Chapter 19

Detailed programme design

Note: This section assumes that the outline programme design (described in Chapter 17) has already been conducted.

After the initial programme and budget approval, the detailed design process can be embarked upon. The objectives of this process are to gather additional information essential to the design and implementation of the programme; increase stakeholder ownership; develop demand; and improve decision-making. Further information can be found in Chapter 13 of the Manual.

19.1 Design process

The detailed design process is represented by Figure 19.1 below.

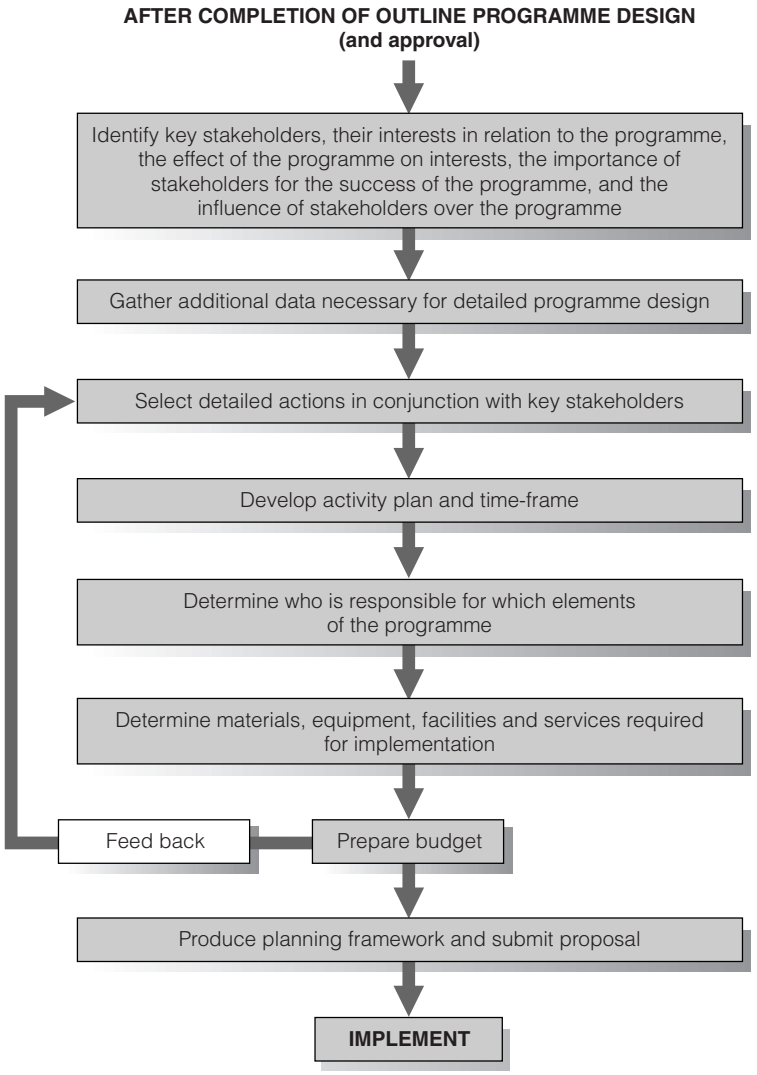


Figure 19.1. Detailed design process

19.2 Stakeholder analysis

In order to assess the participation of different stakeholders in the affected area it is important firstly to identify them. Stakeholder analysis can help identify different interests in a programme, conflicts of interest, and the potential for co-operation and coalitions. The stakeholder analysis should help to assess which stakeholders are important for programme success. It can also help to assess appropriate and feasible roles for different stakeholders. The first stage in the process is to identify the key stakeholders; these may include any of the following:

- Key informants (e.g. health staff, engineers)
- General groups
- Formal leaders
- Focus groups (e.g. women's groups)
- Households and individuals: men, women, children, and disabled people
- The agency
- Other agencies working in the affected area
- The donor

Table 19.1 can be used in stakeholder analysis to identify stakeholders and their respective interests, the likely effect of the project on these interests and the relative importance and influence of stakeholders. For more detailed explanation and examples refer to Chapter 13 of the Manual.

