that they save time because of having the toilet now in or close to their houses.

### 3.3.2. Toilet Usage

We can see from Table 8d that for most households (82%), if they have a toilet, it is used by all household members.

In 8% of the cases the main users are women only. It is also either all household members (in 58% of the cases) or the women in the household (24%) who carry the responsibility of taking care of the toilet.

We asked, whether the toilet is perceived to be clean, more specifically whether there are any flies, it smells or both. The great majority of households (80%) states that their toilet neither smells nor do they report there to be any flies. 10% say that there are flies and 8% report that their toilet smells.

**Table 3 - 8b Construction & funding**

Households with toilet:		
	Frequ	%
<b>Toilet construction:</b>		
Arranged themselves	183	85.9
Through TSC	30	14.1
<b>Funding:</b>		
Own money/savings	184	84.8
From the Government	28	12.9
Loan from formal source	3	1.4

**Table 3 - 8c Main motivation to construct toilet**

Households with toilet:		
	Frequ	%
<b>Motivation to construct toilet</b>		
More convenience	52	24.2
females wanted one	32	14.9
status in the village	28	13.0
better hygiene	51	23.7
greater safety	39	18.1
financial support gvnmt	10	4.7

**Table 3 - 8d Users and caretakers**

Households with toilet:		
	Frequ	%
<b>Users of toilet</b>		
Everybody	179	82.1
Women	18	8.3
girls	7	3.2
nobody	10	4.6
<b>Main caretaker</b>		
Everybody	122	57.8
Women	51	24.2
Men	23	10.9
Grandparents	1	0.5
Nobody	9	4.3
Helper	2	1.0



### 3.3.3. Households without own toilet

88% of all households in the areas that BISWA chose to implement FINISH and SIMAVI in their second phase do not have their own toilet. We now look at where and when these households go to release themselves. We also look at why they do so, whether it is their own preference or which constraints they face to have their own toilet.

From Table 9a we can see that almost all of the households that do not have their own toilet, namely 94%, go somewhere outside near their dwelling. The remaining households usually use their neighbours' toilet (5%).

On average, household members need to walk about 270m to get to the place where they relieve themselves. The distance ranges from 0.5 to 2000m.

We ask households about when they usually go out to relieve themselves. Privacy is an important issue when it comes to going to the toilet and it is often reported that especially women only go early in the morning or late at night and avoid the hours of daylight. We will look more specifically at women in our sample households in the following chapter. But, we do want to already get an idea whether household members are constrained as to when they go and other problems they perceive with the alternative they use. Table 9b provides statistics on this issue.

We can see that 59% of households state that they go any time they need to go. The remaining households are constrained to a certain time, mainly early in the morning (45%).

The main other problem associated with the alternative to a personal toilet used (mainly outside near the dwelling), is that it is uncomfortable (stated by 45% of households), that it is inconvenient (22%) and that there is no water available (11%). It is also perceived to be unsafe and dangerous by 8% of households.

We asked those households that do not have a toilet whether they would prefer their own. 99% stated that they would prefer to have one on their own instead of using the alternative place.

**Table 3 - 9a Alternative if no own toilet**

Households without toilet:		
	Frequ	%
<b>Alternative if no own toilet</b>		
Public toilet	4	0.3
Neighbor's toilet	86	5.3
Outside near dwelling	1,532	94.3
Open fields	1	0.1

**Table 3 - 9b Timing & Problems**

Households without toilet:		
	Frequ	%
<b>Time(s) alternative is used</b>		
Any time I need to go	978	58.8
In the early morning	748	45.0
In the late evening	419	25.2
At night	41	2.5
During the day	5	0.3
<b>Associates following problem(s) with alternative:</b>		
uncomfortable	746	44.9
inconvenient	371	22.3
no water	188	11.3
unsafe/dangerous	133	8.0
embarrassing	8	0.5
fear of animals (snakes...)	43	2.6
unhealthy	1	0.1
takes much time	4	0.2

**Table 3 - 9c Reasons for not having own toilet**

Households without toilet:		
	Frequ	%
<b>Reason for not having own toilet</b>		
No need	228	13.8
Too expensive	1383	83.4
No space	3	0.2
Toilet shouldn't be close to house	40	2.4
Never thought about it	64	3.9

We therefore wanted to know their main constraint to owning a toilet themselves. The answer to this question is summarized in Table 9c: The great majority (83%) states that a toilet is too expensive for them. 14% of all interviewed households state that there is actually no need for them, and 4% never thought about having their own toilet.

We also asked households – whether they have their own toilet or not, about their hygiene practises. We learn that almost 30% of households do not wear shoes when they go out to relieve themselves. They clean themselves usually with water (71%) or with soil (27%), or stones or leaves (2%). 87% of households always wash their hands, 10% do so sometimes and the remaining 4% never wash their hand after going to the toilet. Of those that do wash their hands, 40% do so with water and soil, 19% with water only and 39% with soil.

### 3.3.4. Bathing facilities

We will now analyse the bathing situation in our sample in more detail, as we did with the toilet situation just above.

To recapture from Table 3 - 7, only 10% of our sample have their own bathing facility (as compared to 12% of households who have their own toilet). 61% of those households that have a toilet have at the same time a bathing facility.

Table 3 - 10a provides information about where household members typically bathe – separated by whether they stated to have their own bathing structure or not.

One can see that about 40% (65 households) of households that state to have their own bathroom, have it inside their house (33% a closed bathroom, 7% an enclosure), and 39% have a bathing structure outside their house (36% closed, 3% an enclosure).

For households that state not to have their own bathroom, the main place to go for a bath are public bathing facilities (84%). 12% of households state that they bathe in open bathing space in the open.

**Table 3 - 10a Typical bathing place for household**

	own bath	
	yes	no
<b>Place where household typically bathes (%)</b>		
Closed bathroom inside the house	32.9	
Bathroom enclosure inside the house	6.8	
Closed bathroom outside the house	36.0	
Bathroom enclosure outside the house	3.1	
Shielded/thatched structure	3.7	0.4
Public bathing facilities	9.3	83.7
Open bathing space outside the house	8.1	11.6
Other		4.3

**Table 3 - 10b Perception of bathing place**

	Own bath	
	Yes	No
<b>Perceives bathing place to be... (%)</b>		
convenient	74.8	25.1
safe	74.8	16.1
clean	72.4	28.2
healthy	68.7	11.8
smelly	28.0	61.8

We ask households about their perception of the place where they typically bathe. The statistics are displayed in Table 10b and we again split the sample into households with and without their own bathing facility. We can see that the great majority of households who have their own facilities find these to be convenient and safe (75%), clean (72%) and healthy (69%). 28% find it smelly.

Those households that use public space are less satisfied with their bathing place: Only 25% find it convenient, 16% safe, 28% find it clean, 12% healthy and 62% find it smelly.

We finally want to know the main reason why households without their own bathing facilities do not have one. We can see in Table 3 - 10c that as for the toilet, most find it too expensive (78%). 8% do not see the need and 4% state to have no space. 3% never thought about it.

**Table 3 - 10c Reason for public bath**

Households without bathing facility:		
	Frequ	%
Reason for not having own bath (%)		
No need	128	7.4
Too expensive	1343	77.5
No space	70	4.0
Never thought about it	49	2.8

### 3.4. Water

The survey also investigated household water source for the purpose of drinking, cooking, bathing, washing utensils and usage in the kitchen. We ask from which source households collect or get water for the different purposes and collect information that allows us to estimate how much time the household spends on collecting water in a week. We ask the main set of questions only for the season when the survey was conducted and add some questions that gives us information how the situation differs for households in the dry season. We will point to these differences where appropriate. Results related to the main source of drinking water, amount of water consumed and sources used are summarized in Table 3 - 11.

The main source from which drinking water is collected in the survey area is open wells: 52% of the sampled households come to this source for their drinking water. The second most popular source, which is used by 40% of all households, is a hand pump or mini-power pump. Only 3% get their drinking water from a household connection.

**Table 3 - 11 Drinking Water**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max	mean	FINISH	SIMAVI	FINISH	SIMAVI
<b>Main source of drinking water (fraction)</b>									
Open well	0.52	0.5	0	1	0.47	0.52	0.58	0.461	0.171
Pump	0.40	0.49	0	1	0.45	0.4	0.35	0.469	0.236
Household connection	0.03	0.18	0	1	0.04	0.04	0.02	0.799	0.27
Other	0.05	0.21	0	1	0.05	0.05	0.05	0.846	0.92
Dry season: Open well	0.22	0.42	0	1	0.26	0.19	0.21	0.284	0.409
Dry season: Pump	0.67	0.47	0	1	0.63	0.69	0.7	0.387	0.254
Dry Season: HH connection	0.02	0.15	0	1	0.02	0.02	0.02	0.684	0.988
Dry Season: Other	0.09	0.28	0	1	0.09	0.09	0.07	0.972	0.405
<b>Purification of drinking water</b>									
No need to do anything	0.93	0.26	0	1	0.94	0.94	0.92	0.867	0.546
Boil the water	0.03	0.16	0	1	0.01	0.02	0.03	0.968	0.597
Add chlorine tablets	0.01	0.1	0	1	0.01	0.01	0.02	0.674	0.523
Filter it through a cloth	0.02	0.13	0	1	0.01	0.02	0.02	0.412	0.578
Use water filter	0.01	0.11	0	1	0.02	0.01	0.01	0.213	0.584

We see a shift away from open well during the dry season. During this time, 67% of households get their drinking water from a hand or mini-pump; 22% still collect it from open wells.

We do not only collect information on the main drinking source of the household but also about the treatment that households apply to their drinking water. The lower panel of Table 3 - 11 gives summary statistics about purification practices of drinking water of our sample households. Note that households were able to give multiple answers. 93% believe that there is no need to do anything with the drinking water they get. Of the remaining households, 3% boil their drinking water and 2% filter it through a cloth. Again, practices do not differ between the treatment and control group.

Table 3 - 12 displays information on the number of litres used per household per purpose as well as number of litres collected from different sources. We already know that most households get their drinking water through an open well – this is confirmed by the number of litres used per day per household from this source (open well, borewell and public open well). The second most used source in terms of litres per day per household is a pond.

