Sanitation Supply Chain Analysis
Pemagetshel Dzongkhag
PHED-SNV Rural Sanitation and Hygiene Programme

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## LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>BHU</td>
<td>Basic Health Unit</td>
</tr>
<tr>
<td>CDH</td>
<td>Community Development for Health</td>
</tr>
<tr>
<td>Dzongkhag</td>
<td>District</td>
</tr>
<tr>
<td>Geog</td>
<td>Sub-district</td>
</tr>
<tr>
<td>IEC</td>
<td>Information Education Communication</td>
</tr>
<tr>
<td>KABP</td>
<td>Knowledge Attitude Behaviour Practice</td>
</tr>
<tr>
<td>LSM</td>
<td>Large Scale Market</td>
</tr>
<tr>
<td>MSM</td>
<td>Medium Scale Market</td>
</tr>
<tr>
<td>PCA</td>
<td>Pendant Cement Authority</td>
</tr>
<tr>
<td>PF</td>
<td>Pour Flush</td>
</tr>
<tr>
<td>PHED</td>
<td>Public Health Engineering Division</td>
</tr>
<tr>
<td>PVC</td>
<td>Polyvinyl Chloride</td>
</tr>
<tr>
<td>RM</td>
<td>Rural Market</td>
</tr>
<tr>
<td>RSAHP</td>
<td>Rural Sanitation and Hygiene Programme</td>
</tr>
<tr>
<td>SNV</td>
<td>Netherlands Development Organisation</td>
</tr>
<tr>
<td>SSH4A</td>
<td>Sustainable Sanitation and Hygiene for All</td>
</tr>
<tr>
<td>SSM</td>
<td>Small Scale Market</td>
</tr>
<tr>
<td>VIP</td>
<td>Ventilated Improved Pit</td>
</tr>
<tr>
<td>VIDP</td>
<td>Ventilated Improved Double Pit</td>
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</table>
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1. Background and Context

This in-depth sanitation supply chain analysis of Pemagatshel Dzongkhag is part of the expansion of the Rural Sanitation and Hygiene Programme (RSAHP) and was commissioned by SNV in Bhutan and the Ministry of Health’s Public Health Engineering Division (PHED). The supply chain analysis will critically inform the design of interventions to support strengthen market-based solutions and pro-poor support mechanisms in the Dzongkhag. It will also inform activities undertaken as part of other RSAHP programme components (i.e. sanitation demand creation, behaviour change communication, and governance and gender integration).

The RSHAP has the objective of increasing access to effective, affordable and sustainable sanitation in rural communities, leading to improved health and its associated economic and social benefits. Since 2008, SNV has provided technical assistance to the Ministry of Health’s Public Health Engineering Division (PHED) through the Rural Sanitation and Hygiene Programme (RSAHP), which began as a two year pilot in four Geogs: Jarey in Lhuentse; Nanong in Pemagatshel; Laya in Gasa and Hilley in Sarpang. In June 2010, the pilot phase was expanded to all Geogs of Lhuentse Dzongkhag following the newly developed Sustainable Sanitation and Hygiene for All (SSH4A) Programme model as part of the regional SNV programme approach. In July 2011, following a selection process against agreed criteria, PHED identified Pemagatshel as the next Dzongkhag in which to implement the SSH4A programme through a district wide approach over the next two years with technical assistance from SNV.

The purpose of this next phase of the RSAHP is to refine the district-wide approach further in order to inform the planned national programme that will allow the rural population of Bhutan to achieve improved health and quality of life through gaining access to sustainable sanitation and hygiene. The goal for Pemagatshel Dzongkhag is enhanced access to improved sanitation and improved hygiene practices of 3200 households. The specific objectives of the Programme are to:

• Create demand for sanitation and hygiene improvements.
• Strengthen market-based supply chains for a variety of sanitation and hygiene consumer needs.
• Develop, test and scale-up innovative localised behavioural change communication strategies that will lead to sustainable hygiene behaviour change.
• Improve district-level WASH governance for local business development and pro-poor support systems.
• Learn, document and share best practices of the programme within existing national and regional platforms.

The immediate benefit expected from this phase of the programme is that approximately 3200 Households in Pemagatshel Dzongkhag (approximately 15,000 rural people) will have increased access to improved sanitation services and their population routinely use and maintain hygienic toilets and practice good hygiene behaviour.
2. Objectives and Scope

The overall objective of the supply chain analysis was to systematically investigate supply and demand for sanitation products and services across Pemagatshel Dzongkhag. For the eleven Geogs of Pemagatshel Dzongkhag, the sanitation supply chain analysis aimed to provide PHED and SNV with:

- A comprehensive analysis of the current sanitation supply chain and the environment in which it operates.
- A detailed and well-structured analysis of consumer needs and preferences.
- A clear assessment of the current organisational capacity of the private sector actors engaged in the sanitation supply chain.
- Recommendations for interventions that could support improved, market-based access, to sanitation products and services to households.

The analysis complements the Programme’s household baseline survey as well as additional formative research into sanitation behaviours. It builds on existing data, experiences and research tools, including previous SNV supply chain research in Bhutan and elsewhere. It aims to provide comparable and clear data analysis and insights as well as practical and specific recommendations for targeted supply chain interventions in Pemagatshel.

SNV defines a supply chain as:

*A system of organisations, people, technology, activities, information and resources involved in moving a product or service from a supplier to a customer. Supply chain activities transform natural resources, raw materials and components into products and services that are delivered/carried out for the end customer.*

The existing supply chain for sanitation-related products and services, including input suppliers, wholesalers, retailers, transport service providers, masons and financial institutions was investigated in order to understand the main market players and the relationships between them. The supply chain analysis also involved the consumers of Pemagatshel, including latrine owners and non-owners, men and women, to understand their needs, preferences and desires, as well as their knowledge, attitudes, and practices regarding sanitation behaviours, products and services.

3. Approach and Methodology

To move from simple description of the sanitation market, to creation and testing of sustainable strategies to improve it, the research team utilized a modified version of the Human Centered Design (HCD) methodology. HCD is a process and a set of techniques used to create new solutions, including products, services, business models and modes of interaction (IDEO 2009). The approach starts with the people that are being ‘designing for’, examining their needs, dreams, and behaviours and understanding what they want. This is called the ‘Desirability‘ lens. Once identifying a range of what is Desirable, solutions are viewed through the lenses of Feasibility and Viability. As we move through the process, solutions are viewed through each of the lenses, seeking to answer the following key questions in turn (IDEO 2009):

- *Desirability:* What do people desire?
• **Feasibility:** What is technically and organizationally feasible?
• **Viability:** What can be financially viable?

The HCD process moves through three main phases: Hear, Create, and Deliver. During the Hear phase, we conduct field research to collect stories and gather observations about toilet users and non-users, supply chain actors and other stakeholders. In the Create phase, we work together to translate what we heard into principles, opportunities, solutions and recommendations. In the Deliver phase, SNV might begin to develop and test potential solutions. These might include ideas for training enterprises, plugging supply chain gaps, designing lower-cost products or effectively and sustainably marketing products and services in rural villages.

The HCD methodology uses qualitative research methods to develop a deep understanding of people and what they want. For this research, in-depth interviews were utilized as the key qualitative research method. The purpose of the research team’s HCD research was to generate insights and ideas that can be tested and finalized into strategies for supply chain interventions, product and service model designs and stakeholder engagement approaches.

3.1 Market, Geog and Village Selection
Based on knowledge of existing markets, roads and distribution channels, the team identified the following main market areas as key areas for supply chain business interviews:

• Samdrup Jongkhar Town, Samdrup Jongkhar Dzongkhag
• Pemagatshel Town, Pemagatshel Dzongkhag
• Nanglam Town, Pemagatshel Dzongkhag

Plans to conduct interviews in key market towns across the border in the Indian state of Assam were unable to go forward due to security and logistical concerns.

Selection of geogs for consumer and rural business interviews was done using a purposive sampling approach based on a number of criteria, including:

• Sanitation demand creation intervention (prior intervention, future intervention)
• Distance from main roads and markets
• Location (Geographic spread across the District)
• Sanitation coverage
• Water access
• Number of households
• Economic status
• Logistical constraints

These criteria were based on similar sampling criteria used to identify geogs for the Pemagatshel baseline survey, and had been previously discussed and agreed by SNV, Dzongkhag officials and PHED. Using the criteria, the team selected four geogs to represent the broadest possible range of characteristics and ‘geog types.’ These were reviewed and approved by PHED. In consultation with the Health Assistants in each Geog, the research team then selected the village(s) within that geog that broadly matched the ‘geog type.’ The final list of study geogs and villages is presented below.
### Table 1: Study Geogs and Villages

<table>
<thead>
<tr>
<th>Geog Name</th>
<th>Prior CDH</th>
<th>Road Access</th>
<th>Location</th>
<th>Sanitation Coverage</th>
<th>Poverty</th>
<th># HH</th>
<th>Village Name(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nanong</td>
<td>Yes</td>
<td>Road</td>
<td>North</td>
<td>Good</td>
<td>n/a</td>
<td>576</td>
<td>Nanong, Zhingray</td>
</tr>
<tr>
<td>Yurong</td>
<td>Yes Recent</td>
<td>Road</td>
<td>North</td>
<td>Good</td>
<td>16%</td>
<td>232</td>
<td>Dungshingma, Thongkhar</td>
</tr>
<tr>
<td>Dungmin</td>
<td>No</td>
<td>Very Remote</td>
<td>Central</td>
<td>Very Poor</td>
<td>26.1%</td>
<td>285</td>
<td>La-Dhug</td>
</tr>
<tr>
<td>Norbugang</td>
<td>No</td>
<td>Remote</td>
<td>South</td>
<td>Good</td>
<td>23.5%</td>
<td>375</td>
<td>Norbugang</td>
</tr>
</tbody>
</table>

Source: PHED-SNV Pemagatshel Baseline Survey Sampling Criteria

Geogs and villages where a prior sanitation demand creation intervention using Community Development for Health workshops (CDH) had occurred were investigated to understand how exposure to CDH changes demand behaviour and consumer preferences and needs and also to understand which supply chain strategies worked best and why.

### 3.2 Research Methods

Using HCD as an over-arching approach to the research, the research team (2Male:2Female) used semi-structured qualitative in-depth interviews, key informant discussions and brainstorming workshops to collect and synthesis market data and develop strategic recommendations. The Sanitation Supply Chain analysis utilized the following methods and tools:

### Table 2: Research Methods and Tools

<table>
<thead>
<tr>
<th>Method</th>
<th>Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review of existing documents and market data</td>
<td>Market studies, field reports, evaluations, policy documents, reports and other documents; Geog data sheets; Geog database template</td>
</tr>
<tr>
<td>In-depth supply chain interviews</td>
<td>Interview guides tailored for each business ‘type’; Enterprise profile sheets; enterprise database template; supply chain map</td>
</tr>
<tr>
<td>In-depth consumer interviews</td>
<td>Interview guides for latrine owners and non-owners; CDH latrine cards; latrine inventory sheets</td>
</tr>
<tr>
<td>Stakeholder consultations</td>
<td>Interviews; facilitated participatory mapping exercise</td>
</tr>
<tr>
<td>Data synthesis and analysis workshops</td>
<td>Facilitated team brainstorming/analysis</td>
</tr>
<tr>
<td>Participatory workshop on preliminary results</td>
<td>Participatory workshop</td>
</tr>
</tbody>
</table>
3.2.1 Review of existing documents and market data

The Consultant collected and reviewed available literature and documents for three primary purposes:

- To gain a broad understanding of the current sanitation situation in Bhutan, including progress and key challenges related to sanitation market development, pro-poor strategies, approaches to improving sanitation coverage and hygiene behaviour change and policy and institutional issues.
- To gather specific demographic and sanitation-specific data on the 11 geogs of Pemagatshel Dzongkhag. This included a review of baseline data, formative research, Dzongkhag-level demographic and health surveys, and other documents.
- To gain a nuanced understanding of the RSAHP Programme, including supply chain and other activities undertaken in Phase I. This includes review and analysis of evaluations and field reports to understand previous activities and make recommendations on strengthening these in the new geogs of Pemagetshel.

Specific documents reviewed included: Rural Supply Chain Study of the four RSAHP pilot Geogs; PHED-SNV Rural Sanitation and Hygiene Independent Evaluation; Handbook of Toilet Technologies for Rural Households in Bhutan; Report on the Assessment of Trained Carpenters and Masons and other field reports.

3.2.2 In-depth consumer interviews

Qualitative consumer interviews were conducted, including latrine owners and non-owners, women and men, female- and male-headed households, to understand consumer’s needs and preferences. The interviews covered the following key areas:

- Household income, competing purchase priorities and general purchase behaviours
- Current defecation practices and toilet usage
- Knowledge and preferences for toilet facilities
- Willingness and ability to pay for different types of toilet facilities
- Intention, motivation and triggers for toilet ownership
- Decision, purchasing and construction processes
- Cleaning, maintenance and upgrading of existing facilities

Interviews included the use of CDH ‘informed choice’ technology cards with images of three different latrine options to probe specific product knowledge, preferences, price points and willingness to pay. Results were analyzed using the SaniFOAM framework (Devine 2009).

A total of seventeen consumer interviews were conducted in four study geogs (see Village and Geog Selection below). Within each study geog, a range of households was purposively selected using the following criteria:

- Latrine ownership
- Latrine type (dry pit, pour flush, shelter type, etc)
- Household income/economic status
- Male/female-headed households

The consumer interviews included six non-latrine owners (five female and one male) and eleven latrine owners of various latrine types (four female and seven male). Question Guides for consumer interviews are included in Annexes 1 and 2.
3.2.3 In-depth supply chain interviews
The supply chain interviews and observations helped the research team to create a comprehensive and easy-to-understand picture of the existing state of play and covered the following key areas:

• Types of businesses, locations of key markets/businesses and business networks
• For each type of business, its history, size, product and service offerings, and customer base
• Approaches to business and financial management, human resources, cash flow and use of credit
• Current approaches to marketing, promotion and sales
• Available toilet components and material inputs, including prices, indicative margins and volumes
• Linkages to inputs suppliers, manufacturers and transport service providers
• Construction and related maintenance services and skills
• Roles of women and men within supply chain businesses
• Estimated scale of market activity in Pemagatshel, including number and geographic scope of market players and distribution channels

A total of twenty-nine in-depth interviews were conducted in the four study geogs as well as Pemagatshel Town, Nanglam Town and Samdrup Jongkhar (an important border town and conduit for imported manufactured products from India). Due to the very limited number of market players, the research team attempted to interview all existing sanitation-related businesses we could find. We also expanded the scope of the study to include town- and geog-level General Stores not currently selling sanitation-related products but with potential to become involved in such activities in the future.

In the previous Rural Supply Chain Study of the four RSAHP pilot Geog, a typology was developed to describe different markets in Bhutan based on their size and location (PHED-SNV, 2010). Below is a matrix of businesses interviewed using a modified version of this typology. Question Guides for supply chain enterprise interviews are included in Annexes 3 and 4. A database of Pemagatshel supply chain enterprises for those enterprises that were interviewed is included in Annex 5.