Table 19.1. Stakeholder analysis

Stakeholders	***Interests*** *at stake in relation to project*	***Effect*** *of project on interests*	***Importance*** *of stakeholder for success of project*	***Influence*** *of stakeholder over project*

19.3 Gender and vulnerable groups

It is essential that people of a particular gender or people who are vulnerable in some way are not excluded from the consultation process. For this reason, focus groups such as women's groups may be formed and become involved in the assessment and planning process. These may be independent groups of women formed on their own initiative to discuss certain issues, or may be groups of women encouraged to form for the purposes of a programme that is directed by an external agency. Similarly, vulnerable groups such as people with disabilities and children must be consulted so that they can contribute to programme objectives.

19.4 Community participation *Chapter 12*

Many emergency programmes suffer from a lack of involvement by the affected population and other stakeholders; this may result in inappropriate interventions, unsuitable design of facilities, resentment, or apathy. It is therefore essential that the implementing agency consults and involves the affected population and other stakeholders directly, to ensure an open and ongoing dialogue about programme objectives and activities.

There is more to community participation than answering questions or volunteering manual labour. It is the right of all people to have a say in important decisions that affect their lives. Agencies, therefore, must involve a wide cross-section of stakeholders in the actual decision-making process. This will help to identify demand and develop a sense of ownership, which

will promote further participation and contribute to the overall effectiveness of the programme. In order to achieve this, a planning team consisting of key stakeholder representatives can be formed. Members should be selected carefully so that all stakeholder groups are represented. This team can be involved in assessment, action selection and programme design. There are several ways in which the planning team and the affected community as a whole may be involved:

19.4.1 Interviews and questionnaires

The simplest form of consultation is to interview affected community members through a series of prepared questions or questionnaires. These may be used to collect specific information that cannot be collected through observation alone. This might include private hygiene practices and personal preferences regarding various technical options.

19.4.2 RRA and PRA techniques

Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA) are highly interactive techniques that involve the key stakeholders in the assessment and planning process. These can enable groups and individuals to become actively involved in each of the following:

- Mapping: community maps indicating key facilities, threats and opportunities
- Diagramming: key relationship diagrams
- Trend analysis: seasonal calendars and daily activity charts
- Ranking: priority ranking for sanitation problems, needs and preferences
- Discussing: discussion to identify key issues requiring further attention

Section 19.5 describes the baseline data required for detailed programme design; this will be collected through the consultation process. Stakeholders should also be involved in action selection and in developing the programme activity plan.

19.5 Baseline survey

Following the stakeholder analysis, a baseline survey - usually a questionnaire survey (qualitative and quantitative) - should be conducted before the detailed design is completed. This is necessary to establish pre-project conditions in the affected area, and should help identify:

- vulnerable groups;
- community management structures;
- socio-cultural aspects;
- the acceptability of programmes by affected population; and
- the involvement of different groups in the programme in the short and long term.

Questionnaire surveys can be conducted rapidly but often need lengthy analysis. Checklist H can be used for a qualitative household survey. In general, households may be randomly selected, although it is important to ensure that vulnerable groups are not excluded.

To minimise duplication, the assessor should avoid collecting any information that has already been collected in the rapid assessment, although some information may need updating. It is suggested that the factors and questions in the following sections be considered. Depending on the experience of the assessor much of this information may have been collected earlier.

Checklist H: Baseline survey

Excreta disposal
- Where do men defecate?
- Where do women defecate?
- Where do children defecate?
- Where do people who are disabled or sick defecate?
- Where do elderly people defecate?
- Who uses the existing latrines?
- What type of problems are they facing now?
- What anal cleansing materials are used?
- What are the handwashing practices after defecation?
- What are the handwashing practices after handling children's faeces?
- Are there any important beliefs and taboos related to the location and sharing of latrines?
- Who can participate in an excreta disposal programme and which aspects?
- Who is aware of the health benefits of improved excreta disposal and hygiene practices?
- What type of activities or materials would be best for increasing people's awareness?