**Table 3 - 12 Water consumption & water sources**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Water consumption (litres per household)									
Total litres per day	187	139	14	1690	185	184	193	0.971	0.651
for drinking	27	19	0	250	26	28	26	0.286	0.719
for cooking	32	33	0	530	32	31	34	0.763	0.713
for bathing	64	78	0	1560	61	64	68	0.770	0.519
for washing	31	43	0	891	31	30	34	0.806	0.434
for kitchen	10	25	0	630	12	9	11	0.139	0.566
for other	21	26	0	540	21	21	20	0.983	0.803
Water source (litres per household)									
from river	3	26	0	500	4.2	2.9	3.0	0.636	0.625
from pond	13.43	39.96	0	500	13.5	16.9	8.9	0.509	0.300
from own open well	25.24	75.68	0	900	29.5	19.6	27.4	0.127	0.795
from public open well	8.91	51.32	0	1150	10.5	8.5	7.6	0.628	0.498
from shallow pump	6	35	0	660	5.5	5.5	8.5	0.972	0.416
from borewell	117	132	0	1690	109.2	114.7	127.7	0.733	0.301
from piped source	8	60	0	1550	6.7	11.3	5.3	0.370	0.635
from public tap	3	25	0	510	3.4	2.5	2.5	0.622	0.712
from tanker	0.09	3.05	0	123	0.2	0.0	0.1	0.317	0.642
from other	0.09	2.71	0	95	0.3	0.0	0.0	0.320	0.320
Time spent (minutes per week)									
time spent collecting water(min), week	341	432	0	7000	337	323	368	0.723	0.400

All in all, each household uses on average 187 litres per day for all the above mentioned purposes. This translates to on average 34 litres per household member per day.

The last row of Table 3 - 12 gives information on the average amount of time spent on collecting water in a week, which is 341 minutes per household. This translates into on average of 48 minutes

that each household spends on collecting water per day. We ask households how much more time they spent in the dry season. Households report that they spent on average 48 minutes more during the dry season, implying that 1hr and 36 minutes are spent on water collection per household during that time.

Please note that we again find no statistically significant differences between the treatment and the control group in all variables related to water.

### 3.5. Consumption

We next turn to consumption expenditures of the households. We present here statistics for consumption categories. These are constructed by aggregating over information that was collected for a wide range of items. The questionnaire for example collects consumption expenditure for 21 different food items. The aggregated variable “Food expenditure” includes amounts actually spent on these different food items as well as estimates for the food that was consumed but not bought – i.e. food that was home produced, used from storage or that the household received as a gift or a mean of payment. The variable therefore captures the estimated value of consumed food.

Also note that households were asked to recall their food consumption from the last week (the same holds for alcohol and tobacco consumption), non-durable consumption items (such as transport, electricity, education fees...) are recalls from the last month and durable consumption items (such as clothing, shoes, repairs and maintenance...) are recalls over the last year. We followed common practices in deciding these recall periods.

Summary statistics are displayed in Table 3 - 13.

**Table 3 - 13 Total household consumption expenditures**

Variable	Whole sample				Control	Treatment		p-value		
	mean	sd	min	max		mean	FINISH	SIMAVI	T vs C	FINISH
Expenditures in last year (Rs.) on...										
Total consumption	51,057	46,049	0	780,000	50,019	51,286	52,005	0.751	0.652	
Food	28,002	18,347	0	140,000	28,343	26,919	28,948	0.317	0.704	
Expenditure on alcohol & tobacco	111	914	0	26,000	81	93	164	0.875	0.254	
Total food (incl. Alcohol, cigarettes)	28,114	18,400	0	140,000	28,424	27,013	29,112	0.316	0.666	
Nondurable consumption	19,168	33,485	0	410,000	17,941	20,457	19,016	0.396	0.733	
Durable consumption	3,448	4,392	0	42,800	3,100	3,623	3,641	0.281	0.375	
=1 if a dowry was paid	0.02	0.130	0	1	0.010	0.020	0.020	0.066	0.209	
Amount of dowry paid	414	7,966	0	300,000	600	296	345	0.536	0.629	

We can see from Table 3 - 13 that households spend on average Rs. 51,057 per year on food, other non-durable and durable items. This translates to USD 1,116<sup>17</sup>, which again implies that households spend approximately USD 3.06 a day, or - without using an equivalence scale – USD 0.58 per

<sup>17</sup> Using the following exchange rate: 1 INR = 0.02188USD

household member. We will make these same calculations when looking at income of the households and look at how many of our sampled households live below the internationally used poverty line of \$1.25 a day.

The average household in the survey area spent more than half (55%) of their total expenditures on food, about 38% on other non-durable items, and the remaining 7% on durable items. We would have expected the food share to be higher for this population and the share of expenditures on non-durable items to total expenditures to be lower. Nevertheless, the main driver for these non-durable expenditures is health expenditures, which make up about 40% of non-durable expenditures. This is followed by expenditures on transport, which is about 16% of non-durable expenditures (excluding food).<sup>18</sup>

One of the items included in durable expenditure are dowries paid. While we understand that many household will conceal or misreport this type of information, we still display statistics separately in Table 3 - 13, given that this can be a quite substantial expenditure for an Indian household. About 2% of households in our sample report to have paid a dowry within the last year. The reported amount paid is on average Rs. 23,124 (ranging from Rs. 200 to Rs. 300,000 – note that statistics reported in Table 3 - 13 are unconditional and therefore do not correspond to the amounts stated here.)

### 3.6. Assets

In this section we look at the wealth of households in terms of their assets. As in the section on consumption, also variable on assets are for the most part aggregate constructs. Households are asked during the interview whether they own certain items, how many, and how much they would expect to earn if they were to sell it. Questions are asked in this way to get information on the current market value of the item rather than the value it had when it was bought.

**Table 3 - 14 Asset values**

Variable (Rs.)	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
total value of all assets	100,000	140,000	0	3,100,000	100,000	100,000	96,627	0.754	0.756
value of main dwelling	78,744	110,000	30	3,000,000	76,254	82,660	76,647	0.58	0.976
<b>Value of...</b>									
livestock	5,234	9,998	0	140,000	5,297	5,078	5,347	0.8	0.972
agricultural equipment	2,577	27,720	0	600,000	3,812	2,667	1,004	0.598	0.137
vehicles (incl. bicycles)	4,969	23,975	0	500,000	4,782	5,294	4,743	0.785	0.952
furniture	2,423	4,642	0	110,000	2,435	2,254	2,627	0.46	0.514
electric items (fan...)	2,613	6,108	0	99,600	2,692	2,433	2,746	0.523	0.937
jewellery	3,136	14,018	0	340,000	3,205	2,679	3,641	0.463	0.605

<sup>18</sup> Non-durable expenditures include expenditures on transport, water, electricity, telephone,..., fuel (gas, firewood...), salary for field and other workers, education fees and materials, health expenses, services (barber, servants...), cosmetics (shampoo, soap...).

Summary statistics are reported in Table 3 - 14. Important in view of this report is – as before – the finding that control and treatment groups do not display any significant difference with respect to the value of the assets they own.

The average household in our sample in Orissa owns assets worth Rs. 100,000 (~USD 2,224). Almost 80% of the overall asset value comes from the estimated value of the dwelling the households own. The second most valuable assets owned are livestock at an average of Rs. 5,234 (~USD 116).

Not included in the statistics just discussed is the value of potentially owned land (which was not collected). We can see from Table 3 - 14 though that 57% of all households own land. It seems that households in control areas are slightly less likely to own land than households in FINISH areas, where 65% of households own land as compared to 53% in control areas. In Simavi areas, 50% of households own land, which is not statistically significantly different to the control group. On average, households that own their own land possess 2.8 acres, which is for 94% the same amount as a year ago. In addition, about 13% of households that do not own land themselves rent some.

**Table 3 - 15 Land ownership**

Variable	Whole sample				Control	Treatment mean		p-value T vs C	
	mean	sd	min	max	mean	FINISH	SIMAVI	FINISH	SIMAVI
Household owns land (fraction)	0.57	0.5	0	1	0.53	0.65	0.50	0.049	0.748

### 3.7. Income

We now turn to the income of the household. We take here income from all household members together and rather look at the amounts earned from different income sources.

The first row of Table 3 - 16 reports summary statistics of total yearly income of interviewed households. The average income is Rs. 41,711 (~USD 928). Making the same back-of-the-envelope calculations as in the section on consumption, we find that the average household in BISWA's FINISH & SIMAVI (& Control) area lives on USD 2.54 per day. Recalling that each household has on average 5.3 household members, this translates into ~USD 0.48 per day. Even if we ignored children in the household and used only the number of adults (an adult being someone older than 16 years of age) to make the calculation, we would still find that the average adult in our sample lives, with USD 0.63 a day, far below the internationally accepted poverty line of USD 1.25 a day.

Table 3 - 16 Household income

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Total household income (last year) (Rs.)									
Total yearly income	41,711	50,922	0	650,000	44,158	40,119	40,880	0.20	0.35
Total yearly income (excl. remittances)	41,536	50,943	0	650,000	43,991	39,891	40,762	0.20	0.36
Household received income from... (in last year) (fraction)									
...wages agricultural labor, not own farm	0.58	0.49	0	1	0.56	0.6	0.57	0.528	0.844
...non-agricultural sector, formal	0.38	0.49	0	1	0.4	0.38	0.36	0.717	0.564
...non-agricultural sector, informal	0.22	0.42	0	1	0.24	0.22	0.21	0.587	0.538
...government employment	0.05	0.21	0	1	0.05	0.04	0.05	0.354	0.817
...wages from public relief work...	0.01	0.08	0	1	0	0.01	0.01	0.604	0.891
...non-farm self-employment	0.10	0.31	0	1	0.1	0.11	0.1	0.671	0.965
...farm profit	0.09	0.29	0	1	0.09	0.1	0.09	0.67	0.934
...dairy activities	0.04	0.19	0	1	0.03	0.04	0.04	0.789	0.757
...sales of handicrafts...	0.02	0.13	0	1	0.02	0.01	0.03	0.58	0.388
...traditional hedetary occupation	0.04	0.19	0	1	0.02	0.05	0.04	0.101	0.232
... pension	0.04	0.19	0	1	0.04	0.04	0.04	0.783	0.769
...government schemes	0.00	0.06	0	1	0	0.01	0.00	0.201	0.469
... Dowry	0.00	0.04	0	1	0.00	0.00	0.00	0.163	0.329
... Remittances	0.02	0.13	0	1	0.02	0.02	0.01	0.99	0.595

### 3.7.1. Comparison Income & Consumption

We want to get a rough idea how these earnings compare to consumption expenditures discussed previously in Section 3.5.

