Nacaroa, Mozambique

BEHAVIOR CHANGE MANUAL

Version 1, 2017

Table of contents

List of abbreviations

RANAS	R(isk), A(ttitudes), N(orms), A(bility), and S(elf-regulation)
BCT	Behavior change techniques
WASH	Water, Sanitation and Hygiene
CLTS	Community Led Total Sanitation
NGO	Non-Governmental Organization

Thanks

1.   Introduction

1.1.   Background

Several studies have shown that improved water technologies lead to better water quality at the source, but not necessarily to better water quality at the point of use. This was also observed in the recent impact study conducted by HELVETAS Swiss Intercooperation Project in Benin in 2013 and in another research study in Nepal in 2015. The unsatisfactory water quality at the point of use is largely explained by inadequate hygiene, water transport and storage practices. In the field of sanitation, especially in the post CLTS phase, it is a challenge to achieve long-lasting behavioral change in the appropriate use of latrines. This underlines the need for behavioral changes ranging from handwashing and the use of toilets to water treatment and storage.

This shows the need to address behavioral change in a more systematic way within the WASH project. We need innovative approaches if we are to achieve lasting results.

- Just because a person knows what she should do does not mean she will do it.
- Just because a person wants to adopt a behavior does not mean she will.
- Just because a person fears a given consequence does not mean she will take action to prevent it.
- Many of the action that people engage in to improve their lives are not necessarily done for the rational reason we promote.

These findings persuaded HELVETAS to start the Learning Expedition Behavior Change program. In 2014 and 2015 HELVETAS started three pilot projects in partnership with Eawag to use the RANAS approach in Mali (handwashing), Benin (handwashing; water transport and storage) and Mozambique (handwashing and latrine use). The aim was to improve the impact of WASH projects on behavior change and to work with local teams to test the applicability of the approach in the field. This experience enabled us to adapt the approach to NGOs' needs, and this manual is the fruit of our learning expedition.

Applying the approach in three pilot projects has achieved impressive results. For example, handwashing behaviors rose from 12% to 49% in Mali; and new and innovative interventions to address the use and the maintenance of latrine were developed in a post-CLTS situation in Mozambique.

This manual is based on "Systematic Behavior Change in Water and Sanitation and Hygiene – A practical guide using the RANAS approach" developed by Eawag (download under Eawag Guidelines: http://www.eawag.ch/en/department/ess/empirical-focus/environmental-and-health-psychology-ehpsy/). This manual is a practical, abridged version of the RANAS guidelines. It is made for project managers running WASH projects.

1.2.   How to use this manual

This is a step-by-step manual, but it is advisable to have a good overview of the whole document before starting behavior change activities. The Eawag guide to "Systematic Behavior Change in Water and Sanitation and Hygiene" can give more in-depth knowledge if needed.

After providing a short introduction to the RANAS model, this manual outlines two main steps. Step 1 is an introduction to the behavior change concept and a quick analysis of the project interventions currently in use. Step 2 builds on Step 1 and applies the four phases of the RANAS approach.

Every step is divided into phases with corresponding training sessions. There is a short description of each session with instructions and additional tools and information, which can all be found in the annexes.

1.3.   The RANAS approach

The theoretical basis for behavior change is Mosler's RANAS model (2012). The model is guided by the principle that human behavior depends on a set of psychological factors, which can be divided into five factor blocks. Experience shows that a behavior strategy is more effective if it influences these psychological factors.
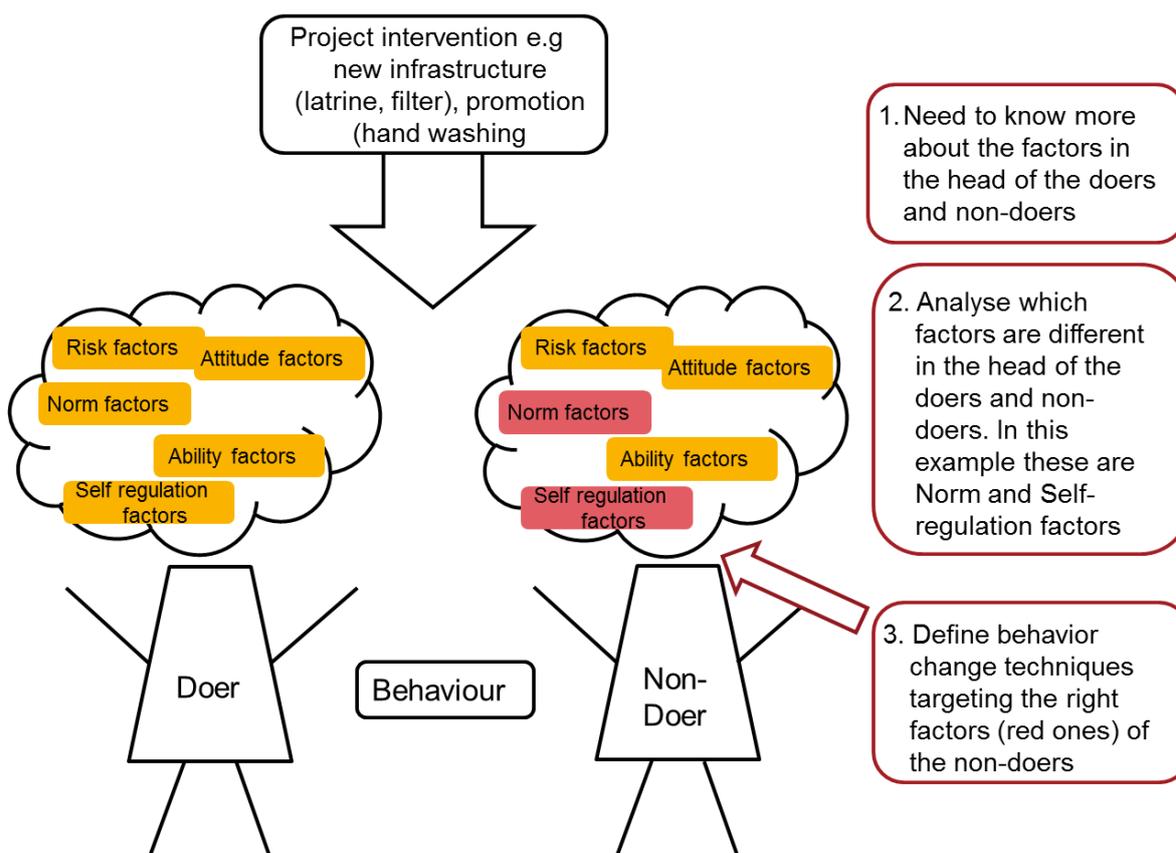
On the next page you will see the RANAS model with a description of the behavioral factors

The RANAS model: R(isk), A(ttitudes), N(orms), A(bility), and S(elf-regulation)
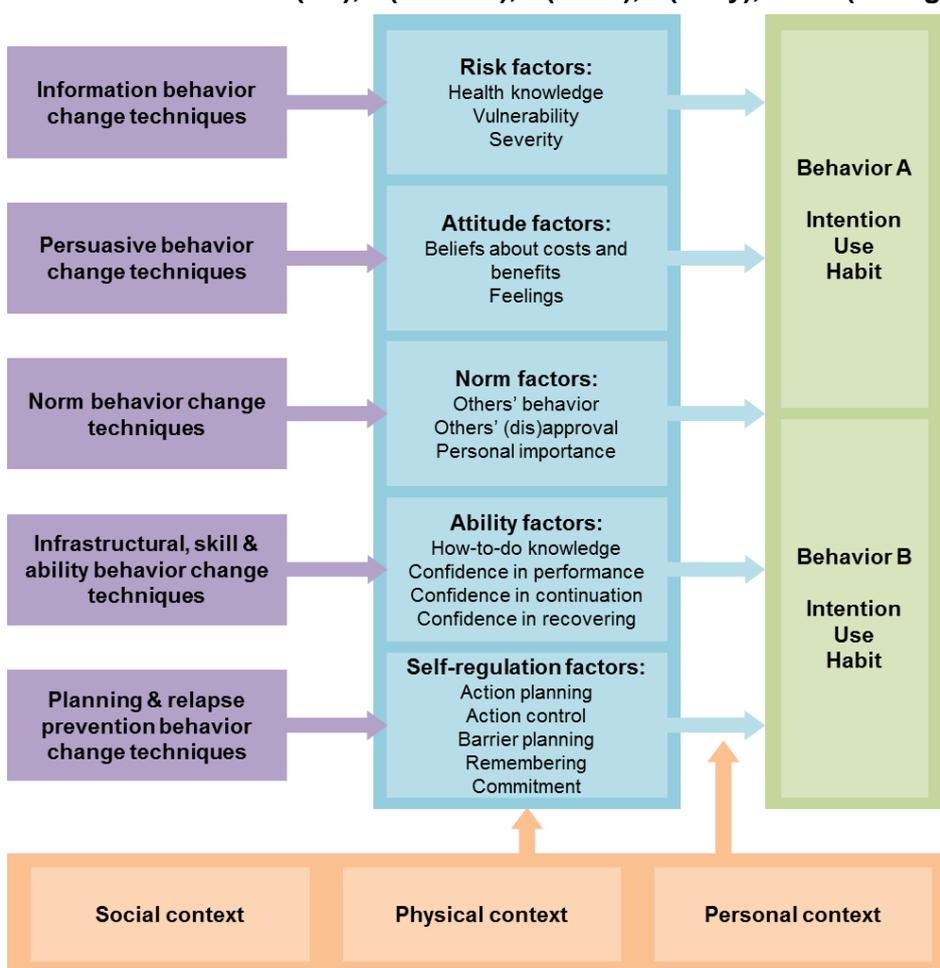
Figure 1: RANAS model of Behavior Change

Risk factors: Perceived vulnerability *(Am I at risk of contracting diarrhea?)* and perceived severity *(And if I get cholera, how much will this affect my life?);* actual knowledge about the possibility of being affected by a potential contamination *(Do I know how diarrhea is contracted, and how to prevent it?)*.

Attitude factors: Beliefs about advantages/disadvantages or cost/benefit *(It takes me too much time to wash my hands. I feel well regarded when I wash hands)* of the behavior, as well as the emotion and feeling arising when thinking about the behavior *(I like the smell of my hands after I've washed them. I feel safe using a latrine)*.

Norm factors: Social influence: other people's behaviors *(All my relatives wash their hands),* other people's approval or disapproval *(The head of the family encourages me to wash my hands)* and personal importance *(It is important to me to have clean hands)*.

Ability factors: A person's knowledge to perform the behavior *(I know the different step to wash my hands correctly)*, the confidence in one's ability to organize and manage the behavior (how-to-do knowledge, confidence in performing) and the confidence in one's own ability to deal with possible barriers, confidence to continue, confidence to recover (*I am confident that I will start washing my hands again when I'm at home and have water and soap again*).

Self-regulation factors: These factors help to manage conflicting goals *(If I don't have any soap, I use ashes to wash my hands until I can go to the market)* and distracting cues when intending to adopt and maintain a behavior. Commitment and remembering are important determinants.

For each factor block, there are corresponding **behavior change techniques** (e.g. a behavior change technique for the "Risk" factor would be to Inform people about risks), which can influence them.

Contextual factors: There are three categories of contextual factors – social, physical and personal. The social context is defined by culture and social relations, laws and policies, economic conditions and the information environment. For example, tradition can influence why people do not like to defecate on the same site. The physical context consists of the natural and built environment, e.g. the season can have a significant influence on water availability and thus on handwashing. The personal context comprises socio-demographic factors such as age, sex and education. For example, it might more difficult for a child to use a latrine than for an adult.

These contextual factors influence psychological factors and their effect on the behavior.

There is a more detailed description and an example of behavioral factors and the RANAS model in

Annex 1: Behavioral factors and the RANAS model

Our project interventions target risk and ability factors through traditional BCT (PHAST, etc.) and we ignore the others. Therefore, it makes sense to get more information about all of these factors to better understand the factors that drive a behavior.

1.3.1. The phases of the RANAS approach

The RANAS approach contains the following principal phases, which can be integrated into a project cycle.

1. **Identify behavioral determinants**
   a) Define the behavior to be changed and the specific population to be targeted;
   b) Collect information on psychological and contextual factors that influence the behavior;
   c) Allocate behavioral factors to the factors in the RANAS model;

2. **Measure and determine behavioral factors**
   a) Develop a questionnaire to measure behavioral factors, behaviors, and conduct observations;
   b) Conduct a representative baseline survey;
   c) Determine the factors which steer the target behavior (compare doers and non-doers);

3. **Select behavior change techniques (BCTs) and design behavior change strategies**
   a) Determine behavior change techniques;
   b) Develop and design behavior change strategies based on the factors identified;

4. **Implement and evaluate behavior change strategies**
   a) Implement different strategies;
   b) Develop the final questionnaire and conduct an evaluation survey;
   c) Define the most effective strategy and adapt intervention.

2.   Steps for implementing the Behavior Change Approach

The manual divides the implementation of the behavior change approach into two main steps. The project can choose to apply only Step 1 or apply the whole approach with Steps 1 and 2.

Step 1: Understanding the behavior change approach and analysis of the existing interventions

This first step aim at introducing the topic of behavior change to a project team to foster the view on the problematic and the complexity of behavior change. The introduction of the RANAS model helps project managers to understand the behavior and its influencing factors, and to analyze the existing intervention. The scope and depth of the analysis depend on the project phase and needs.

The involvement of the project team and local project partners is helpful to get an in-depth view and local analysis, and learn about different experiences. Additionally, this first step helps to create awareness about a systematic behavior change and to decide, based on the capacity, available resources and the stage of the project, whether to implement Step 2 or adapt existing interventions to include the new knowledge.

Outcome: Knowledge of behavior change and critical assessment of existing interventions

Step 2: Application of the RANAS steps

In this second step, the project manager decides to make an in-depth analysis in the form of a study on the behavior that needs changing. A new, adapted behavior change technique and interventions have to be developed to tackle the factors identified as influencing the behavior. The newly designed activities have to become part of the project activities and must subsequently be evaluated. This requires longer-term investment and the integration of the activities into the project cycle.

The involvement of the project and local partners is important during the whole process. It is advisable to define a focal person within the project team who is responsible for leading the process.

Outcome: An evidence-based behavior change strategy

Overview of the two steps

Step 1: Understanding the behavior change approach and analyzing the existing interventions

Content	Methodology	Outcome	Time needed	Human resource
Session 1: Basic introduction			0.5 days	
• Why change behavior? • Possible approaches	Workshop with project team and potentially the implementing partners	Basic understanding of key concepts		Project team, possibly implementing partners, thematic adviser *Information & tools:* Annex 1: Behavioral factors and RANAS model Annex 2: Input on behavior change
Phase 1: Identifying behavioral determinants				
Session 2: Identifying behavioral determinants and overview of the RANAS approach			1-1.5 days	
• Identify behaviors to change • Define your target population • Collect information about the contextual factors • Put the collected information in relation to the RANAS Model	Workshop with project team and implementing partners	Knowledge of the RANAS approach Definition of behavior and target population Better knowledge of the interrelations between contextual and behavioral factors		Project team, possibly implementing partners, thematic adviser *Information & tools:* Annex 3: Introduction to the RANAS phases
Session 3: Critical assessment of the project's intervention with regard to behavioral factors			0.5 days	
• Identify present behavior change intervention in the project • Put the collected information in relation to the RANAS model • Critical analysis and identification of adaptation of intervention	Workshop with project team and implementing partners	Critical analysis of existing approach, and identification of potential improvement measures		Project team, possibly implementing partners, thematic adviser *Information & tools:* Annex 4: List of Behavior Change Techniques

Step 2: Applying the behavior change approach

Content	Methodology	Outcome	Time needed	Human resource
Phase 2: Measuring behavioral determinants				
Session 1: Developing a questionnaire				
Follow Step 1 to develop a questionnaire	Project team work in small groups	Developed questionnaire	2 days to develop questionnaire	Project team Supervisor/focal point Adviser *Information & tools:* Annex 5: Practice RANAS questions Annex 6: Structure of the questionnaire
Session 2: Translating the questionnaire (if needed)				
Translating the questionnaire	Small group work	Translated and adapted questionnaire	1-2 days to translate questionnaire if needed	Supervisor, field people knowing well the local language, possibly interviewers
Session 3: Training interviewers, including pilot test				
Understanding the questionnaire: the idea behind each question and the translated key words Understanding random sampling How to collect data (paper, smartphone, etc.)	Training	Trained interviewers	2-4 days to train interviewer and do pilot test	Supervisor plus local partner or interviewer *Information & tools:* Annex 7: Interviewer training Annex 8: Supervisor's checklist

Session 4: Doing the survey				
Data collection	Individual	Collected data	5 days for survey (5-6 interviews per interviewer)	Supervisor, interviewers
Session 5: Data entry and cleaning				
Training about data entry Preparing data	Key person	Capacity build up for data entry Data ready to use for analysis	3-4 days for data entry, depending on data collection 1 day In case of mobile based data collection	Supervisor and person with good knowledge of Excel *Information & tools:* Annex 9: Checklist "Data entry"
Session 6: Data analysis				
Forming a doer and non-doer indicator Doer and non-doer analysis Results with graphs	Key person	Capacity-building on data analysis Results of the study	3-5 days for data cleaning and data analysis depending on sample size	1 Person with good knowledge of Excel and supervisor *Information & tool:* Annex 10: Checklist "Data analysis"
Session 7: Interpreting the data and identifying the main behavior factors				
Presenting the results Identifying main factor to target Common understanding of the results	Group work		0.25 day	Project team and partners

Phase 3: Determining behavior change techniques (BCTs) and corresponding materials and activities				
Session 8: Determining behavior change techniques				
Identifying behavior change techniques	Group work	Measure/option	0.5 day	Project team and partners *Information & tools*: Annex 4: List of Behavior Change Techniques
Session 9: Developing behavior change strategies				
BCT and communication channels Detailed script of interventions	Group work	Defined intervention activities and developed materials	Depending on chosen intervention	Project team and partners, consultant *Information & tools:* Annex 11: Example description of an intervention
Phase 4: Implementing and evaluating promotion strategies				
Session 10: Implementing defined intervention				
Training partners/promotors for implementation Piloting and testing newly designed intervention & scale up intervention	Project intervention		6-12 months of promotion activities	Project team, promoters, partners, NGO, etc.
Session 11: Evaluation (Sessions 3 to 7)				
Adapting questionnaire Training update for interviewers Data collection Data analysis & Discussion of results	Project team	Identified successes and failures	10 days for evaluation	Supervisor and interviewer, data analyst, project team *Information & tools:* Annex 12: Example question about interventions
Session 12: Adapting the strategy				
Critical analysis of intervention	Group work	Defined adaptation	0.5 day	Project team and partners

Stakeholders involved in the different steps

Step 1: It is crucial to include a variety of stakeholders when introducing and analyzing current interventions. The involvement of project staff and partners in project implementation (NGOs, local authorities) is helpful to get a common understanding and a good in-depth analysis of the existing approaches and the context factors. These actors will have greater ownership and understanding of the new behavior change strategy if they are invited to contribute at this stage.

Step 2: These steps can be divided into two main phases: first studying and then developing new interventions. Project staff and local partners have a key role to play in the study. When developing the new intervention, it is important to crosscheck with all relevant stakeholders, get feedback on the proposed intervention and see how best this intervention can be integrated into the pre-existing framework.

3.   Recommendations & advice for preparation

3.1.   General recommendation for program and project managers

- Behavior change goes beyond the usual tasks of WASH teams. It also requires a high level of openness to non-engineering skills. It is therefore important for WASH teams to dedicate sufficient time and human resources to getting into this new approach. Therefore, do not hesitate to repeat and leave enough time for critical questions and debates.
- Define a focal point at management level to give the topic the necessary importance and ensure follow-up.
- Be aware that the team will require capacity-building.
- Make sure to involve program/project management staff and local partners in the process.
- Allocate sufficient time and resources for Step 2. It isn't just a short-term activity and should be built into the YPO of the project and also be reflected in the budget.
- It is useful to define a focal-point person in the field team to lead the whole process.
- It is advisable not to pack all the sessions into only a few days. It makes sense to do Step 1 as a two-day workshop and to continue with Step 2 later.
- The document "Systematic Behavior Change in Water Sanitation and Hygiene**:** A practical guide using the RANAS approach" published by Eawag, gives a lot of background information and is the basis for the approach.

Box 1: Definitions of key terms

Behavior: Sequences of actions of the target population.

Psychological factors: Psychological factors refer to thoughts, feelings and other cognitive characteristics affecting the behavior and functions of the human mind. These factors can influence how a person thinks and later affect her decisions and relations in daily life.

Behavior change techniques (BCT): The element of an intervention that is thought to change a behavior.

Communication channel: Mode of delivery through which a BCT is brought to its recipients.

Behavior change strategy: Combination of a behavior change technique and a communication channel.

4.   Step 1: Understanding the behavior change approach and analyzing existing interventions

4.1.   Phase 1: Identifying behavioral determinants

4.1.1.   Session 1: What is behavior change?

Objective of the session: Basic understanding of the behavior change approach
Time: 2-3 hours
Material: Pin board, PowerPoint presentation
Participants: Project staff, implementing partners (NGOs, local government, etc.)

Instructions for facilitator:

Collect information about existing experiences of behavior change with the following questions before you start with the theoretical input:

- What are behaviors of your own have you wanted to change?
- Which behavior did you last change?
- What are your experiences with behavior change in your project work?
- Which behavior change approaches do you know?

This exchange will help you to gather people's own experiences and provides some familiar, practical examples to which you can refer throughout the workshop.

Use and adapt the proposed PowerPoint presentation to your context.

Annex 2: Input on behavior change

4.1.2.   Session 2: Introduction to the RANAS phase

Objectives of the session: - Knowledge of the RANAS phase   - Definition of behavior and target population   - Better knowledge of the interrelation of contextual factor and behavior
Time: 3-4 hours
Material: Pen and paper, pin board if available
Participants: Project staff, implementing partners (NGO, local government, etc.)

Instructions for facilitator:

- Work on real cases. Ask the participants to form working groups (4-5 persons) and select the most relevant behaviors to change/tackle in relation to the project.
- Make sure that the different stakeholders are represented in all the working groups.
- The behavior should be selected according to the following criteria:
  - o   The behavior is of crucial importance to your Wash/project intervention;
  - o   The project has planned interventions to change this behavior.

Use and adapt the proposed PowerPoint presentation to your context.

Annex 3: Introduction to the RANAS phases

Task 1: Identify and describe the behavior

In this session, the participants are asked to identify the behavior and clearly describe it. It is important to concentrate on the main behavior of relevance to the problem. For example: What is relevant to use of the toilet, and what is part of the behavior? Is it the construction of latrines, the maintenance of latrines or cleaning them? This has to be clarified in the discussion.