Solid waste
- Who in the family collects and disposes of the solid waste?
- Where do they throw the waste?
- How far do they have to walk?
- Who can participate in a solid waste programme and in which aspects?
- Who would like to be involved in the recycling aspects of solid waste?
- Who is aware of the health benefits of improved solid waste and hygiene practices?
- Are there any complaints about the solid waste programme?

Waste management at medical centres
- Have you seen medical waste around your shelter or any other public place?
- Has medical waste caused any problem or injury to you or any member of your family?
- What do you do when you see medical waste?

Disposal of dead bodies
- Has anyone in your family died since the emergency started?
- What was the cause of death?
- Did you have access to a place to bury or cremate?
- What type of problems did you face with burial or cremation activities?
- Did you contact anyone to help you?

Wastewater management
- Does poor wastewater disposal or lack of drainage minimise your access to sanitation facilities and which ones?
- Where do you throw your wastewater?
- Who can participate in a wastewater programme and which aspects:
  - Construction?
  - Maintenance?
- Who is aware of the health benefits of improved wastewater and site drainage?

Checklist H: continued.....

Hygiene promotion

- Do you know any hygiene promoter in the affected area?
- Do you have regular contact with them?
- Have you got or received hygiene promotion kits?
- What methods have been used to promote sanitation facilities and hygiene practices?
- What method should be used to make them more acceptable?
- If you have a problem with any of the sanitation facilities what do you do?
- Do you discuss these problems with anyone?
- Who do you consider your leader in the affected area?
- To what extent could you be involved in excreta disposal, solid waste and wastewater programmes?
- How you would like to be involved in HP activities?

19.6 Necessary action selection

Whilst the outline programme design will have included recommended interventions (or solutions), the detailed actions will not have been selected until now.

Necessary actions should include both hardware (technical) and software (social and institutional) aspects and should be acceptable to all key stakeholders. It is hoped that through this process the agency can ensure that the facilities provided are used and maintained on a regular basis, and that hygiene promotion methods are effective.

In order to ensure that actions are acceptable to them, stakeholders must be actively involved in the selection process, through meetings, interviews and group discussions and activities.

Tables 19.2 - 19.7 list various actions and technical options from which to select. These can be used to stimulate discussion and introduce options of which stakeholders may be unaware. It should be noted that these tables do not include the immediate action options (Chapter 18) but short and long-term options only. In deciding on each appropriate action the following questions should be answered satisfactorily:

Will the selected action:

- satisfy priority sanitation needs?
- be acceptable to all (especially primary and secondary) stakeholders?
- be sensitive to all religious and cultural beliefs?
- address the needs of vulnerable groups?
- address gender needs?
- involve the affected community?
- be affordable?
- be sustainable in operation and maintenance?

19.6.1 Excreta disposal

Chapter 6

Most excreta disposal methods used in emergency situations are well known and described in a wide variety of publications. The various options are listed in Table 19.2 below, whilst actual design details are provided in the Manual.

Table 19.2. Excreta disposal options

Latrine type	*Technology choice*	*Responsibility for construction, O&M*
Family latrine	Pour-flush latrine Simple pit latrine Borehole latrine Composting latrine	Family members Contractors (for borehole latrines only) Hygiene promotion team to promote and advise on family latrines
Communal latrine	Pour-flush latrine Water closet Overhung latrine Trench latrine Simple pit latrine (including raised and twin pit) VIP latrine	Community volunteers Agency staff Contractors Hygiene promotion to promote cleanliness and maintenance
Disabled latrine	Pour-flush latrine Simple pit latrine VIP latrine	Family members Community volunteers Agency staff Hygiene promotion team to identify vulnerable people and mobilise community

Important considerations such as location, space and available resources/personnel must also be included in the decision-making process. Particular reference is made in the Manual to difficult site conditions such as rocky ground, high water tables, unstable soil, and the effects of flooding.

19.6.2 Solid waste management *Chapter 7*

The main options for solid waste management are listed in Table 19.3. It is important to consider personnel as well as methods of transportation and practical disposal options.