In addition to formal interviews, a number of informal consultations, observations and interviews were conducted with truck drivers at the Samdrup Jongkhar truck depot to better understand informal transport arrangements in Pemagatshel.
<table>
<thead>
<tr>
<th>Market Type</th>
<th>Level</th>
<th>Location(s)</th>
<th>Supply Chain Actors Interviewed</th>
<th>Total # Interviews</th>
</tr>
</thead>
</table>
| Large-Scale Market (LSM) | Dzongkhag (border town) | Samdrup Jongkhar Town       | • 1 Cement Supplier  
• 2 Cement Agents  
• 4 Hardware Wholesaler/Retailer                                                      | 7                 |
| Medium-Scale Market (MSM) | Dzongkhag      | Pemagatshel Town            | • 4 Cement Agents  
• 2 General Stores  
• 1 Financial Institution                                                              | 7                 |
| Small-scale market (SSM) | Geog (border town) | Nanglam                     | • 1 Hardware Retailer  
• 2 Cement Agents                                                                   | 4                 |
| Rural market (RM)     | Geog/Village    | Nanong, Yurong, Norbugang, Dungmin | • 4 Masons  
• 1 Horse Owner (Transport)  
• 6 General Stores                                                                | 11                |
| **Total**             |                |                            |                                                                                               | **29**             |

3.2.4 Stakeholder consultations and programme mapping

Interviews and meetings were conducted with national, Dzongkhag and local government officials, programme partners and other key informants to better understand key policy and institutional issues related to sanitation and hygiene improvement and small business development in Bhutan. This included a brief ‘mapping’ exercise with national-level partners to help clarify target market segments and programme goals as well as current and past interventions of PHED and SNV. The market ‘mapping’ helped identify gaps, opportunities and areas for further research based on the programme staff expert knowledge. Key stakeholders from the following organizations were consulted:

- Public Health Engineering Division (PHED)
- District Health Officer - Pemagatshel
- Basic Health Unit (BHU) Health Assistants
- Bhutan Chamber of Commerce and Industry (BCCI), Samdrup Jongkhar
- LNW Consulting

3.2.5 Team data synthesis and analysis

Data gleaned from in-depth interviews and observations was collected, analyzed and synthesized in ‘real time’ utilizing tools from the HCD methodology. At the end of each day, the research team recorded and reviewed all interviews together and discussed key insights and themes as they emerged. Midway through the research schedule the research team had a full ‘synthesis’ workshop, in which they worked together to generate, organize and distil key insights, observations and ideas based on the research that they had collected. Thus the entire research team was actively involved in the creative process of research analysis and design of key programme strategy recommendations and principles.
3.2.6 Preliminary Results Workshop
A full-day workshop was conducted on 9 December 2011 with key staff from PHED, LNW and SNV to share preliminary results from the supply chain analysis as well as results from parallel formative research on consumers. The team presented observations, principles and recommendations based on an understanding of existing supply chains and consumer preferences. This was followed by brainstorming and discussion on overarching programme principles and specific supply chain activities for Pemagatshel.

3.3 Research Team and Schedule
Field research was conducted in Pemagatshel over a 11-day period from 18 to 28 November 2011. The Research Team was comprised of four field researchers, including:

- Danielle Pedi, Consulting Team Leader
- Tashi Dorji, SNV WASH Advisor (Business development)
- Kezang Chokey, LNW Officer
- Ugyen Tshering, Consulting Engineer to SNV

The Consulting Team Leader conducted a full day of training as part of the field research schedule, including a short workshop covering basic principles of sanitation marketing, an overview of the HCD methodology, team review of interview question guides and tools and tips for conducting qualitative in-depth interviews. This was followed by two ‘practice’ interviews and team reflection on the interview approach. Demo interviews were included in final set of consumer interviews.

3.4 Constraints and Limitations
A number of constraints and limitations were identified during the research, including:

- **Reliability and comparability of district and geog level data:** Significant differences between agencies and local administrative bodies exist in terms of definitions of households, families and residents. Complications seem to be related to national census and electoral registration, which requires people to register at the place of their birth rather than their place of residence. Health data is collected using boundaries defined by the area of coverage of a given Basic Health Unit (BHU), rather than by Geog administrative boundaries, and therefore differs from Geog administrative data. After reviewing BHU data against available Geog data, and in consultation with SNV staff, the research team decided to utilize the BHU data as it was deemed to be more reliable and up-to-date. Using BHU data also seemed to make sense given programme partnerships with the Ministry of Health.
- **Language barriers:** The research team included only one native Sharchop speaker. Additional translators were required and it is therefore inevitable that some nuance was ‘lost in translation.’ This is particularly relevant in terms of understanding consumers and how they describe their situation in their own words.
- **Logistical and security issues:** The research team originally planned to travel through India together and conduct interviews in Nanglam and Norbugang as a team. However, due to security concerns the Consulting Team Leader was unable to enter India and the team instead divided into two groups. The original plan also included conducting interviews in Indian border town, but these interviews did not go forward due to time limitations and concerns for team safety.
4. Overview of Pemagatshel Dzongkhag

Pemagatshel Dzongkhag is located in Bhutan’s mountainous southeast, bordering Tashigang in the northeast, Mongar in the northwest, Zhemgang in the west, Samdrup Jongkhar in the southeast and India’s Assam state to the south. It covers an area of about 1030 square kilometres and varies in elevation from 1000 to 3,500 meters above sea level. About 54% of its land area is under forest cover. (NSB 2010).

Pemagatshel is divided into 11 Geogs: Norbugang, Dechheling, Choekhorling Chongshing, Chimung, Dungmin, Khar, Nanong, Shumar, Yurung and Zobel. There are 93 Chiwogs and 239 villages in total. According to the 2010 Annual Household Survey, the rural population of Pemagatshel included 3187 Households and 14,835 people. Of the population, 51% are illiterate and 66 reported having a physical disability. Water coverage is high with 97% of households being served by a piped water supply.

The majority of people in Pemagatshel are engaged in farming as their main livelihood source. Maize is the main cereal crop, although oranges, potatoes and other subtropical fruits are also grown. Household incomes peak during the harvest season, December to February. Gypsum mining and the gypsum power factory at Khothakpa under Shumar Geog also provide significant employment (NSB 2010).

Although road access is improving, several geogs were inaccessible by road at the time of research (although new roads are built are set to open in the coming months). At present, the southern geogs of Pemagatshel are not connected by road to the northern geogs, accept by driving through India (see Figure 1).

Table 4 and Table 5 below present a snapshot of key demographic data for Pemagatshel Dzongkhag. Table 5 disaggregates data based on BHU statistics. Figure 2 presents a supply chain map of the dzongkhag, including key administrative, natural and demographic features as well as geographical representation of main market areas and key supply chain actors in the dzongkhag.
Table 4: Snapshot of Pemagatshel Dzongkhag

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Area (sq. km)</td>
<td>1030.04</td>
</tr>
<tr>
<td>Population (#)</td>
<td>23,777</td>
</tr>
<tr>
<td>Population density (persons per sq. km)</td>
<td>23</td>
</tr>
<tr>
<td>Geogs</td>
<td>11</td>
</tr>
<tr>
<td>Chiwogs</td>
<td>93</td>
</tr>
<tr>
<td>Villages</td>
<td>239</td>
</tr>
<tr>
<td>Towns</td>
<td>2</td>
</tr>
<tr>
<td>Population under 15</td>
<td>7419 (31%)</td>
</tr>
<tr>
<td># BHUs</td>
<td>11</td>
</tr>
<tr>
<td># Hospitals</td>
<td>1</td>
</tr>
<tr>
<td>Roads (length in Km, 2009)</td>
<td>119.47</td>
</tr>
<tr>
<td>Total Cultivated Land (acres, 2009)</td>
<td>32427.50</td>
</tr>
<tr>
<td>Literacy, 2005</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>61%</td>
</tr>
<tr>
<td>Female</td>
<td>31.3%</td>
</tr>
<tr>
<td>Unemployment, 2005</td>
<td>5%</td>
</tr>
<tr>
<td>Total employed in agriculture, 2005</td>
<td>50.1%</td>
</tr>
<tr>
<td>Male</td>
<td>36.3%</td>
</tr>
<tr>
<td>Female</td>
<td>68.2%</td>
</tr>
<tr>
<td>Total employed in industries, 2005</td>
<td>18.4%</td>
</tr>
<tr>
<td>Male</td>
<td>25.3%</td>
</tr>
<tr>
<td>Female</td>
<td>9.3%</td>
</tr>
<tr>
<td>Total employed in services, 2005</td>
<td>31.5%</td>
</tr>
<tr>
<td>Male</td>
<td>38.4%</td>
</tr>
<tr>
<td>Female</td>
<td>22.5%</td>
</tr>
<tr>
<td>Walking distance to nearest road (% HH), 2005</td>
<td></td>
</tr>
<tr>
<td>&lt; 1hr</td>
<td>45%</td>
</tr>
<tr>
<td>1-2</td>
<td>6.8%</td>
</tr>
<tr>
<td>2-5</td>
<td>6.3%</td>
</tr>
<tr>
<td>&gt;5 hr</td>
<td>41.9%</td>
</tr>
<tr>
<td>Households below total poverty line, 2005</td>
<td>18.5%</td>
</tr>
<tr>
<td>Households below food poverty line, 2005</td>
<td>2.9%</td>
</tr>
<tr>
<td>Average annual HH expenditure, Nu., 2005</td>
<td>10,013</td>
</tr>
</tbody>
</table>

Source: National Statistics Bureau 2010
Figure 1: Supply Chain Map of Pemagatshel Dzongkhag

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>----- Road</td>
<td>Mason</td>
</tr>
<tr>
<td>✝️ Town</td>
<td>General Shop – Rural Market</td>
</tr>
<tr>
<td>🌳 Main Market</td>
<td>General Shop – Medium/Small Scale Market</td>
</tr>
<tr>
<td>🌺 Cement Agent</td>
<td>Hardware Wholesaler/ Retailer</td>
</tr>
<tr>
<td>🌱 Cement Depot</td>
<td>Financial Institution</td>
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</table>
### Table 5: Relevant Socio-Economic Data Disaggregated by BHU, 2010

<table>
<thead>
<tr>
<th>Geog/Location</th>
<th>BHU</th>
<th>Total Pop</th>
<th># M</th>
<th># F</th>
<th># HH</th>
<th>% HH w/ Piped Water</th>
<th>% Pop Farm</th>
<th>% Pop Illiterate</th>
<th>% Pop w/ Disability</th>
<th>% HH w/ Electric</th>
<th>% Pop 3hrs from health facility</th>
<th>% HH TV Access</th>
<th>% HH Radio Access</th>
<th>% HH Mobile Phone Access</th>
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<tr>
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<td>681</td>
<td>340</td>
<td>96.5</td>
<td>83.0</td>
<td>94.3</td>
<td>1.8</td>
<td>94.1</td>
<td>96.6</td>
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<tr>
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<td>71.9</td>
<td>67.1</td>
<td>1.6</td>
<td>84.3</td>
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<td>73.3</td>
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<td>3346</td>
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<td>47.7</td>
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<td>77.1</td>
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<td>535</td>
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<td>99.6</td>
<td>56.6</td>
<td>47.9</td>
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<td>53.5</td>
<td>32.9</td>
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<td>73.1</td>
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<td>62.1</td>
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<td>1.9</td>
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<td>88.4</td>
<td>1.1</td>
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<td>92.4</td>
</tr>
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<td>100.0</td>
<td>14.6</td>
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<td>3.1</td>
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<td>31.9</td>
<td>54.9</td>
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<td>81.9</td>
<td>0.0</td>
<td>88.2</td>
<td>68.3</td>
</tr>
<tr>
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<td>1038</td>
<td>1106</td>
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<td>58.3</td>
<td>38.2</td>
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<td>75.0</td>
<td>11.2</td>
<td>64.8</td>
<td>81.7</td>
</tr>
</tbody>
</table>

4.1 Relevant Sanitation Data

The RSAH Programme Phase II baseline household survey found that current sanitation coverage in Pemagatshel includes 12% of households practicing open defecation, 31% with Unimproved Sanitation facilities and 56% with Improved Sanitation using the JMP definition. In addition to finding 44% of households below the benchmark for 'Improved Sanitation’, the study found that 73% of households do not use their toilets in a hygienic way and 65% do not have adequate facilities for hand washing with soap within an accessible distance.

Common toilet technologies included the basic pit toilet (62%), the pour-flush toilet (27%) and the VIDP (1%), while 11% of households had no toilet facility. Roughly 44% of household would consider investing 3000 nu or less to build or upgrade their toilet, with 65% of those will to invest stating that they would ‘self-finance’ their toilet facilities. These baseline results point to a significant potential market for sanitation products and services, including new facilities and upgrades, and indicate at least some willingness to pay for such services. As indicated in Table 6 below, the potential demand for new sanitation products and services can be estimated in terms of new toilet facilities required, and could range from 1800 to 3360 new toilet facilities.

Table 6: Relevant Sanitation Data Disaggregated by BHU, 2010

<table>
<thead>
<tr>
<th>Geog/Location</th>
<th>BHU/ Health Centre</th>
<th>#HH</th>
<th>%HH with Toilet</th>
<th>%HH w/o Toilet</th>
<th>%Pit</th>
<th>%VIDP</th>
<th>%Flush</th>
<th>Potential Demand (# of toilets)*</th>
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</thead>
<tbody>
<tr>
<td>Nanong</td>
<td>Nanong BHU</td>
<td>340</td>
<td>83.8</td>
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</tr>
<tr>
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<td>72.9</td>
<td>0.0</td>
<td>21.2</td>
<td>100 - 186</td>
</tr>
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<td>Shumar</td>
<td>Dzongkhag Hospital</td>
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<td>56.4</td>
<td>2.5</td>
<td>39.2</td>
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<td>Gonpasingma BHU</td>
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<td>9.1</td>
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<td>9.2</td>
<td>0.0</td>
<td>130 - 226</td>
</tr>
<tr>
<td>Yurong</td>
<td>Yurong BHU</td>
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<td>86.3</td>
<td>13.7</td>
<td>74.9</td>
<td>0.0</td>
<td>11.4</td>
<td>161 - 279</td>
</tr>
<tr>
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<td>3.7</td>
<td>3.7</td>
<td>79 - 151</td>
</tr>
<tr>
<td>Dungmin</td>
<td>Dungmin BHU</td>
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<td>80.4</td>
<td>0.0</td>
<td>17.0</td>
<td>96 - 186</td>
</tr>
<tr>
<td>Dungmin</td>
<td>Thrumchung</td>
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<td>7.9</td>
<td>68.5</td>
<td>0.0</td>
<td>23.6</td>
<td>38 - 68</td>
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<tr>
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<td>87.0</td>
<td>0.0</td>
<td>9.3</td>
<td>51 - 98</td>
</tr>
<tr>
<td>Chokhorling</td>
<td>Chokhorling BHU</td>
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<td>0.0</td>
<td>93.0</td>
<td>0.0</td>
<td>7.0</td>
<td>74 - 147</td>
</tr>
<tr>
<td>Norbugang</td>
<td>Nanglam BHU</td>
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<td>56.0</td>
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<td>Norbugang BHU</td>
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<td>91.9</td>
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<td>0.0</td>
<td>74 - 148</td>
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<tr>
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<td>Dechhenling BHU</td>
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<td>66.1</td>
<td>0.6</td>
<td>33.3</td>
<td>168 - 336</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>5018</td>
<td>94.3</td>
<td>4.5</td>
<td>62.5</td>
<td>3.2</td>
<td>28.6</td>
<td>1795 - 3369</td>
</tr>
</tbody>
</table>

Source: Figures calculated based on raw data from Annual Household Survey Report 2010 Geog data sheets, Pemagatshel Dzongkhag Health

* Conservative estimate of potential market for new toilet facilities and upgrades, expressed as a range. Minimum assumes new toilets for all households currently without a toilet facility. Maximum assumes new toilets for all households without a toilet facility plus 50% of existing pit latrines.
5. Analysis of Consumer Needs and Preferences
Consumers are the most important part of the supply chain, thus it was necessary for the supply chain analysis to understand their current practices, needs and desires. This research focused in particular on households and individuals as consumers of products and services, focusing specifically on product and service knowledge and preferences.