The behavior is a sequence of actions by a person and must be described in as much detail as possible. Once the behavior has been identified, the group has to define the start and the end of the behavior along with all the different stages. Look at the example below from Mozambique:
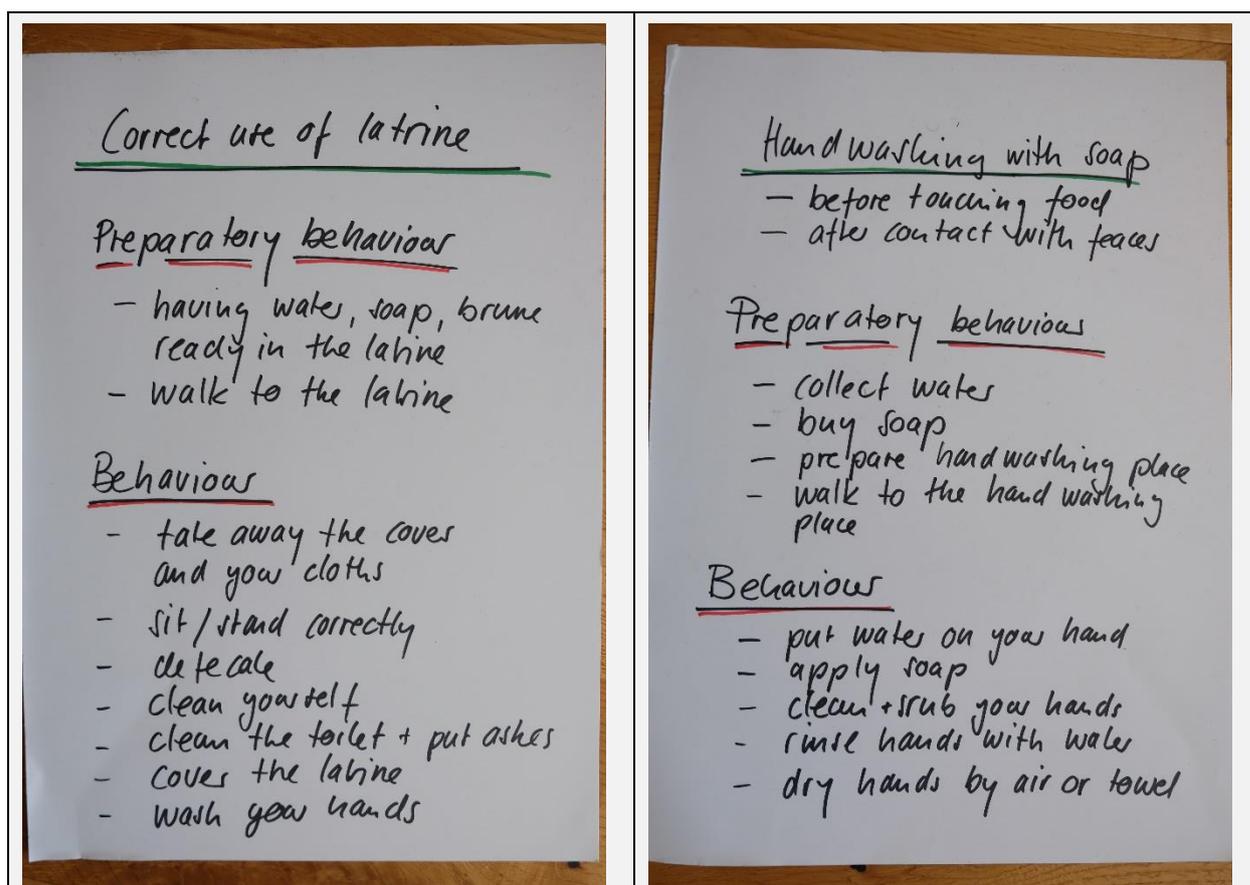
Photo: 1 Example description of behavior

Task 2: Identify the target group for the behavior

It is crucial to define which target group has the greatest leverage to change a specific behavior.

- If you want to target your project activities properly, it is very important to define your target group.
- For each behavior there is a different target group with its own behavioral factors.
- The following question should be asked: Who is the most important actor for changing a specific behavior? For whom should the project prepare its interventions? Which target group is the one with the greatest leverage on the specific behavior of families or the community?

If participants have split into two or three discussion groups for these two tasks, then they should all reconvene with the different solutions and discuss them with the aim of drafting a final description.

Experiences and challenges

Projects often aim to improve hygiene behavior, which involves a whole set of actions (building, using and cleaning latrines, handwashing, safe transport and storage of water, etc.) Discussions help you to gauge how ambitious you should be, select your target groups, and identify and prioritize the most important behavior you want to change.

Challenges:

It is a challenging task to define a behavior, because we all have different definitions in mind. In Mozambique they discussed whether building a latrine and using it constituted one behavior or not. Is cleaning the toilet a separate behavior, or a preparatory activity? The conclusion was that they should focus on use, and that leaving the toilet in a clean condition was part of the right use of the toilet, but daily or weekly cleaning was not. These are the kinds of questions that arise and need to be discussed and clarified by the team.

The definition of the target population gave rise to considerable discussion in Mozambique. Does the head of the family have the greatest influence on the use of the latrine, or do the women who take care of the children and the latrine? At first, the reaction was that the family head has the power to change behavior. Only during the discussion did field workers suggest that the woman of the house may not have full decision-making power, but she does have a greater influence on the use of the latrine, because she takes care of the children and is more interested in seeing the latrine used correctly, as she is responsible for cleaning it.

It was helpful, before discussing the target behavior the project intervention ought to change, to discuss people's own behavior in daily life (e.g. smoking and drinking). This made them aware of the challenges of changing behavior, the need for preparatory behaviors, and so on. Everyone had a practical example to share, and it was useful to be able to refer this link to personal reality during further steps in the RANAS approach.

To address these questions, it was important to discuss behavior in mixed groups of project managers, field staff and staff of implementing partner organizations and public technical services, who have a good understanding of local conditions. This made it possible to take into account different views and allowed a common understanding of the behavior to emerge. In our first pilot country, Mali, we held such discussions in a very small team prior to the introductory workshop. This was done too quickly, which did not allow to build the same common understanding and many questions arose subsequently.

Task 3: Identify contextual factors that influence the behavior:

- Brainstorm as a group about possible hindrances and favorable factors. Further qualitative interviews and observations can be conducted if there is missing information or a lack of clarity
- Be aware that cultural habits play an important role and that it is important to have sufficient information about them.
- Additional information may be collected by observing the target group going about their daily lives, and seeing which people practice the behavior and which don't.
- Be careful to identify not only hindering factors, but also favorable ones.

Context	Description	Examples from countries
Social context	• **Culture and social relations**, e.g. taboos, rites, or norms. • **Laws and policies**, e.g. prohibition of open defecation, water rights, school budget for hygiene supplies, curriculum including WASH behavior. • **Economic conditions**, e.g. household or community wealth. • **Product and service accessibility**, e.g. price of soap, water or infrastructure facilities, availability of soap, reliability of water services. • **Information environment**, e.g. health information shared in the health center or in schools.	**Culture**: Tradition of washing hands without soap in a common vessel before eating (Mali) **Laws and policies**: Integration of hygiene education into the school curriculum (Benin) **Product and service availability**: Availability of soap and slab in remote villages (Mozambique)
Physical context	• **Natural environment**, e.g. climate, seasons, water occurrence or soil condition. • **Built environment**, e.g. well, latrine, handwashing station.	**Natural environment:** Rainy season influencing water availability (Benin, Mozambique)
Personal context	• **Socio-demographic factors**, e.g. age, sex, and education. • **Physical and mental health** of the person.	**Socio-demographic**: Age - small children → difficult to use the latrine

Table 1: Description and examples of contextual factors

Task 4: Identify the relation between the contextual factors and the behavioral factors

- Allocate the respective contextual factors to the behavioral factors, and define if the effect is positive or negative (see table below).
- Be aware that some environmental factors can influence different behavioral factors.
- Discuss whether current project activities influence the identified environmental factors. What kind of activities could be strengthened in the future?
- What kind of information is missing and should be gathered through further qualitative interviews, focus group discussions, etc. to complete the list below.

Please look at the examples on the next page.

Factor	Hindering contextual factors	Favoring contextual factors
Risk factor *Health knowledge* *Vulnerability* *Severity*		**Social:** Integration of hygiene education into the school curriculum (Benin)
Attitude factors *Beliefs about cost and benefits* *Feelings*		
Norm factors *Others' behavior* *Others' (dis)approval* *Personal importance*		
Ability factors *How-to-do knowledge* *Confidence in performance* *Confidence in continuation* *Confidence in recovery*	**Physical:** Availability of soap and slab in remote villages **Personal:** Age: small children → difficulty to use the latrine	
Self-regulation factors *Action planning* *Action control* *Barrier planning* *Remembering* *Commitment*		

Table 2: Example of a table allocating contextual factor to behavioral factors

Experiences and challenges

Projects do not always have the time and capacity to conduct an in-depth analysis of the contextual factors that influence behavior. We mainly focus on technical analysis, and social and organizational or market assessment. Assigning a behavior to contextual factors helps us to better understand the dynamic between the two.

It is also important to realize that negative contextual factors, such as a cholera epidemic, can have a positive impact – for example on hygiene practice – and vice versa.

Challenges:

During the discussion we usually tend to focus on the hindering factors, such as the poor economic condition of the target group, a lack of soap in the village, etc. So it is important also to pay sufficient attention to the favorable contextual factors. For example, the inclusion of hygiene education in the school curriculum has had a positive influence in Benin.

We have realized that we often have a predefined view of what is influencing what and thus forget some of the factors. The framework helps us to complete the analysis in a more systematic way.

The working group mentioned in the previous steps brainstorms all the contextual factors first. The diversity of the group in Mozambique ensured that the analysis was more holistic. This helped to

identify the key issues in the social, physical/technical and personal contexts. The next step identifies the issues that have to be examined in greater detail. In Mali, the influence of the tradition of washing hands in the same bowl or pan without soap before eating was identified as a social factor for which we needed more reliable information from the field through qualitative interviews

4.1.3. Session 3: Critical assessment of the project's existing intervention with regard to behavioral factors

Objectives of the session: • Better knowledge of the interrelation of intervention and behavioral factors • Critical analysis of existing approach and identification of improvement measures
Time: 0.5 day
Material: Pen and paper, pin board if available
Participants: Project staff, implementing partners (NGOs, local government, etc.)

Task 1:

- Identify the various BCTs that are implemented in your project to change the selected behavior.
- What are the messages/content of the intervention?
- Allocate the identified interventions to the behavioral factors (see table below).
- Discuss the results. Are we targeting all factors? If not, which ones are missing and why? How can we adapt the present intervention to influence more different factors and achieve a more holistic approach? What would be the next steps? What effect does the RANAS model have on my future work?
- Introduce the Behavior Change Technique List, and analyze if there are some BCTs which might be useful to adapt the existing intervention.

Annex 4: List of Behavior Change Techniques

Interventions	Behavioral factors
Poster with information about diarrhea prevention measures	Risk factor: factual knowledge
Handwashing demonstration at community meeting	Ability factor: how-to-do knowledge
CLTS	Risk factor: factual knowledge Attitude factor: emotion Norm factor: Others' (dis)approval
etc.	

Table 3: Example of table allocating project interventions to behavioral factors

➔ **After these three sessions the decision must be taken if the project should enter the fully fledged RANAS approach by applying Step 2, or not.**

Helpful questions to help you come to a decision:

- o Do we have the human capacities and a person who wants to take the lead and be the focal point?
- o Have we budgeted for it?
- o Can we easily integrate it into the project cycle?

Experiences and challenges

The allocation of the intervention to behavioral factors gives a good indication of how many factors we should target with our project activities. It can be an eye-opener to see that all the interventions are targeting only one or two factors such as the risk factor (e.g. health knowledge) and ability factors (e.g. how-to-do knowledge). This stimulates discussion and opens it up to critically assess the work done and identify some possible adaptations. Additionally, it helps us make a decision about strengthening the project's behavior change approach.

Challenges:

One challenge is that some interventions target several factors – for example, the CLTS approach, which influences the risk, attitude and norm factors. A group discussion is essential to sort this out. The discussion also serves to gain a better understanding of which kind of effect an intervention can have.

This is only a short analysis based on a more qualitative assessment and it is not evidence-based, but it helps start the discussion about behavior change and how to improve the existing intervention without requiring a big study.

5. Step 2: Applying the behavior change approach

5.1. Phase 2: Measuring behavioral determinants

5.1.1. Session 1: Developing the questionnaire

A questionnaire needs to be developed to enable project staff to measure the different behavioral factors within a community. Note, that this is a crucial step that requires a considerable amount of time and effort. Drafting the questions is a key activity in the RANAS approach. The first time you develop a questionnaire it is advisable and necessary to seek external support from an adviser or project person with experience of RANAS or other behavior-related surveys

The development of the questionnaire should be done in a small team with a good mix of people (field staff or local implementing partners to bring in local sensitivities and experiences, the supervisor, and project staff). It is also advisable to have the person in charge of data analysis on board.

Objectives of the session: • A completed survey questionnaire • A defined sampling method
Time: 1-2 days depending on the participants' experience
Material: Computer, pen and paper, pin board
Participants: Project team, possibly implementing partners, study supervisor, person in charge of data analysis

Instructions for work:

- Give a list of questions to the group and ask them to group the questions according to the respective behavioral factors. This gives a quick insight into these specific questions and stimulates discussion.

    Annex 5: List of RANAS questions for the exercise

- Example questions from other RANAS surveys can be used as for inspiration, but be careful to adapt it to your behavior and the local context.
- When formulating questions, always bear in mind your target group, and use their wording and terms.
- Formulate the question as simply as possible, and make sure that the answer categories are credible and workable in the local context.
- As far as possible, use closed questions or open questions with categories to simplify later analysis.

You will find more information in the annex about the structure of the questionnaire, as well as the type of questions you can use.

Annex 6: Structure of the questionnaire

Experiences and challenges

Greater attention was paid to this task than in other surveys, because developing the questionnaire was a key step in the approach. Drafting the questionnaire in a group has built up know-how and created awareness in our WASH teams in Mali, Benin, and Mozambique of the need to formulate questions in a precise way. Additionally, it has allowed us to experiment with new methods of data collection using mobile phones.

Challenges:

The most challenging aspect was formulating the questions in such a way that they elicit the information to be collected with all its nuances, while also being clear and concise in the local language. A key issue was finding answer categories for the scale questions that can be translated into the local languages.

Questions regarding behavior such as defecation are very personal and tricky. In Mali, we had long discussions about how cleaning a baby's behind and defecating should be formulated in the local language so as not to offend the interviewees. Questions regarding behavior and risk factors were already familiar, but questions regarding norms and self-regulating factors are new and need more reflection by the team.

In the first pilot country, Mali, the questionnaire on handwashing was still rather long. The challenge in the other countries was to reduce the questionnaire without losing the added value of the RANAS approach.

The most efficient way to develop the questionnaire was to work in a small group consisting of the project manager, the person responsible for the survey and data analysis, and a representative of the field staff who speaks the local languages and knows the communities well. This helped us to formulate the questions in a simple and culturally sensitive way. At the same time, the project staff became familiar with the questionnaire, which is of great help for the translation and interviewer training.

In our first pilot in Mali, we developed the questionnaire before giving it to the project team, but this is not advisable. A lot of additional discussions were necessary to create a common understanding of

the questionnaire with the team and the interviewers afterwards. The first time a RANAS questionnaire is developed, external support in the field or by Skype is advisable, but the development of the questionnaire has to be done jointly with the team right from the beginning.

As an NGO, we do not want to publish scientifically, so the questionnaire should be as short as possible for its purpose. It helps to define the maximum number of questions you want to ask per factor. Another option was chosen in a project in Pakistan that did not have the capacity to conduct a full RANAS study. There, we integrated some RANAS questions into a KAP survey questionnaire. Depending on how the data will be collected, whether by a questionnaire on paper or using a mobile-based system, special attention must be paid to the formulation of the question and answer categories. Open questions have to be reduced to a minimum, as entering such answers on a mobile phone can be tiring.

5.1.2. Session 2: Translating the questionnaire (if necessary)

If possible, the questionnaire should be translated into the local language. If the local language is not a common written language, it is also enough if only the key words are translated to assure a common understanding of the questions. This work can be done and prepared with local staff and then improved with the interviewers during the interviewer training session. This allows them to become familiar with the questionnaire and avoid misunderstandings.

5.1.3. Session 3: Defining the study zone, size and selection procedure of the sample

Selecting the study zone and size of the sample

The study zone should be representative of the project intervention zone. To be able to define the study zone we should have enough information about the zone with regards to population, number of villages, etc. It is also important to have information about on-going and future project activities to ensure that the survey is carried out in the communities targeted by the planned intervention. This is important in relation to the evaluation, because we want compare the situation before and after the intervention. This requires good coordination with partners and responsible local government.

The size of the sample can be defined as 10% of the population. For simplicity's sake, we advise including at least 100-150 households. If this number does not allow you to cover all the villages in your project zone, you can choose the villages at random, for instance by lottery.

It is up to the project whether it opts for a higher sample than 150 households. It can make sense to integrate the RANAS questions into a normal baseline study where a larger sample is necessary or planned.

Sample selection procedure

Households must be selected randomly:
- Random selection is necessary when the population is too big for everybody to be interviewed.
- Random selection is necessary, because the interviewer's selection may not be representative.
- Methods for selecting households randomly:
    - If available, selection using a numbered list;
    - Use the random route technique (see box below)

Box 2: The random route technique

The interviewer walks around the allocated area/village. She/he chooses her/his way at random, and starts counting the households on the left- and right-hand sides of the road (this should be defined). Sometimes the structure of the settlement makes it necessary to enter a compound to count the households there.

At the fifth household, the interviewer is supposed to ask somebody to participate in the survey. If there is nobody at the fifth household, or the people don't fit the defined target group or do not wish to be interviewed, then she/he should ask people in the sixth, seventh or eighth (and so on) household to participate.

After she/he has carried out the interview, she/he starts counting again.

Five is not compulsory as a number: the survey coordinator can also decide on any other standard number, depending on the area. The number might be lower for a small community; in an extensive community, it may be higher. The number must be chosen so that every household could theoretically be selected for the survey sample. To achieve this, the interviewers should start from a different corner of the area every day. Every interviewer must count in the same way. The random route technique ensures that interviewers don't select households in an arbitrary manner.

5.1.4. Session 4: Forming the survey team

The choice of the interviewers is important for the success of the study. The selection criteria are the following:
- Knowledge of the local languages and conditions;
- Good writing and reading skills;
- Depending on the interview target group, it is important to pay attention to the gender of the interviewer. This can influence how easy it is to discuss certain topics with the interviewees;
- Social sensitivity and good communication skills.

The interviewer can be selected from among the project or partner organization's staff (local animator, etc.). The advantages are that you do not have to recruit people, and they know the project zone and the project. There is, however, also a certain risk. It is not always easy for the project staff to change roles and be completely objective. There is also the danger of distorting the answers, especially during the evaluation study.

If external interviewers are hired, the project staff and the local authorities have to ensure that they are properly introduced to the communities to avoid any conflicts or misinterpretation of the study's objectives.

The interviews should take about half an hour. The capacity of an interviewer depends on the population density and accessibility of the target population. An interviewer can usually conduct 5-8 interviews per day. The number of days can therefore be estimated on the basis of this information and the number of interviewers:

- For example, five interviewers can do six interviews per day → 150 interviews per week.

5.1.5. Session 5: Training the interviewer

Objectives of the session: • Trained interviewers • Questionnaire translated, if necessary • Questionnaire piloted in the communities
Time: 3 days
Material: Computer, pen and paper, pin board, questionnaires, possibly smartphones depending on the collection mode.
Participants: Project staff, study supervisor, interviewers

The content of the RANAS questionnaire is special, and it is therefore important to train interviewers properly to ensure good data collection. The training should be as interactive as possible and provide enough time to do role plays and practical exercises using the questionnaire.

The training includes the following topics:

• Short introduction to the RANAS approach and the aims of the study;
• Discussion of the questionnaire and the different types of question;
• Translation of key words for common understanding;
• How to use the questionnaire (special attention and further training is necessary if a smartphone-based system is used, which is not yet familiar to the interviewer);
• Role play to encourage familiarity with the questionnaire;
• Information about household selection (random route technique);
• Organizational information (time plan, logistics, remuneration, etc.);
• Pilot test of the questionnaire in a village:
  o Each interviewer does one or two interviews with a person from the target group. This allows the interviewer to train in real conditions, but also to check the questionnaire and see if some of the questions are not well understood and need to be adapted or improved. A final version of the questionnaire is then drafted based on the interviewers' feedback.

You will find further information regarding interviewer training in the annex.

Annex 7: Interviewer training

5.1.6. Session 6: Data collection and entry

Data collection

The data collection and entry depend very much on the chosen methodology. The data collection can be done with a classical questionnaire on paper or with smart phone based survey.

HELVETAS has made very good experiences in using smart phone based survey tools. It has reduce the work and improved the data quality of the survey. Additionally interviewer are more motivated using these devices for surveys.

Box 3: Smartphone-based data collection

Information and communications technology (ICT), such as mobile survey tools, can facilitate field-level data collection. Some providers have created systems designed for use in challenging and remote areas with weak and unreliable internet connections. Data can be collected through the Android-based smartphone app, both on- and offline. When the user then accesses an internet connection, the data is automatically uploaded to the cloud-based data management and analysis portal in a usable format. This eliminates costly and time-consuming data entry, and creates the prospect of managing all project data remotely.

HELVETAS has entered into a smartphone data collection partnership with Akvo for surveys and monitoring.

Different providers offer different solutions, and each organization has to choose the best solution for its needs. Here are a few further links: www.akvo.org, www.mwater.co, home.magpi.com,

Whichever option is chosen, the supervisor has to ensure that data collection is done correctly during the survey. It is advisable that he/she check the online or paper questionnaire every evening to avoid recurrent interview mistakes. This saves a lot of time during data analysis. For example, for the question, "How many times do you wash your hands?" some interviewers in one of the pilot countries wrote a figure and others wrote out the number in word form. The figure is much easier to handle during analysis, and the written-out number had to be reformulated as figures.

It is important to plan the study timeframe for the interviews well and to take account of market days, farming seasons and special holidays, etc. to avoid any delays or unexpected surprises.

Annex: 8: Checklist for the supervisor

Data entry

If the smartphone-based option is chosen, the data is already available in electronic form and can be transferred into Excel, which is a big advantage.

With a paper-based questionnaire, the data has to be entered in a prepared Excel sheet. This can be done by project staff or outsourced. It is important that the person in charge of data entry is well trained to avoid mistakes or additional work during data analysis. The best option is for the person in charge of data analysis to be responsible for the person doing the data entry too.

Depending on the length of the questionnaire and the simple size this can take some few days.

Annex 9: "Data entry" checklist

Experiences and challenges

Because the survey was of particular importance, greater attention was paid to training the interviewers, and this paid off in terms of the quality of the data collected. It was important to realize that local people can understand and answer relatively sensitive questions.

Collecting data with smartphone-based system simplifies both the data collection and the data entry steps. It also helps to supervise the interviewer and if the data centralized and linked to Google Maps. Although some initial investment is required to purchase the smartphones, ultimately you gain in data quality, there is no cost for printing questionnaires, and data entry takes less time.

Challenges:

The sample selection can be tricky. The Mozambique project is led by the local government. At the time of the baseline study, the local government had not yet defined the future intervention areas. This

caused a situation in which the intervention based on the study was not necessarily applied in the study area, and this hampered the subsequent evaluation of the intervention.

During the planning phase, it is important to take account of the seasonality of household workloads, local events, and the gender composition of the interviewer team. The Mali project team initially chose only male interviewers, because they could move around on motorbikes. The composition of the interviewer team was changed when they realized that the questionnaire's target interviewees were women. This had an impact on logistics, because the women could not ride motorcycles or stay overnight in the villages.

Although the interviewers were trained, sometimes the answers were not entered in the same way. If the study supervisors did not react immediately, this caused a great deal of additional work in data cleaning later.

The questionnaires were not fully translated; we only focused on translating the main keywords, as most of the data collectors could not read the local languages. Translating the questionnaire went well with the interviewers in Mali, because it deepened their understanding of the questionnaire and was part of the interviewer training. In Mozambique, the translation was done with the help of the local partners and the group of staff who participated in drafting the questionnaire, because it had to be translated into different local languages.

The length of interviewer training also depends on the collection mode. More time has to be allocated if a mobile-based data collection system is being used for the first time. We found in Mozambique that using mobile phones to collect data can be a motivating factor for interviewers. In remote areas, however, gaining access to electricity to recharge phones can be a challenge.

To reduce the work and cost, we reduced the sample size to a minimum of 150 households in Benin and Mali.

The survey supervisor has an important role to play and should react immediately if there is an inconsistency in responses. This allows a lot of time to be saved when entering and cleaning data.

5.2.   Phase 3: Determining behavior change techniques (BCTs) and corresponding materials and activities

5.2.1. Session 7: Data analysis

To identify which behavioral factor is most decisive for the performance of the behavior, we have to compare the non-doers and the doers regarding these factors. Identify the biggest difference between doers and non-doers for a particular factor, and that is the one you will have to address with your intervention.

We apply a basic estimation with a calculation program like Excel, which is accessible for all projects. If there is already excellent knowledge within the team about other statistics programs like SPSS, this can be used, but it is not necessary.

   For the data analysis, there are three steps to follow:

- Cleaning and preparing the data;
- Dividing the sample into doers and non-doers (see example in the annex);
- Calculating the mean score of the doers and non-doers for each factor.

The person doing the analysis should be familiar with Excel and will need a short introduction to the analytical procedure, based on the checklist for data analysis.

Annex 10: "Data analysis" checklist

5.2.2. Session 8: Interpreting the data and identifying the main behavior factors

Once you have analyzed the data, the main results should be presented in a simple way (for an example, see Figure 2 below) to the project team and the relevant partners. It is not necessary to explain the whole process of data analysis to the team. Besides analysis of the factor, any additional information should be presented that helps to better understand further differences between doers and non-doers (see Figure 3 below).

The project team can make a first joint analysis with the person in charge of data analysis before sharing the results with the partner. If the team is small this can be done altogether, as it has a learning effect.