Table 19.3. Solid waste management options

Disposal system	*Storage*	*Transportation*	*Disposal*	*Responsibility for construction, O&M*
On-site disposal	None	By foot	Family pits Communal pits Composting	Family members Community volunteers Agency staff
Off-site disposal	Communal bins Family bins Communal depots	Human-powered Animal-powered Machine-powered	Open pit Incineration Landfilling Composting	Community volunteers Agency staff Provision of protective clothing External personnel or contractors

19.6.3 Waste management at medical centres *Chapter 8*

Many of the issues that affect solid waste management affect equally the management of medical waste (Table 19.4). It is important, however, that medical waste is separated from general solid waste and disposed of in a hygienic way to avoid further spread of disease or infection.

Table 19.4. Waste management options at medical centres

Disposal system	*Segregation*	*Disposal*	*Transportation*	*Responsibility for construction, O&M*
On-site disposal	Sealed containers Designated bins	Incineration Sharps pit Pit disposal Landfilling	By foot	Medical staff Agency staff; Provision of protective clothing
Off-site disposal	Sealed containers Designated bins	Incineration Sharps pit Pit disposal Landfilling	Human-powered Animal-powered Motorised	Medical staff Agency staff Provision of protective clothing External personnel or contractors

19.6.4 Disposal of dead bodies *Chapter 9*

The disposal of dead bodies is obviously a sensitive issue and the choice of disposal method will depend primarily upon socio-cultural practice and expectations. In addition, safety, available resources and space must be considered, especially in cases of epidemics. Table 19.5 lists appropriate options.

Table 19.5. Disposal options for dead bodies

Scenario	*Transportation*	*Disposal*	*Responsibility for construction, O&M*
Stable situation	People-carried Cart Motor vehicle	Burial Cremation	Family members Community members
Medical epidemic (e.g. cholera)	Motor vehicle	Burial (following disinfection) Cremation (following disinfection)	Medical staff Agency staff Hygiene promotion to raise awareness of health risks

19.6.5 Wastewater management *Chapter 10*

Several options exist for the management of wastewater and they depend largely upon site conditions and available space. The options in Table 19.6 should be considered:

Further information on each option can be found in the Manual; it is likely that a combination of methods will be adopted.

Table 19.6. Wastewater management options

Ground conditions	*Disposal*	*Treatment*	*Responsibility for construction, O&M*
Permeable soil	Soakpit Infiltration trench Natural drainage Irrigation	Filter Grease trap Settlement tank	Agency staff Community volunteers mobilised through hygiene promotion External personnel or contractors
Non-permeable soil	Natural drainage Natural drainage Man-made drainage Evaporation pan Evapotranspiration bed Irrigation		

19.6.6 Hygiene promotion *Chapter 11*

A typical hygiene promotion programme should focus on the following key aspects:

- promoting safe hygiene practice;
- promoting the appropriate use and maintenance of sanitation facilities; and
- promoting participation in sanitation programmes.

General options are provided in Table 19.7, from which a small number of activities should be selected at a time. The various methods that may be used for these activities are described in the Manual (Chapter 11).

Table 19.7. Hygiene promotion options

Objectives	*Activities*
Reduce high-risk hygiene practices	Promote safe disposal of faeces Promote handwashing after defecation, etc. Promote safe water use, storage and disposal Promote safe disposal of solid waste Promote safe handling and disposal of medical waste Promote increased hygiene in cases of epidemics
Promote appropriate use and maintenance of sanitation facilities	Promote appropriate use and maintenance of sanitation facilities Promote appropriate use of: latrines; solid waste facilities; wastewater disposal systems; medical waste facilities; or burial grounds.
Promote participation in programmes	Encourage families to construct their own latrines Recruit waterpoint and latrine attendants Mobilise community for clean-up campaigns Mobilise community for construction of drainage channels or other sanitation facilities

The above sector tables (Tables 19.2-19.6) also indicate relevant hygiene promotion activities to promote the construction and use of facilities.

19.7 Selection checklist

Once necessary actions have been selected, the checklist in Table 19.8 can be used to check the appropriateness of each action, and whether all the key issues have been considered.

