

Chapter 6: Designing the intervention



“Many interventions aimed at changing habits have failed because of inappropriate planning” (Andrien, 1994).

6.1 INTRODUCTION

The above-mentioned statement was used as rationale for the course of designing and planning followed in this study. I agreed with Andrien (1994) in the belief that nutritional interventions can only be effective when it is based on an in-depth analysis of relevant problems and a clear concise definition of objectives and methods of communication. Other authors and researchers agree (Dennill *et al*, 2000:90).

The aim of this phase was to design a needs-based, participatory-action orientated intervention to address the assessed needs of the particular rural community involved. These needs were identified in Chapter 5 as (1) poor hygienic and sanitary conditions and practices, (2) perceived food insecurity, (3) insufficient dietary diversification and (4) insufficient food coping strategies. The transformation process that was followed from needs assessment to designing the intervention is summarised in Figure 6.1. Wolcott's (1994) term of transformation was adopted, which expands beyond the mere description, analysis and interpretation of data. It refers more to data management and includes an aspect of theorising. This chapter is devoted to this transformation process, starting with prioritisation and verification of the various assessed and felt needs. All the gathered information regarding this particular problem was also taken through an analytical and theorising activity.

6.2 GAINED DATA ON HYGIENE AND SANITATION

Information was obtained during the needs assessment phase using the following methods:

- unstructured observations
- structured observations
- scoring guideline
- knowledge test
- behavioural scale
- group discussions.

The findings are presented in a chronological order, following the order in which the facts were obtained. The first observations were done in an unstructured way. The research team merely noted the observed hygiene and sanitation practices and conditions. These observations are presented in Box 6.1 and summarised in Box 6.2. A structured observation guideline was used for

the next series of observations done three months later (see Box 6.3). On another occasion hygiene and sanitation practices and conditions within each household were scored using three dimensions of personal, household and environmental hygiene. Indicators relevant to each of these dimensions were based on the first observations but also compiled from the literature (Ahmed *et al*, s.a.; Almedon *et al*, 1997; Billig *et al*, 1999; Curtis *et al*, 2000) (see Table 5.1). Low scoring in all three dimensions showed that the intervention should include strategies to address all these aspects. Frequencies were computed and incorporated in the next data analytical step.

The participants' knowledge of hygiene and sanitation was measured by the sum of their responses (for the particular test, see Addendum C). Sanitation behavioural was measured by scoring their responses on a three-point scale (see Addendum D). These scores were attained through consensus among the three research team members involved. All the participants attained good scores in the test (mean=78%) as well as on the scale (mean=77%), indicating that transfer of information regarding basic hygiene and sanitation should be limited. The behavioural scale measured intentions to apply knowledge. Although the intentions might have been present, the outcomes of the microbiological tests and observations said otherwise. No particular food-borne illnesses or spurts of diarrhoea were reported, showing that the approach should be more focused on the health and dignity aspects of safe hygiene practices rather than prevention of disease.

The findings were presented to the community members during a meeting to foster group discussions and to verify the findings. The various identified needs were also prioritised during these discussions. This process is discussed next. The group discussion was recorded, translated and then transcribed. Verbatim text was included in the following analytical activity.

6.3 VERIFYING AND PRIORITISING

Felt needs were mainly non-nutritional (to earn more money, to have more agricultural land, to have water directly available in their houses and to have a crèche for the pre-school children). These needs could have had a bearing on nutritional status, but were considered beyond the scope of this study. The research team explained in elaborative terms why these needs could not be fully addressed. The next step was to prioritise the identified needs. The following statement of the FAO (Latham, 1997:331) guided us in the process of choosing a particular need as the problem to be firstly and urgently addressed:

“If food, beverages, dishes or utensils are obviously unclean, if food looks or smells bad, if a food that is meant to be eaten hot is served cool or lukewarm, if the environment where the food is served has flies, cockroaches or evidence of rodents, or if food servers have dirty hands and clothes, then it is likely that the food being served is contaminated.”

This statement exactly described the situation on Oranje farm. The observation was verified by high (>300cfu/ml) total microbiological counts on Rodac plates from various surfaces in all eighteen households, including mugs, plates, dining room tables, toilet seats, kitchen cloths, hands, clothes, and food preparation bowls, as well as the presence of *Escherichia coli*. Through group discussions and with the assistance of the field worker and key informant, the decision was made to address the hygiene and sanitation conditions in the community and practices of the community members by designing and implementing a suitable, effective intervention. Before the designing process could be initiated, all the information gained regarding this need had to be analysed and interpreted as summarised in Figure 6.1.