The researchers looked broadly at patterns of consumption and types of durable and consumable goods already available and purchased by rural Pemagatshel households to understand general purchase behaviours and where a toilet might rank in terms of household purchase priorities. It also looked more specifically at needs and preferences for sanitation products and services. Research into consumer preferences was analyzed using the SaniFOAM framework (Devine 2009), which focuses on key behaviours and target populations and then analyses the opportunity, ability and motivation of targeted populations to carry out the desired behaviour (FOAM = Focus, Opportunity, Ability, Motivation).

The following presents a summary of key insights and research highlights but is not an exhaustive review of all behavioural determinants within the SaniFOAM framework. A more comprehensive study on sanitation behaviours was conducted in a parallel piece of research and should be read alongside this Supply Chain Study for a full understanding of consumers in Pemagatshel (see Formative Research of Sanitation Behaviours in Pemagatshel Dzongkhag, 2011).

5.1 Focus
The parallel Formative Research into sanitation behaviours segments the market based on latrine ownership and gender, investigating behavioural determinants for two sanitation related behaviors of men and women with unimproved sanitation and those without access to sanitation. Similarly, the supply chain study analyzed female and male latrine owners and non-owners (see Annexes 1 and 2 for in-depth interview question guides). This supply chain research indicates that the market could be further segmented based on the following key variables:

- **Access to roads and markets:** The market might be segmented geographically, with separate activities and messages (and possibly products and production techniques) based on access to cement, pans, fittings and other materials. Indeed, a separate strategy may be required for very remote rural villages where businesses may be unable to profitably sell such material inputs.

- **Income levels:** The market for particular toilet products might be segmented by household income level, with products at different price points pitched to different income groups. For those with very low income and ability to pay, lower-cost (or no-cost) hygienic toilets can be promoted as the first step on the pathway to the ‘ideal’ toilet.

As indicated in the statistics above, the large majority of households in Pemagatshel (almost 90%) already own some form of toilet. Consistent and appropriate usage of these facilities by the whole family is a critical issue. Likewise, whether the physical facilities themselves meet hygiene standards is a key factor in determining what sorts of products and services might be required. According to preliminary findings in the
Pemagatshel baseline survey, almost one-third of all rural households own a toilet that is not hygienic. In terms of latrine ownership, there are roughly two types of latrines in Pemagatshel:

- **Simple ‘traditional’ pit latrine:** The most common type of toilet is a simple, usually stone-lined pit with a wood or stone slab and wood or stone cover for the defecation hole. This type of toilet is usually built with a simple shelter of wood and natural materials. There is great variety in the types of traditional pit latrines currently in use. Most families pay nothing or very little for collected materials for a traditional latrine, and usually construct this type of latrine by themselves.

- **Pour-flush toilet:** The pour-flush toilet is less common than the traditional pit latrine, and also comes in a variety of shapes and sizes. By far the most common type of pour-flush toilet is the single off-set pit. While some households have concrete superstructures with CGI sheet roofing for their pour-flush toilet, many will also have a more simple natural material shelter. Cost estimates for pour-flush latrines vary, but can be estimated at 4000 – 6000 nu for pour-flush with wood/natural shelter and 12,000 – 20,000 nu for pour-flush with concrete shelter, including material and labour.

5.2 Opportunity

5.2.1 Access and Availability

At present, access and availability of material inputs is a major barrier to purchasing toilet products. Rural consumers in Pemagatshel have very limited exposure to shops and businesses selling or even displaying toilet products.

The current toilet purchase and construction process is very complex. People currently need to go to a minimum of two shops to purchase the materials they need, and then collect additional natural materials. When they bring all of the materials back to their houses, they may need advice or additional support on construction.
Although barriers to access are significant, access to toilets is arguably no more or less difficult than access to other durable goods. In terms of general purchase behaviour, it is clear that people can and do access the product they want, travelling long distances to purchase expensive items like TVs, rice cookers and curry cookers, and going to great lengths to transport these goods back to their homes. The purchase of most durable items happens in Samdrup Jongkhar or India. There seems to be a preference for travelling to major markets to buy expensive things, although some households indicated that they might be interested to purchase toilet supplies and materials at their local rural General Shop if they were available for a reasonable price.

When factoring costs, people do not consider the price of a trip to Samdrup Jongkhar or elsewhere, including transport, food and overnight accommodation. Thus, they perceive goods they purchase in these main markets to be ‘cheaper’ than goods closer to their homes (which have embedded transport costs). Many respondents noted that they will make one major trip for large expensive purchases – usually before the school season (Jan-Feb). The annual outing seems to have a social value, especially for women, and is a key moment for exposure and access to new products. Consumers noted that they might spend up to 20,000 nu on this annual trip.

5.2.2 Product Attributes
Irrespective of gender and toilet ownership, there is a strong preference among Pemagatshel consumers for a toilet that uses water for flushing. The ‘ideal toilet’ is a pour-flush toilet. It has cement walls, CGI sheet roof and bathing facilities located inside or attached to the house. People have seen this toilet in government buildings, BHUs, cities and towns. Pour-flush toilets flush away faeces so they are not seen, keep away flies and ‘protect’ from ‘bad smells’. Pour-flush toilets are considered clean, convenient, safe, easy and good for health. The preference for toilets that flush away or hide faeces from sight may lead households without access to ceramic pans to construct ‘improvised’ concrete pour-flush pans. One respondent with an improvised pan noted, ‘I feel dirty when I see the faeces.’

Before constructing their pour-flush toilets, most pour-flush owners we met had previously had a traditional dry pit toilet: they thus had first-hand experience with dry pits and were able to compare the different experiences. Pour-flush owners were consistently satisfied with their toilets. In terms of ‘upgrades’, they mentioned having a tap inside the shelter, repairing or upgrading the walls and roofs.

Among traditional pit owners, consumers are less satisfied with their facilities and several were considering or actively planning to build new pour-flush toilets. It is important to note that the notion of ‘upgrading’ existing traditional pits by investing further to make them more hygienic or structurally improved is generally not considered by traditional pit owners. ‘Upgrading’ in the minds of a traditional owners means constructing an entirely new toilet with a concrete slab and ceramic (or ‘improvised concrete’) pan.
When shown photos of different toilet types, most traditional pit latrine owners and non-latrine owners expressed a preference for a concrete slab and ceramic pan; there was not a strong preference for a particular type of pit (e.g. off-set, direct or double-pit).

5.2.3 Social and Cultural Norms
Although consumer may aspire to an ‘ideal’ pour flush toilet, they are willing to accept ‘poorer quality’ toilets. Traditional toilets are considered smelly, full of flies and uncomfortable because the user can see the faeces. Although some respondents said they felt ashamed (lotshong mai la) of their toilet, most were willing to accept a traditional toilet as a better option than open defecation. Among non-latrine owners, although most indicated that the toilet they preferred conformed to the ‘ideal toilet’ image, the toilets they would actually consider or plan to construct were of the ‘traditional pit’ variety. Indeed, some lower income non-owners expressed the view that although the ‘ideal toilet’ was the ultimate aspiration, the traditional toilet was good for them because it ‘matched’ their circumstances.

There is already a strong cultural practice of latrine ownership and usage. Even among open defecators, we found most had owned a latrine at some time in the past. Usage may be inconsistent, but ownership is already a norm. People who defecate in the open are not happy or satisfied with the practice. They expressed a preference for toilets but gave various reasons for not having one. The most common reason given was that their old toilet had collapsed and they did not have the time to rebuild.

5.2.4 Sanctions and Enforcement
Rural villagers we interviewed expressed a respect for authority and seemed to be willing to listen to and trust local leaders. Indeed, in the past, rural households have followed rules to construct and use a basic toilet. It is likely that clear regulations on toilet ownership and use would have a strong impact on village norms, particularly if these were agreed and endorsed through village meetings or within the CDH community planning process.

5.3 Ability

5.3.1 Knowledge
There is limited knowledge of toilet options and costs among non-latrine owners and traditional pit latrine owners. Respondents had great difficulty estimating costs for manufactured latrine components, even when prompted with latrine images. Although they have a general idea of what they might need, they don’t know how much of each material or how to build. Because there is limited exposure and experience with non-traditional latrines, it is difficult for households to imagine what finished products look like.

Non-owners estimate that a pour-flush toilet (with simple shelter, concrete slab and ceramic pan) will cost anywhere from 10,000 to 20,000 nu, including materials and labour. In fact, according to the PHED Handbook on Toilet Options for Rural Households in Bhutan (DoH, 2011), such models would be around 4500 to 6000 nu.
This over-estimation of actual costs could fuel the perception that pour-flush toilets are unaffordable and out of reach.

None of the respondents we met indicated that they had taken the contents of their pit out to use as fertilizer; however some did plant trees over the pit. The most common practice when a traditional dry pit fills up is to cover it over and dig another one. Some households also wait until the faeces dries out, then dig out the pit contents so that they can re-use the stone lining for a new pit latrine. Pour-flush toilet owners had no plan for what they would do if their pit filled up.

5.3.2 Skills and self-efficacy

Most households have people with basic experience in unskilled or semi-skilled construction work. To cut costs, households will often limit the tasks required of a mason. For example, they will dig and line their own pit and build their own shelter. Cutting labour costs often increases time and complexity. Labour costs are usually around 150-250 nu per mason per day if charged on a daily rate, or a negotiated fee based on a set contract for a project (e.g. adding a room to the house). In actuality, a household will pay much more in ‘hidden costs’ including food and alcohol for the labourers. Labourers will often sleep at the house, and are provided with three meals a day. To cut down on costs, households often receive support from family members for construction or employ systems of informal labour sharing. Households who were planning to construct a new toilet believed they could save up to two-thirds of the cost by doing the construction labour themselves.

At present, every toilet in Pemagatshel is effectively ‘custom-built.’ Every toilet is a bit different from the next, as each is built to suit individual household needs. A typical ‘ideal’ concrete pour-flush toilet might take 5-10 days to construct, plus 2-3 days to dig the pit and one week to collect all the natural materials. There is a great deal of variability in quality and design. Since households do construction themselves, this can result in poor quality toilet facilities. Households were able to identify specific areas where they required (or in the case of non pour-flush owners, where they would require) further advice, for example in the placement of the pipe and pan.

Examples of ‘improvised’ pour-flush pans of stone and cement.
Improvised concrete pans are often made of rough poured concrete surfaces and hard edges, where faeces can collect and are difficult to clean. These toilets require cement, sand and other inputs, but it is not clear whether they offer a great deal of value for the extra cost and complexity of construction. Owners note advantages of improvised pans, including less smell, no flies and – most importantly – that they do not see the faeces in the pit. However, they also note disadvantages, including technical design flaws that make the faeces difficult to flush away or clean off of the surface.

5.3.3 Roles and decisions
Many women and men interviewed noted that they would jointly make the decision to purchase or build a latrine. However, it was also clear that the many specific decisions related to actual purchase and procurement of materials tended to be in the ‘male’ domain. Women – even those identifying themselves as ‘joint’ heads of households – and children may be influential in the lead-up, discussion and decision to purchase and build a toilet, influencing the final decision to construct. After the decision is made, men seem to be more active in deciding what specific toilet the household will have (including buying materials from different shops, collecting materials, seeking construction advice and doing the construction labour).

Women noted that they make decisions about smaller purchases (e.g. 2000 nu) on their own, but that for larger purchased of 10,000 nu or more, they would need to consult with their husbands.

5.3.4 Affordability
For most households in Pemagatshel, income is seasonal and peaks during orange harvest (Dec-Feb) and to a lesser extent during peanut season (Oct-Nov). For some households, agricultural income is complimented by non-farming income (e.g.: trading, salaried jobs, etc.). Most large purchases are made right before the school season (Jan-Feb). Among respondents we interviewed, estimates of annual household incomes varied from as low as 2000 nu (for elderly female-headed household) to up to 100,000 nu for households with large orange groves. On average, reported household income was 12,000 to 20,000 nu for both latrine owners and non-owners. A 4000-5000 nu toilet could thus represent anywhere from one-fifth to one-third of average annual income. It should be noted, however that there is a high risk of error in self-reporting of annual income, and that reported income was for cash income. These figures do not include assets such as animals that are often sold for cash when a family makes a large purchase.

Based on reported household expenditures on durable items, religious ceremonies and other expenses it seems that there is at least some ability to pay among a large number of families. Considering the wide array of toilet options available and the range of materials that are used, a hygienic and good quality latrine does seem to be within financial reach – particularly if this toilet is a good, quality low or no-cost traditional or VIP latrine.
People perceive that they cannot afford to buy the ‘ideal’ toilet they want, but this may be more of a function of lack of knowledge of actual costs and a prioritisation of other items rather than a lack of ability to pay per se. Respondents were asked, ‘If you received 3000 nu, what would you spend it on?’ The majority stated that they would buy household consumable items, clothing and food. Most people (except for those with extremely low incomes) noted that 3000 nu was ‘not a lot of money’ for them, and it was not perceived to be enough to buy something like a toilet. Deeper research into household incomes would be required to further analyze ability to pay.

Only the highest income families reported being able to put away regular savings, e.g. for emergencies. Informal borrowing systems do exist in villages, but these are often considered too expensive. Households are more likely to borrow or receive remittances from relatives.

5.4 Motivation

5.4.1 Emotional/physical/social drivers
Both men and women are very influenced by their peers. Most identified their ‘ideal’ toilet as the toilet of their neighbour. Exposure and experience are very strong drivers for toilet purchase and construction. Many consumers with pour-flush latrines noted that they had first seen or used this type of toilet in the city or town. Indeed, exposure to pour-flush toilet technologies in official buildings and in larger towns seems to be a key motivator for purchase. Social pressure also motivates some households, with some expressing shame (lotshong mai la) if they did not have a ‘good’ quality toilet.

5.4.2 Competing Priorities
Toilets are clearly not a purchase priority. Households – even non-latrine owners- are able to save for and purchase things they want. Televisions, rice cookers, curry cookers, hot water boilers, mobile phones and electrification are some of the items that households without toilets or with unhygienic toilets have invested in. The costs of these items were reported as follows:

- Rice cooker/curry cooker: 1400 – 2000 nu
- Television: 7000 – 9000 nu
- Household electrification (including labour and materials: 8000 – 10,000 nu
- Annual Puja: 3000 – 10,000 nu

When asked what they would buy if they had money, non-latrine owners mentioned mobile phones, school supplies, home appliances, etc. as things they would buy before they would consider investing in a toilet.

It should be noted that for poorer families, many of their most expensive assets are given by family members outside of the household. The poorest tend to rely on family members for regular remittances.
5.4.3 Intention
As noted above, many non-owners have previous experience of owning or using a toilet. There was no non-owner respondent in the sample who did not own a toilet at some time in the past. Intention amongst non-owners to construct (or re-construct) a toilet was strong, with most able to provide specific details about their construction plans, and/or show the materials they had already purchased to construct a new latrine. A notable exception was the households with the lowest estimated incomes, which seemed to be much less likely to have clear intentions regarding toilet construction. For these low-income households, targeted assistance will likely be required.