Table 19.8. Selection checklist

Issue	*Relevant information*
Segregation of facilities (gender issues)	
Cultural and religious beliefs	
Anal cleansing methods	
Addressing the needs of vulnerable groups	
Acceptability of technology to affected population	
Acceptability of sanitation sites to the affected population	
Upgradeability of selected technology	
Sustainability of technology	
Ease of procurement and transportation of materials and equipment	
Use of local materials without adverse effect on the environment	
Operation and maintenance of facilities	
Appropriate hygiene promotion activities for all sanitation facilities	
Acceptability of methods of dissemination to be used for hygiene promotion activities	
Addressing gender issues	
Community management and mobilisation	
Level of community participation	

This is designed to act as a final check before detailed design and implementation.

19.8 Developing the logical framework

The logical framework is a way of planning programmes and testing their internal logic through the planning process. The logical framework (Table 19.9) can be used to present the programme design in a logical fashion by linking means and ends, and this can form the basis for the activity plan. Further information can be found in the Manual (Chapter 13).

Table 19.9. Logical framework

Narrative summary	*Measurable indicators*	*Means of verification*	*Important assumptions*
Goal:			
Purpose:			
Outputs:			
Activities:			
Inputs:			

19.9 Developing the programme activity plan

In order to develop an activity plan for the programme, the necessary actions selected need to be listed and considered in more depth.

It is important that the activity plan contains significant detail and demonstrates the use of needs-sensitive and appropriate design. In other words, it should be clearly seen that technical designs and implementation approaches incorporate stakeholder needs and preferences identified through the consultation process.

Whilst the selected actions will depend on many external factors such as availability of resources, site conditions, and the ability and experience of personnel, it is important that the programme design shows that a range of options has been considered. The reasons for selection should also be stated clearly so that the donor is able to follow the programme justification.

19.10 Developing the time frame for the activity plan

Once an activity plan has been drawn up, it is necessary to develop a time frame for its implementation. The planning team should be asked to estimate the time-frame required for each action, and these estimates can be used to develop a programme Gantt chart (Table 19.10).

It may be appropriate to ask different team members to estimate the duration of different activities. These can then be presented to the group, discussed and modified before completing the Gantt chart. Activity durations are likely to be measured in weeks or months, and participants should be encouraged to consider logistical and financial factors affecting implementation.

Ideally, all activities should be presented on a single programme Gantt chart:

Table 19.10. Example Gantt chart

	Weeks/Months							
Activities	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**

Activities can be broken down into shorter distinct periods during implementation (Chapter 20).

19.11 Determining responsibilities

The *personnel requirement* section of the programme proposal is intended primarily to show the number and category of salaried employees required, including both national and international staff. This may include job titles, brief job descriptions and reporting lines.

In addition, individuals and groups from the affected community who are to be responsible for the completion of specific activities should be identified. This can be done by asking the planning team to identify who will be best suited to take responsibility for each activity listed in the programme activity plan. This process should be followed by discussion to reach a group consensus for each activity.

19.11.1 Community volunteers

Some agencies have strict policies whereby community participants must be involved on a voluntary basis only, since they are also the beneficiaries. In practice, community volunteers often receive incentives such as additional food, and those with particular skills may receive money. Great care must be taken in deciding on such issues, in order to avoid unnecessary tensions or conflict. It is important that such decisions are made before implementation and worked into the detailed programme design.

19.12 Determining resources

In developing each sector action plan the planning team was asked to consider what resources would be required for the implementation of the selected actions. This can be developed further by asking the planning team to combine the elements investigated so far in a programme implementation plan (Table 19.11).

Table 19.11. Implementation plan

Activities	*Responsibilities*	*Equipment and materials*	*Facilities*	*Services*

19.12.1 Logistics

The logistics of moving personnel and resources to the project site is probably the key service required in any emergency programme. Inefficient or inadequate logistical systems can be the cause of much frustration in the field. For this reason it is important that efficient systems are set up as early as possible in the programme, and that where possible local resources requiring minimum transportation are used.