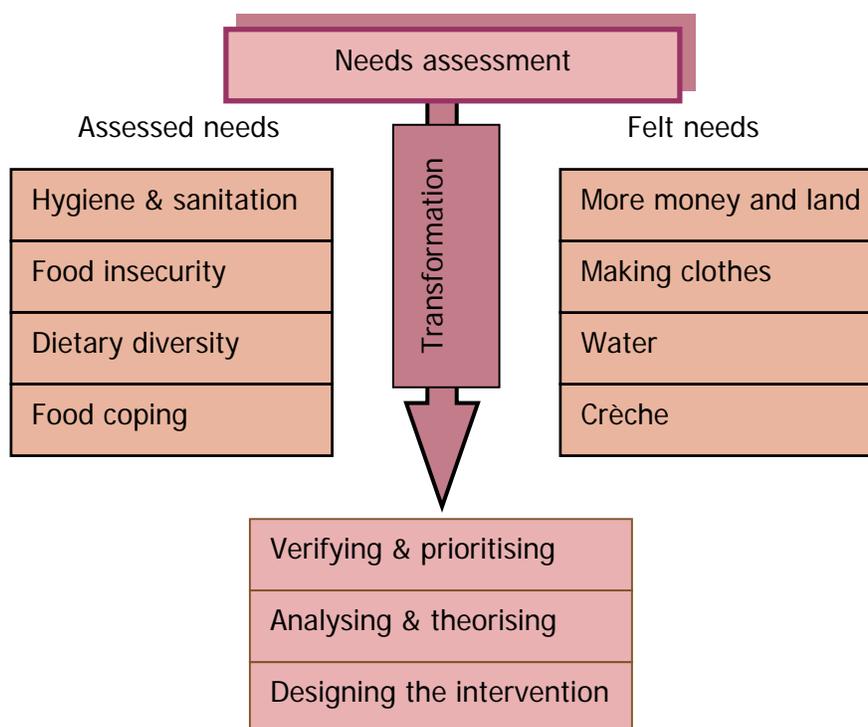


FIGURE 6.1: PROCESS FROM NEEDS ASSESSMENT TO DESIGNING THE INTERVENTION

6.4 ANALYSING

The analytical activity was valued as a process by which the researcher expanded and extended the data beyond a descriptive account (Wolcott, 1994:36). The gained information was more than mere writings of objective accounts of fieldwork experienced within the specific context of hygiene and sanitation and the designing of a suitable intervention. The process of analysis was not a distinct phase of the research process, but a continuous, reflective activity that informed and guided the processes of data collection, needs assessment, intervention planning, implementation and evaluation (Babbie & Mouton, 2001:328; Coffey & Atkinson, 1996:6; Collins, 1999: 58; Miles & Huberman, 2002:394). Data analysis was also interpretative, involving mainly qualitative descriptions of the phenomenon under study (hygiene and sanitation). Within the qualitative paradigm, analysis was also perceived as an inductive, data-led activity, with the emphasis on the search for emerging themes and patterns. I paid careful and systematic attention to the information in the various data sets to identify key themes and patterns. These themes and patterns were derived from the data itself, but also included aspects from the literature. The data was organised into categories and then sorted in terms of similarities and distinctions to discover themes and patterns in the categories.

The aim of this analytical activity was to identify the specific hygiene and sanitation practices and conditions that could be converted into messages as the content part of an intervention. Based on this aim, I selected an analytical strategy termed 'theme analysis', which describes recurring themes found in the data such as visual qualities, behavioural characteristics, discourse topics, or participants' expressed concerns (Aronson, 1994; Spradley, 1979). The data was explored to seek out themes and patterns as well as distinct features, dimensions, consequences and relationships with the phenomenon. The following practices and conditions considered to be unacceptable in terms of good hygiene were identified:

- Young children using the open veld to defecate, without adult supervision
- Hands not washed
- Filthy toilets
- Filthy kitchen cloths
- Uncovered drinking water
- No rubbish removal system.

The next step was to build a valid argument for choosing these themes. This was done by reading related literature and dispersing the findings with the literature in order to make logic inferences. This step was referred to as theorising.

6.5 THEORISING

Theorising is integral to analysis (Coffey & Atkinson, 1996:139). It is the extent to which you go beyond the data to develop ideas, create meanings and make sense. Theorising is also seen as a means of bringing some structure to existing assumptions and propositions about interventions (Boone *et al*, 2002:65). Theorising was done in the sense of having, creating and using ideas. Ideas that were drawn upon were a mixture of my own, respondent's views and those from other researchers reported in the literature. Ideas from the literature are presented first.

What is development if it is not helping human beings to live in health and cleanliness with dignity? (Simpson-Hébert & Wood, 1998:15).

This statement clearly links hygiene and sanitation with development, but hygiene and sanitation also have a well-recognised connection with health and nutrition (Latham, 1997:331). Apart from obvious reasons to practice good hygiene like general well-being, dignity and pleasantness, more health applied reasons are the prevention of food contamination and infection, the effect on growth and development of vulnerable children, the effect on environmental health and productivity (Appleton & Van Wijk, 2003:11; Billig *et al*, 1999:6; Okun, 1988:1463). Hygiene and sanitation practices refer to basic knowledge, skills and human behaviour as well as social and cultural factors concerning health, life-styles and environmental awareness. These include:

- personal hygiene (washing, dressing, eating)
- household cleanliness (kitchen, bathroom)
- community cleanliness (waste collection, common places) (WHO, 1993).

Poor hygiene, inadequate quantities and quality of drinking water, and lack of sanitation facilities cause millions of the world's poorest people to die from preventable diseases each year. Women and children are the main victims. Inadequate water, sanitation and hygiene account for a large part of the burden of illness and death in developing countries. Lack of clean water and sanitation is the second most important risk factor in terms of the global burden of diseases, after

malnutrition (Billig *et al*, 1999:6; World Bank, 2002b). Some commonly held wrong assumptions about hygiene and sanitation, which could be relevant for this study, are that:

- safe and adequate water supply is a pre-condition for good sanitation
- message-giving will change behaviours and automatically create demand
- sanitation improvements simply means building latrines
- traditional cultural beliefs and attitudes are a barrier to good sanitation practices
- improved sanitation has no immediate benefits
- children's faeces are harmless (Simpson-Hébert & Wood, 1998:9, 10).

Changing hygiene and sanitation behaviour can never be quick or straightforward. These behaviours are often steeped in tradition, ritual and custom and the task of altering it may be much more difficult than that of simply providing sanitation facilities. Although recipes for behaviour-change programmes do not exist, very clear lessons have been documented that highlighted several common elements for successful programmes (Jenkins, 1998:105). Previous studies showed that standard approaches to encourage behaviour change do not work well. The limitations of studies based on knowledge, attitudes and practices, are well known (UNICEF, 1999a: 26).

In every household, but especially in those with less-than-ideal sanitation, some knowledge about food-borne disease is very important. It should be imparted in every school and should be an element of health education at every level. Many people in developing countries have very little understanding of the 'germ' concept of disease, which is that unseen organisms can cause serious illness. An important challenge for intervention planners is to ensure that people understand that micro-organisms do cause disease (Latham, 1997:331). However, we cannot assume that education about germs and diseases will lead directly to positive behaviour change. Education alone is also not enough. Whilst education about germs is a good thing to do, it does not necessarily lead to behaviour change (UNICEF, 1999a: 26).