5.4.4 Willingness to Pay
Respondents were shown images of four types of toilets: 1) off-set pour-flush with concrete slab, ceramic pan, 2) direct pit pour-flush with concrete slab and ceramic pan, 3) off-set twin pit pour-flush with ceramic pan, and 4) ventilated improved pit with concrete slab. All toilets featured a wooden shelter. As noted above, there was a strong preference for pour-flush, either single off-set pit or direct pit. However, most respondents were unable or unwilling to provide estimates of what they thought their preferred toilet might cost. While traditional pit owners and open defecators seemed willing to pay something (e.g. there is not a high expectation that they will be provided with a toilet for free), exactly how much they would be willing to pay is unclear. Further research, possibly with actual physical products rather than pictures, would be required to understand household willingness to pay for specific products promoted by the Programme.

6. Analysis of Current Sanitation Supply Chains
In general Pemagatshel’s rural supply chains for all goods and services are characterized by a very limited number of businesses competing for a small number of customers. Most manufactured goods are imported from India, with which the Dzongkhag shares an extensive border. The cost of doing businesses in Pemagatshel is high due to low populations, low population densities, limited road access and difficult mountainous terrain. Most existing businesses at geog and even dzongkhag level are ‘General Shops’, small-scale retailers tending to sell similar sorts of groceries and fast moving consumer goods (rice, sugar, cooking oil, soap, cleaning products, snacks and beer) for roughly the same prices, with little differentiation or choice for consumers.

Despite the limited market size and logistical challenges in Pemagatshel, deep distribution channels exist in even the most remote off-road geogs and villages. Rice, the staple food in Pemagatshel (consumed with every meal), is not grown in the area and must therefore be purchased by nearly all households. Thus, there is a distribution channel down to the geog level for this staple item packaged in a bulky, heavy 50 kg sack. At least one General Shop exists in every geog and a sophisticated system of formal and informal transportation linkages is in place for moving goods and people.
Because sanitation facilities are not a single ‘off-the-shelf’ product, there are a number of material inputs and actors involved in their manufacture, distribution and construction. Toilet components and materials move through different and disconnected supply and distribution channels, but are generally considered part of construction/housing material supply chains.

Figure 2 presents a schematic of supply chains for sanitation material inputs. There are two main categories of manufactured inputs that must be purchased to produce a toilet that is not a simple traditional pit latrine: 1) cement and 2) hardware and sanitary components, including ceramic pans, traps, pipes and fittings. A third category of collected materials includes items such as wood, stone and sand procured locally by individual households and/or specialized small-scale businesses. Masons and carpenters at the local level do provide construction services, although most households themselves are also active in unskilled or semi-skilled construction labour. Due to the very difficult terrain and limited road access, businesses involved in transportation and specialized transportation services are critical supply chain actors for all manufactured goods.

For all supply chain actors, individual rural households make up a very small fraction (usually less than 20%) of overall sales. Contractors and government project are usually the main source of revenue and income.

The following sections present each of the main sanitation supply chains and key businesses within them. Geog- and dzongkhag-level General Shops, although usually not directly involved in distribution of sanitation material inputs, are also critical conduits, distribution points and points of direct contact with rural consumers. These are not presented in the schematic, but potential opportunities to engage these small-scale enterprises are discussed below.
6.1 Cement

6.1.1 Overview
There are two primary manufacturers of cement in Bhutan, Pendent Cement Authority Limited (PCAL) and Lhaki Cement Pvt. Limited. Both companies have one factory each, located in Gomtu, in Samtse Dzongkhag in south western Bhutan. Currently a second cement factory, the Dungsam Cement Corporation Limited (DCCL) is under construction in Nanglam Town, Pemagatshel and is due to open in two to three years’ time. This factory is under Druk Holding and Investments (DHI) and will have a production capacity of 1.0 million tons clinker and 1.36 million tons per year. PCAL was established by the Bhutanese government in the 1970s and is currently held by DHI, a government-owned holding company, as an incorporated ‘joint sector company.’ PCAL has over 90% of the market share for cement in the country, with the remaining 10% supplied by Lhaki Cement, a private company. Current combined production capacity within Bhutan is 2400 metric tons per day (1600mt at PCAL factory, 800mt at Lhaki Cement). The Bhutanese government prohibits Bhutanese companies from importing cement from other countries, although large-scale
government projects do import cement from India to supply growing demand from construction and road-building projects. From time to time, limits to national production capacity and surging demand create cement bottlenecks and shortages. The new factory at Nanglam is expected to smooth supply, alleviate bottlenecks and reduce need for Indian cement imports.

PCAL cement is distributed through a system of licensed and certified agents. Prices are fixed by the company and agents must sell a minimum of 15 metric tons (300 numbers of 50kg bags) per month. Each agent purchases cement from one of four main cement PCAL depots throughout the country. There are currently 20 certified PCAL agents in the eastern region, including six agents in Pemagatshel, and these falls under the Samdrup Jongkhar Depot jurisdiction. Lhaki Cement uses a similar agent system and has one agent in Pemagatshel.

6.1.2 District Cement Agents: General Characteristics
A small number of authorized agents operate in Pemagatshel, including 3 agents in Pemagatshel Town, 2 agents in Nanglam Town and an additional 3 agents in Samdrup Jongkar that service the Pemagatshel area. Agents generally have a number of business lines, and are typically active in contracting work, transport services, grocery and beer wholesale, LPG gas and retail/restaurant businesses as well as cement supply. Cement agents typically own between 3 and 6 trucks of different sizes. The majority of their cement sales are to construction contractors (including their own contracting operations) and government projects.

To obtain a cement agent license from the Ministry of Economic Affairs, prospective agents must fulfil a number of requirements, including having adequate cash flow to make upfront payments for cement stock. As no trade credit is extended by PCAL, cement agents do not extend credit for cement. However, for other business lines, in particular wholesale grocery sales to rural market General Stores, retail credit is extended for typical terms of 1-2 months. Cement agents appear to have more financial resources and may be more willing to take on debt to grow their business or to make significant investments in equipment and stock. They keep stock and financial records, with women often playing key roles in management.

6.1.3 Prices, Margins and Volumes
Cement is packaged in 50kg or 25kg bags. The 50kg bag is the standard size and makes up the bulk of orders. The 25kg bag was introduced in 2005 to cater specifically for the remote rural market, after PCAL market research determined that the 50kg bag was too heavy to be carried on human or horse back. In practice, the 25kg bag is not stocked at the Samdrup Jongkhar depot and is usually only supplied to order. The 25kg bag is slightly more expensive (to cover costs of additional packaging). Cement agents report that even among remote rural households, consumers tend to purchase the 50kg bags, which are split open at the end of the road and divided into two empty 25kg rice sacks for onward transport to villages by horse or foot. This results in a large amount of wastage.

Maximum retail prices for cement are set by PCAL and are calculated based on distance from the depot. PCAL factors all costs of loading, unloading, transport and
overhead costs into the retail price. Fixed prices might change once or twice per year depending on fluctuating costs of fuel and other inputs. Current retail prices for Pemagatshel are given in Table 7. Cement agents usually arrange their own transport and must do their best to stay within the PCAL set overhead/transport margin. Agents are required to pay the full amount for each new shipment in advance; the company does not offer any form of trade credit or alternative payment arrangements. Cement agents invoice PCAL after selling their shipments and receive 6.25 ngultrum per 50kg as commission or ‘profit.’ Thus, cement agents can expect to make a minimum of 1875 ngultrum per month in ‘profit’ (based on the 300 bag per month quota). In reality, the profitability of each agent will depend on how well it can reduce transport costs per unit under the PCAL margin. This is usually achieved through bulk purchase orders and securing large contracts.

### Table 7: Fixed Prices on Pendant Cement (effective March 2011), Ngultrum

<table>
<thead>
<tr>
<th>Destination</th>
<th>50 kg Bag</th>
<th>Per Bag</th>
<th>Per Metric Ton</th>
<th>25 kg Bag</th>
<th>Per Bag</th>
<th>Per Metric Ton</th>
<th># of Certified Agents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depot IV (Samdrup Jongkhar)</td>
<td>279.375</td>
<td>5587.50</td>
<td>144.9375</td>
<td>5797.50</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Samdrup Jongkhar</td>
<td>283.375</td>
<td>5667.50</td>
<td>146.9375</td>
<td>5877.50</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pemagatshel</td>
<td>315.925</td>
<td>6318.50</td>
<td>163.2125</td>
<td>6528.50</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nanglam</td>
<td>329.375</td>
<td>6587.50</td>
<td>169.9375</td>
<td>6797.50</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PCAL retail prices are at point-of-sale and exclude additional loading and transport charges from the cement agent’s shop/storage centre to outlying geogs and construction sites. These transport charges can add significant costs to the consumer. For example, a 50kg bag of cement costs 200 nu to transport from Tshelshing Zor to Norbugang: this is almost two-thirds of the cost of the cement itself (see 6.4 Transport Services below).

#### 6.1.4 Key Observations

Cement agents present a number of key opportunities and indeed expressed strong interest to be involved in sanitation marketing efforts. Some key observations include:

- **Cement agents have existing business linkages and distribution channels in rural geogs.** Cement agents are also usually construction contractors. They typically own their own trucks and employ drivers and construction labourers. All three Pemagatshel-based cement agents are also grocery wholesalers with regular delivery routes to geog and village-based General Stores. Nanglam-based agents do not act as grocery wholesalers, but are actively involved in village-based construction projects. The Programme may be able to leverage these existing rural linkages and networks, rather than attempting to build trust in less familiar businesses.
• **Cement and sanitary hardware are currently distributed through separate channels, but agents expressed interest in product ‘bundling.’** Although cement agents are active in the construction industry, none of them sell hardware or sanitary materials. Cement agents we spoke to expressed interest in supplying sanitary hardware components and packaging these with bags of cement. Several cement agents have already supplied pour-flush latrine ‘sets’ to individual households that have specifically ordered them. One Pemagatshe agent felt confident he could use his network of village masons to offer a ‘cement-hardware-construction’ product and service package.

• **Cement agents may be motivated by retail toilet sales proposition.** Because many cement agents are already distributing grocery goods in their own trucks to geogs and villages, they may be able to supply small numbers of latrine components as part of existing deliveries/shipments. Unlike retailers, who would be transporting shipments of toilet components only, cement agents are delivering truck-loads of other goods as well. They may not require bulk orders or a minimum number of latrine sets to make a delivery. Many stated they could readily fill orders of one or two latrine sets at a time, although bulk purchase orders would be preferred. This flexibility for delivery and transport will benefit consumers and could mean a more steady supply in the long-term, after initial CDH-driven demand is exhausted.

6.2 Hardware and Sanitary Components

6.2.1 Overview
There are currently no manufacturers of ceramic pans, fittings, pipes and other materials in Bhutan. These items are therefore all imported from India. The majority of hardware and sanitary components in Pemagatshel is sourced from importers and wholesalers in the large-scale market (LSMs) of Samdrup Jongkar and, to a lesser extent, from Phuentsholing and directly from wholesalers across the border in the Indian state of Assam (primarily from Guwahati and Siliguri). Revenue and Customs taxes and duties can vary based on the types of items they import, but it’s generally around 10% in Bhutan and 3% in India. Businesses can apply for tax exemption, but many may be reluctant to do so due to bureaucratic red tape.

6.2.2 Hardware Wholesaler/Retailers: General Characteristics
There are five to six hardware wholesaler/retailers in Samdrup Jongkar. Most are well-established family businesses with a minimum of four full time staff. Women play roles in management and sales, and may be joint owners alongside their husbands. These businesses source goods from wholesale markets in India and usually sell a wide range of construction materials, hardware, electrical goods, paints and other home improvement items. Shop fronts are small and space within shops is often quite limited, but each business has significant off-site storage facilities for stock. Most shops have vehicles and some offer delivery services in the rural areas for an additional cost. There is also one hardware retailer in Nanglam with similar characteristics but smaller overall business size compared to businesses in Samdrup Jongkar.
Sanitary products are a very small percentage of overall sales for hardware wholesaler/retailers, comprising perhaps about 15% or less of gross sales revenue. During the field visit, the research team could not find any toilet components or fittings on display. Shop owners and managers stated that toilets are not in high demand as a retail item and they cannot afford to use limited space to display them. The primary customers for sanitary items are contractors and government. For individual retail consumers from rural areas, some may offer technical advice on latrine technologies and tell people what they need to buy. Hardware shops in Samdrup Jongkhar usually develop relationships with Indian wholesalers of sanitary goods and can often arrange trade credit for up to one month.

6.2.3 Prices, Margins and Volumes
Hardware shops generally sell the same types of toilet components for roughly the same prices, and indeed will often borrow from each other if they run out of stock. It was difficult to obtain clear estimates on retail margins, however these could be in the order of 10 – 20%.

![Two common squatting pans: without connected footrests (left) and with connected footrests (right).](image)

Table 8: Typical products, prices and margins for sanitary products

<table>
<thead>
<tr>
<th>Component</th>
<th>Common Brands</th>
<th>Retail Price at shop, nu</th>
<th>Volumes and Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pans</td>
<td>Hindustan; Parry Ware; Hindware</td>
<td>450-600</td>
<td>2-3 per month for individual household consumers; 100,000 nglultron in total sales per year</td>
</tr>
<tr>
<td>Traps</td>
<td>Prince; Supreme</td>
<td>200 - 300</td>
<td>--</td>
</tr>
<tr>
<td>Joints/Fittings</td>
<td>Prince; Supreme</td>
<td>Varies</td>
<td>--</td>
</tr>
<tr>
<td>Pipes</td>
<td>Prince; Supreme</td>
<td>200 - 300</td>
<td>4in diameter, 6 or 10 feet in length most common for toilets</td>
</tr>
<tr>
<td>CGI Sheet</td>
<td></td>
<td>500 - 600</td>
<td>--</td>
</tr>
</tbody>
</table>
6.2.4 Key Observations

Key observations and opportunities related to engaging hardware wholesaler/retailers include:

- **Toilets are considered a 'one time business.'** Sanitary products are not considered a major business opportunity, particularly in terms of retail sales. Hardware shops see very little demand for toilets and have very little incentive to focus on toilet sales. With the limited space they have, shops are very reluctant to display or store toilet components. It is unclear if it will be possible to provide these shops with incentives to keep a product display or sign up given their other competing priorities.

- **There are no suppliers of hardware and sanitary materials in Pemagatshel Town.** All hardware supplies for the northern part of Pemagatshel are sourced directly from Samdrup Jongkar, Phuentsholing or India.

- **Hardware wholesaler/retailers may not be interested in anything but bulk sales.** Wholesalers in Samdrup Jongkar and Nanglam have existing business arrangements with Indian wholesalers and are able to offer discounts and competitive prices on sanitary components. They may be most appropriate in a wholesale role, as it is unlikely they will have time or interest to invest in village-level retail sales. It may also be possible to eliminate the need for Samdrup Jongkar wholesalers, if other types of enterprises (e.g. cement agents) are willing to cross the border to procure hardware supplies. This would cut out a 'middleman' and further reduce the cost per unit for sanitary hardware.

6.3 Collected Materials

6.3.1 Overview and General Characteristics

Rural households in Pemagatshel rely on collected materials for the bulk of their housing and toilet construction needs. The time, cost and effort it takes to collect these materials - including timber, stone, sand and gravel - adds a further layer of complexity to the toilet construction process that may present a barrier or cause delay or deferment of toilet construction, particularly for female-headed and elderly households with limited ability to collect materials on their own.