First step

Two main questions have to be asked to interpret the results regarding behavioral factors:

- For which factor does one see the greatest differences between doers and non-doers? (See red circle in the graph below.)
- For which factor are the scores of doers and non–doers the lowest? (See blue arrow in the graph below.)

Second step

Interpret the additional information regarding the behavior and environmental factors as well as the socio-economic data.

- Are there any relevant differences between doers and non-doers regarding the socio-economic situation or personal contextual factor (education, income, age, etc.)?
- Are there any relevant differences between doers and non-doers regarding the physical contextual factor (e.g. the observed infrastructure condition such as the availability of latrines, handwashing station, etc.) which are linked to the behavior?
- Are there any relevant differences between doers and non-doers regarding the social contextual factor (ethnicity, tradition, etc.)?
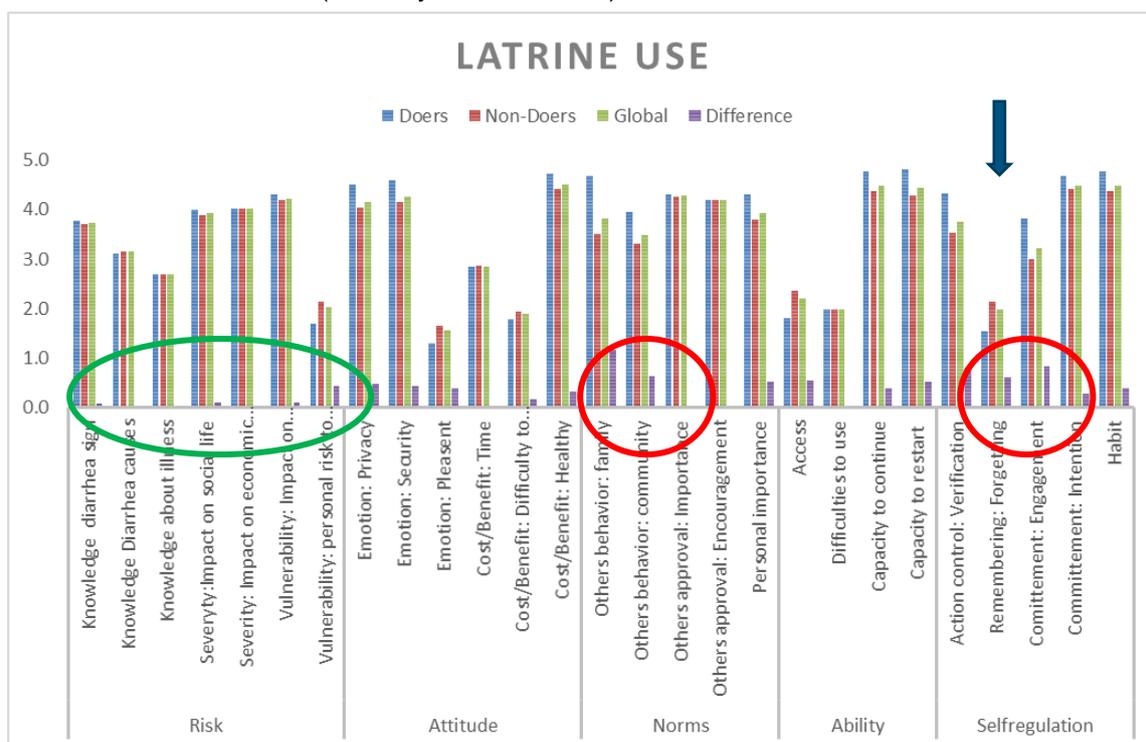
Figure 2: Graph of the results for the behavioral factors of the doer and non-doer analysis in Mozambique
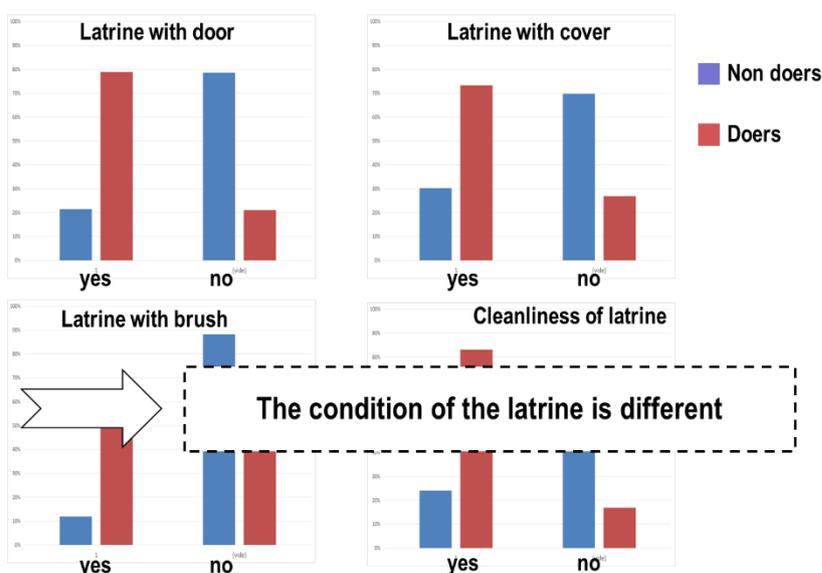
Figure 3: Graph of the results on the condition of the latrine in Mozambique

Conclusion of the analysis in Mozambique:

- **Risk factors**: There is no big difference between doers and non-doers → **no action is necessary**
- **Norm and self-regulation factors**: There are some big differences between the factors "others' behavior", action control, remembering and engagement → **these are the factors to target.**
- **Condition of latrine:** Differs between doers and non-doers → this might have an influence on use.

It is important that the data is interpreted and discussed together by the project team, as well as with the concerned stakeholders. This leads to a better joint understanding of the results and the conclusions. External support for this discussion can easily be provided remotely.

Experiences and challenges

The data analysis can be done using Excel and require no statistical know-how. Doing the whole data analysis on our own allowed us to build capacity for data management within the team. This is also helpful for further monitoring and evaluation work.

Challenges:

The cleaning and analysis of the data is a full-time job involving several days' work for one person. The time needed should not be underestimated; this work cannot be done in one or two hours alongside all the other daily tasks.

In Mozambique, data collection was done using mobile phones for the first time. This significantly reduced the workload for data entry, but some of the answer categories were not properly defined, causing additional work during the data cleaning process.

Finding a person who has knowledge of Excel and likes to play with numbers is not always easy, therefore capacity-building must be factored in.

With the RANAS approach, you calculate the difference between doers and non-doers and not the percentage of a certain factor in the whole population, for example the percentage of people who like

the smell of soap. This is new, and it took time for the team in Benin and Mozambique to understand the logic.

The analysis can be tricky. High score and high difference do not necessarily mean that this factor has to be tackled, but it has to be looked at individually and linked to the question. For example, in Benin the non-doers had a high score compared to the doers regarding the question about perceived vulnerability in relation to their actual behavior. The first reaction was that we should address perceived vulnerability; it was only on closer examination that we realized this was telling us that the non-doers already had enough knowledge about the risk they were taking.

A color code for the different types of question is of great help and reduces mistakes if the data is entered into Excel manually.

Although one person does the data analysis, it is important to have a second person who has some basic knowledge and can act as a sparring partner by taking a critical view. This is especially important for the work of coding open questions.

The definition of the cut-off level between doers and non-doers should be discussed in the project team and not simply decided by the data analyst. Adaptations can then be made in the case of too low a level of doers or non-doers.

A clear and step-by-step instruction for the data cleaning and analysis were developed for all pilot countries. After the data cleaning and the first analysis, the work was crosschecked by another person to eliminate mistakes.

The result of the analysis has to be discussed in the group. They should bear the corresponding question in mind to avoid misinterpretation. Additionally, it helps to have a good common understanding of the results when developing behavior change techniques in the next step.

5.2.3. Session 9: Determining behavior change techniques and communication channel

Objectives of the session: • Define behavior change technique   • Identify communication channel   • Describe behavior change intervention
Time: 1 day
Material: Computer, pen and paper, pin board
Participants: Project team, partners

Don't fall back into your old behavior! This is also valid for project staff. Experience has shown that even after clear analysis we tend to return to our normal messages and intervention.

It is important when choosing the right BCT to focus only on the factors identified in the previous step. As a first step you can use Table 4 below and fill in the two first columns:

- The BCT list is a source of inspiration (see Annex 4) and helps to identify possible interventions. The list contains a variety of potential BCTs grouped under each behavioral factor.
- Mark the BCT which could be potentially be used for your behavior, and fill in Column 3 of the table.

Example for latrine use in Mozambique		
Today's situation	Tomorrow's situation	How we can achieve it
What non-doers think about the behavior	What we want the target individuals to think and feel about the behavior tomorrow:	How we will achieve this (BCT)
Risk factor: There is no significant difference between doers and non-doers	No change required	No intervention required
Attitude factors It is not safe and there is not enough privacy to use a latrine.	I feel safe using a latrine. I have privacy when using my latrine.	BCT 8: Describe positive feeling when using latrine
Norm factors: Not many of my family use the latrine. Not many of the community use the latrine.	Most of my family members use the latrine. Most of the community uses the latrine.	BCT 9: Inform about other's behavior BCT 10: Prompt public commitment
Capacity factor: It is difficult to access the latrine.	It is easy to access the latrine.	BCT 15: Provide instruction BCT 20: facilitate resources BCT 21: Organize social support
Self-regulation factors: I do not check if the latrine is clean. I do forget to use the latrine. I am not committed/motivated to use the latrine.	I check the latrine's condition. I always remember to use the latrine. I am committed to maintaining and using a latrine.	BCT 36 Agree a behavioral contract BCT 10 Prompt public commitment

Table 4: Table to analyze the factors to be changed and allocate appropriate BCTs

- Discuss and brain storm in the group about how to adapt BCTs to your behavior and context using the additional information you gained from the contextual factors and experiences.
- Be aware that one behavior change technique can address a different factor.
- When choosing the behavior change technique, bear in mind your human and financial capacities.
- Once you have discussed the possible BCT, start to write a script for the intervention including the communication channel (see Table 5 below).

Communication channel = the mode of delivery through which a BCT is brought to the recipients

The following communication channels can be used for your identified BCTs. Some BCTs are more effective if you use interpersonal communication channels. These BCT generally require personal guidance and direct contact with the receiver.

Mass-media communication channels:

- Print media: newspapers, brochures, leaflets, stickers, paintings
- Audiovisual media: radio, television, megaphones
- Songs, folk drama and theatre, concerts, rallies, parades, cinema shows
- Internet

Interpersonal communication channels:

- Group communication
- Community meetings
- Small-group training sessions
- Mobilized social networks

Person-to-person communication:

- Home visits with promoters
- Opinion leaders
- Peer-to-peer communication
- From teachers through children to parents

Example for latrine use in Mozambique		
BCTs	**BCT description**	**Communication channel**
BCT 9: Inform about other's behavior	Inform the public about how the behavior is performing Give a small flag to households maintaining and using their latrine	Community meeting
BCT 10: Prompt public commitment BCT 36: Agree a behavioral contract BCT 21: Organize social support	Publicly commit to using and maintaining the latrine, as well as supporting their neighbors to do so and sign up on a list	Community meeting
BCT 15: Provide instruction	A participative exercise is then organized to draft a checklist for a well-maintained latrine and explain how to do this	Community meeting
BCT 20: facilitate resources	Invite private service provider to present their slab products and do their marketing Households that use and maintain their latrine get a price reduction voucher for a slab	Community meeting

Table 5: Description of identified BCTs and communication channel

Once the main activities have been defined, a detailed script for the intervention with the actors and the timeline has to be developed (see Annex 11).

Annex 4: List of Behavior Change Techniques

Annex 11: Example description of an intervention

Experiences and challenges

This step is essential, because it both supports and forces you to define action based on the results of your study and the catalog of BCTs. The catalog of BCTs is enriching and opens up discussion about new intervention options.

Additionally, it helps to analyze the interventions completed in a project to see if they actually tackle the target factors. Even if no study has been done, the catalog can be used to assess the present intervention of a project and to identify possible gaps.

It is important for project teams to realize that existing interventions can be used, but the main task is to ensure the right content. For example, in Benin a theater play addressing norm issues about handwashing was developed; beforehand, health risk had been treated as the main issue.

Challenges:

For the project team, it is a challenge to choose the right BCT to target the identified factors. Although we assessed and identified the factors to tackle, we tended to fall into our old behavior and plan interventions as we are used to doing, such as explaining risk. This was the case in Benin and Mozambique when the team was first asked to propose an intervention for handwashing that tackled the norms.

The choice of BCT has to take into account the project and local resources as well as the area to be covered. It is a difference if, as in Mali, a partner NGO or, as in Mozambique, governmental staff implement the new intervention.

It makes sense to take time to identify existing activities and assess them in the light of the study results. There might be some intervention which will need only very little adaptation.

It is important to let local field staff brainstorm possible BCTs and to take time to describe the intervention in detail to ensure correct understanding of the approach. Coaching is needed to ensure quality and to avoid falling back into old patterns of behavior.

5.3.   Phase 4: Implementing and evaluating promotion strategies

5.3.1.   Session 10: Implementing a defined intervention

The project can now implement the defined and tailor made intervention in their project. It is important that the interventions are timely good planned taking into account seasonality, work load etc. of the community. The interventions are implemented for a certain period (at least 6-12 months) before an evaluation takes place.

Here are some pieces of advice for the implementation:
- Build capacity within your partner organization or your own project promoters to implement the new intervention. Make sure that they understand the content and the planned goals of the intervention.
- Always carry out a first pilot implementation in one of your communities. This has two advantages. First, it helps you see if your new designed intervention is well received and understood by your target communities. Second, you can use this opportunity to invite representatives of your partners as part of their training, and then use their observations as critical assessment. If necessary, you can still make adaptations before scaling up.
- Ensure that your promoters implement the intervention correctly. This means that you should check that the interventions are well interpreted, and that the promoters do not fall into old behavior and apply the same discourse as before.
- Follow up on the first activities in the villages in private.

Experiences and challenges

This step shows the full range of possible combinations and obliged the project team to clearly describe the behavior change campaign. In Benin, all these steps were done before a new project phase and were helpful when planning the capacity and resources needed for the behavior change strategy for the new project.

Challenges:

The choice of communication channel has a strong influence on the sustainability of the intervention. The challenge is to find a good balance between the credibility and effectiveness of the communication channel and locally anchored structures. For example, the question in Mali and Mozambique was whether a local NGO or the governmental structure should be used as interpersonal communication channel.

Cost is another issue which needs consideration right from the beginning in the choice of the communication channel.

When introducing a new approach, we expect new and fancy solutions. The first reaction of the project team was disappointment that we ended up with a household visit and a theater play as communication channels after all the effort put in to the analysis and survey.

In all three countries, both interpersonal communication, such as community meetings and household visits, and mass communication, such as theater plays and posters, are used as communication channels in the project. Enough time has to be planned to discuss the different communication channel options. This helped the team to realize what had already been done in the right way and to build on these resources.

The task for the project team was to identify which of these communication channels should be used to apply the BCT identified in Session 9. This also helped when estimating the cost, as these were well-known activities.

5.3.2. Session 11: Evaluating the intervention

After an implementation period a follow-up survey of the intervention helps to understand if the activities were well received and if the envisaged change has occurred.

The survey is a panel survey, and we want to compare the answers of the same people before and after the intervention. This means that the interview has to be done with the same people as in the baseline survey. The same questionnaire must be used to analyze how the behavioral factors have changed over time. Additional questions are included to check whether the interventions were delivered as intended: Did the target group receive the BCT? Did the people like or dislike it? What can they remember about the intervention?

To simplify the questionnaire, questions about the socio-economic situation that proved irrelevant in the first questionnaire can be left out in order to reduce the size of the questionnaire, if there have been no bigger changes in the project zone and questions. For example, the questions about the risk factor were left out in Mali, because there were no significant differences between doers and non-doers regarding this factor.

The data is analyzed in the same way as for the first survey by comparing the change in behavior of doers and non-doers, and the target behavioral factors, taking account of the additional information on the intervention.

Once you have the data you can compare it to your baseline survey.

Annex 12: Example question about interventions

5.3.3. Session 12: Adapting the strategy

The work is not finished when the data has been analyzed. It is an on-going process. Using the results of the follow-up study, a critical analysis must be carried out of the interventions and how they should be adapted for future activities.

For example, the evaluation in Mali showed that the intervention was able to increase handwashing practice from 14% to 48%. A clear change was observed at the level of the norm factors, which were one of the target factors. The effect on self-regulation factors was not so great.

This has led to a discussion about how best to improve the intervention to address the self-regulation factor and achieve better results in future.
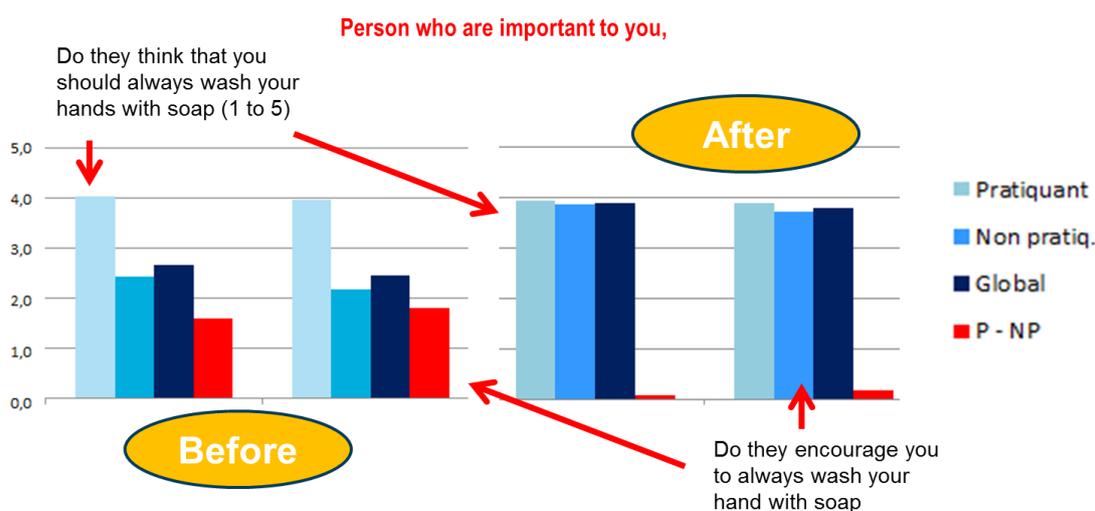
Figure 4: Norm factor before and after intervention in Mali

Some guiding questions, which should be asked during the analysis of the result in the team:

- Did the target person receive the interventions?
- Which intervention did they like best?
- Did the target factors change?
- What do we have to adapt in our interventions?

Once this analysis has been completed, an action plan should be drawn up that takes account of the following questions:

- What needs changing in the designed interventions?
- Do additional interventions need to be developed? → Repeat Session 9.
- To allow for follow-up on the improved interventions, some data needs to be collected in future and it must be optimally linked to the project monitoring system.

6.   Annexes

Annex 1: Behavioral factor and RANAS model

Annex 2: Input on behavior change

Annex 3: Introduction to the RANAS phase

Annex 4: List of Behavior Change Techniques

Annex 5: RANAS exercise questions

Annex 6: Structure of the questionnaire

Annex 7: Interviewer training

Annex 8: Supervisor's checklist

Annex 9: "Data entry" checklist

Annex 10:"Data analysis" checklist

Annex 11: Example description of an intervention

Annex 12: Example question about interventions

Annex 1: Definition of behavioral factors and the RANAS model

RANAS Model

Information behavior change techniques → Risk factors: Health knowledge, Vulnerability, Severity

Persuasive behavior change techniques → Attitude factors: Beliefs about costs and benefits, Feelings

Norm behavior change techniques → Norm factors: Others' behavior, Others' (dis)approval, Personal importance

Infrastructural, skill & ability behavior change techniques → Ability factors: How-to-do knowledge, Confidence in performance, Confidence in continuation, Confidence in recovering

Planning & relapse prevention behavior change techniques → Self-regulation factors: Action planning, Action control, Barrier planning, Remembering, Commitment

Behavior A: Intention, Use, Habit

Behavior B: Intention, Use, Habit

Social context | Physical context | Personal context

Definition of behavioral factors

Behavioral factors	Definition	Example
Risk factors: a person's understanding and awareness of the health risk		
Health knowledge	A person's knowledge of a disease's causes and (personal) consequences and its preventive measures.	The person knows that bacteria can cause diarrhea. The women knows that handwashing helps to prevent diarrhea
Vulnerability	A person's estimate about the general probability of contracting a disease and their subjective awareness of the personal risk of contraction.	I do not feel at risk of getting cholera, as I have my own pump.
Severity	A person's assessment of the seriousness of an infection and of the significance of the disease's consequences.	If I get diarrhea I will not be able to work and lose income
Attitude factors: a person's positive or negative stance towards a behavior.		
Beliefs about costs and benefits	A person's beliefs about monetary and non-monetary costs (time, effort, etc.) and benefits (lower medical costs, improved health) of a behavior, including the social benefits (higher status, appreciation by others).	It takes me too much time to treat the water.
Feelings	A person's emotions (joy, pride, disgust etc.) which arise when thinking of a behavior or its consequences or when practicing the behavior.	I like the smell of my hands when I wash them with soap.
Norm factors: represent the perceived social pressure towards a behavior.		
Others' behavior	A person's observation and awareness of others' behavior; his or her perceptions as to which behaviors are typically practiced by others.	Most of my family wash their hands without soap.
Others' (dis)approval	A person's perceptions as to which behaviors are typically approved or disapproved of by relatives, friends or neighbors. This includes the awareness of institutional norms, i.e. the dos and don'ts expressed by recognized authorities such as village, tribal or religious leaders, and by other institutions.	It is important to the village chief that we do no defecate in the open.
Personal importance	A person's beliefs about what she or he should or should not do.	It is very important to me to look clean.

Ability factors: represent a person's confidence in her or his ability to practice a behavior.		
How-to-do knowledge	A person's knowledge of how to perform the behavior.	The person can show correctly how to clean their hands or use the filter.
Confidence in performance	A person's perceived ability to organize and execute the courses of action required to practice a behavior.	I know where to buy chlorine and I have enough money to do so.
Confidence in continuation	A person's perceived ability to continue to practice a behavior, which includes the person's confidence in being able to deal with barriers that arise.	If I don't have any soap, I will use ashes to wash my hands until I can go to the market.
Confidence in recovery	A person's perceived ability to recover from setbacks and continue the behavior after disruptions.	When I return from the village after a festival, I will start to use the latrine again.
Self-regulation factors: represent a person's attempts to plan and self-monitor a behavior and to manage conflicting goals and distracting cues.		
Action planning	The extent of a person's attempts to plan a behavior's execution, including the when, where, and how of the behavior.	I usually clean the latrine after I have cleaned the kitchen after a meal.
Action control	The extent of a person's attempts to self-monitor a behavior by continuously evaluating and correcting the ongoing behavior toward a behavioral goal.	I check that my children and I leave the toilet in a clean condition so that we can always use it.
Barrier planning	The extent of a person's attempts to plan to overcome barriers that would impede the behavior.	If the person is going to the field for work, she always takes treated water along with her to drink, because there is no safe water available.
Remembering	A person's perceived ease of remembering to practice the new behavior in key situations.	Every time I cook, I put water and soap near the dishes so I remember to wash my hands before eating.
Commitment	The obligation a person feels to practice a behavior.	I am committed to having the cleanest toilet in the courtyard.

Behavior Change Workshop: Introduction

HELVETAS
Based on the Eawag presentation

- Which of your own behaviours have you wanted to change?

- When did you last change a behavior of your own?

BAD HABITS

New Food Pyramid

Limit intake of red meat & butter

Limit high glycemic foods

Low fat dairy, and soy milk
1-2 servings

Multiple vitamins for most

Water, 5-8 glasses

Eggs, fish, poultry, and plant proteins
1-2 servings

Legumes
1-2 servings

Nuts and seeds
1-2 servings

Whole grains
4-8 servings

Plant oils
2-4 servings

Vegetables
3-6 servings

Fruits
2-4 servings

Daily exercise and weight control

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Swiss Intercooperation

Increase knowledge about behavior change and introduce the RANAS approach

- o Share people's own experiences
- o Become familiar with the Ranas model
- o Know the factors that determine behaviors

Hardware: misuse

Hardware: badly used

Hardware: not used at all

Your own experiences

- What are your experiences of behaviour change in your project work?

- Which kinds of behaviour change approach do you know?