Interventions to improve hygiene and sanitation aims to reduce people's exposure to diseases by providing a clean environment in which to live and measures to break the cycle of disease. This usually includes the hygienic disposing or management of human and animal excreta, refuse, and wastewater, the control of disease vectors and the provision of washing facilities for personal and domestic hygiene. Improved hygiene (hand washing) and sanitation (latrines) have more impact on health outcomes than drinking water quality. An increase in the quantity of water has a greater health impact than improved water quality, because adequate water supply makes it possible, or at

least more feasible for people to adopt safe hygiene behaviours (Billig *et al*, 1999:6; World Bank, 2002b). Interventions to improve hygiene and sanitation should involve both behaviours and facilities, which work together to form a hygienic environment (Okun, 1988: 1463; Simpson-Hébert & Wood, 1998).

In the study of Ahmed *et al* (s.a.), they concluded with the statement that unhygienic practices could be altered by a combination of a mother's proper understanding of the 'germ theory', of the detrimental effect of unhygienic behaviours on health, and of ways and benefits of hygienic practices. Analysis of the intervention data showed a highly significant positive correlation between the mother's understanding of sanitation and their rates of adoption of hygienic practices. They believed that if hygiene-related messages are need-oriented, specific, simple, feasible and suitable for the particular setting, that the potential for their adoption among the target population tends to be very high. The following are common messages in hygiene education interventions (grouped according to similarities but stated in no particular order):

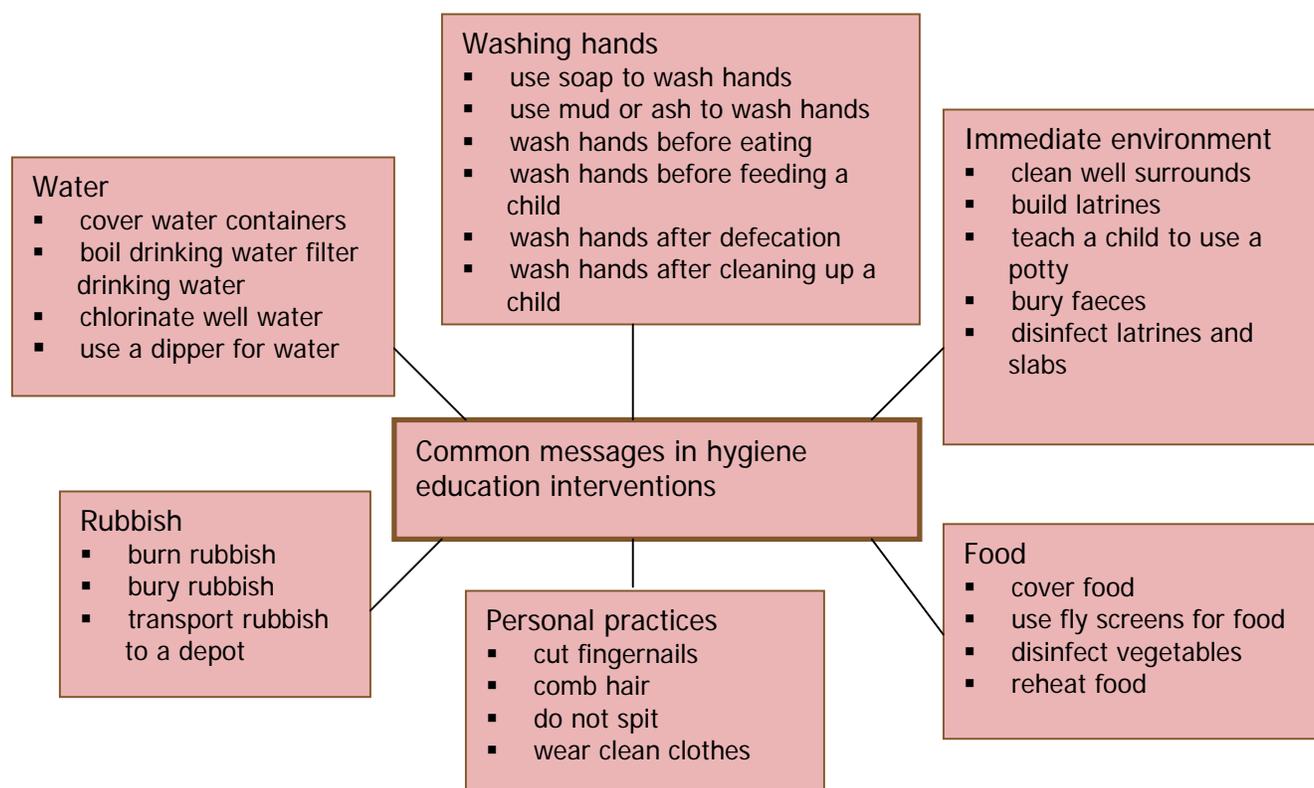


FIGURE 6.2: COMMON MESSAGES IN HYGIENE EDUCATION INTERVENTIONS (Ahmed *et al*, s.a.; Almedon *et al*, 1997; Billig *et al*, 1999; Curtis *et al*, 2000:23; UNICEF, 2002:95; UNICEF, 1999a: 3; World Bank, 2002b)

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These messages can be quite confusing and intimidating and the only way for the change agent to make a sensible choice is to know the risk practices in the particular target area. Usually two messages are considered enough for effective communication (UNICEF, 1999a: 32). Iredale (2003) confirmed this statement by saying that “it is critical to focus on a few key messages”. The World Bank (2002b) has isolated four hygiene practices, considered critical:

- Hand washing using soap (or ash) before food preparation and after dealing with faeces
- Latrine use and safe disposal of children’s faeces
- Safe weaning food preparation
- Safe water handling and storage.

The World Health Organization (WHO, 1993:8) suggested three sets of hygiene practices:

- Safe disposal of faeces, particularly the excreta of young children and babies
- Hand-washing, after defecation, after handling babies, before feeding and eating and before preparing food
- Protecting water from faecal contamination, in the home and at the source.