Households will often collect and store materials over time and build only when they have everything they need. The process of collecting all materials can take some time, as permits alone can take months to process. Households will collect materials or arrange for their collection when they have free time or when family members or neighbours are free to help them. Many households will use material left over from housing construction for their toilets. Particularly for traditional toilets, households will reuse stones and other materials to rebuild toilets.

6.3.2 Typical Costs

Households must obtain permits to cut timber and have a limited quota of timber. Although they may be engaged in carrying the wood from the forest, they usually must hire someone to do the actual cutting down of the trees and chopping into planks or beams. Similarly, they may hire someone to collect stones of appropriate size. It was very difficult to estimate actual costs for different types of collected
materials, as rates and units seem to be negotiable. Households may be involved in labour exchanges so may not pay directly in cash for these items.

### Table 9: Typical costs for collected materials

<table>
<thead>
<tr>
<th>Typical Costs</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Timber</strong></td>
<td></td>
</tr>
<tr>
<td>80-100 nu per cubic foot (cft) depending on location</td>
<td>• Households must obtain a permit for collection</td>
</tr>
<tr>
<td>90 nu labour charge per cft for sawing</td>
<td>• Male daily labourers cut the wood</td>
</tr>
<tr>
<td>20-60 nu labour charge per cft for carrying wood from forest to village, depending on location</td>
<td>• Female daily labourers (or HH themselves) carry the wood from forest to home</td>
</tr>
<tr>
<td><strong>Stones</strong></td>
<td></td>
</tr>
<tr>
<td>4500-5000 nu per 5x5ft pile, including labour costs</td>
<td>• Construction projects must obtain a permit for collection</td>
</tr>
<tr>
<td>60nu per 5x5ft pile for government ‘royalty’ (for construction projects only)</td>
<td>• HH can collect without a permit</td>
</tr>
<tr>
<td></td>
<td>• Female daily labourers break, stack and transport stones</td>
</tr>
<tr>
<td><strong>Sand</strong></td>
<td></td>
</tr>
<tr>
<td>Varies</td>
<td>Can be difficult to access in Norbugang</td>
</tr>
</tbody>
</table>

### 6.3.3 Key Observations

Key observations and opportunities related to collected materials:

- **Collected materials are not ‘free’**: Although many households can (and do) collect materials like timber, stone and sand, there are real costs involved in this material collection. There are designated and organized systems of paid labour for cutting timber and collecting stones and other materials, and timber in particular requires a permit even at the household level. Costs can vary significantly, and households often engage in labour exchange as a way of reducing the financial burden. The time and effort involved for a household to collect everything they need is not insignificant and should be factored into supply chain interventions that seek to simplify the purchase and construction process.

### 6.4 Construction and Maintenance Services

#### 6.4.1 Overview

At present, the vast majority of construction activity is connected with large-scale road and government building projects. The government licenses four types of construction contractors: A Level and B Level contractors bid for large-scale projects such as roads and schools, while C Level and Petty Contractors can bid for smaller projects.
Contractors and projects are a key employer in rural areas, and many households will supplement their farming income with day labour on work sites. Both men and women participate in unskilled and semi-skilled labour, with women tending to do such jobs as stone and wood collection and menial labour on the worksite. Many masons will begin their careers as on such jobs, apprenticing or shadowing a ‘lead mason’ to learn more skilled work.

The research team was not able to identify any maintenance or pit emptying services or businesses. Most households stated that they would rebuild their latrine if the pit filled up. Maintenance and repair work on the physical latrine facilities is usually done by the household itself.

6.4.2 Masons and Carpenters: General Characteristics
The majority of households (but possibly not the most vulnerable) will have people capable of unskilled or semi-skilled labour. Most will assist with or do all construction work on a toilet to cut down on labour costs. There are generally two types of masons:

- **Traditional Mason/Carpenters:** These masons have skills in stonework and carpentry and experience constructing traditional-style homes and toilets. They may have little or no experience working with concrete or constructing pour-flush toilets. Traditional masons are often based in the village and their main customer base tends to be rural households. They typically make 200-250 nu per day.

- **Skilled Mason/Contractors:** These masons often have some formal or informal training or apprenticeship in concrete and more modern construction methods. They typically work under contractors or for government projects. They may have knowledge or experience constructing septic tank toilets in public buildings and may also construct pour-flush toilets for wealthier families. Because they are often hired as contract labourers, they may spend much of their time away from their home villages. They can earn 250-350 per day.

Masons earning a significant livelihood from their work are predominantly men, although as mentioned above, women sometimes play support roles as unskilled labourers on worksites.

6.4.3 Typical Labour Charges
Depending on the job and the customer, masons will work on a daily rate or on a contract basis. In addition to the negotiated rate for construction work, masons are provided with meals, alcohol and sometimes accommodation as part of their work. Thus, the real costs of construction labour may be much higher than a job quote. These ‘hidden costs’ can be quite significant for a rural household, particularly for larger jobs.
Table 10: Indicative Labour Charges by Toilet Type

<table>
<thead>
<tr>
<th>Toilet Type</th>
<th># of days</th>
<th>Daily Rate</th>
<th>Total</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional toilet</td>
<td>4 days</td>
<td>250 per day for one traditional mason</td>
<td>1000</td>
<td>Households decide where to locate toilet, mason advised on materials required; households dig pit and collect materials</td>
</tr>
<tr>
<td>‘High end’ Pour-flush toilet</td>
<td>5-10 days</td>
<td>250-350 per day for skilled 2-person mason team</td>
<td>2500-7000</td>
<td>Often on a contract basis; actual rates vary greatly depending on size/dimension, materials, etc.</td>
</tr>
</tbody>
</table>

6.4.4 Key Observations

Some key observations and opportunities related to Programme engagement of masons include:

- **Many households will opt to do toilet construction themselves.** Despite efforts to introduce better-trained masons at local level, households will construct their own toilets to save on labour costs. Households may seek advice and support on placing the pan and pipes of pour-flush toilets. A recent assessment of Lhuentse mason training confirmed that there is only weak consumer demand for masons for toilet construction (L NW Consulting, 2011 – see Section 7.2 below for further discussion).

- **Traditional masons may be more likely to stay in the village.** Skilled mason/contractors are often away from their villages working as contract labourers, whereas traditional masons seem to largely based in their villages. This will need to be taken into account when considering how masons might benefit from toilet construction opportunities through the Programme.

6.5 Transportation Services

6.5.1 Overview and General Characteristics

As in other regions of Bhutan, transportation is a major bottleneck in Pemagatshel and transport costs can add significantly to the final costs of consumer goods for rural households. There seems to be a fairly standardized - if informal - system of set prices for different types of vehicles travelling along main and feeder roads. Typical trucks include large ‘Gypsum’ trucks, medium-sized DCM trucks, and smaller Mahidra and Bolero trucks. Apart from the ‘Gypsum’ trucks, most trucks are owned by individuals who will either act as drivers or rent out their vehicles by the day.

Businesses usually find creative ways to lower transport costs, and a sophisticated network exists to move goods and people. Gypsum trucks are key ‘transporters’ of goods and people. These trucks travel regularly from the mine in Pemagatshel to Samdrup Jongkhar loaded with gypsum. If time permits, on the return trip they will fill their trucks with imported Indian goods destined for Pemagatshel businesses and households. Informal relationships are cultivated with gypsum truck drivers to cut costs and negotiate minimal transport charges.
Deliveries for most products are usually made to the end of the main road. Rural villagers are responsible for arranging onward transport to their geogs. If there is a feeder road, this will be done by small Bolero truck. In geogs without road access, goods are transported by horse or human. The distance one horse can travel with 50kgs on its back in one day is calculated as one ‘dolam’ (literally, ‘load-road’). A human ‘dolam’ is calculated at 25kg in one day.

6.5.2 Typical Transport Charges
Transport costs for goods are always quoted by the truckload and are based on the dimensions of the truck, distance travelled and fuel costs. Quotes are usually for a one-way trip.

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Indicative Costs, nu (one-way)</th>
<th>Distance</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Trucks ('Gypsum')</td>
<td>4000</td>
<td>Pemagatshel to Yurong</td>
<td>Can carry 160 50kg bags of cement</td>
</tr>
<tr>
<td>Medium Trucks (DCM)</td>
<td>3000 7000 1500</td>
<td>Pemagatshel to Yurong Samdrup Jongkhar to Nanong Denchi to Tsebar</td>
<td>Can carry 80-100 50kg bags of cement</td>
</tr>
<tr>
<td>Small Trucks (Bolero, Mahindra)</td>
<td>1500 4000 2500 2000 1500 3000</td>
<td>Pemagatshel to Yurong Samdrup Jongkhar to Nanong Samdrup Jongkar to Pemagatshel Pemagatshel to Nanong Denchi to Yurong Nanglam to Tshelshing Zor</td>
<td>Can carry 15-20 50kg bags of cement. Can carry 50-60 ceramic pans</td>
</tr>
<tr>
<td>Horses</td>
<td>200 200</td>
<td>Tsebar to Dungmin Tshelshing Zor to Norbugang</td>
<td>Maximum load = 50 kg</td>
</tr>
<tr>
<td>Human</td>
<td>100 150</td>
<td>Tsebar to Dungmin Tshelshing Zor to Norbugang</td>
<td>Maximum load = 25 kg</td>
</tr>
</tbody>
</table>

6.6 Other Goods and Services

6.6.1 Small and Medium Market General Shops
As noted above, in Pemagatshel Dzongkhag there are very few retailers of hardware or construction supplies. In fact, the research team could locate only one hardware retailer (in Nanglam Town). The fourteen retail General Shops in Pemagatshel town sell the usual variety of fast moving consumer goods, groceries and household items. Most shops rely on fast moving low-margin, high-volume products such as snacks, drinks, beer and groceries. General Shops are typically family-run businesses that rely on point-of-sale purchases. They usually do not offer delivery or transport services. Larger shops in Pemagatshel will sometimes act as wholesalers. Their main suppliers are in Samdrup Jongkhar, and they are often able to arrange trade credit with
suppliers (usually for up to 1 month). Retailers do not do any pro-active marketing and sales. They rely on ‘word-of-mouth’ to increase their customer base and usually differentiate themselves and their businesses by their reputation and the trust they build through business and community networks. Women play key roles in management, record and account keeping and sales. The general division of labour in a family-owned General Store is for women to mind the shop and records books while men go out to procure the stock and make deliveries.

![A general store owner demonstrates her record books.](image)

Women tend to play business management roles including finance, accounting, stock management, and sales.

6.6.2 Rural Market General Shops

Each geog has between one and five General Shops, typically micro-businesses relying on the sale of groceries and food products including rice, cooking oil, sugar, tea leaves and beer. These shops are licensed and pay annual taxes. Their customer base is predominantly rural households and government officials based in the geog (e.g. teachers, health workers and other civil servants). Rural shops tend to extend credit more readily than businesses in the towns and cities, often extending credit for 5 months or more to households within the village. They are also willing to arrange flexible payment terms such as trading labour (e.g. to help carry stock from the road head to their shop) for ‘store credit.’

Typical gross revenues per day might be anywhere from 200-3000 ngultrum. These shops usually do not rely solely on retail sales for their household income. Many do
not keep records and have difficulty estimating profits. These businesses usually do not factor in labour costs and other overheads. Common problems include lack of storage space, difficulty arranging transport from the main road and subsequent stock shortage. Shop owners also worry about downward pressure on prices due to increasing competition in areas with new roads.

Two of the six rural market General Shops interviewed noted that they had sold a small number of sanitary hardware sets in the past, but also noted that they could see very little demand for this type of product. All expressed interest in the programme. Opportunities may exit to utilize rural market General Shops as ‘points of sale’ or product display areas. They may be able to link to larger enterprises and keep a small number of products in stock and on display at their shop, possibly on a commission basis.

7. Strategic Principles and Recommendations

7.1 General Programme Principles
Drawing on the above analysis of consumer preferences and the supply chain, the research team developed a set of strategic principles to guide the development of future supply chain interventions. These were shared and discussed at the Preliminary Results Workshop on 9 December 2011 and endorsed by key stakeholders and programme staff. In addition to the specific principles discussed in the sections below, workshop participants discussed the need to develop general or over-arching programme principles. The following is suggested as an over-arching principle:

**Principle: Measure suitability of interventions by two criteria:**
- **Sustainability:** Are marketing activities private-sector driven? Can they be undertaken without substantial support from the programme? Will sanitation marketing activities continue after the programme ceases to operate in a given area? Can private sector actors grow their businesses in the future without ongoing support?
- **Scalability:** Are interventions cost effective and time efficient? Can they be replicated on a larger (e.g. national) scale with minimal programme resources? Do programme activities effectively leverage private sector and household investment?

Undertaking programme activities that meet the ‘sustainability and scalability’ test will help guide programme staff towards market catalyzing and facilitating roles, rather than hands-on ‘programme implementation’ roles in the sanitation supply chain development component (although a more hands-on approach may be required for other components) of the Programme.

7.2 General Observations on Previous Supply Chain Interventions
One of the goals of the Pemagatshel supply chain study is to assist the programme in developing strategies to scale up supply chain activities that have been successful
and/or improve/modify previous activities, based on analysis of conditions in Pemagatshel and experience with what works. Although the research team did not visit Lhuentse to evaluate pilot supply chain work that occurred there under previous phases of the RSAHP, discussions with key programme staff involved in the Lhuentse pilot and review of field documentation point to a number of key issues for consideration. When measured by the ‘sustainability and scalability’ criteria, the following general observations of previous work can be offered:

- **RSAHP Programme field staff involvement in the latrine sanitation supply chain needs clearer parameters.** In the Lhuentse pilot programme, RSAHP local partners field staff were actively involved in all aspects of the latrine selling business, from promoting products, to sourcing suppliers, taking village orders, arranging deliveries and negotiating payments. Discussions with field staff indicate that this level of involvement created many logistical difficulties, such as problems with the timing of deliveries and difficulties negotiating with consumers and suppliers. It seems that the RSAHP programme took on most of the risks, acting as guarantor, ensuring large bulk orders were arranged and perhaps viewing enterprises as suppliers to the project, rather than independent enterprises solely responsible for the sale of their goods. A more sustainable approach might be to ensure that RSAHP staff have the business training they need to ‘let go’ of enterprises and enable them to make the investments (both in time and money) and take on the business risks involved in village-level retail sales (see 7.4 below).

- **Sanitation fairs are a very effective way to influence purchase.** A number of ‘sanitation fairs’ were held in Lhuentse, in which different products were displayed and made available for purchase at large gatherings of villagers. Nearly all programme staff agree that the sanitation fairs were very successful, and anecdotal evidence indicates that the majority of products brought to the fairs were sold. Programme staff members note that when villagers have the opportunity to see and touch the products, they are much more inclined to buy them. A recommended improvement to these events would be to ensure that businesses themselves arrange to transport and display their products, rather than having the Programme make all the arrangements (see 7.5 below).