The first row of Table 3 - 17 [Difference between Income and Consumption expenditures](#) Table 3 - 17 presents statistics for the difference between reported yearly income of the household and yearly total consumption expenditures. We can see that the average household spends more than it earns by almost Rs. 10,000 (~USD 209).

This number is not an informative statistic for the financial situation of the households though given that consumption includes the value of for example home produced food or gifts. Also income includes value for payments that were made in-kind. The second row of the same Table uses exclusively cash earned and items paid for with cash to construct the difference between income and consumption expenditures.<sup>19</sup>

Now the deficit in spending is reduced by about 30% - households spend ~Rs. 6,700 more than they report to earn.

<sup>19</sup> We need to make one assumption along the way. Households report whether they received income from a certain source in cash, in-kind or partly in cash and in-kind. If they answer the latter, we do not know how much of the payment was made in-kind and how much in cash. We therefore assume it is 50:50.



Note that we are making one important assumption along the way; namely that the food consumption in the previous week as well as the other non-durable consumption in the previous month are representative for the whole year. It is on the other hand reasonable to assume that cash spent on food items in a week shortly after a harvest period will be different than spending patterns in a week in the middle of the dry season. We cannot differentiate this with our data.<sup>20</sup>

The final row of Table 3 - 17 presents the difference between income earned in-kind and consumption items received as payments. The average households received more in-cash payments than consumed. The difference was for the most part stored.

**Table 3 - 17 Difference between Income and Consumption expenditures**

Variable	Whole sample			
	mean	sd	min	max
Total yearly household income minus consumption expenditures	-9,565	50,317	-357,089	378,000
Total yearly household income minus consumption expenditures, excluding home produced items	-6,697	54,977	-393,820	392,027
Income in cash minus consumption items received as payments	1,261	9,690	-71,686	96,000

### 3.8. Credit, Savings and Insurance

If we combine the information on income and consumption, we can see that the average household spends more in a year than it earns. In fact, given the information provided, 60% of households make a deficit and this deficit is on average a deficit of Rs. 33,243 a year (this average is conditional on making a deficit. We also need to keep the caveat in mind that we assume the week we collected data to be representative for the whole year).

We will therefore now turn to look at financial transactions of the household, namely look at their debts and savings as well as insurance. We first look at the indebtedness of the households.

#### 3.8.1. Credit

From Table 3 - 18 we can see that just above half of the households (58%) of households state to know a source where they can turn to in case they need to borrow money. It seems that the majority of households are able to turn to formal lending sources: 42% of all households state to be able to borrow from a bank. The next most common source is a cooperative and SHGs, which 21% of the sampled households could turn to to borrow money. Sources such as the workplace, pawn brokers or local shops, frequently used sources elsewhere, are not used in the survey area in Orissa.

These are potential sources though: while 58% state not to be credit constrained, only 11% of households report to actually have debt outstanding.

<sup>20</sup> This does not hinder the impact evaluation – the important comparison for that will be between treatment and control and not between different periods.

**Table 3 - 18 Credit – Access**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
CREDIT (fraction)									
Knows a source to borrow from	0.58	0.49	0	1	0.57	0.63	0.54	0.249	0.533
Has debt outstanding	0.11	0.31	0	1	0.1	0.13	0.1	0.287	0.973
States to be able to borrow from... (more than one answer possible) (fraction)									
...bank	0.42	0.49	0	1	0.43	0.45	0.36	0.622	0.129
...MFI	0.05	0.22	0	1	0.04	0.06	0.06	0.211	0.332
...NGO	0.04	0.19	0	1	0.04	0.04	0.04	0.751	0.988
...Cooperative	0.21	0.41	0	1	0.21	0.27	0.14	0.243	0.166
...SHG	0.22	0.41	0	1	0.22	0.23	0.19	0.707	0.41
...moneylender	0.05	0.21	0	1	0.06	0.05	0.02	0.377	0.01
...relative	0.09	0.29	0	1	0.1	0.09	0.07	0.702	0.232
...friends	0.01	0.09	0	1	0.01	0	0.01	0.095	0.341

The average level of debt of interviewed households is Rs. 2,567. Table 3 - 19 gives details on the 210 households that actually did have debt outstanding at the time of the survey. The average amount a household with debt had to repay at that point in time was Rs. 23,211 (~USD 517). To recapture – this is about 55.6% of the average household’s yearly income – 11% of all households have this average amount of debt outstanding.

**Table 3 - 19 Credit – Actual**

Variable	Conditional on having debt			
	mean	sd	min	max
Amount of debt outstanding	23,211	49,082	500	600,000

If we look at those households that spend more than they earn (those households that have a negative value for the variable described in the second row of Table 3 - 17), we find that the level of debt outstanding does not differ for households that overspent and those that earn enough to cover their expenses. Nevertheless, their savings do differ significantly: Households that overspend have less than half as much savings as those households that earn sufficiently (Rs. 2,759 compared to Rs. 5,819). We discuss savings further below.

Comparing yearly household income and debt of those households that are actually in debt (and not averages of the whole sample), we find that 76% of those households with debt owe about 32% of their yearly income. The other 25% of households with debt owe on average 3.8 times their income in the previous year. Note that about 33% of households who are in debt do have savings, which are mainly savings from the husband. The next section will give more details on the savings of the households interviewed.

### 3.8.2. Savings

About 16% of the households in the sample have savings – on average Rs. 3,494 (~USD 78), as displayed in Table 3 - 20. From Table 3 - 21 we see further that the average amount of savings for households that actually have savings is Rs. 22,327 (~USD 496) (This average is driven by a few households with very high savings – excluding the highest 10%, the average savings reduce to Rs. 7,153). The greatest amount of savings (about 57%) are savings of the husband, whereas 34% are savings of the wife and remaining 9% of savings are attributed to the couple. Again, we see no significant differences in means of these variables for the treatment and control group on a conventional significance level of 5%.

**Table 3 - 20 Savings**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
SAVINGS (fraction)									
has savings	0.16	0.36	0	1	0.16	0.16	0.15	0.878	0.734
SAVINGS – Amount (Rs.)									
Total	3,494	23,260	0	500,000	3,532	3,596	3,331	0.96	0.90
Husband	2,971	23,117	0	500,000	3,461	2,850	2,552	0.66	0.53
Husband & wife	610	9,222	0	300,000	819	471	541	0.51	0.66
wife	385	7,462	0	300,000	629	275	238	0.47	0.43

**Table 3 - 21 Savings – conditional**

Variable (Rs.)	Conditional on having savings			
	mean	sd	min	max
Savings, total	22,327	55,184	20	500,000
<b>Amount of savings of...</b>				
...husband	30,493	68,328	20	500,000
...husband and wife	36,194	62,268	2	300,000
...wife	6,477	30,063	20	300,000

### 3.8.3. Insurance

Finally, we look at whether households have insurance and if so, which type.

**Table 3 - 22 Insurance**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
INSURANCE (fraction)									
Has insurance	0.13	0.33	0	1	0.12	0.14	0.13	0.493	0.796
Has crop insurance	0.00	0.07	0	1	0.00	0.01	0.00	0.616	0.361
Has life insurance	0.09	0.29	0	1	0.1	0.1	0.07	0.953	0.314
Has vehicle insurance	0.02	0.16	0	1	0.02	0.03	0.02	0.918	0.939
Has health insurance	0.01	0.09	0	1	0.00	0.00	0.01	0.931	0.081

Table 3 - 22 provides this information: only 13% of households have some type of insurance. Among these, the most common one is life insurance (9% of sampled households have this type of insurance – mainly from LIC). Some people state to have health insurance (2% - again mainly from LIC) and vehicle insurance (1%) – these statistics are again comparable between the two groups.

### 3.9. Shocks

We now turn to shocks the households experienced over the last year. These are mainly negative shocks but we also consider shocks that could result in an income gain to households. Results are displayed in Table 3 - 23.

Overall, very few shocks are reported. The most common shock was a bad harvest – 6% of all households report to have experienced this shock. Other shocks were reported by only 1% of the sample or less.

The same holds in terms of positive shocks, 1% of households experienced a job gain and 1% state to have experienced some other positive shock.

We find some unbalances when considering the shocks – Less job losses are reported in FINISH areas as well as fewer bad harvests.

**Table 3 - 23 Shocks experienced**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Household experienced shock in last year: (fraction)									
Job loss	0.01	0.09	0	1	0.01	0.01	0.00	0.926	0.09
Job gain	0.01	0.09	0	1	0.01	0.00	0.01	0.471	0.994
Serious robbery/theft	0.00	0.06	0	1	0.00	0.01	0.00	0.762	0.086
Natural disaster (sa draught)	0.01	0.07	0	1	0.01	0.00	0.01	0.703	0.893
Bad harvest	0.06	0.24	0	1	0.05	0.09	0.04	0.101	0.663
Death of a hh member	0.01	0.08	0	1	0.00	0.01	0.01	0.788	0.566
Any other loss	0.01	0.11	0	1	0.01	0.02	0.01	0.371	0.799
Any other gain	0.01	0.08	0	1	0.01	0.01	0.00	0.748	0.475
Had to cut meal of adult	0.00	0.06	0	1	0.00	0.00	0.01	0.956	0.533
Had to cut meal of children	0.000	0.05	0	1	0.00	0.00	0.00	0.686	0.9

### 3.10. Health

The final section of the household questionnaire we discuss is concerned with the health of the household. We look at how the household perceives its own health and provide information on the households' health seeking behaviour, including health expenditures and distances covered to access health services.

From Table 3 - 24 we can learn that respondents seem to overestimate their health as well as their household's health status when comparing themselves to their peers: 24% of respondents think they are themselves healthier whereas only 17% perceive themselves less healthy than their peers. 59% think they have about the same health as their peers. The statistics for perceived health of the family are comparable.

**Table 3 - 24 Perceived Health**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Perceived Health (fraction) – compared to peers									
Own health better	0.24	0.43	0	1	0.21	0.27	0.24	0.162	0.517
Own health same	0.59	0.49	0	1	0.59	0.58	0.59	0.838	0.992
Own health lower	0.17	0.37	0	1	0.19	0.15	0.17	0.157	0.523
Families' health better	0.21	0.41	0	1	0.2	0.22	0.21	0.487	0.676
Families' health same	0.62	0.49	0	1	0.61	0.62	0.63	0.806	0.584
Families' health lower	0.16	0.37	0	1	0.18	0.15	0.15	0.325	0.317

With respect to frequency of health visits we can see from **Error! Reference source not found.** Table 3 - 25 that 21% of households had at least one household member visit a health provider (or be visited by one) within the last 4 weeks and 15% of households had at least one household member hospitalized within the last year.