Billig *et al* (1999:7) said that the most important hygiene messages concern the basic issues of hand washing, proper disposal of faeces and protection of drinking water. Curtis *et al*, (2000:30) concluded that hygiene promotion should focus on the elimination of human stools from the domestic environment and effective hand washing after stool contact.

All these findings and statements were used to generate ideas and to formulate themes for designing a relevant intervention. What counted as ideas were substantial – it had to make sense in the particular context of this study. Some contemporary accounts of theorising are expressed in terms of ‘theory building’, where ideas are brought together and systematically ordered (Glaser & Strauss, 1999). It was not assumed that theory was built in this study by the aggregation and ordering of themes and the transformation into messages. It was rather an intellectual activity whereby I speculated about the data, in order to create ideas, and to link my ideas with those of others, and so to move conceptually from my own research setting to a more general and abstract level of analytical thought. Theorising was therefore not seen as casual explanation but the translation of the identified themes and patterns into positively stated messages. For this intervention the following messages were chosen and/or formulated:

- Teach children to use toilets
- Wash hands with soap
- Keep toilets clean
- Wash kitchen cloths everyday

- After washing the kitchen cloths, hang them out in the sun to dry
- Cover drinking water
- Burn rubbish.

These core educational messages are considered action-orientated, specific, relevant to this community's needs, and according to global guidelines (UNICEF, 1999a).

6.6 THE DESIGNING PROCESS

There is a considerable body of literature on the methodology of programme design, which I am not going to replicate here. The conventional approach of lecturing people about hygiene, compelling them to install sanitation or even providing them with subsidised sanitation which they do not want and will not use, have proved unsuccessful (Cairncross, 2003:195). UNICEF (1999a: 15) used a certain approach, which combines the features of hygiene promotion into a simple, systematic plan. This approach has been termed 'formative research', with four basic principles eminent, namely to:

- start in the community
- find out about the problems
- find out why people want good hygiene
- build on how people communicate.

It begins with, and is built on, what local people know, do and want. The aim is to answer four key questions:

- which specific practices are placing health at risk
- what could motivate the adoption of safe practices
- who should be targeted by the program
- how can one effectively communicate with these groups?

These questions are linked to appropriate methods for informing intervention design.

Jenkins (1998:109) advocates the following steps in promoting hygiene behaviour change:

- understand what people do and why
- develop the behaviour-change project jointly with the community
- take a gender-sensitive approach
- address the real perceived needs of the people
- make use of all available resources
- make educational messages simple and accessible

- listen to the people
- transfer skills by doing, not just talking
- evaluate your work
- keep the community involved.

Ultimately, however, the people themselves must perceive a problem or need, decide on the solution and change their practices. Simpson-Hébert and Wood (1998:15) also recommend that hygiene and sanitation interventions should be designed in collaboration with key stakeholders. Simple, positive and attractive messages should be constructed for local channels of communication. Measurable behaviour change objectives should be set. Management, monitoring and evaluation goals complete the intervention. Olson (1998:114) agreed by stating that the objectives of hygiene and sanitation programmes could be achieved far more successfully by using participatory approaches. Although participatory approaches are considered more time-consuming, the overall benefits and savings have been tremendous as shown by various studies that have evolved over time.

There is an apparent paradox at the heart of hygiene promotion programmes, however. Whilst the hygiene promoter sets up the program for the sake of better public health, the community may be more interested in hygiene for the sake of the pleasure of cleanliness or the convenience of the target practices (UNICEF, 1999a: 26). Interventions should therefore focus on aesthetics and comfort rather than germs and diseases.

The research team developed goals and objectives, designed plans and activities, and chose means and strategies for the intervention, assisted by the key informant. The designing process that was followed consisted of three parts:

- Developing goals and objectives
- Constructing a facilitation plan
- Formulating an evaluation plan (Caffarella, 1994:18).

This process was structured (see Box 6.4) to organise thinking and planning. The structure was also used to display a summary of the designed intervention (see Box 6.5). The first row, *needs*, referred to the assessed and felt needs as identified in the community and decided to be addressed. The next two rows are used to set the overall *goal* and various *objectives* of the intervention. *Facilitation plans* for addressing each need and attaining each objective included the

strategies (learning activities, messages), *format* which included decisions on procedures, methods, techniques and support, as well as the *resources* needed. An *evaluation plan* to address the facilitation plan as well as a plan for the intervention was lastly indicated. Each part of the designing process will now be further clarified.

6.6.1 Setting goals and objectives

A basic condition for the success of any intervention is whether goals and objectives have been clearly formulated (Mouton, 1999: 103). Goals should not be 'political slogans' such as 'to improve the quality of life', 'to help people', 'to empower teachers', 'or to make schools more effective'. Goals should meet two requirements. Mouton (1999:103) said: "*they should be linked to a strong theoretical paradigm and they should be empirically measurable*". Program goals that are theoretically plausible are more likely to produce the desired outcomes (all other things being equal). If a programme had not embedded its goals in a broader, international paradigm or framework, the translation into concrete objectives will be totally inadequate. The fact that the goals can be justified and explained within a more encompassing theoretical framework, gives it a certain plausibility and coherence.

The **goals of this intervention** were to understand and describe the specific nutritional needs and problems on a commercial farm and to address these needs and problems by designing and implementing an effective, relevant nutritional intervention. The research team involved in this study wanted to design, implement and evaluate an effective, appropriate intervention to address these needs. These needs were identified (see Chapter 5) as poor hygienic and sanitary conditions and practices, perceived food insecurity, insufficient dietary diversity, and insufficient food-coping strategies. The particular needs of hygiene and sanitation received priority and are dealt with in this chapter.

Objectives should be set separately for each need. It is cited that objectives are the steps to be taken to pursue the goal. Objectives can actually be described as, "the bridge between needs assessment and intervention planning" (McKenzie & Smeltzer, 2001:82). Objectives can be set in terms of various elements. Endres (1999:264) recommends an ABCDE model that includes the following elements:

- A. An *audience* that will exhibit the change in behaviour
- B. *Behaviour* desired from the audience
- C. *Conditions* under which the behaviour is expected to occur, e.g. intervention

- D. *Degree* to which the behaviour will occur daily or weekly, and the degree to which the audience will comply
- E. *Evaluation method and tools* to measure whether the behaviour has been achieved.