- **Large-scale mason training in construction has had mixed results.** An assessment of mason training in Lhuentse indicated that only 28% of households in a July 2011 mid-term performance monitoring survey used the services of masons or carpenters. Of these, 53% (45 respondents) paid for these services, 24% (21 respondents) exchanged labour for services, and 23% sought technical advice only. Approximately 41% of households improved their toilet facilities without the use of masons or carpenters. A further 31% did not construct or upgrade their toilets over the 6 month assessment period. (LNW Consulting, 2011). The assessment interviewed 26 of the 87 (81M; 5F) masons trained in Lhuentse, recommending improvements such as better selection criteria for mason training participants (38% had no previous experience at all), better dissemination of information about mason services and clarification of mason’s roles after the training. Given that consumer demand for actual construction services is not very high, and given the logistical issues and costs involved in running a large-scale mason training programme, it could be argued that a more scalable approach might involve limited roles for masons, with more targeted training for a smaller number of key service providers (see 7.3 below).
7.3 Strategy Development Principles: Product and Service Options

**Principle 1: Simply the process by designing toilet products or product packages that build on technology options.** At present, rural household toilets are essentially ‘custom-made.’ Each new toilet requires consumers to seek technical advice. Purchasing and building a toilet is complicated and knowledge is low in terms of which materials to buy, how much of each material is needed, where to buy and how much it might all cost. Purchasing all the materials is time-consuming and complex. The quality of each toilet depends on many factors and varies greatly. While technologies types give consumers a better understanding of a particular product category (e.g. pour-flush off-set latrine, VIDP latrine), they do not guide the customer towards a particular, identifiable toilet with specific features, a price and a business that can sell that product. By focusing on the development of ‘products’ that can be sold, the programme can help enterprises dramatically reduce purchase complexity and product variability. If it is not possible to offer full ‘products,’ offering toilet material packages or sets may help reduce some complexity. A toilet package would include all required materials, instruct a consumer on exactly what else they needed to collect, and advertise the total cost of a full set.

**Potential Activities:**
- Spend time designing and testing prototypes of entire toilet products or product packages (not just pans, traps and fittings) to get user feedback on specific product attributes (e.g. preferred dimensions and sizes of the slab, colours and brands of ceramic pans, etc.) and prices
- Explore opportunities to use locally manufactured or pre-fabricated components for the slab, lining, shelter and other toilet components that are not already manufactured, for example utilizing moulds to cast concrete components.
- Develop and cost specific and standardized toilet packages that include e.g., for a pour-flush toilet, the ceramic pan and trap, pre-cut pipe, correct amount of cement
- Limit the types and amounts of ‘collected materials’ that households have to procure, e.g. by selling them in pre-packaged bundles
- Avoid confusing bills of quantity, but rather encourage enterprises to provide indicative retail prices for set units.

**Priority: Very High**

**Difficulty: Medium, but will require additional time and design resources.**

**Principle 2: Offer a limited range of standardized ‘base model’ options.**

By reducing the choices on offer to a small number of options at different price points, the Programme can make it less overwhelming for households to select the option that is right for them. On the supply side, this can help with standardizing the manufacturing and construction processes to increase quality and efficiency.

**Potential Activities:**
- Reduce the number of technology types introduced during CDH (e.g. from eleven to three) and link these to a specific product/product package for each technology.
• Develop **advertising materials** specifically targeting potential consumers with visual depiction of the finished toilet product, the total cost for one package (rather than for each component or material), the local materials required and a contact phone number. These advertising materials would be developed under the Programme and made available to any participating business. They would go beyond describing technology options, but would rather provide specific product information and field-tested marketing messages (see also ‘Sales, Promotions and Social Marketing below).

• Advertise the lowest-cost ‘base model’, with optional add-ons or further customization available on request and for additional cost.

**Priority: Very High**  
**Difficulty: Medium, but will require additional time and design resources.**

**Principle 3: Reduce the need for skilled masons in construction, but identify new roles for them as advisors and trainers.** Most households have access to semi-skilled labour required to construct a toilet and many prefer to do labour themselves to reduce costs. Rather than using engineers to train a large cadre of semi-skilled masons, the Programme could target existing skilled masons to act as technical advisors and trainers.

**Potential Activities:**
• Develop a set of selection criteria (including level of skill and previous knowledge, commitment to staying in the village, ability/willingness to provide advice, etc.) and a training approach to engage masons/advisors or strong ‘model’ households to provide technical advice to others.

• Develop targeted training programmes to support engineers and masons in new roles.

**Priority: Very High**  
**Difficulty: Low**

**Principle 4: Develop communications tools and guidance for ‘Do It Yourself’ construction.** Households currently seek only minimal support in constructing their toilet, usually in the form of advice on pan and pipe placement. The Programme could help consumers construct and install their toilets themselves by developing simple instructions.

**Potential Activities:**
• Design and test clear step-by-step pictorial instructions for each new toilet product or product package

• Understand and develop clear guidance or instruction sheets on common ‘problem areas’ (e.g. placing the pan and pipe)

**Priority: Very High**  
**Difficulty: Low**
**Principle 5: Promote options that allow easy upgrading from ‘unhygienic’ to ‘hygienic’ facilities.** Not everyone will be able or willing to invest in or construct a completely new toilet in the short to medium term. Offer simple technology options for upgrading, rather than rebuilding, existing facilities to help households move from ‘unhygienic’ to ‘hygienic’ facilities as a first step.

**Potential Activities:**

- Identify common problems with ‘unhygienic’ toilets and use simple instructions and market materials to offer concrete solutions and steps for upgrading. Train new local advisors in technical advice for toilet upgrades.
- Build on existing CDH work by including specific ‘upgrading’ solutions and steps during introduction of technical options.
- Consider designing and testing prototypes for toilet components or ‘add-ons’ (such as simple slab covers to help block gaps in wooden slabs) that can help households improve on their existing toilet facilities

*Priority: Medium  
Difficulty: High*

**Principle 5: Promote alternatives to the improvised concrete pan.** Current ‘improvised’ concrete pans are often poorly constructed, difficult to flush and with hard edges and rough surfaces where faeces can collect. Promote product options that discourage this option and clearly promote other pour-flush pan options (e.g. ceramic or plastic models) as more durable, hygienic and cost-effective options.

**Potential Activities:**

- Develop marketing messages that clearly discuss the costs, pros and cons involved in improvised concrete pans, and communicate that other types of pans do not add significantly to the toilet cost while dramatically improving its functionality.
- During CDH, ask improvised concrete pan owners to discuss their experiences constructing and using this technology so that people can hear first-hand about benefits and disadvantages before making their decision.
- Consider designing and testing prototypes for more durable and hygienic alternatives to concrete pans. These might be manufactured or pre-cast concrete pans or pan moulds and coatings.

*Priority: Low  
Difficulty: High*
7.4 Strategy Development Principles: Business Models and Supply Chain Interventions

**Principle 1: Target enterprises with existing rural distribution networks.**
Currently, there are a good number of potential businesses in the target area that are already active in construction or construction-related material supply in rural Pemagatshel. Many of these businesses already have the capital, equipment, business linkages, know-how and acumen to get started in toilet sales. By building on existing businesses, the Programme can ‘piggy-back’ on transport/distribution channels and avoid the need for new business training and hand-holding as new businesses build trust and networks.

**Potential Activities:**
- Develop clear criteria for business engagement that includes minimum requirements such as access to/ownership of vehicles and equipment; minimum financial resources and investment requirements; willingness to sell on ‘non-bulk’ basis; etc.
- Discuss requirements directly with businesses that have already come forward in initial stakeholder consultations.
- Explore opportunities to engage geog- or village-level General Shops as sales or distribution points. This might include helping to negotiate business partnerships between larger businesses and smaller-scale shops.

*Priority: Very High  
Difficulty: Low*

**Principle 2: Link supply chains for cement and toilet components.**
Target ‘focal’ businesses that can act as aggregators of cement and toilet hardware components (and/or offer full products/product packages). This will reduce complexity and transport costs for the consumer. In Pemagatshel town, cement agents are grocery wholesalers and contractors with existing deep distribution networks.

**Potential Activities:**
- Revisit businesses interviewed during the supply chain research to gauge their interest in becoming involved in the Programme. Discuss with supply chain researchers to get their opinions on who seems strong and who expressed the most interest. This should include Pemagatshel-based PCAL cement agents.

*Priority: Very High  
Difficulty: Low*
**Principle 3: Embrace the profit incentive and make business risk an essential part of the model.**
Potential profit is what motivates businesses to take risks, and business risk involves monetary investment. Market players who are serious about the toilet business opportunity will need to see that they can make enough money selling toilets not just to cover their costs, but to continue selling toilets to more people over time. They will also need to know that failure is an option. When negotiating with businesses, RSAHP programme staff should approach with a clear business proposition and as a service provider and supporter – the RSAHP Programme is offering to help their business, not the other way around.

**Potential Activities:**
- Provide additional training to RSAHP partners and field-level staff on how to ‘think like a business,’ including negotiating tools and tactics and developing a ‘Programme pitch’ for engaging new businesses that clearly articulates the investment costs, risks and potential profits for businesses.
- Develop RSAHP programme ‘rules of engagement’ for new businesses and local government, including (formal or informal) agreements on roles and responsibilities of all parties and clear articulation of what the Programme will and will not do.
- Identify resource or skills gaps within the RSAHP Programme and recruit or reassign resources based on experience (e.g. in marketing, business management, etc). This might include distinguishing roles and responsibilities of Programme staff working on community engagement and Programme staff members focused on business development and marketing, as these are two very different skill sets and activity areas.

**Priority: High**
**Difficulty: Medium**

**Principle 4: Get ‘proof of concept,’ scale through replication and encourage competition.**
The small market size, lack of existing business and conventional ‘contracting’ approach may mean it is difficult at first to get market players excited about the retail toilet business opportunity. Businesses might want or expect that the Programme will ‘contract’ them to supply to particular areas. Rather than identifying businesses across all of Pematashel, focus on getting one or two businesses up and running on a fully commercial basis. Then use this positive experience to get others interested.

**Potential Activities:**
- Work closely with one or two businesses in the first instance, trialling business models and modes of engagement and allowing time for Programme staff to gain confidence in new approaches and to test and refine what works.
- Use exposure tours and a ‘seeing is believing’ approach to replicate the early successful businesses and advertise the ‘toilet business opportunity’ to other potential businesses.
• Identify business management gaps and needs of Programme-supported businesses and offer targeted support (e.g. one-on-one mentoring, peer-to-peer exchange) to help them improve.
• Facilitate formal and informal linkages between local businesses and local government officials.
• Offer market access and information to all potential businesses and make sure Programme-supported businesses understand that they do not have a ‘monopoly’.

Priority: Medium
Difficulty: Low

7.5 Strategy Development Principles: Sales, Promotion and Social Marketing

**Principle 1: Facilitate businesses to take orders and make deliveries without Programme assistance.**
To be sustainable, business models and marketing strategies will need to be private sector led and driven. Businesses must work independently while linking closely to local government.

**Potential Activities:**
• Together with first pilot businesses, develop **and test** models, strategies and systems for selling, tracking, stocking and delivering toilets and taking payments.
• Help businesses to identify and incentivize appropriate people to promote their products, take orders and provide customer service at the village level.
• Minimize and, where possible, eliminate Programme staff involvement in order taking, delivery arrangement and all financial transactions.
• Provide simple tools and training on, e.g. simple sales records, stock management, order and delivery tracking and payment systems. This information should be collected in a way that allows Programme staff to easily feed businesses data into the Programme monitoring framework.

Priority: Very High
Difficulty: Medium

**Principle 2: Maximize seasonal sales opportunities.**
Sanitation demand creation, sales and promotion activities need to be implemented during the times of year that are the best opportunity to capture as much demand as possible, e.g. in January and February when household cash income is highest. Creative financing mechanisms (e.g. instalment payment plans) can help ease the burden of up-front purchase at other times of the year.

**Potential Activities:**
• Develop detailed programme work plans and marketing campaigns that coincide with peak income seasons (Dec-Feb in Pemagatshel).
• Develop realistic sales targets and expectations, particularly in the first year of marketing, that account for seasonal sales fluctuations.
• Allow time for market ‘penetration’, e.g. for marketing efforts to reach consumers and for new products to diffuse within market segments. Real momentum might begin after at least two full peak sales seasons.
• Design and test financing mechanisms for lower-income market segments, linking businesses to the ‘pro-poor strategy’ Programme component. This would involve building on the recommendations of the pro-poor support mechanisms research in Lhuentse.

**Priority: High**
**Difficulty: High**

**Principle 3: Promote the use of product displays of affordable options.**
Seeing is believing – the toilets that people see in the village will become the toilets they want. Marketing messages and activities can promote lowest cost base or ‘entry level’ models that are aspirational but still affordable. This might include displaying very low cost shelters (e.g. of bamboo rather than concrete or wood).

**Potential Activities:**
• Use physical product displays – rather than installing ‘demonstration toilets’ - to promote base or ‘entry level’ models and products. Physical products might be displayed at rural market General Stores or at the Geog office, along with a banner or other print material. Ensure that businesses themselves contribute their own resources to the product displays – this might be done on a cost-sharing basis.
• Ensure that businesses themselves take the lead on promoting and displaying their products, including investing their own time and resources. At the beginning, this might involve offering guarantees or incentives to businesses to minimize their risk.
• Support and facilitate ‘sanitation fairs’, inviting any businesses selling sanitary products to join. Ensure that the businesses themselves arrange transport of the products to the sanitation fairs. At the beginning, the Programme may need to provide some guarantees that a minimum number of products will be sold.

**Priority: High**
**Difficulty: Medium**

**Principle 4: Communicate that any hygienic toilet is a toilet to be proud of.**
Communicate exactly what is meant by ‘hygienic toilet’ and show examples of both dry and wet options that meet these criteria. Messages could include simple steps a family can take to make their toilet more hygienic. Messages should emphasize that a hygienic dry pit is just as good as a pour flush, and that not all pour flush latrines are hygienic.

**Potential Activities:**
• Design and test social marketing and communications messages focused on specific ‘hygienic’ toilet attributes.
• Focus marketing campaigns around the concept that ‘A hygienic toilet is an ideal toilet’.
• Use marketing to ‘rebrand’ the dry toilet as an aspirational consumer item.

Priority: High
Difficulty: Medium

**Principle 5: Use CDH as an opportunity for commercial sales by private businesses.**
CDH activities already include discussion of technology choices. Review CHD activities as sanitation marketing strategies and activities develop to understand and test changes to CDH in light of these new approaches.

**Potential Activities:**
• Design and test options for linking CDH with commercial sales opportunities, including timing and phasing of the different approaches, roles and responsibilities of actors and time and cost considerations.
• Develop marketing strategies that leverage CDH without relying solely on it: successful marketing approaches should help generate new demand with or without CDH (and after Programme-led CDH activities cease).

Priority: High
Difficulty: Low

**Principle 6: Encourage bulk purchase, but make it clear this is a retail opportunity.**
To overcome the high costs of transport, businesses should look for ways to encourage customers to buy in quantity. After CDH activities, there may be an initial surge in demand – this is a great sales opportunity. However, demand will continue even after the initial first sales and deliveries, and enterprises can be encouraged to continue to supply even after initial CDH-driven sales activities.

**Potential Activities:**
• Help businesses to develop promotional strategies such as group discounts to encourage bulk purchase.
• Avoid partnering with businesses that require a ‘mandatory minimum’ number of orders to make a delivery and encourage participation of businesses that are willing and able to sell smaller quantities of toilets on an on-going basis.
• Consider sales and marketing in a long-term context and from a business (not a Programme) perspective.
• Discuss on-going sales and marketing opportunities with businesses and develop clear strategies for on-going and cost-effective promotion.