Supply with "Hardware"

Person

Use / Compliance

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Swiss Intercooperation

Hardware

Supply with bucket and chlorine

Person

Software

Behavior Change
Technique

Factor A
Factor C
Factor B
Factor D

Drinking disinfected water
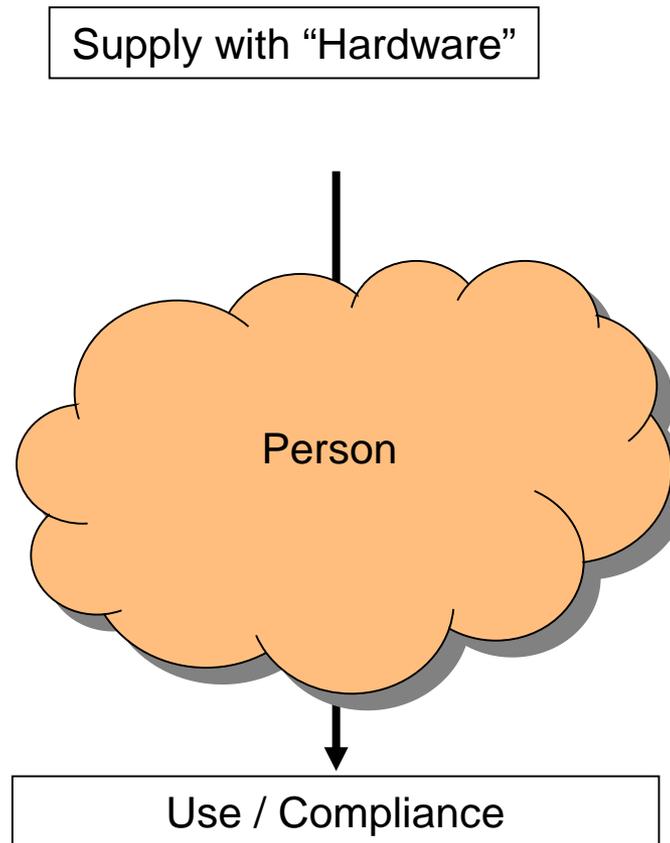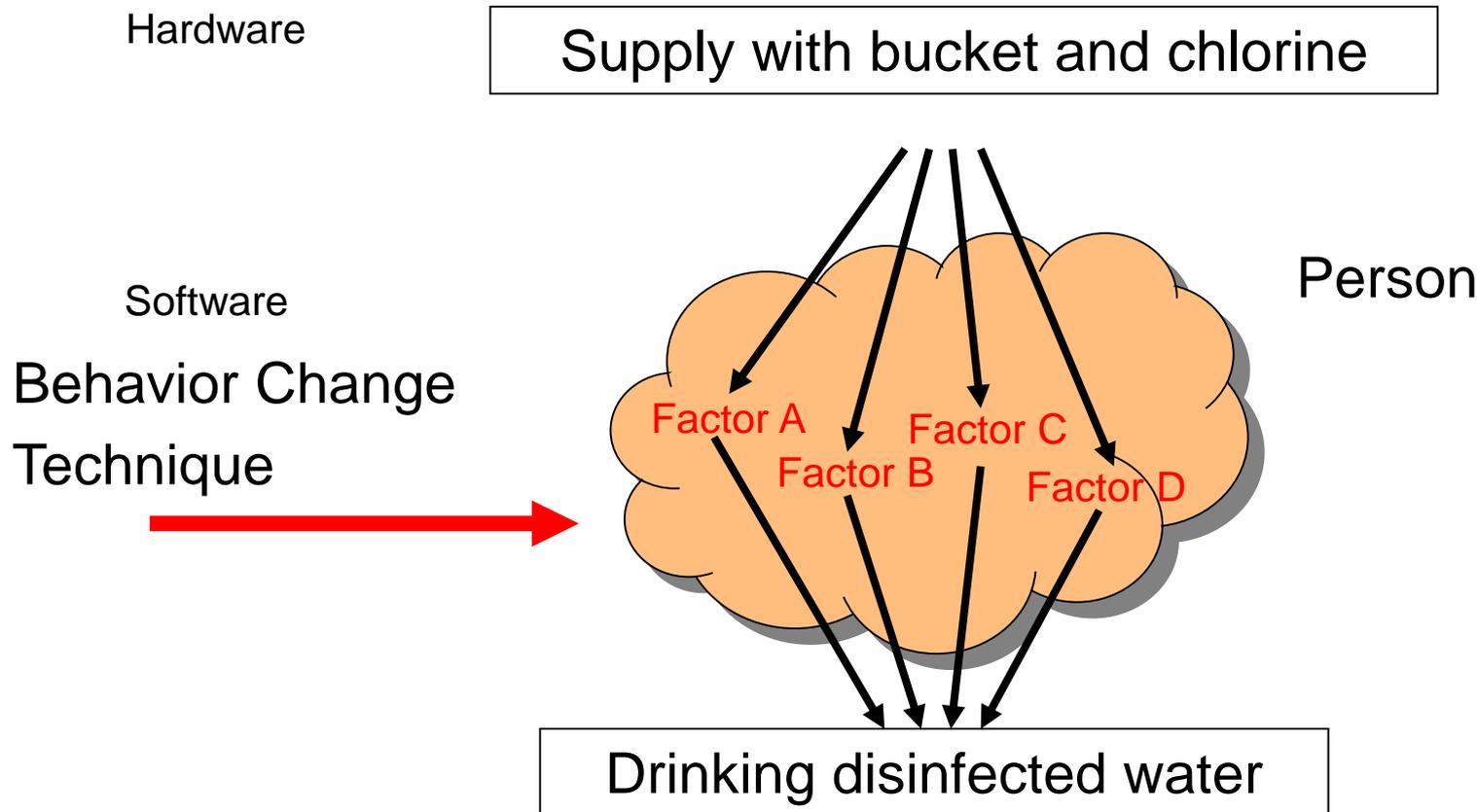
If we know which behavioral factors are affected by the Behavior Change Technique (BCT)
➔ then we can apply more goal-oriented BCTs and improve strategies

determine if and how the material is used.
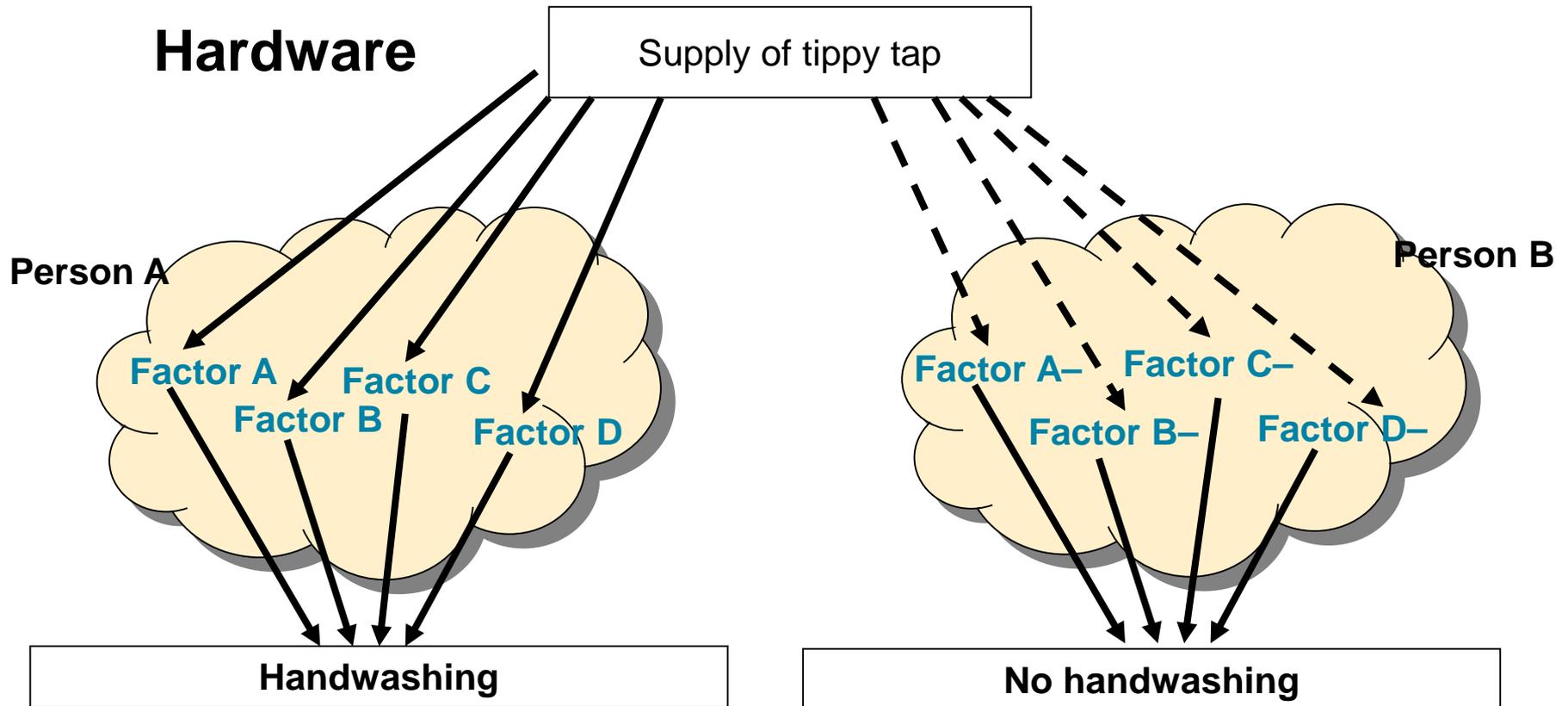
Behavioral factors...

determine if and how the material is used.

Hardware — Supply of a tippy tap → Person B (Factor A–, Factor B–, Factor C–, Factor D–) → No handwashing

Software — Behavior Change Techniques (BCT) → Person B (Factor A, Factor B, Factor C, Factor D) → Handwashing
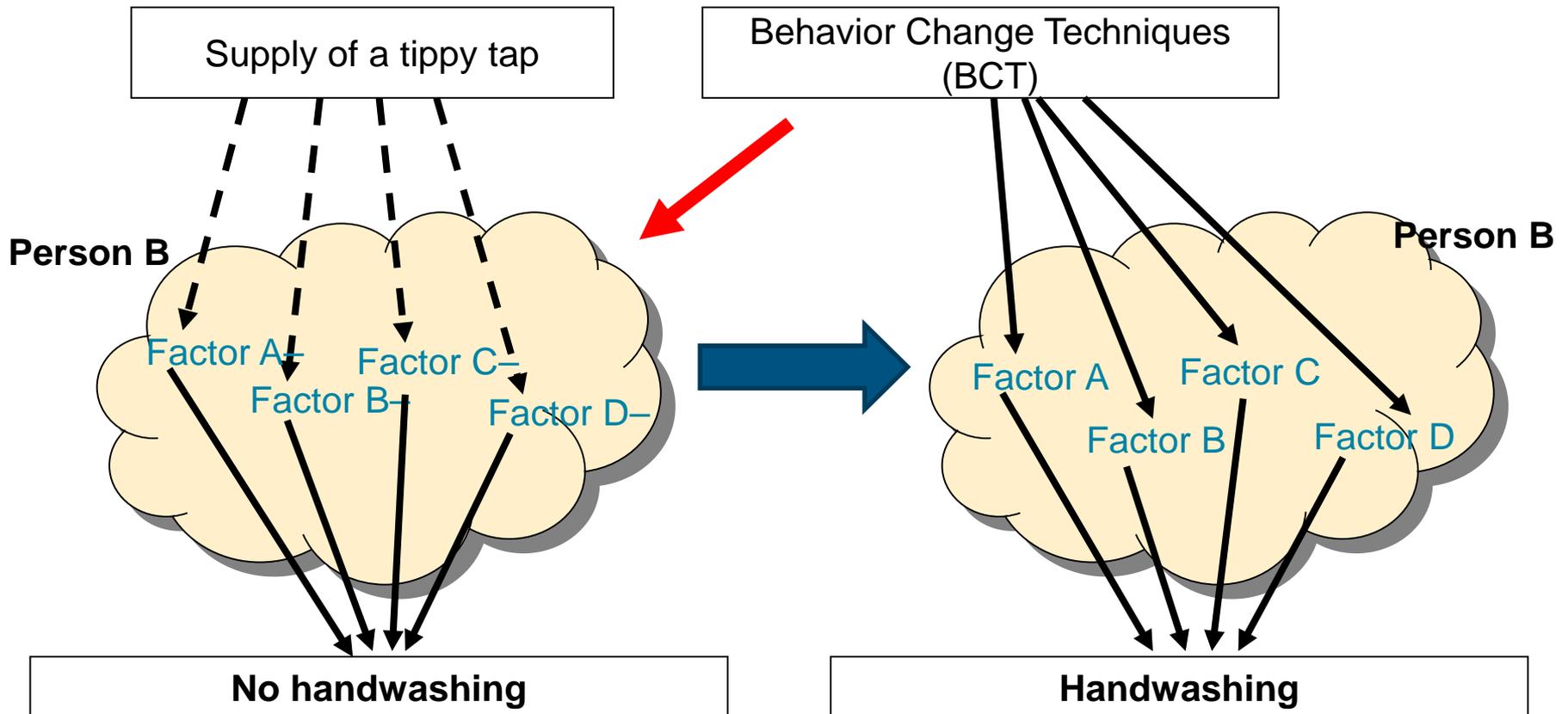
RANAS approach

Software

TCC 2 | TCC 1

Person

Factor A
Factor C
Factor B
Factor D

Handwashing
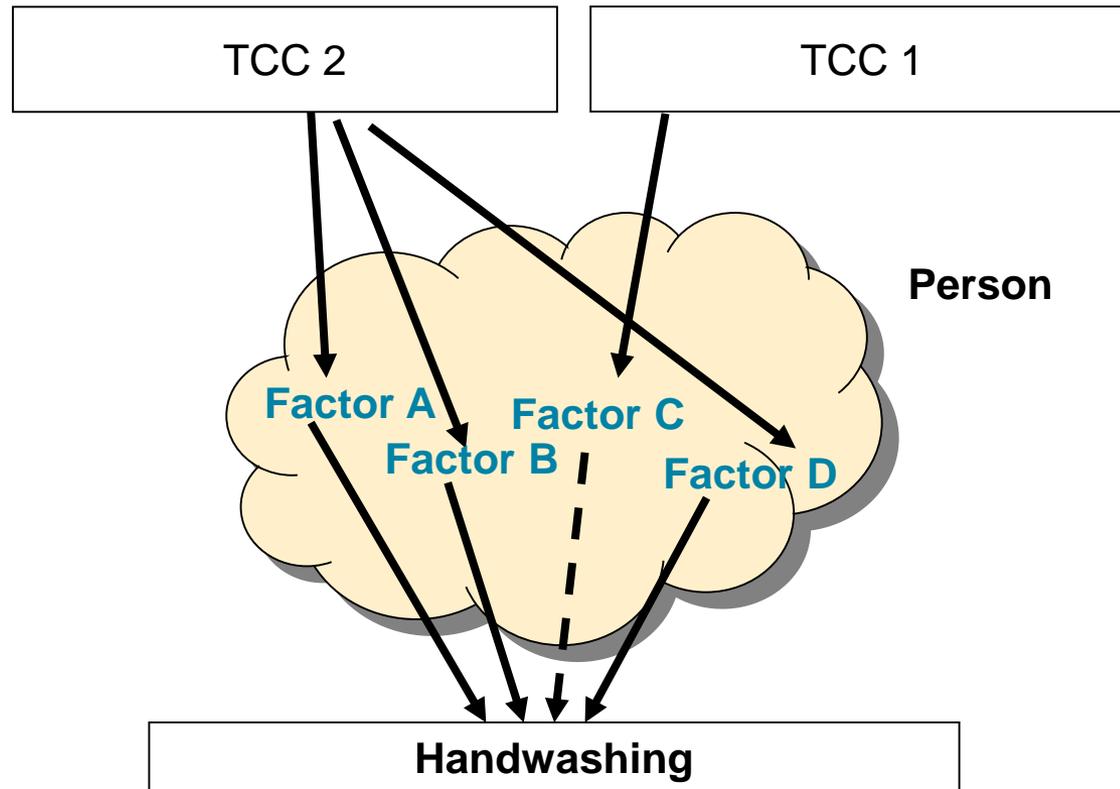
(1) Which behavioral factors determine the behavior?
(2) Which factors are affected by which behavior change techniques?

➔ Develop more targeted technique and improve strategies

Psychological factors for behavior change
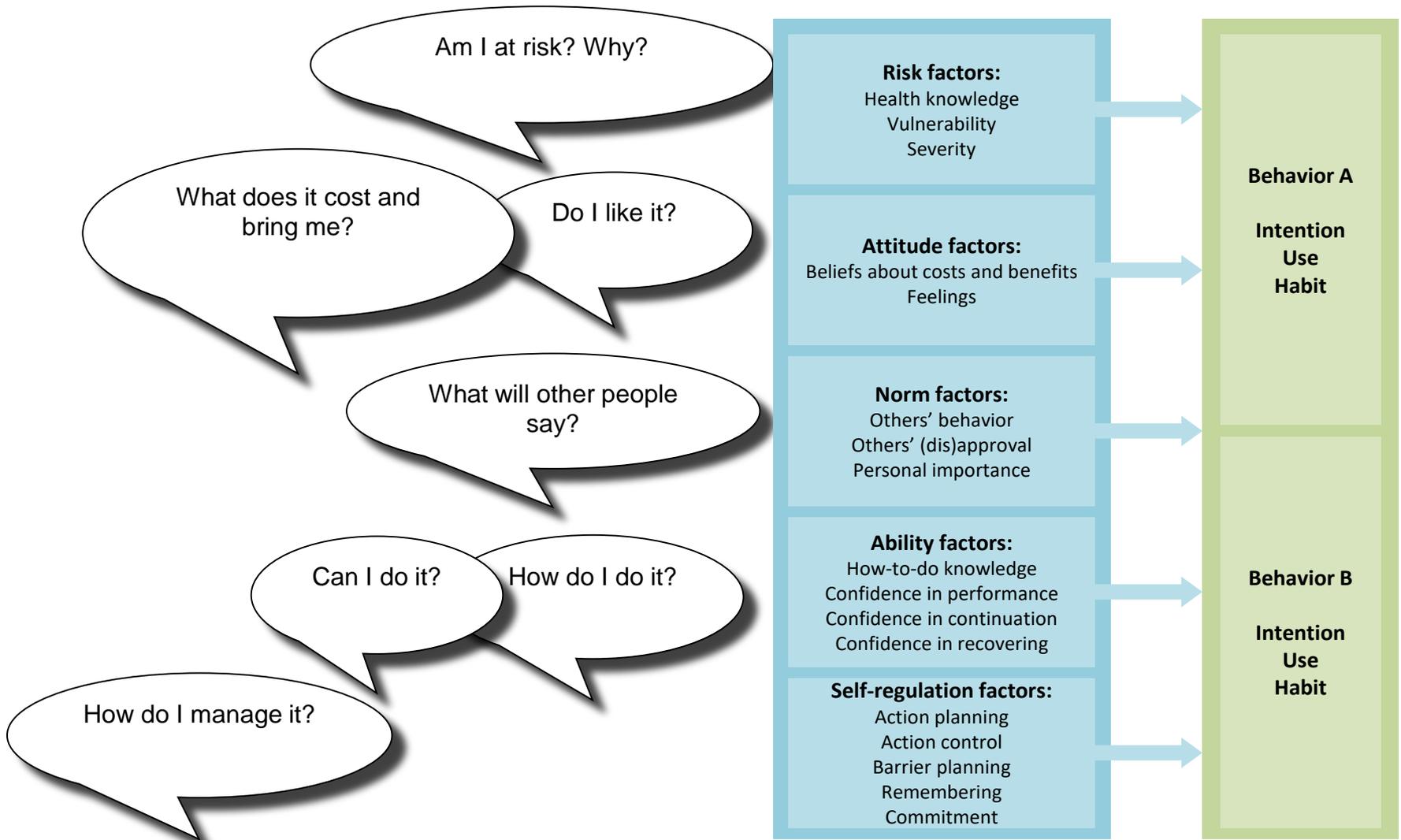
Mosler, H.J., (2012). A systematic approach to behavior change interventions for the water and sanitation sector in developing countries. A conceptual model, a review, and a guideline. International Journal of Environmental Health Research, 22 (5), 431-449.

The RANAS model:
R(isk), A(ttitudes), N(orms), A(bility) and S(elf-regulation)
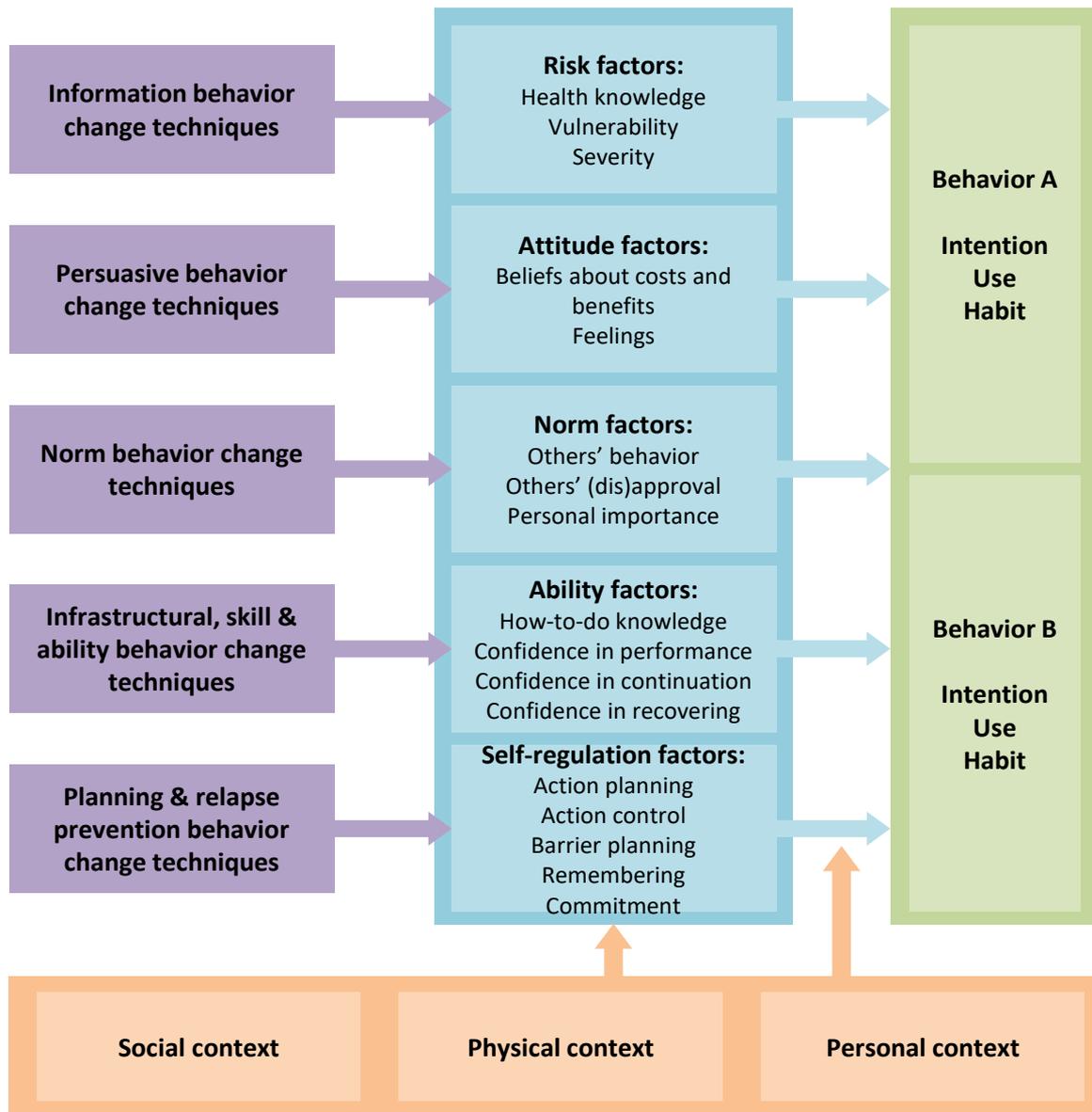
Evidence-based behavior change protocol

Phase 1. Identify behavioral determinants

a. Define the behavior that needs changing and the target population to be tackled

b. Conduct qualitative interviews about the favoring and hindering contextual factor of the behavior

c. Allocate behavioral factors to the factors of the RANAS model

Phase 2. Measure behavioral determinants

a. Develop a questionnaire to measure behavioral factors and behaviors, and carry out observations

b. Conduct a representative baseline survey

c. Determine the factors that steer the target behavior

Phase 3. Select behavior change techniques (BCTs) and design a behavior change strategy

a. Select BCTs to change behavior steering factors

b. Develop and design behavior change strategy (including definition of communication channel, etc.)