McKenzie and Smeltzer (2001:87) emphasise similar elements, namely outcome (what will change), conditions (when change will occur), criterion (how much change) and target population (who will change).

The **objectives** related to the identified, prioritised need in this intervention were formulated as follows:

- *Encouraging and motivating* all adult female community members to *participate* in the intended intervention and to *collaborate* with the research team in order to adopt safer hygiene and sanitation practices after a 12 month intervention period
- Improving the hygiene and sanitation *conditions* within the community after a 12 month intervention period, as measured according to set criteria and indicators
- Improving the hygiene and sanitation *practices* of at least 80% of the female adult group after a 12 month intervention period as measured according to set criteria and indicators.

All the objectives were set for adult female community members (described in Chapter 3 as the target group) to practice after the intervention had commenced. These practices would then be evaluated by the research team according to set criteria and indicators and by using methods such as observations with field notes, group discussions and key informant feedback. These stated objectives needed a specific facilitation plan, format and evaluation plan, which will now be conferred.

6.6.2 Designing a facilitation plan

The facilitation plan was based on the set goal and objectives and consisted of various strategies to attain the goals and objectives. These strategies included learning activities and the actual messages (content) transferred, the particular format and resources needed to implement the strategies. The strategies and content of the facilitation plan were primarily based on the outcomes of the analytical activity. Certain practices and conditions were observed and measured, indicating which messages and focus points to include.

6.6.2.1 Strategies

Strategies refer to the specific activities that were planned. Strategies are usually selected to bring about behaviour change and should be mediated by local knowledge and contexts. There is a trend in community studies and interventions towards more participatory approaches and the inclusion of learners as part of the selected strategies. There is also growing recognition to include strategies that are designed to create supportive environments for behavioural change and to sustain the effects of interventions. Furthermore - strategies should also be designed to strengthen local ownership and to develop structural and institutional support (Smith, 1997). These recommendations also apply to nutritional interventions (Smith & Smitasiri, 1997).

Within the nutritional context, most researchers and authors (Allen & Gillespie, 2001:94; Andrien, 1994; Smith & Smitasiri, 1997) advise on a selection of strategies that go beyond communication activities and include those that address the factors determining nutritional behaviour. They further advise not only to focus on existing problems, but also to aim at promoting and enhancing nutritional health. Depending on the situational analysis, such strategies might include increased access to more affordable foods, nutrition education for school children, feeding programmes and nutrition education for parents in schools and day-care settings, or the provision of affordable, nutritious food at worksites.

Key strategies mentioned by Allen and Gillespie (2001:94) are: growth monitoring and promotion, integrated care and nutrition, communications for behavioural change, supplementary feeding for women and young children, feeding at schools, health-related services, micronutrient supplementation and food-based strategies. Strategies such as social mobilisation and community development may also have value and relevance to increase local community control over nutritional issues and provide social support for improved nutrition (Smith & Smitasiri, 1997). Within such strategies, social health indicators as well as epidemiological factors are considered, which move nutrition education towards a focus on people and health rather than disease.

Case studies done in developed countries show the diverse socio-economic and cultural conditions from which nutrition problems arise and in which nutritional interventions need to operate (Smith, 1997). The reviewing of case studies is valuable because it highlights difficulties that can occur, provide examples of good practice that can be shared and give insight in a range of strategies and approaches, which can be considered as options. The case studies described in Smith (1997)

illustrated a wide range of information, education and communication strategies, including strategies for structural and environmental support.

Strategies can include information processes as well as the more conventional communication processes. Information dissemination is generally designed to inform unilaterally, for example through print and broadcast channels, whereas communication strategies use interpersonal, face-to-face channels such as group discussions, home visits, training and counselling (Smith, 1997). The issue, however, is no longer which channel to choose or which channel is best, but how to use a combination of channels to improve and support nutritional behaviours.

Nutritional interventions are further concerned with modifying social communication to bring about middle or long-term changes in the behaviour of populations. When interpersonal communication forms part of the proposed strategy, it has a complementary role, reinforcing other activities aimed at changing the behaviour of an entire social group. To achieve this goal, an intervention must be based on a thorough study of behaviour, attitudes and the practices of the social group concerned (Andrien, 1994).

Although nutrition interventions cannot contribute directly to change structural factors such as poverty, income level, employment and educational status or the social impacts of race, gender, age, disability or ethnicity, it must consider these impacts in the design, development and implementation of the programme (Smith & Smitasiri, 1997). This requires programme planners to move away from individual behaviour change and information transmission as the only approach, and to consider in their planning environmental supports, organisational change, advocacy and policy development, and particularly working collaborative across sectors and within social networks. There is a growing recognition, therefore, of the need to include strategies designed to create supportive environments for behavioural change and to sustain the effects of interventions through strategies designed to strengthen local ownership and to develop structural and institutional support. Strategies should go beyond communication activities and encourage planners to consider a variety of strategies to address the factors, which are determinants of nutritional behaviour.

If nutritional interventions are to be truly effective, they must focus on bridging the gap between people's mere awareness of health and nutritional aspects and their actual behaviour regarding health, food and nutrition. Such information therefore must be delivered in a form, that people can

in fact use it to improve their current health and nutrition practices. Interventions should be designed to go beyond merely delivering information to people, but should first of all support individual behaviour change, before success can be achieved with broader efforts (Shafer *et al*, 1996:1187).

Face-to face education, either in groups or on one-to-one bases, has been the traditional approach to nutritional interventions, but its effectiveness has been seriously questioned (Smith & Smitasiri, 1997). Evaluations of successful nutritional interventions confirm that those that have an impact on behaviour depend on social context and interpersonal interaction to provide participants with the opportunity to practice the new behaviours and learn to solve their own nutrition problems over time. Environmental support, organisational change, advocacy and policy development, and particularly working collaboratively across sectors and within social networks, were other factors considered when planning broader interventions.