Priority: Medium
Difficulty: Low
Table 12: Summary of Strategy Development Principles and Recommendations

<table>
<thead>
<tr>
<th>Principle</th>
<th>Potential Activities</th>
<th>Priority</th>
<th>Difficulty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Simply the process by designing toilet products or product packages that build on technology options.</td>
<td>• Design and test prototypes of entire toilet products or product packages • Use locally manufactured or pre-fabricated components for the slab, lining, shelter and other toilet components • Limit the types and amounts of ‘collected materials’ that households have to procure • Develop advertising materials for each new product • Avoid confusing bills of quantity, instead providing indicative retail prices for set units.</td>
<td>Very High</td>
<td>Medium</td>
</tr>
<tr>
<td>2 Offer a limited range of standardized ‘base model’ options.</td>
<td>• Reduce the number of technology types introduced during CDH (e.g. from eleven to three) and link these to a product or product package for each • Advertise the lowest-cost ‘base model’, with optional add-ons or further customization available on request and for additional cost.</td>
<td>Very High</td>
<td>Medium</td>
</tr>
<tr>
<td>3 Reduce the need for skilled masons in construction, but identify new roles for them.</td>
<td>• Develop a set of selection criteria for identifying skilled masons/advisors or strong ‘model’ households to provide technical advice to others.</td>
<td>Very High</td>
<td>Low</td>
</tr>
<tr>
<td>4 Develop communications tools and guidance for ‘Do It Yourself’ construction.</td>
<td>• Design clear step-by-step pictorial instructions for each new toilet product or product package • Understand and develop clear guidance or instruction sheets on common ‘problem areas’ (e.g. placing the pan and pipe)</td>
<td>Very High</td>
<td>Low</td>
</tr>
<tr>
<td>5 Principle 5: Promote options that allow easy upgrading from ‘unhygienic’ to ‘hygienic’ facilities.</td>
<td>• Identify common problems with ‘unhygienic’ toilets and use simple instructions and market materials to offer concrete solutions and steps for upgrading. Train new local advisors in technical advice for toilet upgrades. • Build on existing CDH work by including specific ‘upgrading’ solutions and steps during introduction of technical options. • Consider designing and testing prototypes for toilet components or ‘add-ons’ (such as simple slab covers to help block gaps in wooden slabs) that can help households improve on their existing toilet facilities</td>
<td>Med</td>
<td>High</td>
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<td>6 Promote alternatives to the improvised concrete pan.</td>
<td>• Develop marketing messages that clearly discuss the costs, pros and cons involved in improvised concrete pans • During CDH, ask improvised concrete pan owners to discuss their experiences constructing and using this technology so that people can hear first-hand about benefits and disadvantages before making their decision.</td>
<td>Low</td>
<td>High</td>
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## Business Models and Supply Chain Interventions

<table>
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<tr>
<th>Principle</th>
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<th>Priority</th>
<th>Difficulty</th>
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</table>
| 1 Target enterprises with existing rural distribution networks. | • Develop clear criteria for business engagement, including existing networks.  
• Discuss requirements directly with businesses that have already come forward in initial stakeholder consultations.  
• Explore opportunities to engage geog- or village-level General Shops as sales or distribution points. | Very High | Low |
| 2 Link supply chains for cement and toilet components. | • Target ‘focal’ businesses that can act as aggregators of cement and toilet hardware components by revisit businesses interviewed during the supply chain research, including Pemagatshel-based PCA cement agents. | Very High | Low |
| 3 Embrace the profit incentive and make business risk an essential part of the model. | • Provide additional training to RSAHP partners and field-level staff on how to ‘think like a business.’  
• Develop RSAHP programme ‘rules of engagement’ for new businesses and local government, including (formal or informal) agreements on roles and responsibilities of all parties and clear articulation of that the Programme will and will not do.  
• Identify resource or skills gaps within the RSAHP Programme and recruit or reassign resources based on experience (e.g. in marketing, business management, etc). Distinguish roles and responsibilities for community engagement and business development/marketing, as these are two very different skill sets and activity areas. | High | Med |
| 4 Get ‘proof of concept,’ scale through replication and encourage competition. | • Work closely with one or two businesses in the first instance, trialling business models and modes of engagement and allowing time for Programme staff to gain confidence in new approaches and to test and refine what works.  
• Use exposure tours and a ‘seeing is believing’ approach to replicate the early successful businesses and advertise the ‘toilet business opportunity’ to other potential businesses.  
• Identify business management gaps and needs of Programme-supported businesses and offer targeted support to help them improve.  
• Facilitate formal and informal linkages between local businesses and local government officials.  
• Offer market information and access to all businesses and make sure Programme-supported businesses understand they do not have a ‘monopoly’. | Med | Low |
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</thead>
</table>
| 1 Facilitate businesses to take orders and make deliveries without Programme assistance | - Together with first pilot businesses, develop and test models, strategies and systems for selling, tracking, stocking and delivering toilets and taking payments.  
  - Help businesses to identify and incentivize appropriate people to promote their products, take orders and provide customer services  
  - Minimize and, where possible, eliminate Programme staff involvement in order taking, delivery arrangement and all financial transactions.  
  - Provide simple tools and training on, e.g. simple sales records, stock management, order and delivery tracking and payment systems. | Very High | Med        |
| 2 Maximize seasonal sales opportunities                                    | - Develop detailed programme work plans and marketing campaigns that coincide with peak income seasons.  
  - Develop realistic sales targets and expectations, particularly in the first year of marketing, that account for seasonal sales fluctuations.  
  - Allow time for market ‘penetration’, e.g. for marketing efforts to reach consumers and for new products to diffuse within market segments.  
  - Design and test financing mechanisms for lower-income market segments, linking businesses to the ‘pro-poor strategy’ Programme component. | High     | High       |
| 3 Promote the use of product displays of affordable options.              | - Use physical product displays – rather than installing ‘demonstration toilets’ - to promote base or ‘entry level’ models and products. Physical products might be displayed at rural market General Stores or at the Geog office.  
  - Ensure that businesses themselves take the lead on promoting and displaying their products, including investing their own time and resources.  
  - Support and facilitate ‘sanitation fairs’, inviting any businesses selling sanitary products to join. Ensure that the businesses themselves arrange transport of the products to the sanitation fairs. | High     | Medium     |
| 4 Communicate that any hygienic toilet is a toilet to be proud of.       | - Design and test social marketing and communications messages focused on specific ‘hygienic’ toilet attributes.  
  - Focus marketing campaigns around the concept that ‘A hygienic toilet is an ideal toilet’.  
  - Use marketing to ‘rebrand’ the dry toilet as an aspirational consumer item. | High     | Medium     |
| 5 Use CDH as an opportunity for                                            | - Design and test options for linking CDH with commercial sales opportunities, including timing and phasing of the different approaches, | High     | Low        |
| commercial sales by private businesses. | roles and responsibilities of actors and time and cost considerations.  
|• Develop marketing strategies that leverage CDH without relying solely on it: successful marketing approaches should help generate new demand without or without CDH (and after Programme-led CDH activities cease). |

| 6 Encourage bulk purchase, but make it clear this is a retail opportunity. | • Help businesses to develop and test promotional strategies such as group discounts to encourage bulk purchase.  
|• Avoid partnering with businesses that require a ‘mandatory minimum’ number of orders to make a delivery  
|• Consider sales and marketing in a long-term context and from a business (not a Programme) perspective.  
|• Discuss on-going sales and marketing opportunities with businesses and develop clear strategies for on-going and cost-effective promotion. | Med | Low |
References


Annex 1: Consumer Question Guide – Latrine Owners
CONSUMER INTERVIEW GUIDE – LATRINE OWNER

Background
Tell me about yourself and your family. How old are you? Have you always lived here? How many people live in your household? What are their ages? What kinds of work do you and your family do? Have you finished any formal schooling? How about your other household members? Can you give us a tour of your home?

Income Flows, Competing priorities and General Purchase Behaviour
Does your cash income vary throughout the year? What months do you have the most cash income? The least? On average, how much cash income do you make per year?

In a normal week what purchases do you make? How much does each item cost? [Food, clothing, transportation, household supplies, etc.] For your normal weekly purchases do you ever buy on credit? Where do you go to make your weekly purchases?

What sources of electricity/cooking fuel do you have? How much do you spend per week/month? What sources of water do you have? How much do you spend per week/month? How much do you spend on school fees per month/year? How much do you spend on weddings or religious celebrations per year?

What are the most expensive things your family owns (e.g. television, mobile phone, animals, farm equipment) [probe: costs of these items] where do you go to buy expensive items?

What is the last expensive purchase that you made? Did you have to save money to make this purchase? How much time did it take you to save this money? Where did you go to buy this item? How did you transport it back to your house?

Do you wait for certain times of year to make expensive purchases (e.g.: after rice harvest)? Do you ever make expensive purchases on credit? Do you ever take loans for expensive purchases? What are the repayment terms?

How often do you go to the market? To the district capital? To the border towns? When you go to the market, how much money do you bring with you?

Do you consider 3000 nu. a lot of money? If you had 3000 nu. what would you buy?

Is there something your family is saving for right now? What is something that your neighbours have that you would also like to own?

In your household, who makes decisions about purchasing expensive items? Does it depend on the type of purchase? Is there any expensive thing that you would buy without consulting your family? In your household, who collects and saves the money? When you built your home, how did you gather the materials and construct it? [For example: Did you buy all the materials slowly over time and then build, or did you build
part by part as you could afford materials]? Did anyone help you to construct it? What did they do? You hire anyone to help you construct it? Who?
Do you have any improvements or repairs planned for your home? What are they? When do you plan to do them? How long have you been saving?

**Current Practices**

What kind to latrine do you have? Can I see it? *(Use latrine inventory sheet to probe latrine type)*

How many people use this latrine? Do adults in your family use this latrine all the time? In all seasons? Do children in your family use this latrine all the time? In all seasons? Where else do people in your family go to for defecation?

Do any of your neighbours use your latrine?

How long have you had this latrine? Where did you defecate before you had this latrine? Have you had any other latrines? If yes, what happened to it?

When do you wash your hands? Where do you wash your hands? Can you show me? *(Observe: hand washing station/location, presence of soap)*

**Knowledge and Preferences**

What things do you like best about your latrine? Why are these things important to you? *(Probe: any thing else, what else?)*

What things do you dislike about your latrine? Why? *(Probe: any thing else, what else?)* Have you or your family had any problems with this latrine? What kinds of problems? What did you do?

How satisfied are you with this latrine? Why?

What is your idea of a ‘perfect latrine’? *(Probe: what kind of below-ground structure? What kind of above ground parts? What kind of shelter walls and roof? How big?)* What kind of people have this type of latrine?

**Intention, Decision and Purchase Process**

What made you decide to build this latrine at the time that you did?

When you were considering building a latrine, what types of latrines did you consider? Why did you decide to build this type of latrine? Why did you decide to make it this way?

Did you seek any advice on latrine types or latrine construction? Who did you get advice from? Was it easy or difficult to get advice on what to build?


Who in your family made the final decision to buy a latrine? About what type of latrine to build? About where to install it? Who chose the materials?
Did you buy any materials for your latrine? Where did you go to buy the materials? [Probe: names of markets and shops] How far is it from here?

How did you get the materials from the shops to your house? Was transporting the materials difficult or easy? How much did the transport cost? How long did it take?

Did you build it yourself? Who in your family helped you?

Did you hire help? Who did you hire? How did you hear about this person? How much did it cost for hired the labour? During the construction, what did the hired person do? What did you do? Were you satisfied with their work? Why/why not?

How did you decide where to put the latrine on your property? How deep is the pit? What shape is it? Why did you dig it this way?

How long did it take to build your latrine, from the time that you decided to build it to the time that you completed construction? Did you build it all at once or in stages over time? What was most difficult? What was easy?

If you could change one thing about your latrine, what would it be? What would make your latrine better? Why? [Probe specific upgrades: what would you change about the slab, pit, shelter]

If I return to your house six months from today, how likely is it that you will have made some improvements or upgraded your latrine? If I return in one year?

Would you consider taking a loan to make improvements on your latrine? Would you consider paying for a toilet in instalments?

**Cleaning and Maintenance**

Who is responsible for cleaning your latrine? How do you clean it? What materials do you use for cleaning? What parts are hard to clean?

Has any part of your latrine ever broken? What part? When? Why? What did you do to fix it?

How do you collect water for anal cleansing, hand washing and/or flushing? Where do you store it?

Has your latrine pit ever filled up? How do you know when the latrine is full? What do you do if the pit filled up?

Is handling urine and using it as fertilizer acceptable to you? What are the benefits? Do you use the urine as a fertilizer? Is handling faeces and using it as fertilizer acceptable to you? What are the benefits? Do you use the faeces as a fertilizer?
CONSUMER INTERVIEW GUIDE – NON-LATRINE OWNER

Background
Tell me about yourself and your family. How old are you? Have you always lived here?
How many people live in your household? How many children are there living in your household?
What kinds of work do you and your family do?
Have you finished any formal schooling? How about your other household members?

Income Flows, Competing priorities and General Purchase Behaviour
Does your cash income vary throughout the year? What months do you have the most cash income? The least? On average, how much cash income do you make per year?
In a normal week what purchases do you make? How much does each item cost? [Food, clothing, transportation, household supplies, etc.] For your normal weekly purchases do you ever buy on credit? Where do you go to make your weekly purchases?
What sources of electricity/cooking fuel do you have? How much do you spend per week/month?
What sources of water do you have?
How much do you spend on school fees per month/year? How much do you spend on weddings or religious celebrations per year?
What are the most expensive things your family owns (e.g. television, mobile phone – how many mobile phones?, animals, rice cooker, farm equipment) [probe: costs of these items] Where do you go to buy expensive items?
What is the last expensive purchase that you made? Did you have to save money to make this purchase? How much time did it take you to save this money? Where did you go to buy this item? How did you transport it back to your house?
Do you wait for certain times of year to make expensive purchases (e.g.: after rice harvest)? Do you ever make expensive purchases on credit? Do you ever take loans for expensive purchases? What are the repayment terms?
How often do you go to the market? To the district capital? To the border towns? When you go to the market, how much money do you bring with you?
Do you consider 3000 nu. a lot of money? If you had 3000 nu. what would you buy?
Is there something your family is saving for right now? What is something that your neighbours have that you would also like to own?
In your household, who makes decisions about purchasing expensive items? Does it depend on the type of purchase? Is there any expensive thing that you would buy without consulting your family? [Use specific example from above] In your household, who collects and saves the money?
When you built your home, how did you get the materials and construct it? From where? [For example: Did you buy all the materials slowly over time and then build, or did you build part by part as you could afford materials]? Did anyone help you to construct it? What did they do? Do you hire any one to help you construct it? Who? Do you have any improvements or repairs planned for your home? What are they? When do you plan to do them? How long have you been saving?

**Current Practices**

Where do you go to for defecation? Where do men/women in your family go? Where do girls/boys go? How far away from your home is this place? How long does it take to walk there? Do you use this location at all times of day and night? In all seasons?

When do you wash your hands? Where do you wash your hands? Can you show me? [Observe: hand washing station/location, presence of soap]

Have you ever owned a latrine? If yes, what happened to it?

**Knowledge and Preferences**

What types of latrines do you know about? [For each latrine type, probe: how do they know about it? How much does it cost?] What types of latrines have you tried yourself? Where did you try them?

What type of latrine is your favourite type? Why? [Probe: any thing else, what else?] What type of latrine is your least favourite? Why? [Probe: any thing else, what else?]

**Intention, Decision and Purchase Process**

Have you ever thought about or discussed building a latrine with you family? Why/why not? When was the last time you discussed building a latrine with your family? Who discussed it?