Phase 4. Implement and evaluate promotion strategies

a. Implement the interventions

b. Do a follow-up survey

c. Adaptation of the strategy if needed

Behavior change workshop – Session 2

2016
Based on the Eawag presentation

Phase

1. Define potential behavioral factors

a. Define the behavior to be changed and the target population to be tackled

b. Conduct qualitative interviews about the favoring and hindering contextual factor of the behavior

c. Allocate behavioral factors to the factors of the RANAS Model

Defining a behavior

→ **Behavior** = sequences of actions of the target population

→ **Action** = performed activity

➢ **Define beginning and end of behavior**

➢ **State it precisely**:
- Preparatory behavior
- All the steps

➢ **Measurements of behavior**:
- Observation of the performance
- Observation of outputs (e.g. bottles in the sun)
- Calculating self-indications (% of consumed water)
- Self-reporting

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Correct use of latrine

Preparatory behaviour

- having water, soap, brume ready in the latrine
- walk to the latrine

Behaviour

- take away the cover and your cloths
- sit/stand correctly
- defecate
- clean yourself
- clean the toilet + put ashes
- cover the latrine
- wash your hands

Hand washing with soap

- before touching food
- after contact with feaces

Preparatory behaviour

- collect water
- buy soap
- prepare hand washing place
- walk to the hand washing place

Behaviour

- put water on your hand
- apply soap
- clean + srub your hands
- rinse hands with water
- dry hands by air or towel

➤ (Avoiding) open defecation

➤ Building or purchasing toilets

➤ Improving toilets: cover, lock

➤ (Avoiding) inappropriate use

➤ Cleaning

➤ Emptying or paying for service

Example of hygiene behavior

➢ Handwashing after contact with feces: after defecation, after wiping a child's bottom, after disposing of feces.

➢ Handwashing before handling food: before eating, before preparing food, before feeding a child, before handling drinking water.

➢ Food hygiene: hygienic handling and cooking of food; clean cookware as well as safe storage of food so that animals and especially flies don't have access.

➢ Body hygiene: washing the body with water and soap, trimming fingernails, wearing clean clothes and menstrual hygiene.

➢ Housing hygiene: safe storage of cookware, cleanliness of floors and close surroundings of the house.

Who is most important in changing behavior?

➢ Women
➢ Men
➢ Primary caretaker
➢ Children
➢ Pupils
➢ Leaders
➢ Most vulnerable

Which people are to practice the target behavior?

Whose behavior has the greatest influence on the family?

Who has the greatest influence on others' behavior?

Definition of the behavior and the target population

Goal: Describe precisely the behavior and the target population

Task:

- Define the sequence of action of the behavior with all the activities involved

- Define the most important actors for the behavior change

Process:

- Discuss in groups for 15-20 minutes
- Present your results
- Define an agreed solution in plenary

Contextual factor of the behavior
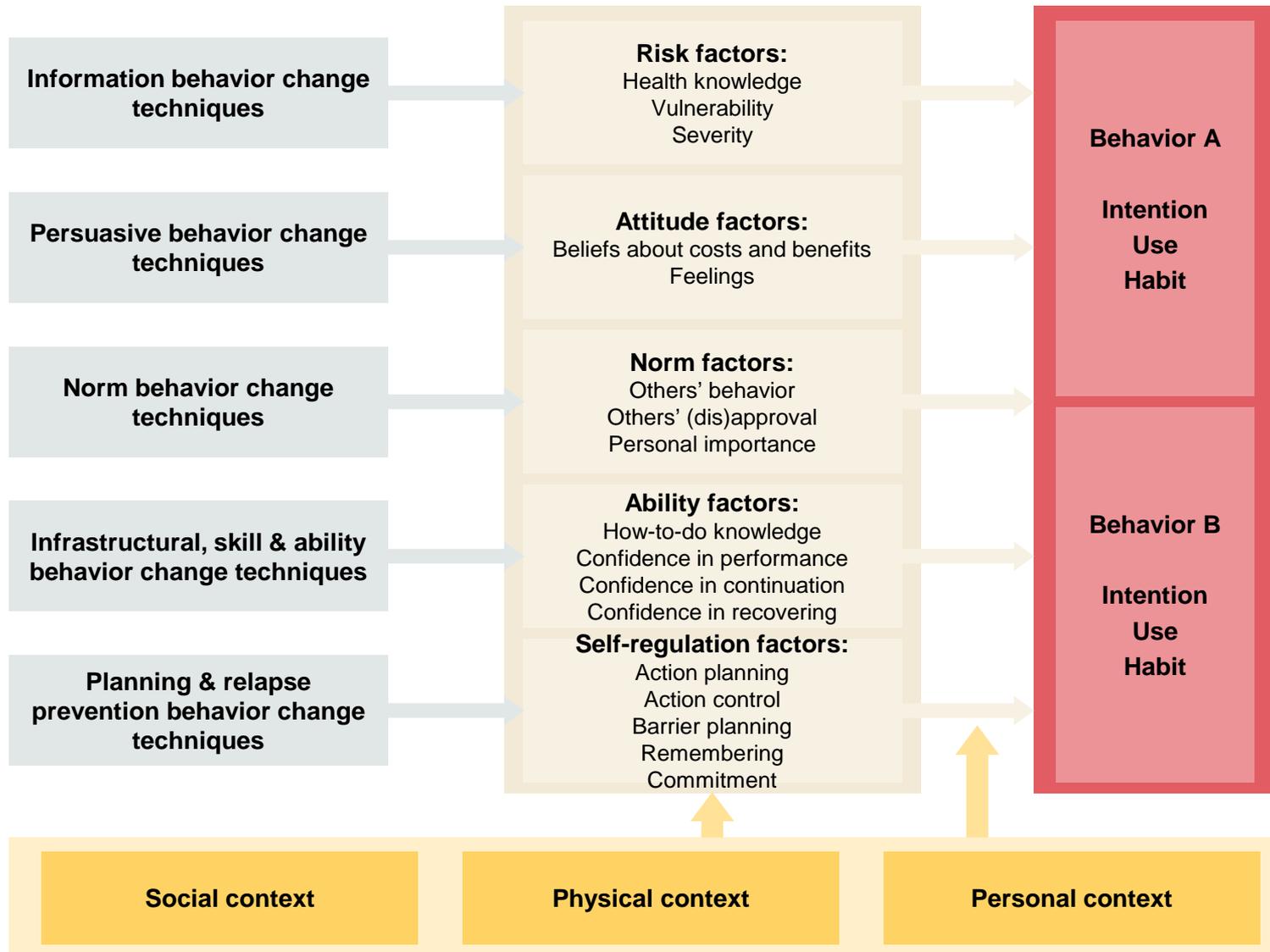
Contextual factors

Collect information via qualitative interviews, group discussions or observation

Social context	• Culture and social relations, e.g. taboos, rites, or norms. • Laws and policies, e.g. prohibition of open defecation, water rights, school budget for hygiene supplies, curriculum on WaSH behavior. • Economic conditions, e.g. household or community wealth. • Product and service accessibility, e.g. price of soap, water, or infrastructural facilities; availability of soap; reliability of water services. • Information environment, e.g. health information shared in the health center or in schools.
Physical context	• Natural environment, e.g. climate, seasons, water occurrence or soil condition. • Built environment, e.g. well, latrine, handwashing station.
Personal context	• Socio-demographic factors, e.g. age, sex, and education. • Physical and mental health of the person.

Collect information about facilitating and hindering contextual factors

But: Know-how about the conditions and the factors facilitating or hindering the behavior

Task and process:
- Work in groups of 4-6 persons for 30 minutes
- Collect the contextual factors facilitating and hindering the chosen behavior
- Identify information gaps. What kind of extra information do we need and how can I get it (interviews, group discussion, observation)?
- Present the results

Classify the favoring and hindering contextual factor according to the RANAS model

But: Know-how about the interlinkages between environmental contextual factors and behavioral factors

Task and process:

- Work in groups of 4-6 persons for 30 minutes
- Classify the contextual factorsfacilitating and hindering the chosen behavior in the RANAS model (see table in the next slide).
- Present the results.

Task 3

Ranas factors	Contextual factor	Contextual factor group	+/- Influence
Risk factor			
Health knowledge			
Vulnerability			
Severity	Cholera epidemic	Physical	+ people are more aware
Attitude factors			
Beliefs about cost/benefit			
Feelings/emotions			

Some definitions

Behavior	Description
Behavior	Perform waste separation
Intention	Readiness to do waste separation
Habit	Automatic performance of waste separation
Use	Usage of waste separation containers
Compliance	More than 90% of the waste is separated

Phase 2

Phase

1. Identify potential behavioral factors

↓

2. Measure and define behavioral factors

2. Measure and define behavioral factors

1. Develop a questionnaire to measure behavioral factors and behaviors, and conduct observations.
2. Conduct a representative baseline survey.
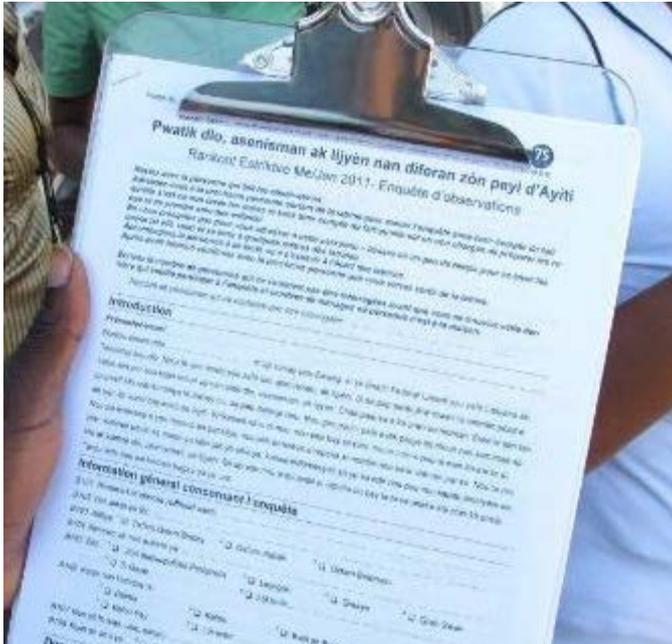
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2. Measure behavioral factors

a. **Develop a questionnaire to measure behavioral factors and behaviors, and conduct observations**

b. **Conduct a representative baseline survey**

- Face-to-face interviews
- Based on standardized questionnaire
- Aim is to collect detailed information about:
  - The behavior
  - Behavioral factors

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Can you tell me what causes diarrhea?
……………………………………………

→ *Ask open-ended question*

→ *Write down respondent's answer*

Types of questions: open questions

Open questions with given answer categories (multiple response)

In general, why do you wash your hands with _soap/ash/sand_ and water?

☐ Against bacteria children/baby   ☐ Against diarrhea   ☐ To protect our

☐ Against dirt/smell   ☐ Compliance/obligation   ☐ Against sickness

☐ To protect health   ☐ Because of hygiene   ☐ Group behavior

☐ Habit   ☐ Don't know   ☐ Other ………………..

→ *Ask open-ended question*

→ *Based on the answer, the interviewer selects the corresponding answer category*

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Do you wash your hands with _soap/ash/sand_ and water after contact with stool frequently?

0 ☐	1 ☐	2 ☐	3 ☐	4 ☐
Not frequently	Hardly frequently	Quite frequently	Frequently	Very frequently

→ *Ask question and read out the answer categories*

→ *The interviewed person chooses an answer category*

→ *The interviewer ticks the chosen responses*

Psychological factors: risk

Understanding and awareness of health risks

Factor	Description	Question
Perceived vulnerability	Subjective perception of the individual risk of contracting a disease	How high do you feel is the risk that you will get diarrhea if you drink untreated water?
Perceived severity	Subjective perception of the seriousness of a disease's individual consequences	Imagine that you contracted diarrhea. How severe would be the impact on your life in general?
Factual knowledge	Knowledge about a disease's causes and consequences, and its prevention	First, I will present some potential effects of diarrhea. Could you please tell me for each whether it is a body effect or not? • Cough • Loss of water and salt from the body • Fever • Three or more loose stools per day

Psychological factors: attitude

Positive or negative attitudes towards a specific behavior

Factor	Description	Question
Cost/benefit	A behavior's advantages, e.g. health or status improvements, and disadvantages, e.g. time and monetary costs	Do you think that getting drinking water from the Maji Safi Kiosk is expensive? How good or bad for your health would you say it is to drink water from the Maji Safi Kiosk?
Emotions	Feelings arising when thinking about or performing a behavior	How pleasant is it for you to use the latrine?

Psychological factors: norm

Beliefs about how common the behavior is and what the social environment thinks about it

Factor	Description	Question
Others' behaviors	Perception regarding behaviors typically practiced by others	How many of your relatives, excluding people in your own household, separate waste?
Others' approval/ disapproval	Perception regarding behaviors typically approved or disapproved by others	Do people who are important to you generally discourage or encourage you to separate waste?
Personal norm	Personal perception regarding a behavior	How strong an obligation do you feel toward yourself to always clean your latrine after use?

Psychological factors: ability

A person's confidence regarding his or her ability to perform a behavior

Factor	Description	Question
Action knowledge	Knowledge about how to perform a behavior	What kind of waste do you have to separate?
Action self-efficacy	Confidence in one's ability to initiate and execute a behavior	How sure are you that you can always treat your drinking water before drinking?
Maintenance self-efficacy	Confidence in one's ability to maintain a behavior in light of barriers	How confident are you that you will use the latrine if it is occupied?
Recovery self-efficacy	Confidence in one's ability to recover from relapse	Imagine you have stopped treating drinking water for several days, for example because you did not have any chlorine at home. How certain are you that you will start treating it again?

Psychological factors: self regulation

Beliefs about how to maintain a behavior and how to translate intentions into actions

Factor	Description	Question
Action control	Self-monitoring and efforts carried out to execute a behavior according to standards set for oneself	Over the last week, how closely did you pay attention to treating your drinking water?
Action planning	Detailed planning of a behavior's execution including the specification of 'when', 'where' and 'how	At what time of the day do you normally treat your drinking water?
Coping planning	Establishing plans to overcome anticipated barriers and distractions to a behavior	Do you have a plan as to how you can always treat your drinking water even if you don't have any chlorine?
Remembering	Ease of remembering a behavior at a specific time/in a specific situation	Over the last month, how many times did you forget to get to separate your waste?
Commitment	Strength of commitment towards practicing a behavior	How important is it for you to separate your waste?

Conduct a representative baseline

1. Translate and retranslate your questionnaire
2. Recruit a team of local interviewers
3. Train the interviewer team in how to approach households, interviewing techniques, and the questionnaire
4. Pre-test your questionnaire in the field (with approx. 5-10 households)
5. Get information about population figures in your project villages
6. Select households for interviews randomly
7. Conduct the baseline survey

Obtain information about population figures in your project villages ➔ sample size

- Rule of thumb:
  10% of the households in the population
- To simplify, we never do less than 100 households, but 150 is better

Duration of one interview: 30 minutes

Capacity of one interviewer:

- 5–8 interviews per day

Capacity of 5 interviewers in one (6-day) week :

- 150–240 interviews per week

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Phase

1. Identify potential behavioral factors

↓

2. Measure and define behavioral factors

↓

3. Select behavior change techniques (BCTs) and design behavior change strategies

3. Select behavior change techniques (BCTs) and design behavior change strategies

1. Determine the factors which steer the target behavior (compare doers and non-doers)
2. Develop and design behavior change strategies

Next step: determine the factors

1. Enter the questionnaire data into a computer program (e.g. Excel)

2. Divide the sample into doers and non-doers

3. Calculate the intervention potentials

4. Select the behavior steering factors

Separate doers and non-doers

Example of behavior questions	Doers	Score Doers	Non-doers	Score Non-doers
4 times a question with 'Imagine question of different hand washing situation'	4 times handwashing with soap is mentioned	1	0-3 times handwashing with soap is mentioned	0
How often did the person wash her hands?	Answer category 5 = always	1	Answer category 1(never), 2 (seldom), 3 (sometimes) and 4 (often)	0
How often did you wash your hands yesterday?	Define a minimum number, p. ex 5 times a day	1	Less than 5	0
Observation: Water and soap available	Yes	1	No	0
Total score		**4**		**0**

→ If a person gets a the score of 4, she is considered a DOER
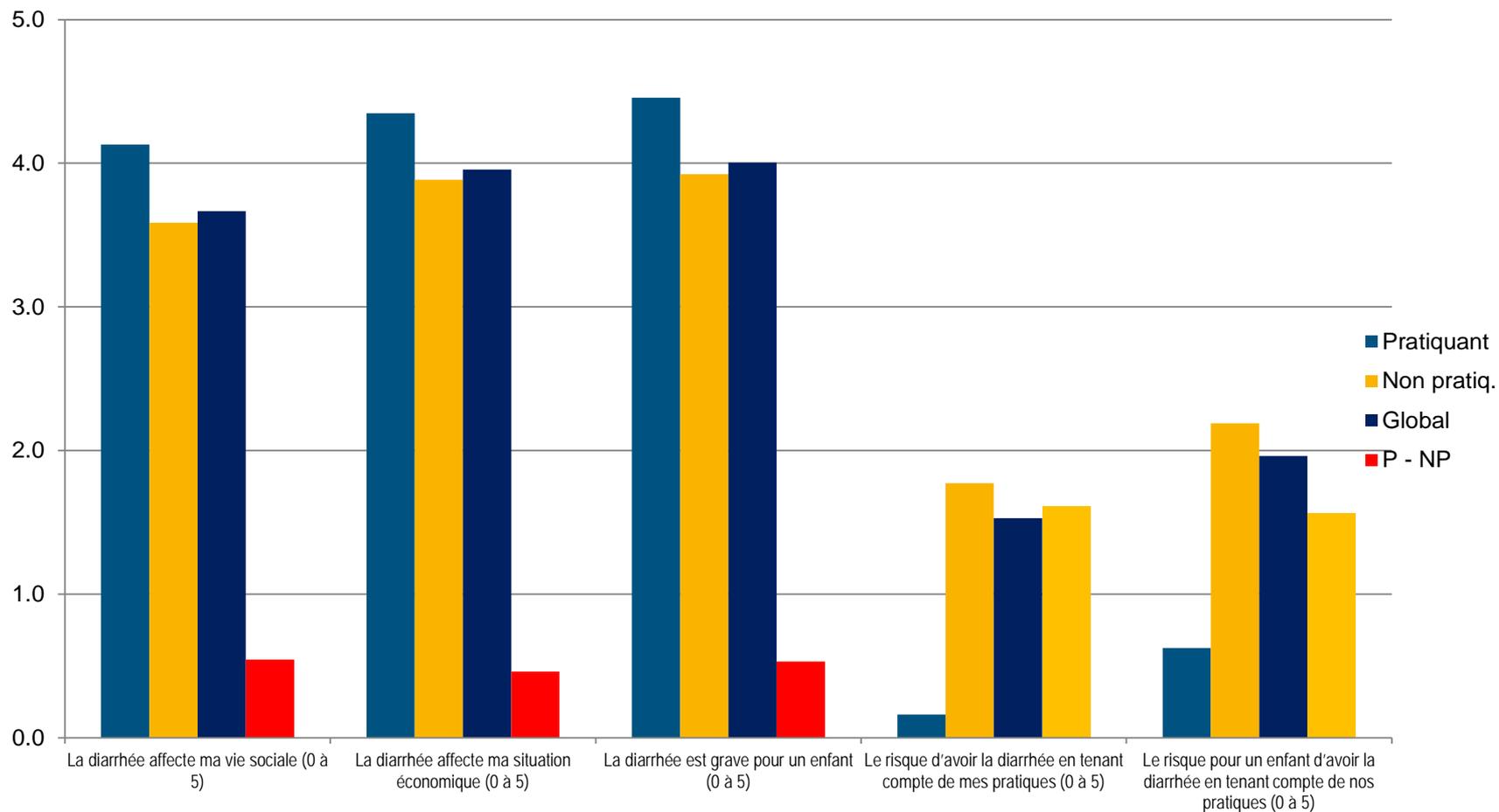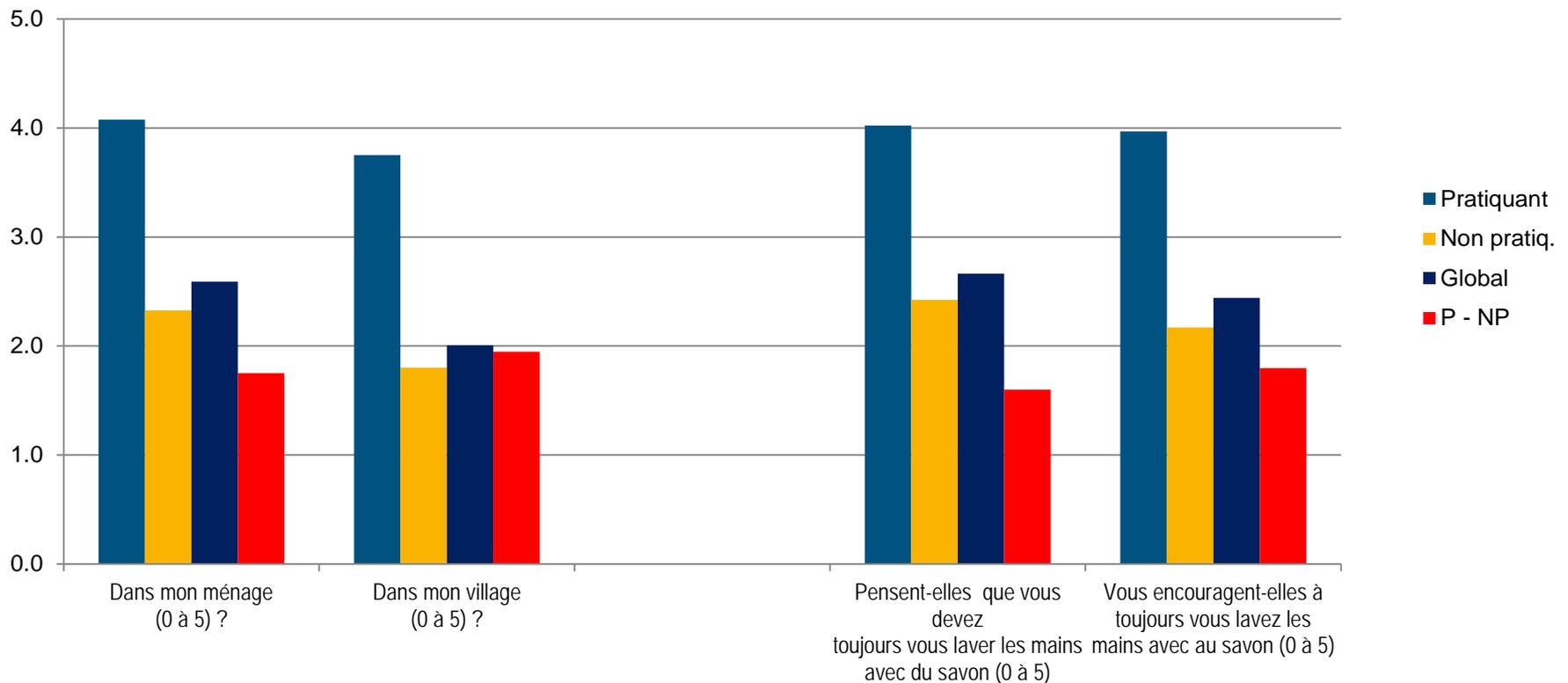
Risk factor

LATRINE USE
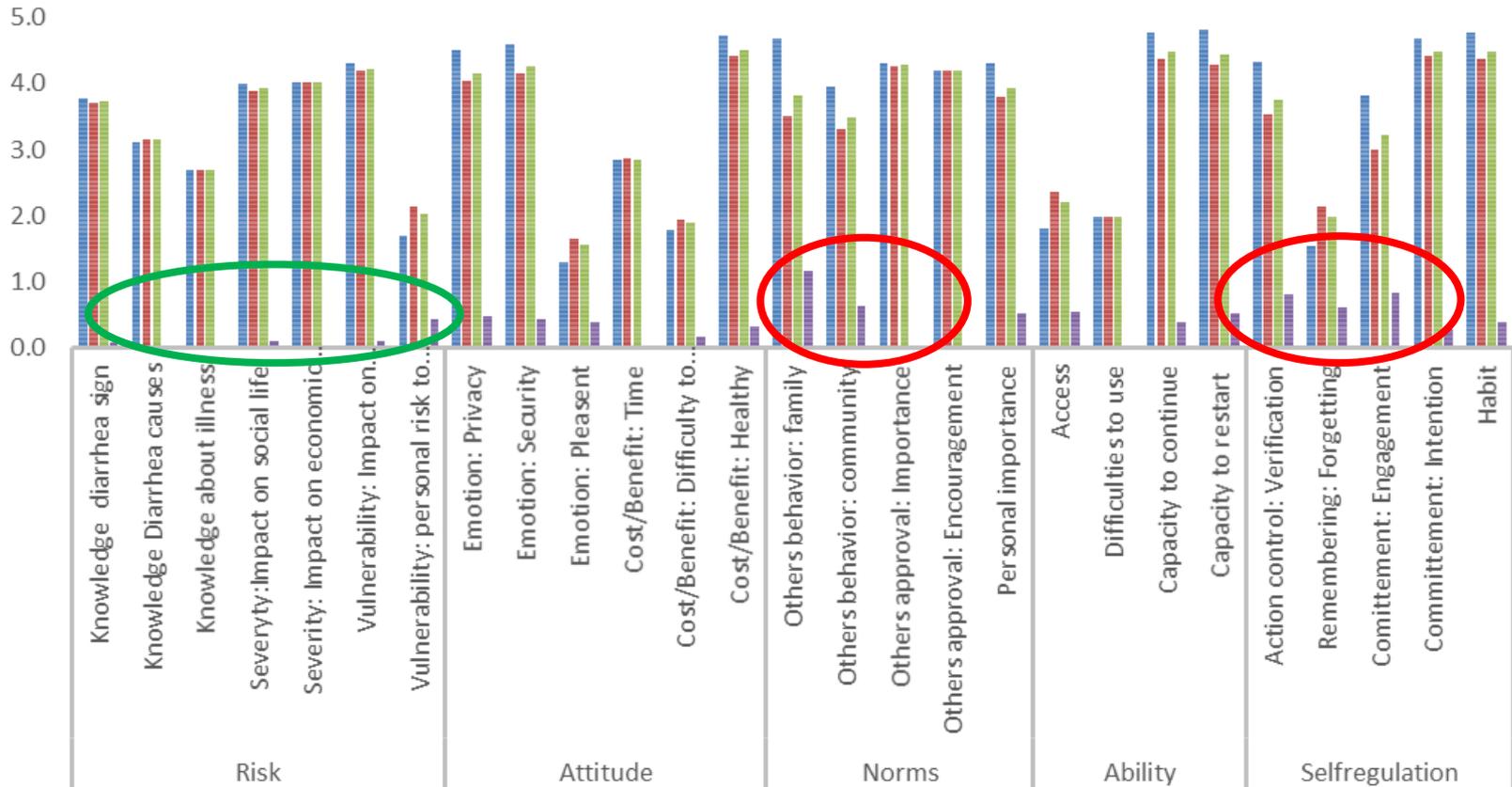
Conclusions from the analysis in Mozambique:

- **Risk factor**: There is no big difference between doers and non-doers
  → **no action needed**

- **Norm and self-regulation factors**: There are some big differences between the "Others' behavior", Action control, Remembering and Engagement factors
  → **These are the factors to target**

- **Condition of latrine:** Differs between doers and non-doers → this might have an influence on the use

Next steps:

- Use the Behavior Change Technique list to define a possible intervention for the identificated factors.