Other strategies reported to support nutritional interventions are:

- Local communities that are committed to allocating land for vegetable gardening. Community action can be critical for the sustainability of nutrition improvement
- Day care centres with a policy to serve only nutritious food
- Schools with a policy to allocate specific time to nutrition education
- Government with policies which incorporate nutrition education goals into agriculture, and make nutrition education mandatory in schools
- Social marketing methods such as media, advertising and sponsorships to raise awareness of nutrition issues in the community, influence public opinion and give nutrition education a higher profile
- Advocacy to influence decision makers to support nutrition promotion and to mobilize social support
- The process of creating broad social support will often be the first stage in effective positive changes
- Achieving organisational commitment to support improved nutrition. Collaborating with organisations and sectors such as local government, social organisations, worksites, educational organisations, health centres and cultural groups to support nutritional improvements (Allen & Gillespie, 2001; Frankle & Owen, 1993:220; Smith & Smitasiri, 1997).

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Strategies selected to bring about behaviour change should be mediated by local knowledge and contexts (Smith, 1997). There is a trend towards more participatory approaches and the inclusion of learners in all aspects of programs. Community participation is a necessity because nutrition behaviour is deeply entrenched in the fabric of socio-cultural life. Participation can be obtained by incorporating representatives of the target population in the planning committees, and by systematically involving them at all stages of the intervention (Andrien, 1994).

Within a sanitation context, the following strategies for interventions on a community level were reported:

- Advocacy (Nyoni, 2004)
- Community mobilisation (Iredale, 2003)
- Community teams (Ahmed *et al*, s.a.; Ferrell, 2002:4; IRC, 2004a)
- Demonstrations (Nyoni, 2004)
- Games (Iredale, 2003), e.g. three-pile sorting, pocket charts (Almedon *et al*, 1997)
- Health clubs (IRC, 2003a)
- Healthwalks to foster spontaneous informal conversations and discussions (Almedon *et al*, 1997).
- Household credit schemes (Varley, 1998:133)
- Innovative technologies (Simpson-Hébert & Wood, 1998:203-263)
- Mass campaigns (Appleton & Van Wijk, 2003:19)
- Poems and folk songs (Ahmed *et al*, s.a.)
- Promotion through children (Simpson-Hébert & Wood, 1998:161, 185)
- Social marketing (IRC, 2004b; Mehra, 1998:51; Sanitation Connection, 2002)
- Training of health promoters (Iredale, 2003).

The WHO (1993; s.a.) has also published a list of lessons learned during decades of efforts to improve sanitation, namely that:

- It needs to be addressed holistically, including improvement of facilities, environmental conditions and behavioural change
- It should be demand-driven and the community should be fully involved in the process
- High risk groups should be identified for better targeting of funds and efforts
- It should be a component of other health-promotion or disease control programmes
- Awareness needs to be raised and sanitation set as a priority in national and local governments and also in the population at large

- Systems have to be sustainable
- Cost-sharing and cost-recovery need to be addressed carefully.

There is also considerable mention in the literature of integrating hygiene and sanitation intervention with different other services in the area (social services, school feeding, health care, growth monitoring, agricultural extension, water safety, public works) (Iredale, 2003; IRC, 2003b; Nyoni, 2004).

Within this study, only those elements from the literature that fitted the particular community and intervention were considered. Decisions were also made on how best to incorporate these components into the designing and implementation phases. *“Care should be taken not to try and cover too many issues at once – focus on what’s important to the community”* said Nyoni (2004). Iredale (2003) confirms by stating that it is critical to focus on only a few key messages. In order to limit the number of messages included in the facilitation plan, I decided to focus on the specific problems that were observed in more than 70% of the participants (six or more from the eight cases) (see Box 7.6).

6.6.2.2 Format

Although nutritional interventions cannot contribute directly to changing structural factors such as poverty, income level, employment and educational status, or the social impacts of race, gender, age, disability or ethnicity, it must take these impacts into account in the design, development and implementation of the program (Andrien, 1994; Smith & Smitasiri, 1997). Physical infrastructure, such as housing and transport, must also be considered in planning. All of these factors can, in turn, relate to the factors that have an impact on the individual and his vulnerability to nutritional risk. Along with inter-generational and familial factors, they can influence nutritional status, self-esteem and motivation (Andrien, 1994).

In this study ‘format’ refers to procedures, methods and techniques used, as well as necessary support activities. Various learning experiences, such as group or individual work or work within the community are also implicated, for example lectures, brain storming, group discussions, role playing, individual research, field trips, large-group debriefing, or small group debriefing. All adults vary in their comfort levels and varied formats provided ample opportunity to find a comfortable approach for each participant (Dirkx & Prenger, 1997:67, 76). The selection of methods and techniques were based on what was appropriate for the target group and the setting. Aspects of

contextual learning were also included, which referred to learning that the participants found meaningful, relevant and significant to their situations and life experiences (Dirkx & Prenger, 1997:19). The emphasis was on personal meaning within the act of learning. Learning was made meaningful by grounding it in the life experiences of the participants.

The following six strategies with various learning activities were planned:

- Information sessions with a mini-lecture, slide-show, game, information sheet/activity and discussion
- Individual dialogue sessions (face-face counselling; based on the outcomes of the previous information session)
- Key informant trials (home visits, fact finding trips; encouraging good behaviour; problem-solving)
- Tuck shop (supplying various affordable cleaning agents; non-profit selling)
- Competitions (cleaning-up the environment; cleaning the houses and latrines)
- Educational support material (personalised poster).

6.6.2.3 Resources

Resources can be categorised as human (labour, skills), materials (food, supplies), operational (money, time, utilities, information) and facilities (space and equipment) (Almedom *et al*, 1997). The various resources that were needed to implement the intervention are summarised in Table 6.1.