**Table 3 - 25 Health seeking**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Outpatient care, last month (fraction)									
Any household member outpatient care	0.21	0.41	0	1	0.23	0.21	0.2	0.62	0.42
Hospitalization, last year (fraction)									
Any household member hospitalized	0.15	0.35	0	1	0.14	0.15	0.15	0.54	0.60

Table 3 - 26 gives us the main reason for the most recent visit to a health provider in the upper panel and to a hospital in the lower panel. The most common reason to seek health care was acute pain – 39% of those households that sought health services went for this reason. A further 20% sought healthcare for reasons other than stated (we do not have more detail on the exact reason), 15% went to receive medication and/or prescription, 14% went for treatment or therapy.

Information on health expenditures and distances travelled to receive health services are provided in Table 3 - 27. These statistics are averages for the whole sample.

**Table 3 - 26 Reason for seeking health service**

Variable	Conditional on having had visit	
	Frequ	%
<b>Outpatient care - reason</b>		
Medical visit/check-up	22	0.061
Treatment/therapy	49	0.137
Immunization/vaccination	6	0.017
Preventive medical exam	59	0.165
Acute pain	138	0.385
Receive medication/ prescription	53	0.148
Other	75	0.209
Accident	1	0.003
dental visit	2	0.006
<b>Hospitalization – reason</b>		
Illness	33	14.6
Surgery	10	4.42
Childbirth/Caesarean	16	7.08
Accident	8	3.54
Medical analysis or studies	16	7.08
Other (specify)	84	37.17
Physical aggression (violence)	59	26.11
Abortion	33	14.6

On average, a household had to pay Rs. 276 (~USD 6.04 or 0.7% of yearly household income) for a visit categorized as outpatient care. The main cost driver was medical expenditures (93% of all costs) and the remaining 7% are transportation costs. A household had to travel on average 2km to reach the chosen health care provider.

As mentioned above and stated in Table 3 - 25, 15% of households had at least one household member hospitalized in the year previous to the baseline survey.

The main reason that was stated for hospitalization is reasons other than those listed (37%). 26% of households that had a member being hospitalized had so because of physical aggression (violence) and 15% because of abortion, another 15% because of an illness. These statistics are displayed in the lower panel of Table 3-26.

**Table 3 - 27 Health expenditures – OUTpatient Care**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Outpatient care, last year (Rs.) – average over last 5 visits (up to)									
Transportation cost	20	143	0	3000	23	23	13	0.985	0.274
Medical costs	257	2017	0	60000	233	228	322	0.959	0.541
Total costs	276	2091	0	61800	256	251	335	0.96	0.599
Distance travelled	2	19	0	500	2	2	4	0.695	0.327

The average costs for a hospital visit were Rs. 813 (~USD 18 or 1.9% of yearly household income). This can be seen in Table 3 - 28. For such a visit, 92% of total costs came from the medical expenditures and only 8% from transportation costs.

**Table 3 - 28 Health expenditures – INpatient Care**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
INpatient care, last year (Rs.) – average over last 5 visits (up to)									
Transportation cost	68	459	0	15.000	58	80	63	0.50	0.86

Medical costs	746	4,615	0	95,000	718	865	629	0.63	0.77
Total costs	813	4,858	0	95,440	777	945	692	0.60	0.79
Distance travelled	5.26	29.7	0	800	5.05	4.72	6.22	0.86	0.59

## 4. Findings – Women

In this chapter we look at the information collected from the main woman of the household. The rationale for having a special focus on women as part of the survey is due to the assumption that it is especially women who will benefit from (improved) household sanitation. This holds especially in view of effects on privacy and safety but also status and prestige.

As mentioned in the section on survey instruments, the woman questionnaire was exclusively administered by female interviewers due to the sensitivity of some of the questions. Emphasis was put that the interview was conducted in private.

### 4.1. Background and Status

We first look at the background and the status of the main woman in the household, such as her and her parents' education, her marital status and her control over financial and other decisions in the household.

**Table 4 - 1 Educational attainment, woman and her parents**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Age of Woman	39.5	12.4	4	90	39.9	39.9	38.5	0.96	0.115
<b>Educational Attainment of main woman (fraction)</b>									
No formal education	0.47	0.5	0	1	0.46	0.47	0.49	0.86	0.428
Up to grade V	0.23	0.42	0	1	0.24	0.23	0.21	0.706	0.197
Grade VI-VIII	0.12	0.32	0	1	0.11	0.13	0.12	0.423	0.771
Grade IX-X	0.13	0.34	0	1	0.14	0.13	0.13	0.688	0.745
Grade XI-XII	0.03	0.16	0	1	0.02	0.03	0.03	0.772	0.936
Higher education (> grade XII or vocational training)	0.01	0.12	0	1	0.02	0.01	0.01	0.555	0.922
<b>Educational Attainment of father of main woman (fraction)</b>									
No formal education	0.65	0.48	0	1	0.59	0.66	0.69	0.198	0.068
Up to grade V	0.23	0.42	0	1	0.25	0.24	0.2	0.707	0.19
Grade VI-VIII	0.06	0.23	0	1	0.07	0.05	0.05	0.219	0.169
Grade IX-X	0.04	0.18	0	1	0.05	0.03	0.03	0.117	0.318
Grade XI-XII	0.01	0.1	0	1	0.01	0.01	0.01	0.574	0.86
Higher education (> grade XII or vocational training)	0	0.06	0	1	0.01	0.00	0.00	0.273	0.179
<b>Educational Attainment of mother of main woman (fraction)</b>									
No formal education	0.81	0.39	0	1	0.78	0.83	0.84	0.245	0.201
Up to grade V	0.13	0.34	0	1	0.15	0.13	0.12	0.516	0.513
Grade VI-VIII	0.03	0.17	0	1	0.04	0.02	0.02	0.212	0.114
Grade IX-X	0.01	0.10	0	1	0.02	0.01	0.01	0.405	0.18
Grade XI-XII	0.00	0.04	0	1	0.00	0.00	0.00	0.963	0.902

Higher education (> grade XII or vocational training)	0.00	0.03	0	1	0.00	0.00	0.00	0.963	0.33
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Table 4 - 1 provides information on the age and the educational background of the main woman, as well as of her parents. The typical main woman in our sample is almost 40 years of age and has no formal education. 23% of women went to school up to grade V, 12% up to grade VIII and 13% between grade XI and XIII. Only one percent has a higher degree than grade XII.

It is interesting to see that the main woman has on average a higher educational status than her parents – especially than her mother. 65% of the fathers and 81% of the mothers have no formal education. In fact 88% of the fathers and 94% of the mothers stayed at max in school until grade V. None of these educational attainments for women or her parents differ significantly between the treatments and the control group as can be seen from the last two columns.

From Table 4 - 2 we can see that (in line with information on the household head from section 3.2) the great majority, namely 94%, of the main women are married. Only 3% have never been married, the remaining 3% are widowed (only one woman is divorced and four separated). Note that we do find the marital status to differ between our two evaluation groups: In control areas, 94% of the main women are married compared to 93% in FINISH treatment areas and 93% SIMAVI treatment areas.

**Table 4 - 2 Marital status of main woman**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Marital status of main woman (fraction)									
Never married	0.03	0.17	0	1	0.03	0.02	0.04	0.696	0.534
Married	0.94	0.24	0	1	0.94	0.94	0.93	0.978	0.565
Widowed	0.03	0.17	0	1	0.02	0.03	0.03	0.54	0.632

The next area of interest is how much freedom the main woman has to move around on her own. The upper panel of Table 4 - 3 shows the fraction of women that has permission to go to certain places without being accompanied. We can see that restrictions depend on the destination: Almost all women (89%) are permitted to go alone to their neighbours, to a religious place (such as a temple) or to collect water. Nevertheless, only 55% are allowed to go alone to the local market, only half the women can visit a doctor on their own and less than 40% of the interviewed women can visit friends or relatives that visit further away.

The lower panel of Table 4 - 3 gives more detailed information on the main woman's health visits. 45% of women state that is no problem for them to get permission for seeking medical treatment. Nevertheless, only 24% have no problems to get money to cover the expenses of such a visit. Also the distance to a health centre or other medical provider is a problem for 80% of the women. 63% of women are concerned that there will be no female health worker to attend her, or any health worker at all. 52% are also concerned that they will not get the needed drugs. No differences are found between treatment and control areas, neither FINISH nor SIMAVI.



Table 4 - 3 Permission to move around

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Permitted to go alone to... (fraction)									
... Local market	0.55	0.50	0	1	0.55	0.57	0.51	0.61	0.522
... Health Centre or doctor	0.50	0.50	0	1	0.48	0.56	0.46	0.165	0.802
... Neighbours	0.89	0.31	0	1	0.89	0.92	0.87	0.285	0.578
... Friends/Relatives further away	0.38	0.48	0	1	0.37	0.42	0.33	0.196	0.272
... Shrine/Mosque/Temple	0.89	0.31	0	1	0.87	0.91	0.89	0.153	0.531
... Collect water	0.89	0.31	0	1	0.89	0.89	0.88	0.966	0.688
... To house of family	0.56	0.50	0	1	0.59	0.56	0.52	0.566	0.183
In case medical treatment is needed: No problem to... (fraction)									
... Get permission to go	0.45	0.5	0	1	0.45	0.46	0.45	0.773	0.975
... Get money for the treatment	0.24	0.43	0	1	0.27	0.21	0.24	0.201	0.57
... Cover the distance to the health facility	0.2	0.4	0	1	0.2	0.18	0.23	0.709	0.654
... Take the transport	0.24	0.43	0	1	0.24	0.22	0.28	0.791	0.462
... Find someone to go with	0.48	0.5	0	1	0.47	0.5	0.48	0.627	0.816
... Concern no female health worker	0.37	0.48	0	1	0.37	0.36	0.39	0.925	0.746
... Concern no health provider	0.37	0.48	0	1	0.37	0.34	0.4	0.69	0.691
... Concern not to get the needed drugs	0.48	0.5	0	1	0.44	0.51	0.49	0.277	0.365

We next look at the main woman's financial access and control. The upper panel of Table 4 - 4 gives information the women's perception with respect to their control over money to buy certain items. 56% of women state that they have control over money to buy fruits and vegetables, 51% to buy other food items. 45% state they have control over money to buy themselves clothes, 41% for medicine for herself, 23% for toiletries for herself and 40% for medicine and clothes for her kids.