Why haven’t you built a latrine? What has prevented you from building a latrine? [Probe for multiple reasons]

If you were to build a latrine, what kind of latrine would it be? [Probe: what kind of below-ground structure? What kind of above ground parts? What kind of shelter walls and roof? How big?] What features of this kind of latrine are important to you? [Probe specifics] What kind of people have this type of latrine?

How much do you think this kind of latrine would cost?

In your household, who would make the decision to buy a latrine? About what type of latrine to build? About where to install it? Who would choose the materials?

Where would you go to buy the materials for that latrine? [Probe: names of markets and shops] How far is it from here? What kinds of materials would you need?

Would you build it yourself? Who in your family would help you?

Would you hire help? Who would you hire? Why would you hire this one? How did you hear about this person? How much do you think it would cost for hired labour? During the construction, what would the hired person do? What would you do?
Where would you put the latrine on your property? How far away from your house? Why would you put it there? [Probe? Why?]

Who would use it? Would you share with your neighbours? If I return to your house six months from today, how likely is it that you will have build a latrine? If I return in one year?

Do you currently have any money saved towards buying a latrine?

Would you consider taking a loan to purchase a latrine? Would you consider paying for a toilet in instalments?

**CDH Latrine Cards**

*After you have finished the line of questioning above, take out the CDH cards. Lay the CDH cards on a flat surface in no particular order.*

Have you ever seen any of these latrines before? Where?

[Ask the interviewee to describe each one – what are the basic features and functions. Ask – what does this do? Why is this here? If they have no idea, you can explain to them.]

What do you think about these options? What do you like about this one? What do you dislike? [For each option, probe specifics for each component - slab, pan, shelter, etc.]

Which one do you like the best? Why?

How much do you think each one costs? Materials? Labour?

Which one would you like to purchase? Why? Which one(s) would you never purchase? Why?

Have you ever seen any businesses selling materials for building these latrines? [Point to pan, pipe, concrete] Where have you seen them?

Is there something missing here that you would prefer?

For these latrines, what would you do if the pit filled up?

Would handling urine and using it as fertilizer be acceptable to you? What might the benefits be? Would you have interest in using the urine as a fertilizer? Would handling faeces and using it as fertilizer be acceptable to you? What might the benefits be? Would you have interest in using faeces as a fertilizer?
ENTERPRISE INTERVIEW GUIDE – RETAILERS AND WHOLESALERS

Background
Tell me about yourself and your business. How old are you? Have you always lived here? Do you have a family?
How long have you been in this business? How did you get into this business?
Do you have any employees (full time/part time)? How many total? How many men? How many women? What are they responsible for?
Are your family members involved in operations? How many family members? How many non-family members?
How did you learn how to run this business? Did you have any training? [probe: type of training, where, how long]
What time of year do you do the most business? Why? The least? Why?
Do you have other sources of income beside this business (rice farming, other businesses)?
Can you give us a tour of your business?

Product Offering
What kinds of products do you make and sell? How did you decide to sell these products (for example, pipes in these lengths and these diameters)?
What is your most profitable product or business line?
Do customers ever request anything special that you have to order? Or do they select from what you have here?
What products/materials do you sell that can be used for a toilet? Which are the most popular? Why do you think they are the most popular?
Is there a time of year when you sell the most sanitation-related products? The least? How many squat pans do they sell per month?
What are retail prices for each of the sanitation-related products you sell [probe cost data for each product]
What percentage of your total sales/total business are sanitation-related products?
Do you offer any sanitation-related services to your customers? [probe: construction? Maintenance? Information? User instructions? Other services?] How much do you charge for each of these services?

Input Suppliers
Where/what businesses do you get your sanitation-related products and materials from? [probe: pans, sand, cement, wire, etc - specific locations and suppliers for each product/material type]?
How do you transport these to your business location? [probe: transport arrangements, costs and distances]
How much do you pay for each of the sanitation-related products you sell?
Do you always buy from the same supplier or do you negotiate with suppliers every time you need supplies?
How do you decide how much product to keep in stock? Do you take loans to make stock investments? How often do you refill stock?
Do you get discounts if you buy a large amount of products at one time?
Do you ever buy supplies on credit with any of the suppliers? What are the credit terms?

Customers
Who are your main customers? Where do they come from (rural villagers or town)? How far away from here? Do you think they are mainly poor, middle-income or wealthy families?
When people come to your shop to buy a toilet, what exactly do they usually buy?
Do consumers usually know about latrines? Do they know what they want? Do they know what type of latrine they want to build? Do they ask for your expertise? Is there anyone involved in the transaction besides you and the customer (e.g. a mason)?
Do customers typically buy all of their latrine products at one time? Or do they purchase them over time? If over time, what are the first things purchased?
How do customers usually pay you?
Do you offer credit or instalment payment options? What terms do you offer? Do you offer this to everyone or do you have criteria? What percentage of customers take credit? What percentage pay before/on delivery? How do you keep track of customers who have not paid you all yet? Do you ever have problems collecting payments?
Do you only sell products to households or do you also sell to other businesses? Which is greater for you- retail sales or wholesale sales? What are your wholesale prices?
Do you ever bid on government or NGO contracts? If yes, is this a large part of your business? What type of contracts do you usually bid on?

Transportation and delivery
How do the products usually get from here to your customer’s home?
Do you deliver products to your customer’s home? Do you charge for transportation or is it included in the sale price? How much on average do you charge for transportation? What is the farthest distance you will deliver to? At what price?
Do you have your own vehicle for transportation? What kind of vehicle is it? How much (latrine parts) can you carry on one trip?
Is it easy for you to arrange for delivery? Do you deliver personally or do you have someone drive and deliver?
**Marketing and Promotions**

How do you find new customers? How do customers learn about your products and services?

Do people usually come to your shop to make an order?

Have you ever done promotion to help sell a product? Through a sign or a billboard? Any other methods? Do you ever advertise? Do you ever go house-to-house to find new customers?

Do you ever use a sales agent to help you sell products? What is your relationship with them?

Do you compete with any nearby businesses? How do you differentiate yourself?

Can you describe an effort that was successful in bringing in new customers? One that was unsuccessful?

How could products and services be better marketed to the poorer households?

Do they partner with other businesses, or work with the same masons?

If a customer is not happy, what do you do? Have you had any customer complaints? Why?

**Business Management**

Have you ever taken a loan to expand your business? From who (e.g. Bank?) What did you use it for? What were the terms? Do you have any difficulty with repayments?

Have you ever borrowed money from other sources (family, friends) for your business? What did you use it for?

Do you ever use credit to purchase anything? What for? Why do you need to use credit? What are the typical terms?

What is the biggest worry you have about your business? What are the biggest problems/challenges you face related to your business?

Have you had to purchase any new equipment recently? How did you pay for it? Why did you decide to make the investment in the new equipment?

What months are easiest for you to find labour and what months is it difficult? Why?

What is the hourly wage for unskilled and skilled labour?

Is selling toilets a good business for you? Is the sanitation part of your business growing, staying the same, or decreasing?

Do you have any plans to improve or expand your sanitation-related business line? What are the key challenges to expanding sanitation-related business? How could these challenges be addressed?

What do you think is the potential market for sanitation products and services in your area? What changes are needed to improve the market potential?

What would encourage you to employ more women in your business? In what type of roles?

Are you interested in working on increasing sanitation to rural villages in your area? Can we contact you in the future?
Annex 4: Enterprise Question Guide – Masons and Carpenters
ENTERPRISE INTERVIEW GUIDE – MASON S AND CARPENTERS

Background
Tell me about yourself and your business. How old are you? Have you always lived here? Do you have a family?
How long have you been in this business? How did you get into this business?
Do you have any employees (full time/part time)? How many total? How many men? How many women? What are they responsible for? Where do they come from? Do you provide any training for them?
How did you learn how to be a mason? Did you have any training? [probe: type of training, where, how long]
Have you have any training related to reading plans or constructing toilets/septic tanks?
What time of year do you do the most business? Why? The least? Why?
How much of your working time per year is taken up as a mason/carpenter? (If full time, part time, seasonal, no. of months)
Do you have other sources of income beside this business (rice farming, other businesses)?

Service Offering
What kinds of services do you offer to your customers? [probe: construction? Maintenance? Information? Advice? User instructions? Other services?] How much do you charge for each of these services?
What is your most profitable service?
Do you often build latrines? What types of latrines do you build? What is the most common type? Which are the most popular? Which are the least? Why?
How much does each type of latrine cost [separate: labour cost, material cost]
Do you ever do repairs or maintenance work on latrines that you’ve built? What about latrines that another mason has built? What kind of maintenance?
Do you ever help in latrine emptying?
Are you ever hired to do upgrades or improve existing latrines?
What is the hardest part of constructing a latrine pit? A slab? A shelter? What is the easiest part of constructing a latrine pit? A slab? A shelter?
Have you recently learned any new skills or started building anything different from what you’ve done in the past? What motivated you to do this? How about latrine-specific skills and services? Is there anything you want to learn to do? Why? When do you think you’ll learn this?
Is there a time of year when you construct the most latrines? The least? Why?
What type of latrine is most profitable to build? What is least profitable? What percentage of your total business is sanitation-related construction?

**Customers/Projects**

What parts of the latrine do you usually build? What parts do the customer build? Did anyone else help build it?

Who are your usual customers?

Do customers usually know exactly what they want or do you discuss options with them and give them advice?

Do your customers have the option of going to another mason? Why do you think the customers chose to hire you?

How much are you usually paid for your services? How are you paid for your services (payment terms)?

Do you ever bid on government or NGO contracts? If yes, is this a large part of your business? What type of contracts do you usually bid on?

**Inputs**

Who usually buys the materials and products to build the latrine? Who decided what materials needed to be purchased – you or the customer?

Where/what businesses do you get your sanitation-related products and materials from? [probe: pans, sand, cement, wire, etc - specific locations and suppliers for each product/material type]?

How are these transported from the business to the customer’s home? [probe: transport arrangements, costs and distances]

Do you always buy from the same supplier or do you negotiate with suppliers every time you need supplies?

**Marketing and Promotions**

How do you find new customers? How do customers learn about your services?

Are most of your customers ‘repeat customers’ or do you have new customers for each project?

Have you ever done promotion to help sell your services?

Do you compete with any nearby masons? How do you differentiate yourself?

Can you describe an effort that was successful in bringing in new customers? One that was unsuccessful?

How could construction services be better marketed to the poorer households?

Do you partner with other businesses?
If a customer is not happy, what do you do? Have you had any customer complaints? Why?

**Business Management**

Is building latrines a good business for you? Is the latrine building part of your business growing, staying the same, or decreasing?

Do you ever use credit to purchase anything? What for? Why do you need to use credit? What are the typical terms?

What is the biggest worry you have about your business? What are the biggest problems/challenges you face related to your business?

Do you have any plans to improve or expand your sanitation-related services? What are the key challenges to expanding sanitation-related business? How could these challenges be addressed?

What do you think is the potential market for sanitation services in your area? What changes are needed to improve the market potential?

What would encourage you to employ more women in your business? In what type of roles?

Are you interested in working on increasing sanitation to rural villages in your area? Can we contact you in the future?
Annex 5: Pemagetshel Dzongkhag Supply Chain Enterprise Database
# Pemagatshel Dzongkhag Supply Chain Enterprise Database

## A. Pemagatshel Town / Shumar Geog

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<td>Tsheten Tshering Tshongkhang</td>
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<td>Bhutan Development Bank</td>
<td>Cheda</td>
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### D. Dungmin Geog

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<th>Location</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Shop</td>
<td>Dorji Wangda</td>
<td>Dorji Wangda</td>
<td>Dungmin Tari, Dungmin</td>
<td>17983038</td>
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<td>2</td>
<td>Mason</td>
<td>Tenzing Jamtsho</td>
<td>Tenzin Wangchuk</td>
<td>La Dug, Dungmin</td>
<td>N/A</td>
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<td>3</td>
<td>Transportation</td>
<td>Horse Transporter</td>
<td>Tenzin Wangchuk</td>
<td>Dungmin ( lower)</td>
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### E. Norbugang Geog, Nanglam

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Business Category</th>
<th>Businesses</th>
<th>Owner’s Name</th>
<th>Location</th>
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<tbody>
<tr>
<td>1</td>
<td>Cement Agent</td>
<td>Tashi Choden Cement Agent</td>
<td>Tashi Choden</td>
<td>Nanglam Town, Norbugang</td>
<td>17880806</td>
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<td>2</td>
<td>Khorlo Cement Agent</td>
<td>Ugyen Dorji</td>
<td>Nanglam Town, Norbugang</td>
<td>17610271</td>
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<td>3</td>
<td>Hardware Enterprise</td>
<td>Yangche Enterprise</td>
<td>Tshering Choki</td>
<td>Nanglam Town, Norbugang</td>
<td>07-481122 17114560</td>
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<td>4</td>
<td>General Shop</td>
<td>Dorji Gyeltshen</td>
<td>Dorji Gyeltshen</td>
<td>Nanglam Town</td>
<td>17592591</td>
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<tr>
<td>5</td>
<td>Sherub Tenzin Tshongkhang</td>
<td>Phuntsho Wangmo</td>
<td>Tshelshing Zor, Norbugang</td>
<td>17968932</td>
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<td>6</td>
<td>Ugyen Lhamo Restaurant</td>
<td>Ugyen Lhamo</td>
<td>Tshelshing Zor, Norbugang</td>
<td>17838391</td>
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<td>7</td>
<td>Tashi Namgay</td>
<td>Tashi Namgay</td>
<td>Neyshing Borang, Norbugang</td>
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<td>8</td>
<td>Mason</td>
<td>Mason</td>
<td>Tenzin Chojey (Bhadur)</td>
<td>Norbugang</td>
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## F. Samdrup Jongkhar

<table>
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<th>Business Category</th>
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<th>Owner’s Name</th>
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<tbody>
<tr>
<td>1</td>
<td>Cement Agent</td>
<td>Penden Cement Samdrupjongkhar Depot</td>
<td>Dawa Gyeltshen, Dy. Incharge</td>
<td>Samdrupjongkhar</td>
<td>07-251790 17631732</td>
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<td>2</td>
<td></td>
<td>Lhaki Om Cement Agent</td>
<td>Bimla Darji</td>
<td>Samdrupjongkhar</td>
<td>07-251356 17914805</td>
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<td>3</td>
<td></td>
<td>Kinley Sithup Cement Agent</td>
<td>Ugyen Tshering</td>
<td>Samdrupjongkhar Town</td>
<td>07-251763</td>
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<tr>
<td>4</td>
<td>Hardware Enterprise</td>
<td>Karma Tshongkhag (Tuesday Closed)</td>
<td>Karma Tshering, G.M</td>
<td>Samdrupjongkhar Town</td>
<td>07-251091</td>
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<td>5</td>
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<td>Yoezerling Hardware Shop</td>
<td>Pema Seldon</td>
<td>Samdrupjongkhar Town</td>
<td>07-251399</td>
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<td>6</td>
<td></td>
<td>Brajnath Gupta and Sons</td>
<td>Santosh Gupta</td>
<td>Samdrupjongkhar Town</td>
<td>07-251109</td>
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<td>7</td>
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<td>Suresh Hardware</td>
<td>Sandeep Goyal</td>
<td>Samdrupjongkhar Town</td>
<td>07-251050, 07-251418 (Fax) 17110891</td>
</tr>
</tbody>
</table>
SNV is dedicated to a society where all people enjoy the freedom to pursue their own sustainable development. We contribute to this by strengthening the capacity of local organisations.