6.6.3 Designing an evaluation plan

Evaluation was not viewed as a general managerial function to track performance with corrective action. It was rather seen as a regular procedure undertaken throughout the life cycle of the intervention and an activity interlinked with the other phases. This procedure required assessments of the process and outcomes of the intervention in the context of its stated objectives. Evaluation was further considered a necessary support activity and an instrument for refining or restructuring the facilitation plan. No single evaluative model was selected as a blue print for constructing the evaluation plan. The evaluation plan stemmed from the activities undertaken and served to underscore the objectives, as suggested by Dirkx and Prenger (1997:77). A variety of methods were chosen that were meaningful to the study as well as to the participants. Methods for both process and outcome evaluation were included in the planning decision (Smith & Smitasiri, 1997).

TABLE 6.1: RESOURCES NEEDED AND USED IN THIS STUDY

Category	Resources used in this study
Human	Main facilitator and research team Participants Key informant Farm owner and staff working on the farm Skills in conducting research, interviewing, observing, PAR Skills in facilitating group discussions Skills in translating English to Southern Sotho (and vice versa) Skills and knowledge of participants Ability to speak Sotho
Materials	Incentives in the form of cleaning agents, vegetable packs Competition prizes Donated items for the tuck shop Utilities (Personal computer with word processing and Power Point software, paper and cartridge ink for printing data gathering instruments and results; digital camera and photos taken; scale, measuring tape) Subsistence (in the form of food, drink and accommodation for the research team)
Operational	Analysed/summarised data (regarding needs and problems) Information regarding the specific farm and community members living on the farm Funds for travelling and accommodation of the research team Funds for data analysis (micro-biological tests), nutritional status Funds for educational material Remuneration for field work, translations and transcriptions Time to do site visiting and conducting research (usually three consecutive days) Time to design the research plan, test educational material
Facilities	School class room Conference centre Transportation (suitable rented vehicles and fuel)

Although the evaluation phase of the study is presented in depth in Chapter 8, the formulated plan to evaluate the process of implementation as well as the measurements of objectives and outcomes is revealed here. The evaluation plan in this study related to the implementation of the facilitation plan to address hygiene and sanitation is formulated and set in Table 6.2.

TABLE 6.2: EVALUATION PLAN FOR THE HYGIENE AND SANITATION INTERVENTION

Criteria	Indicators	Method
Process of implementation:		
Encouragement Motivation Participation Collaboration	% women encouraged, motivated, participating and collaborating Willingness to participate Enthusiasm	Group discussions Field notes
Outcomes:		
Safer hygiene and sanitation practices	% reduction in unhygienic practices	Key informant feedback Observations
Improved hygiene and sanitation conditions	% improvement in sanitary conditions	Key informant feedback Observations

Specific criteria and indicators of success were derived from the literature (Almedon *et al*, 1997; Billig *et al*, 1999:22; Curtis *et al*, 2000:29; Samanta & Van Wijk, 1995; WHO, 1993).

6.7 SUMMARY

The design of the intervention was based on an in-depth analysis of the nutritional situation on Oranje farm. The most urgent need to be addressed was revealed as the poor hygienic and sanitary conditions and practices. The aim was to design a needs-based, participatory-action orientated intervention to address this particular need. Three steps were followed, namely to develop goals and objectives, to construct a facilitation plan and to formulate an evaluation plan. This designed intervention is summarised in Box 6.5, where-as the implementation phase is revealed in the next chapter.

BOX 6.1: UNSTRUCTURED OBSERVATIONS REGARDING HYGIENE AND SANITATION PRACTICES

“The people don't practice personal hygiene, don't wash themselves, don't brush their teeth, and don't wash their hands after defecation. Children do not use the pit latrines but go to the veld”, was said by one of the participants.

Faeces were observed within 5 meters from the houses. The children were sent to the veld by their parents when in need to urinate or defecate. Most of the times the children were not accompanied by any adult. Grass (*lengana*) or cardboard was used to clean anal surfaces.

Dustbins were not used by any of the households to collect garbage. People used plastic bags in stead, which are thrown on a communal site. Again, no signs of burying or burning of disposed material were observed. The wind also scattered some rubbish through the veld.

Animal droppings were observed all around the village. Only four of the 18 households attempted to keep their yards clean, sweeping with grass brooms.

Dogs are not always kept at bay, and were allowed to enter the cooking area.

All the children appeared very dirty, and were wearing dirty clothes. They also indicated that they had not bathed within that particular week.

During food preparation times, no surfaces were cleaned when fresh vegetables were cut. Hands were also not washed before preparation started.

In one household, the feeding of a 6-month baby was observed. The caretaker cleaned the child's dirty nappy, and directly started to feed her again, without washing her hands in-between. The baby food was also left uncovered, with flies all around the food. Within the same household, buckets with drinking water without lids were seen, and people eating from the same dish with dirty hands and dirty nails. Dogs were lying next to the preparation area.

People indicated that they do not have money to buy soap. When they cleaned, they only used cold water. Sometimes, when dishes and pots are washed, the water may be warmed. Pots were not scrubbed, and no abrasive such as 'steel wool' or any other replacement was observed.

In one particular house, the bed and laundry were very dirty. A child was observed with visible worms dripping from the nose. The child also had dry dermatitis, oedema, and skin lesions. The house was described as 'smoky and smelly'. Only four of the 18 houses could be described as domestically clean, based upon the observed criteria (see Table 6.1).

With regard to the usage of drinking water - hands were touching the drinking water when mugs were used to scoop. No spoon with an extended handle was observed to prevent hands from touching the drinking water.

The day of the visit was also communal 'washing day'. Four women were observed at the communal tap, boiling water in a conga. The children carried the dirty laundry from the houses in plastic containers. Laundry was hand washed with powder soap and left to sun dry on the fences. The washing water in the basins was very dirty.