- Choose the communication channels

- Describe the interventions precisely

Develop and design behavior change strategies

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Example for latrine use in Mozambique		
Today's situation	Tomorrow's situation	How we can achieve it
What non-doers think about the behavior	What we want the target individuals to think and feel about the behavior tomorrow:	How we will achieve this (BCT)
Risk factor: There is no significant difference between doers and non doers	No change required	No intervention required
Attitude factors **It is not safe and there is not enough privacy to use a latrine.**	I feel safe using a latrine. I have privacy when using my latrine.	BCT 8: Decribe positive feeling when using latrine
Norm factors: **Not many of my family use the latrine.** **Not many of the community use the latrine.**	Most of my family members use the latrine. Most of the community uses the latrine.	BCT 9: Inform about other's behavior BCT 10: Prompt public commitment
Capacity factor: **It is difficult to access the latrine.**	It is easy to access the latrine.	BCT 15: Provide instruction BCT 20: facilitate resources BCT 21: Organize social support
Self-regulation factors: **I do not check if the latrine is clean.** **I do forget to use the latrine.** **I am not committed/motivated to use the latrine.**	I check the latrine's condition. I always remember to use the latrine. I am committed to maintaining and using a latrine.	BCT 36 Agree a behavioral contract BCT 10 Prompt public commitment

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Information behavior change techniques (BCTs) ==> Risk Factors

Presenting facts / knowledge transfer: communicate circumstances and possibilities of contracting a disease (e.g. verbal presentation, pictures, movies).

➔ <u>F-Diagram</u> / <u>Information intervention</u> / Material

Personal risk information: individualised messages focusing on cumulative risk effects and presenting individual examples / to request people to assess their own susceptibility

Showing scenarios: presenting situations in the person's everyday life where she or he is at risk of contracting the disease

➔ <u>Risk info vulnerability</u> / Material

Fear arousal: use threat-inducing arguments by stressing the severity of contracting a disease (graphic illustration of pain or distress, bodily disabilities or decay, and even death)

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Persuasive BCTs ==> Attitudinal factors

Persuasive arguments*:* use causal explanations; explain usefulness; present novel and important information with a high positive expectancy value

➔ <u>Persuasion costs</u> / <u>Cuba persuasion</u>

Persuasive peripheral cues*:* competence, sympathy, credibility, fame, publicity of the source; length and number of arguments in the message

Talking to others*:* self-persuasion by generating and reminding oneself of arguments supporting the new behavior.

Affective persuasion*:* presenting the performance of a healthy behavior as pleasant or joyful; or provoking aversion towards an unhealthy behavior.

Norm factors

Highlighting norms: pointing out a desired behavior or reducing "social pressure" for an unfavourable behavior by referring to a favourable injunctive norm.

A message that an undesired behavior is regrettably frequent is counterproductive! Injunctive normative messages about a strongly disapproved-of behavior are effective.

Informing people about others' approval/ disapproval: say that important people (e.g. traditional leaders) support the desired behavior or disapprove of the unhealthy behavior

Public commitment: encourage people to make a public commitment to a favourable behavior

Anticipated regret: pre-empt the concerns and regret people would feel if they perform undesired behaviors which are not consistent with their personal norms of healthy living.

Setting up infrastructure: (help with) providing the necessary infrastructure (e.g. vessels for water collection, filters for filtering water, etc.) is a precondition for performing the behavior.

➔ Cuba infrastructure / Tippy Tap

Guided practice: skill demonstration, instruction about the desired behavior, enactment with feedback about the correctness of the performance.

Facilitating resources: direct financial help or the person has to make some effort to obtain the resources.

Provide instruction: conveying know-how in order to improve a person's knowledge about how to perform the behavior.

Ability factors

Modelling*:* persons who perform the behavior and are perceived as competent and successful serve as behavioral models.

Reattribution of past successes and failures*:* self-efficacy is fostered if failures are not attributed to the particular person but to adverse circumstances; by contrast, successes should be attributed to the particular person.

Coping with barriers*:* identifying barriers and planning solutions for behavior change
➜ *Coping with barriers* / *Maintenance Plan*

Coping with relapse*:* identifying risky situations where people might fall back into the old behavior; plan coping responses and practice these responses until they become automatic.

Self-regulation factors

Daily routine planning: prompt a person to plan exactly when to perform the desired behavior in the course of her daily life; discuss with the person when and where the new behavior can be integrated into their daily routine.

Outcome feedback: feedback is given on the effects (e.g. health effects) produced by the desired behavior, or else the person checks these effects herself (self-feedback).

Contingency management: prompt the person to develop her own incentive system so that she is rewarded each time she performs the desired behavior.

Stimulus control: remove reminders or cues for old behaviors, and add cues or reminders for the new behavior

Daily circle
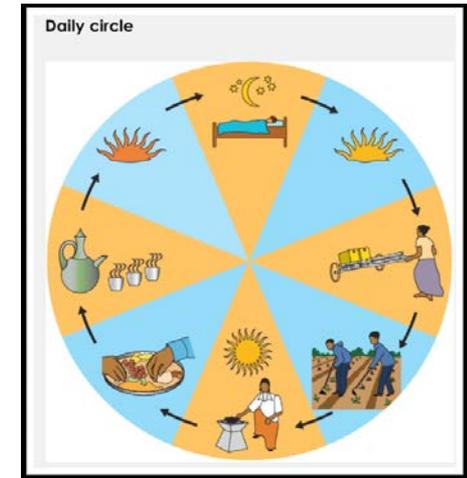
Forming implementation intentions: stimulate the person to express when, where and how to intend to achieve his or her goals.

➔ <u>Implementation intention</u>

Prompts: memory aids which trigger the right behavior in the right situation and help the person to remember the new behavior

➔ <u>Prompt</u> / Material
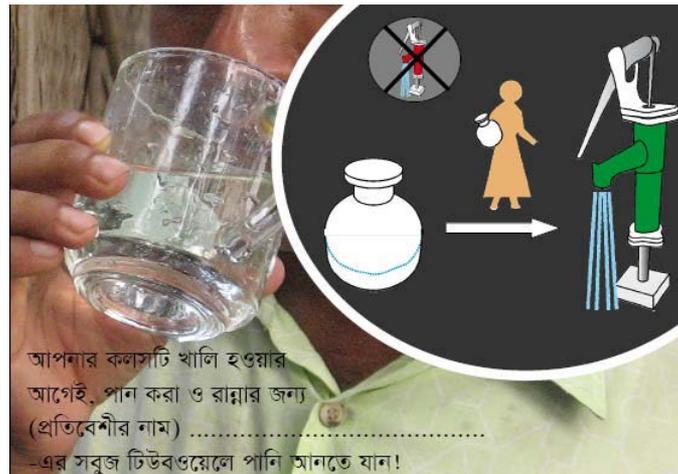
New intervention in Mali

	Behavior factor	**Intervention BCT**	**Intervention with communication channels**
Norm factor	Others' behavior	Inform about behavior of others	Theater dealing with norm issues; pictures of handwashing families
	Others' approval/dis approval	Inform about other's approval	Commitment of the head of the family with picture
Self-regulation factor	Forgetting	Prompt instruction forTippy Tap	Prompt with village chief in the household

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Swiss Intercooperation

Phase

1. Identify potential behavioral factors

↓

2. Measure and define behavioral factors

↓

3. Select behavior change techniques (BCTs) and design behavior change strategies

↓

4. Implement and evaluate behavior change strategies

4. Implement and evaluate behavior change strategies

1. Implement different strategies
2. Develop final questionnaire and conduct evaluation survey
3. Define most effective strategy and adapt interventions

Implement the strategies

Evaluation ODF

Min. 6 months →

Evaluation post-ODF

2-3 months →

2nd Evaluation post-ODF

- Signature of families' **pledges** to maintain the latrine

- **Visual** recognition of the families
- Promotion slab by the private sector

- **Visual** recognition of the families
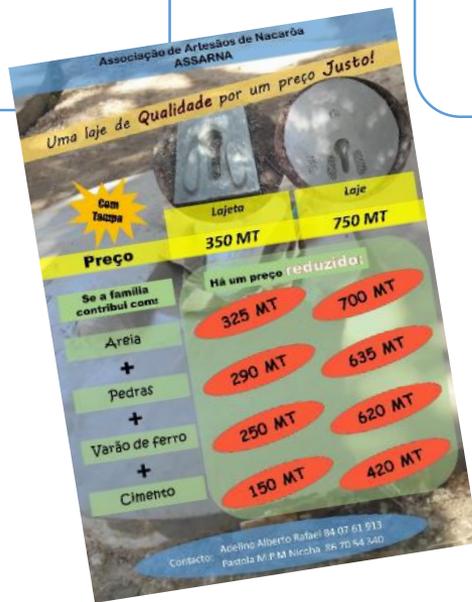
"This recognition (banner) is a big step forward for me. I will not agree to give it back again."
Filomena Rafaele, Namige village, Mozambique

"I would not only like to have a well-maintained latrine but also recognition (banner) showing I'm at the same level as the other families."
Theresa Antonio, Filomena's neighbor

Evaluation of the intervention in Mali

- Where was the intervention received by the target person?
- Which intervention was most popular?
- Did the targeted factor change?
- What aspect of our interventions do we need to adapt?

Annex 4: List of Behavior Change Techniques

Behavioral factors	Behavior change technique	Example, links
Risk factors: a person's understanding and awareness of the health risk		
Health knowledge	1. **Present facts**: present information about the circumstances and possibilities of contracting a disease and about the relationship between a behavior and the disease.	• Phast, F-Diagram • <u>Download Phast Guide</u>
	2. **Present scenarios**: present situations in the everyday life of the participant, showing how a certain behavior leads to the disease.	• Play showing a risk situation of a child drinking unsafe water and then the child gets sick.
Vulnerability	3. **Inform about and assess personal risk**: present qualitative and quantitative assessments individually for each person so that the person realizes that his/her health is at risk.	• Do a household water quality test showing the personal risk at household level, e.g. with H_2S test. Then insist on asking if they personally feel at risk.
Severity	4. **Arouse fear**: use threatening information that stresses the severity of contracting a disease.	• Show picture of people/children facing diarrhea.
Attitude factors: a person's positive or negative stance towards a behavior.		
Beliefs about costs and benefits	5. **Inform about costs and benefits and assess them:** provide information about costs and benefits of a behavior, and conduct a cost-benefit analysis.	• Calculate cost of soap for a family to wash their hands and compare it with cost of medical treatment. • Show non-monetary benefits such as higher esteem shown to those who have a latrine.

	6. **Use subsequent reward:** reward the person each time she/he performs the desired behavior or has achieved the behavioral outcome.	• Reward households that perform well at a community meeting. • Introduce loyalty bonus for people who always buy safe water at the well.
	7. **Prompt people to talk to others:** invite participants to talk to others about the healthy behavior in question.	• Testimonies during community meeting when people share why they do the behavior, why others should also do it and what its advantages are. • Peer to Peer exchange
Feelings	8. **Describe feelings about performing and about consequences of the behavior:** present the performance and the consequences of a healthy behavior as pleasant and joyful, and its omission or an unhealthy behavior as unpleasant and repulsive.	• A movie or play showing the use of the new latrine as safe, convenient and modern.
Norm factors: perceived social pressure towards a behavior.		
Others' behavior	9. **Inform people about others' behavior:** point out that a desired behavior has already been adopted by other individuals.	• Stickers or posters are given to households performing the behavior to make the behavior visible. • A list of households that pay for safe water is published in the village center. • Give instructions to build a handwashing station in the courtyard in a visible spot.
	10. **Prompt public commitment:** let people commit to a favorable behavior and make their commitment public, thereby showing others that there are people performing the behavior.	• During a community meeting people sign up and pledge that they will maintain the latrine. • Personal or community certificate, e.g. CLTS board at the entrance of the village.
Others' (dis)approval	11. **Inform about others' approval / disapproval:** point out that other important people support the desired behavior or disapprove of the unhealthy behavior.	• The village chief communicates the importance of using the latrine and his pride at being an ODF village and having a healthy community.
Personal importance	12. **Prompt anticipated regret:** bring people to imagine the concerns and regret they would feel after performing undesired behaviors, which are not consistent with their personal norms of living healthily and caring for their children.	• A play shows a man who doesn't use a latrine and defecates in the field because he doesn't have time. After the neighbors are disgusted and blame him and his family. The man regrets not having used the latrine.

	13. **Provide a positive group identity:** describe people already engaged in the behavior in an attractive way, for example as modern and up-to-date so as to increase the attractiveness of the behavior itself.	• At a meeting the promoters emphasize that people who wash their hands show that they care for their families and are well respected by the community. Focus on positive trait of people washing their hands.
	14. **Prompt people to become role models:** ask participants to set a good example (e.g. for children) by engaging in the desired behavior so as to influence other people's behaviors by their own.	• Photo of the family head/village chief performing the behavior.
Ability factors: a person's confidence in her or his ability to practice a behavior.		
How-to-do knowledge	15. **Provide instruction:** convey know-how to improve a people's knowledge about how to perform the particular behavior.	• Demonstration of how to use a filter • A poster showing the different steps of handwashing with a practical demonstration
Confidence in performance	16. **Provide infrastructure:** prompt and support the community or households to set up infrastructure.	• Instructions for how to build a tippy tap for handwashing • Instructions for how to build a latrine
	17. **Demonstrate and model behavior:** demonstrate a behavior and prompt participants to pay attention to other people performing the behavior and its consequences for their everyday lives.	• A picture or a film of the household chief or a popular role model washing their hands. This shows the model behavior and sends out a message that "I can do it too".
	18. **Prompt guided practice:** train participants in behavior enactment by giving instructions, demonstrating the behavior, letting them practice and providing feedback about the correctness of the performance.	• Doing the handwashing together with the promoter at household level. Giving feedback to strengthen the person's confidence.
	19. **Prompt behavioral practice:** prompt participants to practice the new behavior in their daily lives.	• At a community meeting show how people can maintain and clean a latrine and then give homework to practice over the next week.
	20. **Facilitate resources:** provide financial help. It may be unconditional or conditional, meaning the recipient might have to contribute (e.g. manpower) to get the resources.	• If their latrine is well maintained, households get a price reduction voucher for a slab to improve it.

	21. **Organize social support:** prompt participants to seek practical or emotional support from neighbors, friends, acquaintances or relatives and/or form social support groups.	• Identify possibilities at a community meeting to help people to remind each other to perform the behavior, e.g. school children reminding their parents to wash their hands and neighbors to maintain their toilets. • Find common solution to ease the behavior e.g. coordinate among household to go to the market to buy soap for all
	22. **Use arguments to bolster self-confidence:** convince community participants that they will be able to perform and/or maintain the desired behavior.	• Find positive encouraging messages during community meetings or household visits, e.g. you have already built your latrine by yourself and I know you are able to carry on during the rainy season too. The neighboring village has succeeded, and so can you. • You already wash your hands after using the toilet. You will be able to wash them at other critical times. You are a good parent and take care of your children. Yes, you can!
	23. **Set graded tasks/goals:** prompt participants to learn difficult behaviors by gradually integrating several tasks.	• Start with handwashing with water and ashes before eating and after latrine use, and then move step by step, introducing additional critical points and adding soap. See Paper: Small doable action.pdf
Confidence in continuation	24. **Reattribute past successes and failures:** prompt participants to attribute failures to a temporary lack of skill or adverse circumstances instead of to any deficiency, but successes to personal achievement.	• At a group meeting, exchange experiences of difficult situations using a latrine, but stress that the participants managed to do it. Underline the good behavior and the person's commitment.
Confidence in recovering	25. **Prompt coping with relapse**: Tell participants that lapses are normal when adopting a new behavior and, though discouraging, not a sign of failure.	• Make the link to previous personal experiences of learning something new, e.g. riding a bicycle. At the beginning you sometimes fall of, but then you further train, it is a learning process. • Identify some possible hints in case of relapse to restart the behavior, e.g. who could remind you (the neighbor, the children, your wife, etc.) or put the soap in a strategic place to remember to wash your hands.

Self-regulation factors: a person's attempts to plan and self-monitor a behavior and to manage conflicting goals and distracting cues.		
Action planning	26. **Prompt specific planning:** stimulate participants not only to formulate what she/he will do, but also when, where, and how she/he intends to achieve his or her goals.	• Specify in your daily routine when you will perform the behavior e.g. cleaning the latrine after you have collected water and cooked, to make sure that there is enough water and ashes. A poster can be used as a visual reminder.
Action control	27. **Prompt (self)-monitoring of behavior:** invite participants to (self-)monitor their behavior by recording it (e.g. frequency).	• Use a device to record how often they have cleaned the toilet this week. This can be done using a special sheet or sticks, etc. hung in a visible place.
	28. **Provide feedback on performance:** give participants a feedback on their behavior performance.	• The names of the persons who are paying for the water are published with congratulations by the well. • The person uses colour, smilies or any other sign to visualize the performance on a sheet of the new behavior on a weekly or monthly basis
	29. **Highlight discrepancy between set goal and actual behavior:** invite the participant to regularly evaluate actual behavior performance (e.g. correctness, frequency and duration) compared to the set behavioral goal	• The household evaluates the condition of the latrine in regard to the commonly defined ideal situation every month with the promoter, and they discuss any discrepancies.
Barrier planning	30. **Prompt coping with barriers:** ask participants to identify barriers to behavior change and plan solutions to those barriers.	• Discuss what might be the barrier to handwashing in the household or at a community meeting,. As a second step, discuss solutions to overcome the barrier (a kind of Plan B).
	31. **Restructure the social and physical environment:** prompt participants to remove social and physical bolsters to the undesirable behavior so as to interrupt habitual procedures.	• Identify what causes your family to drink unsafe water and then remove the bolster (e.g. store the unsafe water in a less accessible place and with no cup for your family members, unlike the safe drinking water)
	32. **Prompt people to resist social pressure:** ask participants to anticipate and prepare for negative comments from others or for pressure to perform the undesirable behavior.	• Develop in a group meeting arguments in case of criticism of the new behavior from others e.g. to have an answer ready for statements like, "You're spending too much money on soap! You don't drink my water from the unsafe source anymore. You're arrogant! etc.

	33. **Provide negotiation skills:** prompt participants to reflect on others' perspectives to find compromises that benefit both sides and arguments that bolster them.	• Discuss in a group meeting why the family chief might refuse to build a latrine and collect convincing arguments to negotiate with him (e.g. security, health, etc.).
Remembering	34. **Use memory aids and environmental prompts:** prompt the participant to install memory aids or to exploit environmental cues so as to help to remember the new behavior and to trigger it in the right situation.	• Hang up a poster at the place where the behavior has to take place to remember it, e.g. handwashing by the latrine entrance. • Mark a vessel for drinking water with a particular color so that you remember that this has to be filled at the safe water source.
Commitment	35. **Prompt goal setting:** invite participants to formulate a behavioral goal or intention.	• Define in public a new goal, e.g. how much water they will collect at the safe water source
	36. **Prompt to agree on a behavioral contract:** invite participants to agree to a behavioral contract to strengthen their commitment to a set goal.	• At a community meeting participants publicly commit to maintaining their latrine and sign up on a list (this can also be done at household level).

Based on the tool 3.1.1. of the Guidelines : Systematic Behaviour Change in Water Sanitation and Hygiene of Eawag

Annex 5: Ranas question for exercise

Ranas Question: Water treatment: Chlorine

1. **Considering your practices of drinking water treatment, how you do it normally, how high do you feel is the risk that you contract diarrhea?**

   1= No risk at all; 2 = Little risk; 3 = Medium risk; 4 = High risk; 5 = Extremely high risk

2. **How effortful do you think is it to always treat your drinking water?**

   1= Not effortful at all; 2 = A little effortful; 3 = Medium effortful; 4 = Very effortful; 5 = Extremely effortful

3. **How much do you like always treating your drinking water?**

   1= I don't like at all; 2 = I like a little; 3 = I medium like; 4 = I like it a lot; 5 = I extremely like it

4. **Imagine you contracted diarrhea, how severe would be the impact on your daily life?**

   1= Not severe at all; 2 = Little severe; 3 = Medium severe; 4 = Very severe; 5 = Extremely severe

5. **How often do you treat your drinking water?**

   1= (Almost) never (0%); 2 = Seldom (25%); 3 = Sometimes (50%); 4 = Often (75%); 5 = (Almost) always (100%)

6. **How much do you like the taste of treated water?**

   1= I don't like at all; 2 = I like a little; 3 = I medium like; 4 = I like it a lot; 5 = I extremely like it

7. **What are the most important ways how you can get diarrhea?**

8. **How strongly do you feel an obligation to yourself to always treat your drinking water?**

   1 = No obligation at all; 2 = Weak obligation; 3 = Medium obligation; 4 = Strong obligation; 5 = Extreme obligation

9. **How is drinking water correctly treated?**

10. **How strongly do you intend to always treat your drinking water?**

    1= Not at all strongly; 2 = A little strongly; 3 = Medium strongly; 4 = Very strongly; 5 = Extremely strongly

11. **Considering your practices of drinking water treatment, how you do it normally, how high do you feel is the risk that you contract diarrhea?**

    1= No risk at all; 2 = Little risk; 3 = Medium risk; 4 = High risk; 5 = Extremely high risk

12. **Imagine that you are in a hurry, for example, because your child is crying: How confident are you that you can always treat your drinking water before drinking?**

    1 = Not at all confident; 2 = A little confident; 3 = Medium confident; 4 = Very confident; 5 = Extremely confident

13. **People who are important to you, how much do they think you should always treat your drinking water?**

    1 = Not at all; 2 = A little; 3 = Medium; 4 = A lot; 5 = Extremely

14. **Imagine you have stopped treating your drinking water for several days, for example because there was no chlorine. How confident are you to start always treating your drinking water again?**

    1 = Not at all confident; 2 = A little confident; 3 = Medium confident; 4 = Very confident; 5 = Extremely confident

15. **How important is it for you to always treat your drinking water?**

    1 = Not important at all; 2 = A little important; 3 = Medium important; 4 = Very important; 5 = Extremely important

16. **Do you have a plan how you can always treat your drinking water even if there is no chlorine at home?**
    No answer options are suggested. Answers will be classified into "correct plan" (e.g. I'll boil the water) and "wrong/ no plan" (e.g. I'll drink untreated water).