Table 4 - 4 Financial control

Variable	Whole sample				Control	Treatment		p-value		
	mean	sd	min	max		mean	FINISH	SIMAVI	T vs C	FINISH
Control over money to buy... (fraction)										
... Fruits or vegetables	0.54	0.50	0	1	0.53	0.57	0.54	0.501	0.911	
... Other food items	0.51	0.50	0	1	0.5	0.54	0.48	0.503	0.633	
... Clothes for herself	0.45	0.5	0	1	0.44	0.47	0.45	0.439	0.848	
... Medicine for herself	0.41	0.49	0	1	0.38	0.45	0.4	0.218	0.813	
... Toiletries for herself	0.23	0.42	0	1	0.25	0.25	0.19	0.959	0.272	
... Clothes or medicine for the kids	0.40	0.49	0	1	0.39	0.43	0.36	0.489	0.677	
Financial access (fraction)										
Has money of her own, under her control	0.51	0.5	0	1	0.5	0.55	0.48	0.265	0.693	

Has bank/savings account in her name	0.18	0.38	0	1	0.15	0.19	0.2	0.222	0.185
Knows of lending/saving groups	0.54	0.50	0	1	0.54	0.59	0.49	0.22	0.257
Is member of a lending/saving group	0.26	0.44	0	1	0.23	0.29	0.26	0.126	0.439
Took a loan at some point	0.17	0.37	0	1	0.16	0.16	0.19	0.971	0.448

From the lower panel of Table 4 - 4 we learn that 51% of the main women state that they have their own money, which is under their control. Only 18% state to have a savings account with a bank in her name and a slightly higher percentage (26%) are a member of a savings group. More (54%) know of one such group. 17% of women say that they took a loan at some point.

## 4.2. Hygiene Practices

In this section we discuss some of the hygiene practices of the main women – a very brief discussion about food hygiene practices and a somewhat more elaborate section on bathing and toilet use.

### 4.2.1. Personal Hygiene- bathing

We start by analysing data collected in bathing practices, of which the information is displayed in Table 4 - 5. Only a very small percentage of interviewed women have access to a private bathing facility. 67% go to a river, canal or pond to bathe themselves and the second most common facility used are public bathing facilities.

Almost all women bathe in the morning, some during midday (note that women could give more than one answer which is why fractions do not add up to 1). 63% of women feel that the place they use for bathing is smelly, only 20% think it is clean and healthy. About a third believes it to be safe and convenient. Again, all these variables are well balanced between treatments and control.

**Table 4 - 5 Personal hygiene – bathing**

Variable	Whole sample				Control	Treatment		p-value		
	mean	sd	min	max		mean	FINISH	SIMAVI	T vs C	FINISH
Where do you typically bathe? (fraction)										
Closed bathroom inside the house	0.03	0.18	0	1	0.03	0.02	0.04	0.385	0.706	
Bathroom enclosure inside the house	0.01	0.09	0	1	0.01	0.01	0.01	0.765	0.691	
Closed bathroom outside the house	0.02	0.14	0	1	0.02	0.01	0.02	0.353	0.705	
Bathroom enclosure outside the house	0.01	0.1	0	1	0.02	0	0.01	0.094	0.407	
Public bathing facilities	0.22	0.41	0	1	0.17	0.26	0.21	0.22	0.582	
Open bathing space outside the house	0.04	0.2	0	1	0.05	0.03	0.04	0.497	0.677	
River/open tanks/canals/ponds/etc.	0.67	0.47	0	1	0.7	0.66	0.67	0.619	0.709	
Usual bathing time (fraction)										
morning	0.98	0.14	0	1	0.98	0.98	0.98	0.99	0.732	
midday	0.07	0.25	0	1	0.06	0.07	0.08	0.898	0.678	
afternoon	0.01	0.08	0	1	0	0.01	0.01	0.443	0.625	
evening	0.01	0.12	0	1	0.01	0.02	0.01	0.23	0.678	
Do you feel this place is...? (fraction)										
Convenient	0.33	0.47	0	1	0.31	0.33	0.35	0.708	0.481	
Safe	0.32	0.47	0	1	0.31	0.32	0.33	0.892	0.67	
Clean	0.22	0.42	0	1	0.22	0.2	0.25	0.579	0.672	
Healthy	0.2	0.4	0	1	0.19	0.2	0.21	0.976	0.813	

#### 4.2.2. Personal Hygiene - toilet

In this section we discuss the main woman's practices with regard to going to the toilet. Statistics discussed are presented in Table 4 - 6. Nine percent of the women report to have an own toilet which they use (this compares to 12% of households stating that they own a toilet). The majority goes into open fields (58%) or somewhere outside near their dwelling (33%).

This leads to a very negative perception of the toilet space used: 70% of women believe it to be unsafe and 59% as dangerous. 25% of women have fear of animals such as snakes every time they go to relieve themselves. Only 29% believe the place to be clean and healthy (16%).

In terms of usage we can see that most women go in the morning (53%) or in the evening (24%).

**Table 4 - 6 Personal hygiene – toilet**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Main toilet-space used (fraction)									
Own toilet	0.09	0.28	0	1	0.09	0.07	0.11	0.372	0.678
Public toilet	0.00	0.05	0	1	0.00	0.00	0.00	0.667	0.899
neighbour's toilet	0.00	0.03	0	1	0.00	0.00	0.00	0.963	0.324
outside, near the dwelling	0.33	0.47	0	1	0.35	0.35	0.3	0.951	0.532
open fields	0.58	0.49	0	1	0.56	0.58	0.59	0.794	0.669
feels this place is... (fraction)									
...safe	0.30	0.46	0	1	0.28	0.33	0.3	0.528	0.755
...clean	0.29	0.45	0	1	0.28	0.3	0.29	0.671	0.864
...healthy	0.16	0.37	0	1	0.19	0.13	0.18	0.139	0.791
...smelly	0.17	0.38	0	1	0.18	0.15	0.18	0.421	0.868
...embarrassing	0.71	0.45	0	1	0.67	0.78	0.67	0.05	0.942
...uncomfortable	0.25	0.43	0	1	0.25	0.25	0.25	0.957	0.943
...fear of snakes,...	0.25	0.44	0	1	0.24	0.25	0.28	0.87	0.476
...dangerous	0.59	0.49	0	1	0.62	0.59	0.57	0.618	0.485
This place... (fraction)									
...smells	0.18	0.39	0	1	0.23	0.14	0.18	0.038	0.21
...has flies	0.07	0.25	0	1	0.08	0.08	0.03	0.976	0.11
...smells and has flies	0.56	0.5	0	1	0.5	0.63	0.55	0.135	0.508
Goes to use the 'toilet' (fraction)									
anytime	0.18	0.38	0	1	0.2	0.17	0.17	0.314	0.375
in the morning	0.77	0.42	0	1	0.75	0.77	0.81	0.466	0.103
in the evening	0.34	0.48	0	1	0.28	0.41	0.34	0.065	0.438
at night	0.07	0.25	0	1	0.04	0.07	0.09	0.305	0.24
during the day	0.04	0.19	0	1	0.06	0.04	0.01	0.335	0.017

#### 4.2.3. Personal Hygiene – menstruation

In terms of personal hygiene we finally discuss menstruation. We can see from Table 4 - 7 that in control as well as in treatment areas, 93% of the main women still have menstruation.

**Table 4 - 7 Personal hygiene – menstruation**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Menstruation (fraction)									
still has menstruation	0.93	0.25	0	1	0.93	0.94	0.92	0.791	0.654

More detailed information on how women deal with their menstruation is given in Table 4 - 8.

**Table 4 - 8 Personal hygiene – menstruation practices**

Women who still have their menstruation		
	Frequ	%
<b>Protection used</b>		
Cloth	7,726	98.4
Cotton	4	0.23
Sanitary napkin	24	1.37
<b>Frequency of changing protection used</b>		
More than 5 times a day	51	2.92
3-5 times a day	199	11.4
1-2 times a day	1,108	63.5
Less than once a day	380	21.8
<b>Means of cleaning protection used</b>		
With water only	677	38.7
By using soap/soap powder	1,061	60.6
by using bleaching powder	8	0.46
<b>Frequency of changing protection</b>		
Every month	251	29.8
once in 2-3 months	594	33.9
Once in a year	246	14.1
After one year	373	21.3
<b>Disposal of protection used</b>		
Throw it in the toilet pit	24	1.37
Throws it away in the field	1,441	82.3
Burns it	121	6.9
Other	165	9.4

98% of those women that still get their period use a simple cloth for protection; only slightly more than one percent use specific sanitary napkins. The majority of women (78%) change the protection at least once in a day, most (65%) 1-2 times a day.

The most common method of cleaning the protection used is to wash it using soap or soap powder (61%), 39% wash it with water only.

The frequency of changing the protection used differs: 33% of all women change it every 2-3 months, 30% every month, 14% once in a year and 21% only after a year has passed.

The most common way to dispose of it is to throw it away in the fields (82% of women do so), 7% burn it and 9% use other means (many of which is throwing it away in different places than in the fields).

#### 4.2.4. Food Hygiene

Most of the main women in our sample are the ones who prepare all meals in the house (85%) or who prepare the meals sometimes (6%). Only less than eight percent prepare meals rarely or never.

If they do prepare meals, 56% of all main women wash their hand before doing so as can be seen in Table 4 - 9.

Most of the women also prepare meals in the morning that are then later consumed for lunch or dinner. If they prepare meals before they are consumed, 87% of the women store them in a closed container.

**Table 4 - 9 Food hygiene**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Food hygiene (fraction)									
Washes hands before preparing meals	0.59	0.49	0	1	0.56	0.58	0.63	0.831	0.344
Prepares meals in the morning for lunch or dinner	0.82	0.39	0	1	0.79	0.85	0.81	0.421	0.782

### 4.3. Children

We now turn to whether the main women have any babies and/or children and discuss a few practices regarding these.

Table 4 - 10 displays general information regarding children of the main women. We can see that about half of the sampled women (51%) have one or more children. On average, each woman has one child younger than 17 years. Conditional on having a child, each woman has on average two children.