BOX 6.2: SUMMARY OF HYGIENE AND SANITATION PROBLEMS IN THE COMMUNITY WITH POSSIBLE STRATEGIES

Observed problem	Planned intervention strategy
<ul style="list-style-type: none"> ▪ Food prepared with dirty hands 	Information session Individual dialogue sessions
<ul style="list-style-type: none"> ▪ Animals entered cooking areas 	Information session
<ul style="list-style-type: none"> ▪ Filthy and worn kitchen cloths (*) 	Individual dialogue sessions Tuck shop Educational support material
<ul style="list-style-type: none"> ▪ Uncovered drinking water (*) 	Information session Individual dialogue sessions Educational support material
<ul style="list-style-type: none"> ▪ Children appeared dirty, wearing dirty clothes 	Information session
<ul style="list-style-type: none"> ▪ No toilet facilities for young children (*) 	Information session Educational support material
<ul style="list-style-type: none"> ▪ Observed human and animal faeces 	Information session
<ul style="list-style-type: none"> ▪ Filthy pit latrines (*) 	Tuck shop Competitions Educational support material
<ul style="list-style-type: none"> ▪ Improper garbage disposal (*) 	Information session Educational support material
<ul style="list-style-type: none"> ▪ Environment polluted with waste 	Competitions

(*) These problems were also observed during the structured observations as indicated in Box 6.4.

BOX 6.3: STRUCTURED OBSERVATION GUIDE

Date: April 2003

See anyone defecating? (Who? Where? Describe?)

Describe pit latrines:

Observed faeces

Amount of flies

Working condition (seats and doors)

Covering seat

Spider webs

Toilet paper or other cleaning matter

Do the young children (between 1-5 years) also use the pit latrines? Yes/No

If yes, does someone help them

If no, where and how do they dispose their stools and urine?

Hand washing facilities

Inside house

Within walking distance of house

Next to latrine

Presence of soap

Water collected per day for household use

Number of containers

Size of containers

Assess volume (in litres) of containers

Number of people for whom the water is collected?

Who usually collects the water?

For which purposes are the water used?

Water separately only for hand washing?

Describe how hands are washed (techniques)

Water separately only for drinking?

If yes, where is the container kept?

Is the container covered?

Distance between water supply and village (meters)

Description of water supply

Presence of soap in the house?

If yes, how much?

Which type(s)?

For which purposes do you use it?

How often do you wash the household members' clothes?

Do you have a kitchen cloth? Yes/No

If yes, can I please see it? Describe

BOX 6.4: STRUCTURE TO ORGANISE THE DESIGN PROCESS

Needs (of the community):			
Goal (of the intervention):			
Objectives (of the intervention):			
Facilitation plan (for addressing each need):			
Strategies: ★ Learning activities ★ Messages (content)	Format: ★ Procedures ★ Methods, ★ Techniques ★ Support	Resources: ★ Human ★ Operational ★ Material ★ Facilities	
Evaluation plan:			
	★ Criteria	★ Indicators	★ Method
Process			
Outcomes			

BOX 6.5: SUMMARY OF THE INTERVENTION DESIGN FOR HYGIENE AND SANITATION

Needs (of the community): ⇒ poor hygienic and sanitary conditions and practices			
Goal (of the intervention): ⇒ addressing the identified nutritional needs of the community members living on the farm			
Objectives (of the intervention): <ul style="list-style-type: none"> improving the hygiene and sanitation conditions within the community and practices of adult female community members, improving food insecurity of community members, improving dietary diversity of community members improving food-coping strategies of community members... ... as observed by the research team and expressed by the participative group			
Facilitation plan (for addressing the first stated need):			
Strategies:	Messages (content)	Format (learning activities)	
<ul style="list-style-type: none"> Group information sessions Individual dialogue sessions Key informant trials Tuck shop Competitions Educational support material 	<ul style="list-style-type: none"> Teach children to use toilets Use soap to wash hands Keep toilets clean Wash kitchen cloths everyday After washing the kitchen cloths, hang them out in the sun to dry Cover drinking water Burn rubbish 	<ul style="list-style-type: none"> Mini-lecture, slide show, game, information sheet/activity and discussion Face-to-face counselling Problem solving Home visits, fact finding trips Non-profit selling Personalised poster 	
Resources: <ul style="list-style-type: none"> Human (research team, participants, key informant, farm owner, staff working on the farm), skills in conducting research, interviewing, observing, PAR, facilitating group discussions, translating English to Southern Sotho (and vice versa), ability to speak Sotho, skills and knowledge of participants Material (incentives, prizes, donated items, utilities, subsistence) Operational (gathered data, funds, remunerations, time) Facilities (school class room, conference centre, transportation) 			
Evaluation plan:			
	Criteria	Indicators	Method
Process	Encouragement Motivation Participation Collaboration	% women encouraged, motivated, participating and collaborating Willingness to participate Enthusiasm	Group discussions Field notes
Outcomes	Safer hygiene and sanitation practices Improved hygiene and sanitation conditions	% reduction in unhygienic practices % improvement in sanitary conditions	Key informant feedback Observations Key informant feedback Observations

BOX 6.6: SPECIFIC HYGIENE AND SANITATION PROBLEMS IN THE COMMUNITY AS OBTAINED WITH A STRUCTURED OBSERVATION GUIDE (n=8)

Dimension	Problem	Observed frequency (n)	Planned intervention strategy
Personal hygiene	Dirty nails and hands	2	Not addressed
	Dirty clothes	7	Tuck shop Information session
	Bad, smelly body odour	1	Not addressed
	Bad behaviour (pricking nose, scratching skin, drying hands on clothes)	4	Not addressed
	Visible sores and wounds	0	Not addressed
Household hygiene	Uncovered drinking water	6	Information session Individual dialogue sessions Educational support material
	Bad ventilation	5	Not addressed
	No washing facilities available	5	Not addressed
	Dirty kitchen cloths	6	Individual dialogue sessions Tuck shop Educational support material
	No presence of any soap	1	Not addressed
Environmental hygiene	Children defecating in open veld	6	Information session Educational support material
	Filthy pit latrines	7	Tuck shop Competitions Educational support material
	Dirty, polluted yard	3	Competition
	Animals present in cooking area	4	Not addressed
	Improper garbage disposal	6	Information session Educational support material