17. **How many people of your community always treat their drinking water?**

    1 = (Almost) nobody; 2 = Some of them; 3 = Half of them; 4 = Most of them; 5 = (Almost) all of them

18. **How often does it happen that you forget to treat your drinking water before drinking?**

    1 = (Almost) never (0%); 2 = Seldom (25%); 3 = Sometimes (50%); 4 = Often (75%); 5 = (Almost) always (100%)

19. **How much do you feel that you treat your drinking water automatically?**

    1 = Not at all automatically; 2 = A little automatically; 3 = Medium automatically; 4 = Very automatically; 5 = Extremely automatically

20. **How sure are you that you can always treat your drinking water before drinking?**

    1 = Not at all sure; 2 = A little sure; 3 = Medium sure; 4 = Very sure; 5 = Extremely sure

Solution for the classification of the questions

Factor	Item example	Response scale
Vulnerability	Considering your practices of drinking water treatment, how you do it normally, how high do you feel is the risk that you contract diarrhea?	1 = No risk at all; 2 = Little risk; 3 = Medium risk; 4 = High risk; 5 = Extremely high risk
Severity	Imagine you contracted diarrhea. How severe would be the impact on your daily life?	1 = Not severe at all; 2 = Little severe; 3 = Medium severe; 4 = Very severe; 5 = Extremely severe
Factual knowledge	What are the most common ways of getting diarrhea?	No answer options are suggested. Each of the most important ways of contamination correctly mentioned is recorded.
Instrumental beliefs (effort)	How much effort do you think it takes to always treat your drinking water?	1 = Not effortful at all; 2 = A little effortful; 3 = Medium effortful; 4 = Very effortful; 5 = Extremely effortful
Instrumental beliefs (time)	How time-consuming do you think it is to always treat your drinking water?	1 = Not time-consuming at all; 2 = A little time-consuming; 3 = Medium time-consuming; 4 = Extremely time-consuming
Instrumental Beliefs (health)	How certain are you that always treating your drinking water prevents you from getting diarrhea?	1 = Not certain at all; 2 = A little certain; 3 = Medium certain; 4 = Very certain; 5 = Extremely certain
Affective beliefs (behavior)	How much do you like always having to treat your drinking water?	1 = I don't like at all; 2 = I like a little; 3 = I medium like; 4 = I like it a lot; 5 = I extremely like it
Affective beliefs (taste)	How much do you like the taste of treated water?	1 = I don't like at all; 2 = I like a little; 3 = I medium like; 4 = I like it a lot; 5 = I extremely like it
Personal norm	How strong is the obligation you feel to yourself to always treat your drinking water?	1 = No obligation at all; 2 = Weak obligation; 3 = Medium obligation; 4 = Strong obligation; 5 = Extreme obligation
Descriptive norm	How many people in your community always treat their drinking water?	1 = (Almost) nobody; 2 = Some of them; 3 = Half of them; 4 = Most of them; 5 = (Almost) all of them
Injunctive norm	How much do people who are important to you think you should always treat your drinking water?	1 = Not at all; 2 = A little; 3 = Medium; 4 = A lot; 5 = Extremely
Action knowledge	How is drinking water correctly treated?	No suggested answer options. Each critical step for treating water correctly mentioned is recorded.
Self-efficacy	How sure are you that you can always treat your drinking water before drinking it?	1 = Not at all sure; 2 = A little sure; 3 = Medium sure; 4 = Very sure; 5 = Extremely sure
Maintenance self-efficacy	Imagine that you are in a hurry, for example because your child is crying. How confident are you that you will always treat your drinking water before drinking it?	1 = Not at all confident; 2 = A little confident; 3 = Medium confident; 4 = Very confident; 5 = Extremely confident

Recovery self-efficacy	Imagine you have stopped treating your drinking water for several days, for example because there was no chlorine. How confident are you that you will start always treating your drinking water again?	1 = Not at all confident; 2 = A little confident; 3 = Medium confident; 4 = Very confident; 5 = Extremely confident
Action control (planning)	How much attention do you pay to always treating your drinking water before drinking?	1 = No attention at all; 2 = A little attention; 3 = Medium attention; 4 = Much attention; 5 = Extreme attention
Coping planning	Do you have a plan how you might continue to treat your drinking water even if you have no chlorine at home?	No answer options are suggested. Answers will be classified into "correct plan" (e.g. I'll boil the water) and "wrong/ no plan" (e.g. I'll drink untreated water).
Remembering/ forgetting	How often do you forget to treat your drinking water before drinking?	1 = (Almost) never (0%); 2 = Seldom (25%); 3 = Sometimes (50%); 4 = Often (75%); 5 = (Almost) always (100%)
Commitment	How important is it for you to always treat your drinking water?	1 = Not important at all; 2 = A little important; 3 = Medium important; 4 = Very important; 5 = Extremely important
Intention	How strongly do you intend to always treat your drinking water?	1 = Not at all strongly; 2 = A little strongly; 3 = Medium strongly; 4 = Very strongly; 5 = Extremely strongly
Behavior (frequency)	How often do you treat your drinking water?	1 = (Almost) never (0%); 2 = Seldom (25%); 3 = Sometimes (50%); 4 = Often (75%); 5 = (Almost) always (100%)
Habit (automaticity)	How automatically do you feel that you treat your drinking water?	1 = Not at all automatically; 2 = A little automatically; 3 = Medium automatically; 4 = Very automatically; 5 = Extremely automatically

Annex 6: Structure of a questionnaire

Types of the questions:

Open questions

How do you make sure that you always have enough water and soap at home to wash your hands?
…………………………………………

These are open-ended questions, and the respondent's answer is written down.

+ These types of question make it possible to record a full spectrum of answers.

- These types of question are more difficult to analyze and have to be coded.

Open questions with given answer categories (multiple response)

In general, why do you wash your hands with *soap/ash/sand* and water?

[1] ☐ Against bacteria   [2] ☐ To protect our children/baby

[3] ☐ Against dirt/smell   [4] ☐ Compliance/obligation

[5] ☐ Against sickness   [6] ☐ To protect health

[7] ☐ Because of hygiene   [8] ☐ Group behavior

[9] ☐ Habit [-88] ☐ Don't know

These are open-ended questions (not mentioning the categories), but the possible answers are already categorized.

+ Although they are open-ended, these types of question are easier to analyze afterwards.

- Some of the answers might not be found in the categories. A category "others" can be added, which will need to be coded afterwards.

Closed questions

How much do you like washing your hands with *soap/ash/sand?*

[1] ☐ Don't like it   [2] ☐ Like it a little

[3] ☐ Like it [4] ☐ Quite like it

[5] ☐ Like it a lot

The answers to the question are mentioned to the interviewer, and he/she must decide which answer fits best.

+ These questions are easy to analyze.

- Depending on the answer categories, it is not always easy for the respondent to choose.

Structure of the questionnaire:

The questionnaire is structured according to previous experience, but the order can be adapted to the specific needs. The number of questions indicated per section is seen as a maximum and can be reduced.

General recommendations

→ The answer categories must be coded with numbers to simplify data entry and analysis. "Other" is usually given the code 99, and don't know 88.

→ As far as possible, choose closed questions and keep open questions to a minimum to simplify and reduce the data analysis workload.

→ If you use a mobile-based data collection tool (e.g. akvo), entering the answers to open questions is complicated. It make sense to work with open questions with given answer categories.

→ It is helpful to indicate for each question in the questionnaire if it is an open or closed question to guide the interviewer.

General information (up to 20 questions)

- Municipality
- Date
- Village
- Quarter/Zone? Applicable?
- First name, surname, age, marital status, education, ethnicity, religion
- Number of persons in a household
- Profession, main activities

Comment:

- Here you are free to add questions relevant to the project or which you will need for your monitoring purposes.
- If you want to evaluate the developed intervention in the future, it will be important that the information collected in this part allows you to identify the person you interviewed so that you can measure the changes at a later date.

Behavior (up to 30 questions depending on the complexity of the behavior)

- These questions are used to distinguish Doers from Non Doers of the defined behavior and to divide the data sample. We also add questions on the intention and the habit of performing a behavior, in case there are almost no Doers in the study zone

- Characteristic of behavior questions:
  - They are directly related to each element of the behavior.

- o They are personal and about the person's own behavior.
  - o They are specific and not theoretical (if this, then that).
  - o They are often time-bounded (related to a specific time period or frequency).
  - o They include an observation or an proxy indicator (e.g. availability of water and soap).

- Questions with "imagine"
  These questions help to get the information indirectly, following the person as he/she performs the behavior in a typical situation, e.g.

> *(open) Imagine you come back from the market in your village and your neighbor invites you to eat with him. What do you do from the moment you are there until you start to eat?*
>
> 0 ☐ HW not mentioned   1 ☐ HW with WATER mentioned   2 ☐ HW with SOAP mentioned

- Questions on identified special issue regarding the behavior
  These questions are used if you have identified any special issues during the contextual analysis that have an impact on the behavior. This can be a special tradition, e.g. the tradition of people washing their hands in the same recipient before eating was identified in Mali, and therefore following question were asked:

> *(closed) Before eating, do you generally wash your hands in the same recipient and only with water?*   1 ☐ *yes*   0 ☐ *No*
>
> *(closed) How important is this tradition to you?*
>
> 1 ☐ *Not important at all*   2 ☐ *A little important*
>
> 3 ☐ *Medium important*   4 ☐ *Very important*
>
> 5 ☐ *Extremely important*

- Approximative measures ("normally", "in which situations", "why")
  These questions are used to obtain more information about how the behavior is performed. It also helps to gather some information about the infrastructure used to perform the behavior and can then be crosschecked with the observation.

(open) What do you normally use to wash you hands?

^{1} ☐ *Only water* ^{2} ☐ *Water and soap* ^{3} ☐ *Ashes* ^{99} ☐ *...*

Which recipient do you normally use to wash your hands?

^{1} ☐ *bucket* ^{2} ☐ *tippy tap* ^{99} ☐ *others...*

(open) In which situation do you wash your hand only with water? Multiple answers

^{0} ☐ *Never use only water* ^{1} ☐ *After defecating*

^{2} ☐ *After cleaning the baby's bottom* ^{3} ☐ *After other contact with feces*

^{4} ☐ *Before feeding a child* ^{5} ☐ *Before preparing food*

^{6} ☐ *Before handling drinking water* ^{7} ☐ *Before eating*

^{99} ☐ *Others...............................*

- Demonstration and observation of the behavior
  These questions and observations help to crosscheck if the self-reported behavior is really performed. Not all behavior can be demonstrated, as it might be too sensitive, so we also have to work with proxi-indicators.

Can you show me how you normally wash your hands?

Observation*:*

How did the person wash her hands?

^{1} ☐ Rinsed on hand with water ^{2} ☐ Rinsed both hands with water

^{3} ☐ Washed one hand with soap ^{4} ☐ Washed both hands with soap

^{5} ☐ Washed both hands with soapy water

Where did the water come from?

^{1} ☐ Bucket ^{2} ☐ Tap ^{99} ☐other..

Which type of soap did she use ?

^{0} ☐ No soap ^{1} ☐ Traditional soap ^{2} ☐ Industrial soap ^{3} ☐ Ashes ^{99} ☐ others...............

How did she dry her hands?

^{1} ☐ With a clean cloth ^{2} ☐ In the air ^{3} ☐ On her clothes ^{99} ☐ Others...........................

- Explicit report ("yesterday", "how often")
  These questions make it possible to get information about the frequency and to what degree the behavior is already a habit.

(Closed) Did you wash your hands with water and soap yesterday?[1] ☐ Yes [0] ☐ No

If yes, how many times? ....

(closed) Before eating, how often do you wash your hands with water and soap?
[1] ☐ *Never*   [2] ☐ *Sometimes*   [3] ☐ *Half the time* [4] ☐ *Often*   [5] ☐ *Always*

- Question about Intention and habit
  We also add questions about intentions and habits of performing a behavior, when there are almost no doers in the study zone.

Intention

(closed) How strongly do you intend to always wash your hands?

[1] ☐ *Not at all strongly*   [2] ☐ *A little strongly*   [3] ☐ *Medium strongly*   [4] ☐ *Very strongly*
[5] ☐ *Extremely strongly*

Habit
(closed) How automatically do you feel that you wash your hands?
[1] ☐ *Not at all*   [2] ☐ *A little* [3] ☐ *Medium*   [4] ☐ *Very*   [5] ☐ *Extremely*

Comment:
- This part of the questionnaire is very important for gathering information that distinguishes between doers and non-doers of the behavior by forming an indicator.
- There should be a good mix of questions about self-reported behavior approximate measures and observation.
- It is useful to form a possible indicator for doers and non-doers to see if you have defined enough questions to divide doers from non-doers (see the example below).
- If you are not sure that the behavior is already performed in your sample, you can also add a question about people's intention to perform a behavior and use it as a criterion to divide the group into doers and non-doers.

Example behavior questions	Doers	Score Doers	Non-doers	Score Non-doers
4 questions with "Imagine different hand washing situations"	Handwashing with soap is mentioned 4 times	1	Handwashing with soap is mentioned 0-3 times	0
How often do you wash your hands with soap?	Answer category 5 always	1	Answer category 1(never), 2 (seldom), 3 (sometimes) and 4 (often)	0
How many times did you wash your hands yesterday?	Define a minimum number, e.g. 5 times per day	1	Less than 5	0
Observation: Water and soap available	Yes	1	no	0
Total score		**4**		**0**

→ In this example we use several measures to divide the sample into doers and non-doers. Only if a participant is **above the cut-off point for all measures is he/she a doer**. In all other cases, the person is classified as a non-doer.

Attitude factors (up to 10 questions)
- Questions on feelings/emotions
  This is all about positive and negative feelings regarding the behavior, such as the taste, odor, shame, disgust, convenience, security, intimacy, comfort, modernity etc.

(closed) How much do you like or dislike washing your hands with soap?

[1] ☐ *Dislike it a lot* [2] ☐ *Dislike it* [3] ☐ *Quite dislike it*

[4] ☐ *Like it* [5] ☐ *Like it a lot*

(closed) How disgusting h is it to clean a latrine?

[1] ☐ *Extremely disgusting* [2] ☐ *Very disgusting* [3] ☐ *Quite disgusting*

[4] ☐ *A little disgusting* [5] ☐ *Not at all disgusting*

- Questions regarding beliefs about costs and benefits

Here it is important to note that costs and benefits refer not only to money, but also to time, esteem, status symbol, power, effort, etc.

(closed) How costly do you think it is to treat your water with chlorine?

^{1} ☐ *Not costly* ^{2} ☐ *A little costly* ^{3} ☐ *Quite costly* ^{4} ☐ *Costly* ^{5} ☐ *Very costly*

(closed) How time-consuming is it to treat your water with chlorine?
^{1} ☐ *Not time-consuming* ^{2} ☐ *A little time-consuming* ^{3} ☐ *Quite time consuming* ^{4} ☐ *Time-consuming* ^{5} ☐ *Very time-consuming*

Comment:
- Make sure to have a good mix of the two categories as well as positive and negative aspects.

Norm factors (up to 8 questions)

- Others' behavior
  This question examines how the person perceives behavior within their community or social environment (family, peer group).

(closed) How many people in your community separate their waste?

^{1} ☐ *Nobody (0%)* ^{2} ☐ *Less than half (25%)* ^{3} ☐ *Half (50%)*
^{4} ☐ *More than half (75%)* ^{5} ☐ *Everybody (100%)*

(closed) How many people in your family separate their waste?

^{1} ☐ *Nobody (0%)* ^{2} ☐ *Less than half (25%)* ^{3} ☐ *Half (50%)*
^{4} ☐ *More than half (75%)* ^{5} ☐ *Everybody (100%)*

- Others' (dis)approval
  This question examines social pressure through approval, encouragement, motivation or importance, etc, also in the negative attitudes of important people. These people may be very different depending on the context e.g. parents, teacher, village chief, influential groups etc.

(closed) How much do people who are important to you encourage you, or not, to separate your waste?
^{1} ☐ *They encourage it a lot* ^{2} ☐ *They encourage it* ☐ *They either encourage it or not*
^{4} ☐ *They do not encourage it* ^{5} ☐ *They do not encourage it at all*

- Personal importance
  This factor is rather difficult and can be left out if there is no special evidence for the behavior. It may be considered in the self-regulation part under commitment.

(closed) How strongly do you feel personally obliged to chlorinate all your drinking water?

[1] ☐ *Not obliged*   [2] ☐ *A little obliged* [3] ☐ *Quite obliged*

[4] ☐ *Obliged* [5] ☐ *Very obliged*

Comment:
- These questions are quite important, because we often forget to ask about the influence of norms and social pressure.
- Here, we want to find out the person's perception and not how things are in reality.

Ability factors (up to 12 questions)

- How-to-do knowledge (handwashing steps, critical situations)
  The emphasis here is on how-to-do and whether there is enough knowledge around to perform the behavior.

(open) What are the critical situations for handwashing with soap? Multiple answers

[1] ☐ *After defecating*   [2] ☐ *After cleaning a child's bottom*

[3] ☐ *After contact with feces*   [4] ☐ *Before feeding a child*

[5] ☐ *Before preparing food*   [6] ☐ *before handling with drinking water*

[7] ☐ *Before eating*

[-88] ☐ *Don't know*

[99] ☐ *Other…………………………………………………………………………………………*

- Confidence in performance (to feel able to do the behavior)
  We use this type of question to find out how capable/confident the person is of organizing the necessary infrastructure, products and other means such as time, money, etc. to perform the behavior.

(closed) How confident do you feel that you will have enough time to always treat the drinking water?

[1] ☐ *Not at all confident* [2] ☐ *A bit confident* [3] ☐ *Quite confident*

[4] ☐ *Confident* [5] ☐ *Very confident*

- Confidence in continuation (feeling capable of maintaining a behavior)
  Here, the accent is more on maintaining the behavior even though you have to invest or do not see the immediate profit, etc.

> *(closed) How confident do you feel that you will continue to wash your hands even though you have to spend money on the soap?*
>
> ¹ ☐ *Not at all confident* ² ☐ *A bit confident* ³ ☐ *Quite confident*
>
> ⁴ ☐ *Confident* ⁵ ☐ *Very confident*

- Confidence in recovering (feeling capable of restarting the behavior after a disruption)
  Here, we would like to find out if the person will be able to restart the good behavior although he/she has stopped because of obstacles (non-availability of product, money), changing environment (season etc.)

> *(closed) Imagine you stopped chlorinating your drinking water for several days, for example because there was no chlorine available. How confident or unconfident are you that you will start continuously chlorinating all your drinking water again?*
>
> ¹ ☐ *Not at all confident* ² ☐ *A bit confident* ³ ☐ *Quite confident* ⁴ ☐ *Confident* ⁵ ☐ *Very confident*

Self-regulation factors (up to 10 questions)

- Action planning (concerning time, money, etc.)
  This type of questions give you information about whether the person already anticipates having all the items they need to be able to perform the behavior and integrating it into their daily routine.

> *(Closed) Do you plan a quantity of water for handwashing when you fetch water?* ¹ ☐ *yes* ⁰ ☐ *No*
> *(open) What do you do to make sure that you always have enough water for handwashing?*
> *The plan is..* ⁰ ☐ *I do nothing*
> *(Here, you could also already define possible options for plans to make it easier to analyze the answers.)*

- Action control (detailed plan)

> *(closed) How strongly do you try to chlorinate all your drinking water?*
>
> ¹ ☐ *Not at all* ² ☐ *A little* ³ ☐ *Quite a lot* ⁴ ☐ *A lot* ⁵ ☐ *A great deal*

- Barrier planning (anticipation of barriers)
  Here, the idea is to find out if there is a lan B if there are obstacles that help to maintain the barrier and avoid disruption.

(closed) Do you have a plan to wash your hands if there is no water and no soap at home?
☐ *yes*   [0] ☐ *No*
(open) The plan is..   [0] ☐ *I do nothing*
(Here, you could also already define possible options for plans to make it easier to analyze the answers.)

- Remembering

(closes) How often do you intend to chlorinate your drinking water but then forget to do it?
[1] ☐ *Never* [2] ☐ *Seldom* [3] ☐ *Sometimes* [4] ☐ *Often* [5] ☐ *Always*

(open) Do you have any tricks to remember to chlorinate your water? ☐ *Yes*   [0] ☐ *No*
If yes, which one:……………………………………………

- Commitment (feeling of obligation)

(closed) How engaged/committed are you to always use the latrine?

[1] ☐ *Not at all committed*   [2] ☐ *A bit committed*

[3] ☐ *Quite committed*   [4] ☐ *Committed*

[5] ☐ *Very committed*

Comment:
- The questions in this factor block are the most difficult ones to find and are not so usual. It makes sense to discuss them intensively within the team.
- The experience has shown that leaving the answer completely open for all the planned questions generates a lot of preparatory work for the analysis. It can make sense to already formulate some possible plans and leave "others" as an option.

Risk factors (up to 10 questions)

- Health knowledge / factual knowledge
Here, we would like to know if the person is aware of causes and prevention measures related to the behavior. For Wash it is usually the health risk.

(Closed) "I will present some potential causes of diarrhea. Could you please tell me for each whether it is a cause of diarrhea or not?

Eat contaminated food ^{0} ☐ No ^{1} ☐ Yes ^{99} ☐ Don't know

Mosquito bite ^{1} ☐ No ^{0} ☐ Yes ^{99} ☐ Don't know

Walk in the sun for a long distance ^{1} ☐ No ^{0} ☐ Yes ^{99} ☐ Don't know

Drink contaminated water ^{0} ☐ No ^{1} ☐ Yes ^{99} ☐ Don't know

---

- Vulnerability

The information collected here is an indication of the person's feeling of risk, regardless of whether that risk is actually present or not.

(closed) Considering your handwashing practices before handling food, how high do you feel is the risk that you may contract diarrhea?

^{1} ☐ Not at all high ^{2} ☐ A bit high ^{3} ☐ Quite high ^{4} ☐ High ^{5} ☐ Very high

---

- Severity
Here, the questions show if the peron's perception of the consequences of the risk/bad behavior has a big influence on their well-being.

(closed) Imagine if you contracted diarrhea. How severe would be the impact on your daily life?

^{1} ☐ Not severe ^{2} ☐ A bit severe ^{3} ☐ Quite severe ^{4} ☐ Severe ^{5} ☐ Very severe

---

Comments
- It is advisable to put the risk factor question at the end of the questionnaire so that it influences the answers to the previous questions less.
- It is important to know that the question about vulnerability and severity reflects the perception of the person and not the reality.

Socio-economic information (up to 20 questions)

Income, expenses, possessions, housing, etc.

Comments:
- Here, you can use the typical questions that you usually use.

Annex 7: General information about interviewer training

It is very important to collect good-quality data. It is therefore crucial to train interviewers well. The training level has to be adapted to the chosen interviewer.

Key questions to be answered before planning the interviewer training are:

- Does the interviewer already have experience with surveys?
- Will the translation be done in collaboration with the interviewers?
- If the data is collected with mobile phones, do the interviewers already have experience of it?