It is likely that the sanitation programme is only one component of the agency's emergency programme in the area, and that a single logistical system will exist for all programme activities. For this reason it is important for personnel to consider the difficulties facing the logistics team and to plan intervention activities accordingly.

Any logistical system is likely to be complex and to include the following processes:

- Specification of goods and equipment required
- Communication with suppliers and agency headquarters
- Procurement and consignment (locally or internationally)
- Transportation (by land, air and water)
- Storage
- Stock control
- Distribution

In selecting technical options and planning activities it is essential that logistical structures and procedures be considered. Sources of different materials, procurement and delivery speed, and ease of transportation and storage should be considered. Options that may seem slightly less preferable technically may be much more appropriate in overall terms, once such aspects are taken into account.

The option of using local contractors, where available, should also be considered, since this may minimise the logistical demands made on the agency.

19.13 Preparing the budget

Good budgets are important if programmes are to be efficient and effective. It is important that sufficient attention is paid to all relevant costs for each of the following:

- Staff salaries
- Building materials
- Training materials
- Tools and equipment
- Transportation
- Administration
- Monitoring and evaluation

From this, a budget can be drawn up for each sanitation sector to be dealt with and this information can be summarised in the overall programme budget. Whilst the donor may be interested in value for money, the key concern is likely to be that the programme objectives can be fully achieved on schedule at reasonable cost, rather than only partly achieved or achieved later than schedule at low cost. It is therefore important that each cost is balanced against quality.

Some donors are keen to see the projected cost per beneficiary as a guide to the expected programme efficiency. This can be calculated from the following equation:

$$\text{Cost per beneficiary} = \frac{\text{total cost of sanitation programmes}}{\text{total number of beneficiaries}}$$

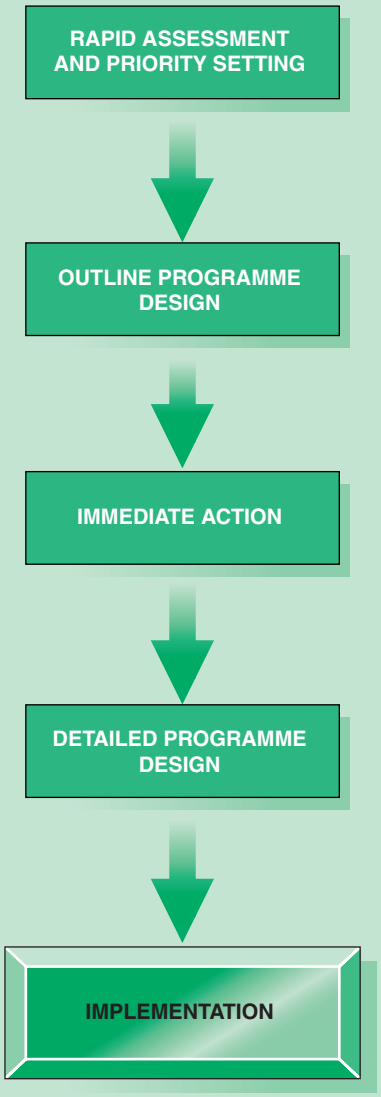
It is also important that cash is available in the field for local purchase and payment of staff or contractors. Requests for such cash should be made well in advance to ensure that the necessary amounts are available when required. Cash needs should therefore also be identified in the detailed programme design.

19.14 Feedback and refinement of plan of action

Once the plan of action has been completed and the budget has been drawn up, feedback should be given to all the key stakeholders. This is necessary to ensure that stakeholders are broadly in agreement with the proposal, that those included are able to carry out their reponsibilities successfully and that any disadvantages to stakeholders are minimised. If necessary the plan of action may need to be refined as a result of this process. Once a consensus has been reached the logical framework and final proposal can be prepared.

19.15 Final programme proposal and approval

If required, the final programme design should be submitted to the agency headquarters for final approval from the donor and the release of funds. It is expected that donor funding criteria will be well known and that the design will incorporate these.


RAPID ASSESSMENT AND PRIORITY SETTING
OUTLINE PROGRAMME DESIGN
IMMEDIATE ACTION
DETAILED PROGRAMME DESIGN
IMPLEMENTATION