**Table 4 - 10 Children**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Children (fraction)									
She has children (fraction)	0.51	0.5	0	1	0.49	0.51	0.55	0.615	0.156
She has babies (<1.5yrs (fraction)	0.06	0.24	0	1	0.07	0.06	0.07	0.332	0.802
She has children (1.5<years<17) (fraction)	0.49	0.5	0	1	0.46	0.49	0.52	0.472	0.108
Children (number)									
Number of children (<17yrs)	1.01	1.21	0	5	0.96	0.99	1.11	0.774	0.131

#### 4.3.1. Babies (0-18 months)

Only 6.4 percent of all women in our sample state to have a baby in the age range 0 to 15 months. More specifically, 121 of the main women have a baby 0-15 months and 3 report to have two within this age range.

Most of the women (94%) who have a baby do breastfeed it, as displayed in Table 4 - 11.

In terms of other liquids given to the infants, we can see that 95% give their children plain water, 30% commercially produced infant formula, 22% other milk, 17% fruit juice and 16% of the babies get tea or coffee.

As with the protection for menstrual bleeding, basically all women (98%) use cloth also as diapers for their babies. The main reasons for using cloth diapers is that they are accustomed to it (44%) and that it is easily available (33%) and cheap (26%).

**Table 4 - 11 Babies**

Women with a baby	
	%
<b>breastfeeding</b>	
mother breastfeeds	94.2
<b>Liquid drunk by baby</b>	
plain water	95.4
commercially produced infant formula	30.1
other milk	22.3
fruit juice	17.3
tea or coffee	16.4
<b>Material used for diaper</b>	
Cloth	98.3
Sanitary napkin	0.85
Other (specify	0.85
<b>Reason for using this type of diaper</b>	
Accustomed to it	44.6
Easily available	33.1
No alternative	12.4
Easy to dispose of	5.8
Cheap	25.6

### 4.3.2. Children (1.5-16 years)

As mentioned, about half of the sample of main women has a child, 49% have at least one in the age range 1.5-16 years.

**Table 4 - 12 Children (1.5-16 years)**

Variable	Whole sample				Control	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
She has children (1.5<years<17) (fraction)	0.49	0.5	0	1	0.48	0.52	0.46	0.28	0.51
Any child had diarrhoea in last week (fraction)	0.01	0.1	0	1	0.01	0.01	0.02	0.801	0.355

To be more specific, 342 (18%) women have one child in this age range, 387 (20%) have two, 169 (9%) have three, 51 (3%) have four children and the remaining ones have five or more. This can be seen in Table 4 - 13.

Table 4 - 12 also informs about how many of the children had diarrhoea in the last week, which is just 1% of all children in the sample.

**Table 4 - 13 Number of children**

Number of children		
	Frequ	%
<b>breastfeeding</b>		
no children	930	48.97
1 child	342	18.01
2 children	387	20.38
3 children	169	8.9
4 children	51	2.69
5 or more children	20	1.05

## 4.4. Knowledge

The final questions we ask the main women relate more specifically to their knowledge with respect to water born diseases. Women were first asked about diseases that can be carried by water. Table 4 - 14 displays first results of the question whether water can carry diseases and then whether it can carry specific diseases. Women could answer yes, no or don't know. We display here how many women answered with yes.

**Table 4 - 14 Diseases carried by water**

Variable (fraction)	Whole sample				Control	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Water can carry diseases	0.83	0.37	0	1	0.84	0.84	0.81	0.962	0.412
<b>She thinks water can carry the following disease (fraction yes)</b>									
Respiratory problems	0.44	0.5	0	1	0.43	0.47	0.42	0.602	0.811
Diarrhoea	0.67	0.47	0	1	0.67	0.69	0.63	0.708	0.33
Fever	0.75	0.44	0	1	0.76	0.74	0.74	0.509	0.481
Worms	0.48	0.5	0	1	0.5	0.47	0.46	0.607	0.564
Skin disease	0.68	0.47	0	1	0.64	0.73	0.66	0.117	0.841
Cold (or cold-like symptoms)	0.74	0.44	0	1	0.76	0.73	0.72	0.433	0.265

83% of women are aware that water can carry diseases. Most (74%) said that it can carry a cold (or cold-like symptoms) and fever (75%); 67% state yes that it can carry diarrhoea and 48% worms. 68% are aware that one can get skin diseases (such as rashes and irritation) through contaminated water and 44% know that it can carry respiratory problems.

Women were then asked more specifically about diarrhoea, how it is caused and how it can be prevented. These results are displayed in Table 4 - 15. Statistics refer again to the percentage of women that answered with 'yes'.

**Table 4 - 15 Diarrhoea – causes, prevention and action**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
She thinks diarrhoea can be caused by any of the following (fraction yes)									
dirty water	0.87	0.34	0	1	0.85	0.89	0.87	0.267	0.679
flies	0.83	0.38	0	1	0.8	0.86	0.82	0.161	0.63
unbalanced diet	0.69	0.46	0	1	0.7	0.67	0.7	0.454	0.861
poor hygiene	0.67	0.47	0	1	0.67	0.66	0.69	0.639	0.743
unwashed food	0.6	0.49	0	1	0.61	0.58	0.6	0.543	0.844
changing weather	0.45	0.5	0	1	0.43	0.48	0.44	0.296	0.748
bottle feeding	0.32	0.47	0	1	0.31	0.31	0.33	0.982	0.789
eating raw food	0.32	0.47	0	1	0.33	0.3	0.31	0.65	0.772
open defecation	0.49	0.5	0	1	0.49	0.46	0.54	0.66	0.371
Preventing diarrhoea (fraction yes)									
protect environment	0.81	0.39	0	1	0.81	0.83	0.8	0.758	0.802
protect food	0.88	0.32	0	1	0.87	0.89	0.89	0.646	0.483
protect water	0.86	0.35	0	1	0.84	0.86	0.87	0.607	0.408
good personal hygiene	0.73	0.45	0	1	0.74	0.73	0.7	0.68	0.413
wash hands before eating	0.7	0.46	0	1	0.7	0.71	0.67	0.712	0.53
wash hands before cooking	0.65	0.48	0	1	0.65	0.66	0.64	0.933	0.733
wash hands before serving	0.63	0.48	0	1	0.63	0.64	0.64	0.781	0.884
wash hands after defecation	0.7	0.46	0	1	0.68	0.71	0.69	0.614	0.893
wash hands after removing faeces	0.68	0.47	0	1	0.7	0.65	0.7	0.357	0.916
eat less	0.29	0.45	0	1	0.3	0.26	0.32	0.448	0.634
avoid raw fruit	0.23	0.42	0	1	0.24	0.2	0.24	0.396	0.972
Harmful for others (fraction yes)									
diarrhoea can harm others	0.42	0.49	0	1	0.44	0.4	0.41	0.549	0.697
faeces of 3month-old can cause diarrhoea - don't know	0.23	0.42	0	1	0.21	0.24	0.24	0.659	0.75
faeces of 3month-old can cause diarrhoea - yes	0.42	0.49	0	1	0.36	0.46	0.42	0.218	0.529
Food & drink during diarrhoea (fraction yes)									
One should drink more	0.81	0.39	0	1	0.78	0.8	0.85	0.64	0.116
One should eat less	0.57	0.5	0	1	0.55	0.56	0.6	0.917	0.623

We can see that the majority of women are aware of the different ways in which diarrhoea can spread – such as contaminated water (87%), flies (83%), poor hygiene (67%) and unwashed food (60%). Nevertheless, there is still a knowledge gap and especially when considering that only 32% of



women are aware that diarrhoea can be caused by eating raw fruit and only 49% are aware that open defecation can be a cause.

The majority of women are also not aware that diarrhoea can harm other household members and that also the faeces from babies can be harmful. Only 42% of women answer 'yes' when they are asked whether diarrhoea can harm other household members, less than 1% (13 women) don't know, implying that 58% are not aware at all.

And, finally, the last row of Table 4 - 15 confirm the practices observed in the previous section: 81% of women are aware that one should drink more when having diarrhoea but only 57% answer yes to eating less.

A similar set of questions as for diarrhoea was asked for worms and answers are displayed in Table 4 - 16. Fraction distributions are quite similar as for the diarrhoea questions.

To note in this as well as in previous Tables is that the level of knowledge is evenly distributed between the treatment and control group, we do not find any significant differences between the means of the two groups for all variables looked at.

**Table 4 - 16 Worms – causes & prevention**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
<i><b>She thinks worms can be caused by any of the following (fraction yes)</b></i>									
dirty water	0.77	0.42	0	1	0.79	0.76	0.75	0.65	0.562
old food	0.72	0.45	0	1	0.74	0.72	0.71	0.737	0.608
eating sweet things	0.91	0.29	0	1	0.89	0.9	0.93	0.859	0.074
unbalanced diet	0.6	0.49	0	1	0.6	0.6	0.6	0.911	0.995
flies	0.65	0.48	0	1	0.65	0.66	0.65	0.756	0.972
unclean environment	0.66	0.48	0	1	0.65	0.64	0.68	0.882	0.524
unclean hands	0.64	0.48	0	1	0.65	0.63	0.65	0.734	0.981
germs	0.7	0.46	0	1	0.7	0.69	0.7	0.875	0.921
open defecation	0.61	0.49	0	1	0.63	0.58	0.61	0.393	0.726
unclean bottle used for feeding	0.43	0.49	0	1	0.45	0.39	0.45	0.414	0.978
walking barefoot	0.49	0.5	0	1	0.46	0.51	0.48	0.465	0.774
eating unwashed fruits and veg.s	0.35	0.48	0	1	0.36	0.34	0.36	0.82	0.941
keeping food open	0.36	0.48	0	1	0.37	0.35	0.36	0.771	0.848
<i><b>Prevention of worms (fraction yes)</b></i>									
protect environment	0.79	0.41	0	1	0.79	0.81	0.76	0.781	0.431
protect food	0.86	0.35	0	1	0.85	0.87	0.87	0.547	0.521
protect water	0.83	0.37	0	1	0.83	0.85	0.83	0.666	0.964
good personal hygiene	0.68	0.47	0	1	0.71	0.67	0.66	0.352	0.405
wash hands before eating	0.66	0.48	0	1	0.66	0.65	0.66	0.708	0.959
wash hands before cooking	0.6	0.49	0	1	0.61	0.6	0.6	0.801	0.83
wash hands after defecation	0.64	0.48	0	1	0.63	0.65	0.65	0.595	0.729
avoid raw fruit	0.23	0.42	0	1	0.24	0.23	0.23	0.924	0.771

## 5. Findings – Communities

In this final section we analyse the data collected about the communities. More specifically, information was collected about villages in which interviews were done. In each of the 100 gram panchayat (the unit of analysis of our study) interviews were conducted in on average 2.2 villages, implying that we have village information on 220 villages.