Content of Interviewer training:

What	Content
Introduction of aim and content of the study	- Introduction of your organization and the project if the interviewer are coming from external - Introduction of the of the study : aim, approach, content
Time: 30 min	**Material:** possibly Powerpoint, presentation, poster

What	Content
Introduction of the survey tool (paper based or mobile-based data collection)	- Introduction to how to fill in the paper questionnaire - Explanation of the process with the filled-out questionnaire - In case of a mobile-based data collection system: Introduction of the software and the mobile phone devise (e.g. akvo) - Introduction to the random household selection method (see Box 1) - Discuss Dos and Don'ts (see following Box 2 below)
Time: 1 day, can be less if traditional paper questionnaires are used or the interviewer are already familiar with the mobile phone data collection	**Material:** final questionnaire on paper or on mobile phone,

Box 1: The random route technique

- The interviewer walks around the allocated area/village. She/he chooses her/his way at random, and starts counting the households on the left- and right-hand sides of the road (this should be defined). Sometimes the structure of the settlement makes it necessary to enter a compound to count the households there
- At the fifth household, the interviewer is supposed to ask somebody to participate in the survey. If there is nobody at the fifth household, or the people don't fit the defined target group or do not wish to be interviewed, then she/he should ask people in the sixth, seventh or eighth (and so on) household to participate
- After she/he has carried out the interview, she/he starts counting again.
- Five is not compulsory as a number: the survey coordinator can also decide on any other standard number, depending on the area. The number might be lower for a small community; in an extensive community, it may be higher. The number must be chosen so that every household could theoretically be selected for the survey sample. To achieve this, the interviewers should start from a different corner of the area every day. Every interviewer must count in the same way.
- The random route technique ensures that interviewers don't select households in an arbitrary manner.

Box 2: Dos and Don'ts

Before starting the study:
- Make sure that you choose the person to interview according to the instructions.
- Introduce yourself to the person and explain the aim of study as defined.
- Explain that the study is anonymous and that the person is free to participate or not.
- Emphasize that the responses are their perception and you will not define if they are right or not.
- Indicate the time it will take.
- Get the person's agreement to participate in the interview before starting.
- Find a quiet place where the person can speak openly and feel comfortable

After starting the study do:
- Read the question as written.
- Do not read the subchapter of the questionnaire.
- If a question is not clear,
  - Repeat or reformulate it without changing the content or influencing the answer.

After starting the study don't:
- Avoid visual contact with the interviewed person (e.g. only look at the questionnaire).
- Rephrase the question.
- Reformulate the question in a leading way.
- Comment negatively or positively on the answer (e.g.."Very good that you are washing your hand" or "What? You don't have a latrine? That's a pity."
- Laugh at an answer.
- Blame the respondent.

Special cases
- Other people (e.g. the husband, neighbor) may interrupt the person or comment on the responses.
  - Explain kindly that you are only interested in the responses of the interviewee.
  - Make sure that the responses are not influenced by the presence of other people.
  - Kindly ask the other people to be silent and not to influence the person during the interview
  - If necessary, ask the person to stay at a distance during the interview.
- When the interviewed persons needs to continue her daily tasks (e.g. cooking, feeding her child, etc.)
  - Just follow the interviewed person to where she has to do her task and continue the interview.
  - Conduct the study as long the person is not too distracted by her work

What	Content
Discuss question by question, as well as the observations and eventually make	- Go through each question and clarify its meaning - Discuss the types of question and answer categories and how to manage them (see Box 3)

or adapt the translation	• If the interview has to be done in the local language, translate the key words to reach a common understanding
Time: 1 day	**Material:** final questionnaire on paper or on mobile phone,

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Box 3: Type of question

Closed questions:

➔ *The interviewer reads the answer categories, the interviewee chooses his answer, and the interviewer marks the given answer.*

> *(closed!):* How much do you like washing your hands with *soap/ash/sand?*
>
> 1 ☐ Don't like it   2 ☐ Like it a bit   3 ☐ Like it   4 ☐ Quite like it   5 ☐ Like it very much

Open questions:

➔ *The interviewee answers in her own words.*
- Open question with lines to write the answer down

> Why are you washing your hands in a single recipients? *Several answers possible!* ....
> ....
> ....

- Open question with answer categories: the answer categories are not read out, and the answers are marked that fit into the suggested categories.

> What is your religion?
>
> 1 ☐ Muslim   2 ☐ Catholic   3 ☐ Protestant   4 ☐ Traditional religion
>
> 5 ☐ No religious affiliation   99 ☐ Other...

- Open question with multiple answers: the answer categories are not read out, and all answers are marked that fit into the suggested categories.

> How do you normally clean your water-storage recipient? *Multiple answers are possible.*
> 1 ☐ With water   2 ☐ With water and soap   3 ☐ With hot water 4 ☐ With bleach
> 5 ☐ Ash   6 ☐ Earth/sand   7 ☐ Water, soap and sponge   8 ☐ Water and sponge
> 9 ☐ Other:...

Combined open and closed questions:

Read the symptom and mark the answers

> Here are some possible symptoms of diarrhea. Can you tell me for each, which are true or not?
>
> **B150** Cough   0 ☐ Yes   1 ☐ No
>
> **B151** Loss of water 1 ☐ Yes   0 ☐ No
>
> **B154** Do you know any other symptoms? ....

Filter questions

Do you cover your water recipient during transport?

1 ☐ Yes   0 ☐ No → If yes: *(Open!)* **With what?...**

What	Content
Exercise in role play selecting the households, introducing the questionnaire and the questionnaire itself	• Role play for the household selection with observer • Role play for the introduction to the household with observer • Practicing the questionnaire with other participants to make them and the observer familiar with the questions. The following questions should be addressed: • Did the interviewer apply the correct selection procedure? • Did the interviewer mention all the important points in the introduction? • Are there questions that are difficult to ask? • Did the interviewer apply the correct method for asking the question regarding the open and closed questions? • Are the answers written down in a legible way?
Time: ½ day	**Material:** final questionnaire on paper or on mobile phone, enough space to do the role play

What	Content
Pilot test in representative setting	• Exercise for the interviewer in a real case. The best is to do the pilot test in a closed and similar project area. • Test the questions
Time: ½ day	**Material:** final questionnaire on paper or on mobile phone; transportation if necessary

What	Content
Discussion of necessary adaptation of the questionnaire and process	Answer the following questions: • Did the target population understand all the questions? • Can the target population answer all the questions? • Are the questions accepted by the target population? Adapt and develop the final version of the questionnaire accordingly.
Time: 1 hour to ½ day depending on the amount of comment	**Material:** questionnaire, computer to do the correction immediately

What	Content
Discuss organizational issue	• Planning (which village and when? Submission time of data) • Logistics (how to get there? When? Is an overnight stay necessary? Food? Means of payment for the interviewer if external, etc. • Supervision (role of the supervisor, reporting mode to him etc.
Time: 1 hour	**Material:** developed action plan,

Annex 8: Checklist for study supervisor

1. Preparing the study

- Make sure that you have the right version of the questionnaire ready on paper or uploaded on the smartphones.
- Make sure that you have enough air time and that the interviewer's and your mobile phones' batteries are fully charged.
- Divide the interviewer's work and plan the transportation accordingly.
- Organize transport, food and accommodation for the team.
- If necessary, inform the local authorities about the study.

2. During the study

- Greet the local authority and, if necessary, inform them about the study activities.
- Help the interviewer to find the first households and make sure that they are correctly selected.
- Check if the interviewer is using the questionnaire properly.
- Ensure that interviews remain confidential.
- Check that each interviewer is filling out the questionnaires properly and in the same way. If there are any inconsistencies, immediately discuss and clarify everything with the interviewer.
- Audit the data in all the questionnaires before leaving each site to ensure they are properly filled in and do not contain any inconsistent or incongruous data. Re-collect and complete missing data.
- Motivate your team and stay in contact with them so that you can react if there are any problems.
- Check that the expected number of completed questionnaires has been attained at each site before leaving.
- Collect the questionnaires on a daily basis and store them in a secure place.

Annex 9: Instructions for data entry

Data entry can be a long and tedious process requiring discipline, patience and organization. It is therefore preferable to have one or more persons appointed or assigned exclusively to this task, to have a computer provided for this express purpose, and a room for filing the questionnaires and to protect potentially sensitive data.

If you are not working with a smartphone-based questionnaire, the data has to be entered manually in an Excel sheet.

Prepare the Excel sheet:

➢ **One row** = one participant see **Star 1**

➢ **One column** = one question see **Star 2** (exception multiple-response questions)

➢ **One cell** = the responses of one person to one question see **Star 3**

To make data entry easier, it can be helpful to mark the columns in different colors for different types of questions so that the person entering the data is forewarned.

- **Questions with categories of answers (Blue cells):**

B022   (open!) What is your husband's main income activity?
[1] ☐ Agriculture [2] ☐ Cattle-raising [3] ☐ Businessman [4] ☐ Artisan [5] ☐ Government employee [99] ☐ Others.............

- o Enter the number code of the chosen answer
- o For the category "others" write the written answer (→ we will categorize them later!)

- **Open question without categories of answer (Green cells):**

B085 (open) What are the obstacles preventing you from washing your hands with soap?
………

- o write the written answer (→ we will categorize later !)

- **Closed question (White cells)**:

B069 (closed) Do you feel dirty when you don't wash your hands with soap?

1 ☐ Not dirty at all   2 ☐ A bit dirty   3 ☐ Rather dirty

4 ☐ Quite dirty   5 ☐ Very dirty

  - o   Fill in the ticked code number (1-5) in the cell

  - o   If you do not find an answer, enter (99) so that you know there is a missing value.

- **Open question with categories of answers with multiple responses (Yellow cells)**

B037 (open) In which situations do you wash your hands with water and soap? *Open question; cross the answers mentioned. Multiple answers are possible!*
0 ☐ Never wash hands with soap   1 ☐ After defecating
2 ☐ After contact with feces   3 ☐ After have cleaned a baby's bottom
4 ☐ Before handling drinking water 5 ☐ Before preparing food
6 ☐ Before feeding a child   99 ☐ Others.......................................

B037_0	B037_1	B037_2	B037_3	B037_4	B037_5	B037_6	B37_99
1	0	0	1	0	0	0	blabal

Here, you have to add a column for each answer category
  - o   If a cell is marked, enter "1"
  - o   If a cell is not marked, enter "0"
  - o   All the cells should be filled in!!

Copy of Annex Example_data entry sheet_proofreading_CORR_sp - Excel

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A14

B037: For each answer option create a column. Insert a 1 if the option was mentioned, and a 0 if not.

B085: Write the text as it is written in the questionnaire. The categorization and the coding will take place in a second step.

Behavior | **Factor**

ORD	B022 (pen) What is your husband's main income activity?	B022_kat(pen) What is your husband's main income activity?	B037_0 In which situations do you wash your hands with water and soap? Open question, check the mentioned answers. Multiple answers are	B037_1	B037_2	B037_3	B037_4	B037_5	B037_6	B037_99	B069 (closed) Do you feel dirty when you don't wash your hands with soap?	B070 (closed) How agreeable is it to wash your hands with soap?	B085 (open) What are the obstacles hindering you from washing your hands with soap?
1	1	1	1	0	0	0	0	0	0		5	5	no obstacle
2	1	1	0	1	1	1	1	0	0		4	4	No money
3	1	1	1	0	0	0	0	0	0		4	5	Distance to town to buy soap
4	2	2	0	1	0	0	0	0	0		1	4	No income
5	1	1	0	1	0	0	0	0	0		1	4	No income
6	1	1	0	1	0	0	0	0	0		1	4	No money
7	1	1	0	1	0	0	0	0	0		1	4	No money
8	4	4	0	1	1	1	0	0	0		4	4	Occasional shortages of money
9	1	1	0	1	0	0	0	0	0		1	4	Shortage of money
10	1	1	0	1	0	0	0	0	0		1	4	Shortage of money
11	1	1	0	1	1	1	1	1	0		4	4	No cask
12	3	3	0	0	0	0	0	0	0	before praying	2	4	No obstacles
13	1	1	0	1	1	1	1	1	1		4	5	Hard to say. I always have water and soap
14	fishermen	6	0	0	0	0	0	0	0	before praying	4	4	Income too low
15	1	1	0	1	1	1	1	1	1		5	4	No obstacles
16	Driver	7	0	0	0	0	0	0	0	before praying	4	4	No money
17	1	1	0	1	0	0	0	0	0		5	5	Not in the habit of using soap

data 1 | Coding | Indicator | Separation | Mean calculation | Graph

READY   130%

Annex 10: Instructions for data analysis

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1. Preparing the analysis

- When the data has been entered, make a copy of the file and work only on the copy for the next steps (so you will always have your basic data just in case something gets wrong when you are working with the data).

- Check that the values have been entered correctly (scale, missing values etc.).

- If the study used a smartphone-based data collection system like akvo, the data has to be converted into codes using the search replace function (→ **see Pictures 1 and 2**).

- Categorize open questions without answer categories as well as all the "others" responses in "99" → Add new columns for the new categories in the table.

  With open questions or answers in the "others" category, you will get a whole range of written answers. You will have to recode them to be able to analyze them. With this process you examine the responses to a given question and look for ways to categorize them according to their similar meaning.

  Example question: B068 "What are the obstacles preventing you from washing your hands with soap?"

  1. Try to cluster similar responses.

  2. A category name has to be found that reflects the answers of the cluster.

  3. A code has to be attributed to each category.

  4. Add a new column and name it B068_kat and enter the relevant new code (**see Picture 3**).

Answer B068	Category	Code
No money for soap	Money	1
Seasonal income		1
No cash income		1
Income too low		1
Local vendors do not have it in the shop	Availability	2
No shop in the village		2
Market is far away		2

- Delete the "-88", "-99" for all the questions.

2. Divide the data sample into "doers" and "non-doers"

To divide the data sample into "doers" and "non-doers" we have to form an indicator based on several questions about the behaviour and define the cut-off point. So if a person reaches a specific score she is classified as a "doer"; below this score she is a non-doer.

The critical questions and the score that define a doer have to be discussed in the group. This discussion should take place while drafting the questionnaire (see Annex 5)

See an example for handwashing → this should be discussed in the group

Example of behaviour questions	Doers	Score Doers	Non-doers	Score Non-doers
Four questions with "Imagine different handwashing situations"	Handwashing with soap is mentioned 4 times	1	Handwashing with soap is mentioned 0-3 times	0
How often did the person wash their hands?	Answer category 5 = always	1	Answer category 1(never), 2 (seldom), 3 (sometimes) and 4 (often)	0
How often did you wash your hands yesterday?	Define a minimum number, e.g. 5 times per day	1	Less than 5	0
Observation: Water and soap available	Yes	1	no	0
Total score		**4**		**0**

- Add a column with the following values to all critical questions: "1 = doers" et "0 = non-doers"

- Add a column where you can calculate the total score and decide if the person is a "doer" or a "non-doer".
- Calculate the percentage of doers and non-doers in the sample.

    → **See Picture 4**

- Discuss the result:
    o If the percentage of the "doers" in the sample is very low or too high (e.g. below 10 %), discuss if your defined indicator is too ambitious or not ambitious enough. If there really are almost no doers, the question about the intention to perform the behaviour can be added.
- Divide the data sample in "doers" and "non-doers".

    → **See Picture 5**

3. Analyze the potential intervention for questions measuring the behavioural factors

- For the variable of the data with interval (questions number 1 to 5)

    o Calculate the means for doers and non-doers separately;
    o Calculate the difference in the means for doers and non-doers;
    o Calculate the mean value of the whole sample.

- For yes/no questions:
    o Calculate the means for doers and non-doers separately → the mean value is the percentage of interviewed persons, who said "Yes (1)";
    o Calculate the difference of the mean between doers and non-doers;
    o Calculate the mean value (percentage of interviewed persons who said "Yes (1)") for the whole sample.

- For variables with nominal data:
    o Select the most frequent category for doers and non-doers, and calculate the percentage for both doer and non-doer categories;
    o Calculate the differences of percentage between doers and non-doers for both categories;
    o Calculate the percentage for both categories for the whole sample.
    o
- Prepare separate graphs per factor group with the following values:
    o Mean values for doers and non-doers);
    o Difference between the mean values of doers and non-doers;
    o Mean value of the whole sample.

    ➔ **See Picture 6**

Also:

- Describe the sample using the socioeconomic (revenue, etc.) and socio demographic (age, education, etc.) information and the approximate measures;
- Compare doers and non-doers in relation to this information.

Picture 1

Picture 2

Picture 3

Picture 4

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Callout notes:

- *If the answer is 2 (=handwashing with soap), the person is considered to be a doer and gets the code 1. You can use the following formula:* $=IF(B4>1;1;0)$
- *If the answer is 5 or more, the person is considered to be a doer and gets the code 1. You can use the following formula:* $=IF(G4>4;1;0)$
- *Here, you calculate the sum of the 4 sub-indicatosr. You can use the following formula:* $=C4+E4+G4+I4$
- *If the sum of the sub-indicators is 4, the person is considered to be a doer and gets the code 1. You can use the following formula:*
- *Here, you will see the identified doers. Use these scores to separate your sample into doers and non-doers.*
- *Here, you can calclulate the percentage of doers for this specific sub-indicator. You can use the follwing formula:* $=AVERAGE(C4:C20)$
- *Check the percentage of doers in your sample. If it is too high or too low, rediscuss your indicator.*
- *Here, you can calculate the mean score of the whole sample for this question. You can use the follwing formula:* $=AVERAGE(P4:P20)$

Row 1: Behavior | Factors

ORD	Question: B030 Imagine come back from the market in your village... 0=HW not mentioned	Imagine Indicator 1	How often do you wash your hands with soap?	Frequency_ Indicator 2	How many times did you wash your hands yesterday?	amount_ Indicator 3	Observation: Is water and soap available?	Observation _ Indicator 4	Total Score_ Indicator Handwashing	Handwashing Doer/Non doer (B033)	B061	B069	B070	B071	B072	B073	B074
1	2	1	5	1	8	1	1	1	4	1	5	5	5	4	4	4	4
2	2	1	4	0	6	1	1	1	3	0				3	3	5	3
3	2	1	5	1	5	1	1	1	4	1				5	5	3	4
4	2	1	1	0	5	1	1	1	3	0				3	2	4	2
5	0	0	1	0	2	0	0	0	0	0				2	3	5	3
6	0	0	1	0	1	0	0	0	0	0				4	2	2	4
7	2	1	1	0	6	1	1	1	3	0				3	1	3	2
8	0	0	4	0	3	0	0	0	0	0	5	4	4	2	4	4	3
9	0	0	1	0	4	0	1	1	1	0	5	1	4	4	2	3	2
10	0	0	1	0	3	0	0	0	0	0	4	1	4	3	3	4	4
11	0	0	4	0	0	0	0	0	0	0	5	4	4	2	3	3	2
12	1	0	5	1	7	1	1	1	3	0	4	2	4	4	2	2	3
13	0	0	4	0	2	0	0	0	0	0	3	4	5	3	4	5	4
14	0	0	4	0	6	1	0	0	1	0				3	2	3	4
15	2	1	5	1	5	1	1	1	4	1				4	4	3	4
16	0	0	4	0	1	0	0	0	0	0				2	2	2	3
17	0	0	5	1	3	0	0	0	1	0				3	4	4	3
Average Sample		35.3%		29.4%		47.1%		47.1%		17.6%				4.2	3.2	2.9	3.5	3.1

Factor column questions:
- B061: Imagine if you contracted diarrhea. How severe would the impact on your daily life be? (economically, socially...)
- B069: (closed) Do you feel dirty when you don't wash your hands with soap?
- B070: (closed) How agreeable is it to wash your hands with soap?
- B071: In your opinion, how many people in your household wash their hands with soap after defecating and before eating?
- B072: Do people who are important to you encourage you to always wash your hands with soap after defecating and before eating?
- B073: Do you think that you are able to always wash your hand with soap after defecating and before eating?
- B074: How important is it to you to always wash your hands with soap and water before handling food?

Picture 5

Picture 6

Annex 11: Intervention script for latrines in Mozambique

This new intervention will be implemented in communities already declared ODF, within the normal CLTS process (the step forward).

Step	Description	Actors	Remark
1	<u>One week before the event</u> the community leaders will be asked to fill in a form with the names of all the families in the community (one leader per neighborhood). It will be the <u>reference list</u> for the process. In each neighborhood, the event starts with the usual speech by the officials. Then the promoters launch a discussion on the question of "ODF, what next?" The discussion will be an opportunity to show that ODF is not the end but the beginning. The promoters will use practical examples (stories and photos of the evolution of the latrine after a few months) from neighboring communities to persuade the community. Interaction is feasible, as it will be possible to find members of the community who know about the other communities where ODF has been carried out previously. A participatory exercise is then organized to elaborate a checklist for a well-maintained latrine. This checklist will be used to evaluate families. The participants are then informed that those who keep their commitment will be officially recognized. The commitment process will start with the commitment of the members of the community already involved in behavior change (CAS and APS). They will also commit to helping others. Then the voluntary families will be asked to sign (or fingerprint) next to their name on the list.	**Promoters**: project team with support of district technical services (WatSan, health and education) involved in the CLTS process. **Other people involved**: local leaders, members of water and sanitation committee (CAS), local health agent (APS)	Will be organized the same day as the installation of the ODF plate. Thus the date will be defined as the day that the community is officially declared ODF. More than one event can be launched at the same time, depending on the availability of technicians (of project team and technical services). Two copies of the form will be signed. One will stay with the local leader, the other with the technical services.

Step	Description	Actors	Remark
2	<u>One week before the event</u> the community leaders will be asked to evaluate the family with the help of the CAS members and the APS. For this they will use the signed list in their possession. The event will start with the usual speeches, but this time the community will organize some cultural interludes to heighten the day's symbolism. Then the families that respected their pledge will be publicly presented with an award. The event will finish with a second (and final) round of pledges to give a second chance to those families that didn't commit the first time or didn't respect their pledge (same procedure as during Step 1). 	**Promoters**: project team with support of district technical services (WatSan, health and education) involved in the CLTS process. **Other people involved**: local leaders	The second step must be organized at least 6 months after the first. As the CLTS process is usually organized from August to December (dry season), this event must be organized in July/August. Then it will be organized after the rainy season (Jan-April) when most of the latrines (and houses) are affected. Initial ideas for the award are (1) visual: a colored flag, and (2) physical: a 50% voucher for a slab. But this must be discussed with the local authorities in each district. The working material could be a bag with a notebook and pen, etc. or a bike (tbc).
Step	Description	Actors	Remark
3	Same procedure as Step 2 excluding the final activity (no more pledges).	**Promoters**: project team with support of district technical services (WatSan, health and education) involved in the CLTS process. **Other people involved**: local leaders	This event must be organized one year later to be sure that there is a rainy season in between.

Annex 12: Example questions for the evaluation questionnaire about the intervention

Questions on intervention carried out

- Questions with "Do you remember"
  These questions help to find out if the person received and remembers one of the behavior change interventions.

(Open!) Do you remember any interventions on handwashing?

[1] ☐ *Play*   [2] ☐ *Poster*   [3] ☐ *Instructions for tippy tap construction*

[4] ☐ *Photo of the household chief*   [99] ☐ *Others...*

- Observation
  These observations help to crosscheck whether the person still has the delivered information (poster, etc.) or has made any improvements based on the instructions or messages it contained.

Interviewer: Observe the location and complete the following questions:

Is there a tippy tap or handwashing station in the household?

      [1] ☐ Yes   [0] ☐ No

Is the poster displayed near the kitchen?

      [1] ☐ Yes   [0] ☐ No

Is the photo displayed in a prominent place in the courtyard?

      [1] ☐ Yes   [0] ☐ No

Question about appreciation and credibility of the behavior change technique

- Questions with "Do you like it?", "Was it convincing and trustworthy?" etc.
  These questions help to find out if the person appreciated the intervention and if they trusted the communication channel.

Did you like the theater play?

[1] ☐ Not at all   [2] ☐ A bit   [3] ☐ Quite a lot

[4] ☐ A lot   [5] ☐ A great deal

Did you like the instructions for building a tippy tap?

[1] ☐ Not at all   [2] ☐ A bit   [3] ☐ Quite a lot

[4] ☐ A lot   [5] ☐ A great deal

Was the theater play convincing?

[1] ☐ Not at all   [2] ☐ A bit   [3] ☐ Quite a lot

[4] ☐ A lot   [5] ☐ A great deal

Was the information source trustworthy?

[1] ☐ Not at all   [2] ☐ A bit   [3] ☐ Quite a lot

[4] ☐ A lot   [5] ☐ A great deal

Comment:
- Here, you are free to add any questions that are relevant to the project or which you will need for your monitoring.
- The number of questions depends on the number of different interventions you did.