### A.1. Population & Transportation

We start by looking at the population and transportation situation in these villages. Table 6 - 1 provides all information we will discuss next.

**Table 6 - 1 Population & Transportation**

Variable	Whole sample				Control mean	Treatment Mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
current population	1491	1623	76	15838	1560	1404	1543	0.506	0.988
current nr of households	264	284	15	2500	249	251	293	0.902	0.457
SC	0.19	0.19	0	1	0.16	0.19	0.22	0.342	0.068
ST	0.22	0.26	0	0.97	0.25	0.18	0.25	0.318	0.968
OBC	0.26	0.26	0	1	0.25	0.3	0.23	0.269	0.765
Minority	0.19	0.25	0	0.96	0.21	0.17	0.18	0.457	0.495
Km to panchayat HQ	3.05	3.787	0	35	3.12	2.45	3.41	0.186	0.736
Km to nearest town	8.52	11.63	0	100	8.33	10.72	6.93	0.416	0.218
Km to district headquarter	32.69	25.6	0	160	32.7	34.43	30.65	0.783	0.787
<b>Main road material</b>									
cement	0.4	0.49	0	1	0.37	0.46	0.35	0.36	0.876
asphalt	0.59	0.49	0	1	0.55	0.61	0.61	0.548	0.485
soil	0.42	0.5	0	1	0.59	0.38	0.28	0.045	0.001
stone	0.19	0.4	0	1	0.16	0.21	0.21	0.424	0.558
<b>Public transport</b>									
Auto (fraction available)	0.43	0.5	0	1	0.54	0.35	0.38	0.076	0.167
shared auto/minibus (fraction available)	0.25	0.44	0	1	0.28	0.25	0.22	0.803	0.569
Bus (fraction available)	0.42	0.49	0	1	0.4	0.43	0.44	0.719	0.696
Transport costs increased in last year	0.93	0.25	0	1	0.93	0.97	0.88	0.182	0.329
Km to bus station with connection to other towns	10.53	10.71	0	60	9.07	12.41	9.61	0.077	0.738
Km to nearest railway station	30.34	27.17	0	150	26.58	29.41	36.38	0.627	0.235

On average, these villages have a population of just under 1,500 people, divided over 260 households. This gives an average of 5.77 household members per household according to the community data. Comparing this to the household survey (which is representative for the village and

gram panchayat level), we find the difference to be small: In Table 3 - 3 we reported that the average number of people per household is 5.29.

Also information on caste structure seems to have been captured well. According to the community data, scheduled castes make up 19% of the village population and scheduled tribes 22%, which compares to 19% and 21% in the household questionnaire

Next to information on the population, Table 3 - 3 reports on the location of the villages. On average, they are 3.05km away from the gram panchayat office, 8.5km from the nearest town and 33km from the district headquarter the furthest being 160km away.

In terms of the type of roads, most main roads in the survey villages are asphalt roads (59%), soil (42%) or simply cement (40%) or stone (19%) (multiple answers were allowed for this question).

About 42% of villages have bus services available within their village and 43% have auto rickshaws they can make use of. The distance to the nearest bus stop with connection to bigger towns is on average 10.5km and villagers have to travel about 30km to reach a railway station. 93% of villages report to have experiences an increase in the transportation fares over the last year.

We next look at the availability of different public services and their distances to the village if not available within the village. This information is presented in Table 6 - 2. From the first set of columns (under the title of 'Availability within the village') we can see that hardly any of our survey villages has a police station, market, post office, telephone services, higher education facilities, or any type of formal health service centre (private or public) available in their village. 86% do have a primary school and 65% report to have a middle school, 37% a secondary school.

**Table 6 - 2 Availability & Distance – public services**

Variable	Availability within the village				Distance to nearest...			
	mean	sd	p-value		mean	sd	p-value	
			FINISH	Simavi			FINISH	Simavi
Police station	0.05	0.21	0.83	0.26	10.3	7.15	0.784	0.244
Market	0.14	0.35	0.892	0.318	6.65	5.46	0.238	0.216
Post office	0.28	0.45	0.029	0.888	4.34	6.13	0.901	0.763
Telephone office	0.14	0.35	0.059	0.654	7.99	8.37	0.718	0.699
STD Booth	0.23	0.42	0.005	0.135	6.55	7.78	0.623	0.393
Bank	0.11	0.32	0.89	0.563	6.63	5.13	0.748	0.88
Primary school	0.86	0.35	0.877	0.689	3.36	8.94	0.189	0.049
Middle school	0.65	0.48	0.547	0.136	2.63	6.42	0.308	0.107
Secondary School	0.37	0.48	0.775	0.838	3.99	6.34	0.821	0.109
Higher Secondary school	0.35	0.48	0.501	0.394	5.69	7.62	0.779	0.338
Sub Centre	0.22	0.42	0.209	0.073	5.51	8.08	0.824	0.861
Primary Health Centre	0.16	0.37	0.316	0.156	6.5	6.38	0.958	0.639
Community Health Centre/Rural Hospital	0.14	0.35	0.025	0.275	8.4	8.73	0.538	0.978
Government Dispensary	0.08	0.27	0.309	0.275	9.46	7.73	0.454	0.006
Government Hospital	0.08	0.27	0.635	0.644	10.1	9.14	0.781	0.21
Private Clinic	0.07	0.26	0.429	0.89	12.4	11.4	0.476	0.592
Private Hospital	0.05	0.22	0.607	0.975	14	13.9	0.962	0.178
Private Doctor/quacks	0.05	0.22	0.457	0.349	12.8	10.6	0.264	0.901
Village Health Guide	0.19	0.39	0.856	0.123	7.22	8.3	0.637	0.552
Traditional birth attendant (dai)	0.52	0.5	0.382	0.195	3.59	5.52	0.904	0.207

All of these public services are around 3-10km away from the village as can be seen in the second set of columns in Table 6 - 2. Furthest away are health care services with on average more than ten kilometres, but up to 100km.

In line with previous findings, none of these village characteristics display structural differences between the treatment groups and the control group.

Of the villages that have schools and anganwadi centre, we asked whether these have sanitation facilities available. We present in Table 6 - 3 the fraction of government primary schools with toilets which is reported at 84%. Not reported in the Table are fractions for middle schools and anganwadi centres as these are reported to have 100% sanitation coverage.

**Table 6 - 3 Availability – sanitation**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
primary school - government	0.84	0.37	0	1	0.83	0.81	0.9	0.806	0.426

We also inquire about availability of other services available in the villages, all of which are presented in Table 6 - 4.

**Table 6 - 4 Availability – other services**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Available within the village (fraction)									
Credit Cooperative Society	0.21	0.41	0	1	0.16	0.23	0.23	0.449	0.506
Agricultural Cooperative Society	0.1	0.31	0	1	0.11	0.09	0.13	0.704	0.747
Milk Cooperative Society	0.16	0.36	0	1	0.18	0.15	0.14	0.739	0.681
Kirana / General Market Shop	0.43	0.5	0	1	0.46	0.38	0.46	0.29	0.98
Weekly market	0.27	0.45	0	1	0.23	0.27	0.32	0.551	0.329
Wine Shop	0.16	0.36	0	1	0.15	0.16	0.16	0.847	0.832
Tailoring Shop	0.38	0.49	0	1	0.32	0.41	0.39	0.355	0.541
Fair Price Shop	0.51	0.5	0	1	0.52	0.54	0.44	0.861	0.366
Paan Shop	0.77	0.42	0	1	0.8	0.82	0.66	0.782	0.127
Pharmacy / Medical Shop	0.17	0.38	0	1	0.16	0.14	0.25	0.643	0.263
Sanitation Products manufacturing unit	0.09	0.29	0	1	0.08	0.09	0.11	0.889	0.625
Mahila Mandal	0.31	0.46	0	1	0.31	0.35	0.27	0.668	0.678
Self-Help Groups	0.86	0.34	0	1	0.81	0.89	0.89	0.148	0.216
Youth Centre	0.59	0.49	0	1	0.57	0.63	0.55	0.523	0.821
Anganwadi Centre	0.87	0.33	0	1	0.89	0.87	0.86	0.604	0.485
Community Centre	0.21	0.41	0	1	0.26	0.18	0.2	0.363	0.488
community television set	0.03	0.17	0	1	0.04	0.02	0.02	0.584	0.436
Library	0.13	0.33	0	1	0.16	0.12	0.09	0.522	0.212
Village Administrative Office	0.23	0.42	0	1	0.24	0.18	0.29	0.408	0.578
Panchayat Office	0.31	0.46	0	1	0.31	0.25	0.39	0.414	0.376
Playground	0.57	0.5	0	1	0.54	0.57	0.63	0.674	0.315
Cemetery	0.54	0.5	0	1	0.58	0.51	0.54	0.497	0.704

Almost every village in our sample has SHGs (86%), an Anganwadi centre (87%) as well as a Paan shop (77%). Relatively common are youth centres (59%), tailoring shops (38%) Kirana shops (43%), fair price shops (51%) and cemeteries (54%).

**Table 6 - 5 Availability – water/sanitation related services**

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Microfinance Institution (general)	0.76	0.43	0	1	0.71	0.78	0.82	0.286	0.107
Microfinance Institution offering credit for sanitation / home improvement	0.09	0.28	0	1	0.05	0.08	0.15	0.449	0.243
NGO offering water projects	0.05	0.21	0	1	0.04	0.05	0.05	0.846	0.785
NGO offering sanitation projects	0.09	0.28	0	1	0.07	0.08	0.13	0.914	0.325
Government's scheme to partially bear the cost of sanitation projects	0.14	0.35	0	1	0.15	0.15	0.13	0.933	0.673

Table 6 - 5 provides further information on whether the villages are subject to any sanitation or water interventions. What we find is that in 76% of the villages households have access to microfinance services in general. In 9% of the villages, these institutions are reported to provide loans for home improvements and/or sanitation. It is BISWA that is reported to provide such loans.

Less than ten percent of the villages are covered by any water or sanitation projects undertaken by NGOs. The NGOs reported to provide a sanitation projects are BISWA, Cultiarina, Gram Vikas, Gandhi Seva Srama and Vikas Niketan.

Finally, only 14% of villages report to receive support from the government for the cost of sanitation.

## A.2. Waste

In this section we discuss briefly how households typically dispose of their waste in our survey villages. Results are displayed in Table 6 - 6.

The most common way of disposing kitchen rubbish is to leave it on the own land, presumably for fertilizer (65%). 33% of households burn the kitchen rubbish on their own land. The next popular option is to simply throw it in the street or other public spaces.

The habits for disposal of other waste are almost the same as can be seen in the lower panel of the same Table.

Table 6 - 6 Waste disposal

Variable	Whole sample				Control mean	Treatment mean		p-value T vs C	
	mean	sd	min	max		FINISH	SIMAVI	FINISH	SIMAVI
Kitchen rubbish									
Throw it into waste baskets	0.01	0.1	0	1	0	0.01	0.02	0.311	0.322
Burn on own land	0.33	0.47	0	1	0.32	0.36	0.28	0.736	0.625
Burn somewhere else	0.15	0.36	0	1	0.21	0.1	0.16	0.103	0.516
Leave it on own land	0.56	0.5	0	1	0.49	0.61	0.56	0.199	0.524
Throw into river	0.06	0.23	0	1	0.09	0.04	0.04	0.238	0.222
Throw into street/drainage/other public space	0.23	0.42	0	1	0.13	0.3	0.26	0.024	0.203
Bury it on own land	0.1	0.3	0	1	0.13	0.1	0.07	0.535	0.28
Bury it somewhere else	0.04	0.2	0	1	0.03	0.04	0.07	0.709	0.33
Other	0.07	0.26	0	1	0.07	0.1	0.05	0.534	0.786
Other rubbish									
Throw it into waste baskets	0.01	0.1	0	1	0.01	0.01	0	0.95	0.312
Burn on own land	0.42	0.49	0	1	0.37	0.45	0.44	0.541	0.565
Burn somewhere else	0.18	0.39	0	1	0.24	0.17	0.11	0.238	0.039
Leave it on own land	0.53	0.5	0	1	0.44	0.61	0.51	0.063	0.536
Throw into river	0.04	0.2	0	1	0.04	0.05	0.04	0.81	0.909
Throw into street/drainage/other public space	0.25	0.44	0	1	0.2	0.24	0.35	0.578	0.151
Bury it on own land	0.06	0.25	0	1	0.12	0.05	0.02	0.173	0.043
Bury it somewhere else	0.03	0.16	0	1	0.01	0.01	0.07	0.95	0.19
Other	0.09	0.28	0	1	0.09	0.12	0.04		

## 6. Conclusion

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The previous sections provided an in-depth look at the baseline data collected for the FINISH randomised field experiment on extending microfinance loans to for the purpose of investing in building sanitation facilities. Formal tests were carried out comparing a wide range of characteristics across the treatment and the control group. This is an important exercise because it allows us to see just how successful the randomisation procedure has been. In principle randomisation ensures that treatment and control units are similar in expectation but testing baseline data on ‘pre-treatment’ variables provides evidence that the randomisation has indeed been conducted appropriately.

The results from this exercise are very encouraging: we find very few significant differences in variables across treatment and control units, despite considering a very large range of detailed variables. In the few cases where differences do exist, they are generally small and do not provide any evidence of systematic differences between treatment and control units along any particular dimension. Indeed the differences are not jointly significant. We are therefore confident that the randomisation and sampling of gram panchayats has been carried out appropriately and has laid down the best possible foundation for analysing the impacts of FINISH and SIMAVI in these areas.

## 7. Future Directions

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The data presented in this report provide an overview of a subsample of the Oriya population. This subsample resides in rural areas and in gram panchayats specifically identified by BISWA, the FINISH implementing institution, for delivery of the FINISH project.

These data will be used in conjunction with follow-up data to assess the impact of the FINISH intervention within these areas.

As explained in the section on methodology, the impact evaluation comprises of a series of surveys, including the here discussed baseline data as well as a follow-up survey about 1.5 years after the implementation has started and a second one approximately another year later.

At the time of this report's publication the implementation of the intervention is ongoing in the survey areas. Implementation turned out slower than expected by the programme partners, mainly driven by the global financial crisis followed by the Andhra Pradesh microfinance crisis. Some of the commitments made by MFIs for sanitation loan financing using their existing portfolios could not materialise as all MFIs faced serious difficulties in refinancing their regular loan portfolio, let alone a new product such as a sanitation loan.

This shortfall in financial resources slowed implementation by MFIs. Yet MFIs faced other genuine bottlenecks too. In Rajasthan a severe drought caused migration of people and as a result IIRD, the implementing agency there, could not proceed with the implementation. In the case of BISWA and to a lesser extent BWDC, the sanitation requirements under FINISH were more elaborate and expensive (going from single to double pit system) as compared to those under the Total Sanitation Campaign. As a consequence their sanitation loan product needed to be modified.

Based on this backdrop, the first follow-up survey is with BISWA is currently planned for the spring of 2012. If this timetable is kept, a full impact evaluation report will be published by the end of 2012.



## 8. Annex

### A.1. Sampling List & Outcome of randomization

**Table A1a:** Survey Sampling List and Randomization Outcome – CONTROL AREAS

District	Block	Gram panchayat
Angul	Kishore Nagar	Ambapala
		Jharbareni
Bargarh	Attabira	Kadobahal
	Bheden	Lupursingha
	Bijepur	Gudimunda
		Pahandi
	Jharbandha	Chandibhata
Bolangir	Loisingha	Badimunda
Cuttack	Nischinta Koili	Fugola
		Jamar
		Katarpada
Deogarh	Reamal	Budapal
Dhenkanal	Gondia	Kaimati
Jajpur	Barchana	Kalanagiri
Jharsuguda	Kirmira	Bhimjore
Keonjhar	Ghatagaon	Bolabeda
		Manoharpur
Khurda	Balianta	Kakarudrapur
	Begunia	Begunia
		Dingar
		Routpada
	Khurda	Malipur
Nayagarh	Nayagarh	Biruda
		Ikiri
		Natugaon
Sambalpur	Bamara	Babunikimal
	Dhankauda	Talab
	Rairakhol	Badbahal
		R.Badmal
Sonepur	Binka	Charda
		Mahadebpali
		Seledi
Sundergarh	Kutra	Katang
	Rajgangpur	Kukuda

**Table A1b:** Survey Sampling List and Randomization Outcome – FINISH AREAS

District	Block	Gram panchayat
Angul	Kishore Nagar	Dhaurapali
Bargarh	Bheden	Aregudi
		Bakti
		Sankirda
	Bijepur	Beniachal
		Jaring
		Talpadar
	Jharbandha	Laudidarha
Bolangir	Loisingha	Taliudar
Cuttack	Nischinta Koili	Asureswar
		Tarota
Deogarh	Reamal	Kantabahal
		Reamal
	Gondia	Bidharpur
		Digambarpur
		Santhpur
Jajpur	Barchana	Barapada
	Binjharpur	Chikana
Jharsuguda	Laikera	Jammal
Keonjhar	Ghatagaon	Muktapur
Khurda	Balianta	Prataprudrapur
	Begunia	Govindapur
Nayagarh	Nayagarh	Badapandusar
		Champatipur
Puri	Bijepur	Bijepur
	Kanas	Andarsingh
	Satyabadi	Madhuban
		Samareswarpur
	Sadar	Jaganathpur
Sambalpur	Dhankauda	Sason
	Jamankira	Badrama
		Kulundi
Sonepur	Binka	Bausuni
		Meghala
Sundergarh	Kutra	Panchara
	Rajgangpur	Keshramal

**Table A1c:** Survey Sampling List and Randomization Outcome – SIMAVI AREAS

<b>District</b>	<b>Block</b>	<b>Gram panchayat</b>
Angul	Kishore Nagar	Dhatarapala
Bargarh	Attabira	Godbhaga
	Bheden	Charpali
		Remunda
Bolangir	Loisingha	Badibahal
		Rengali
		Sargad
Cuttack	Nischinta Koili	Katikata
		Sukarapara
Deogarh	Barkote	Balanda
		Dandasingha
	Reamal	Gundiapali
		Karlaga
		Nuadihi
Dhenkanal	Gondia	Mandar
		Sarangi
Jajpur	Barchana	Saudia
	Binjharpur	Haladi Diha
Jharsuguda	Kirmira	Jharmunda
	Laikera	Babuchhipidhi
		Khuntamal
Keonjhar	Ghatagaon	Dhenkikote
		Pipilia
Khurda	Begunia	Deuli
Nayagarh	Nayagarh	Itamati
Puri	Sadar	Baliputa
	Satyabadi	DASBIDYADHARPUR
Sambalpur	Jujumura	Jhankarpali
	Maneswar	Sindurpank
Sonepur	Binka	Kaintara
		Sankara
Sundergarh	Kutra	Nuagaon

## A.2. Survey challenges & Learning – report by survey managers

From the “Report on FINISH Evaluation Study” as written by the survey managers for the evaluation study in Orissa with BISWA.

### Problems encountered

- Most of the inhabitants of village are illiterate, they don't take decision themselves. Almost all are dependent on the opinion of leaders. Therefore, many households were not willing to participate in the survey until their family head or someone other senior gave consent to participate.
- It was difficult for the surveyors to convince some of the villagers to provide their data due to previous negative experience. They report that fake institutions had entered their villages with the promise to improve the sanitation situation but nothing was ever done.
- The village people were found to be deprived from even the most basic facilities that should be provided by the government. Most were reported to be totally ignored regarding the schemes and benefits offered to needy people by the government.
- The major problem for the surveyors was communication and transportation in the study villages. Surveyors had to arrange their own transportation and some time they have to walk 7 to 10 Km to reach the survey villages.
- The major problem in the North and in the West of Odisha (border area) was that the area is influenced by Maoist (Naxalites) so that interviewers were frightened by their blood-shed menaces.

### Learning

The surveyors got an opportunity to study the genuine living condition of the villagers in Odisha. The study helped them to find out the various issues regarding social, educational, economical, psychological, health problems, hygiene condition, and availability of resources, the level of awareness, and life style of the rural people in the surveyed area.