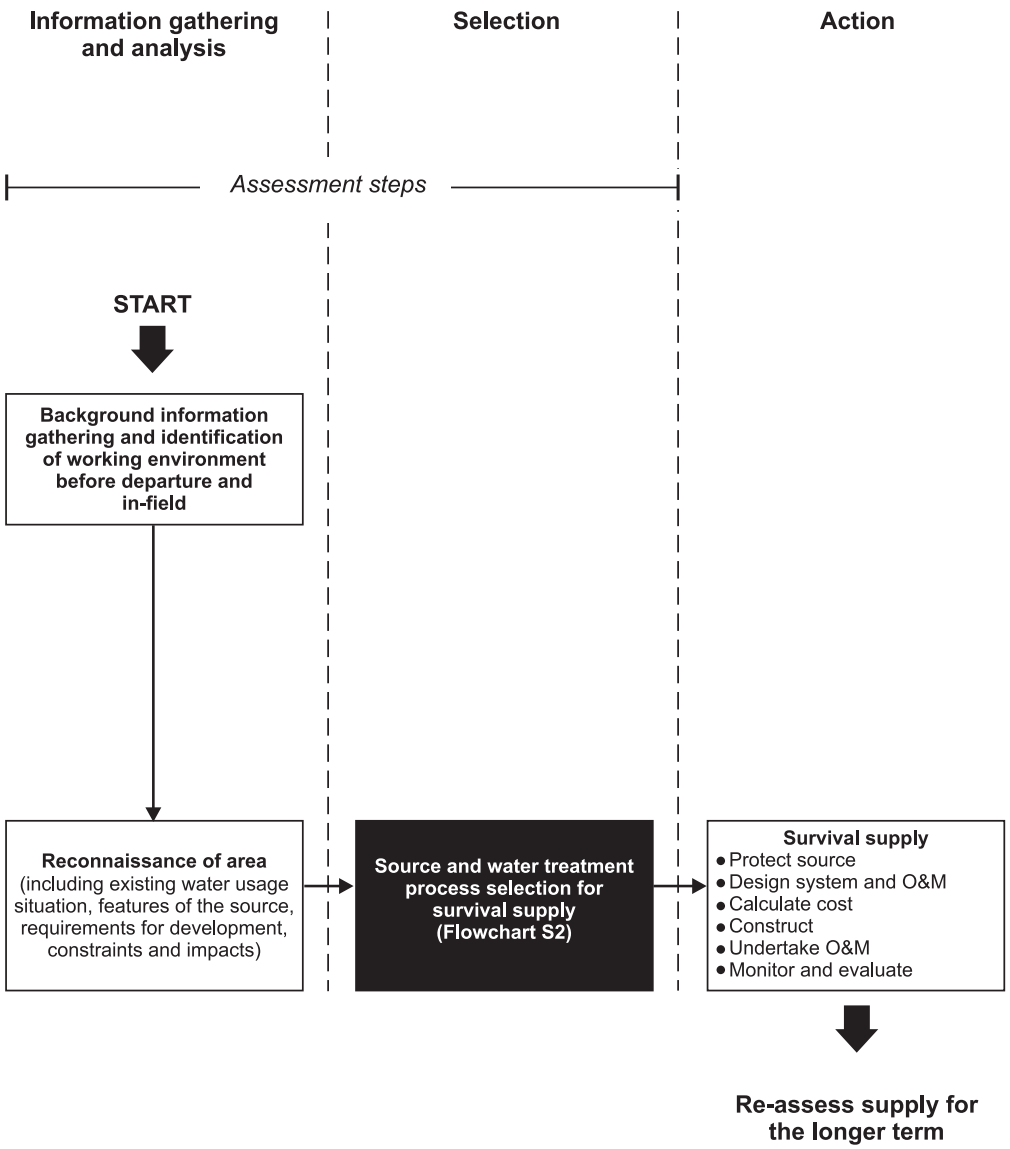
2

SURVIVAL SUPPLY

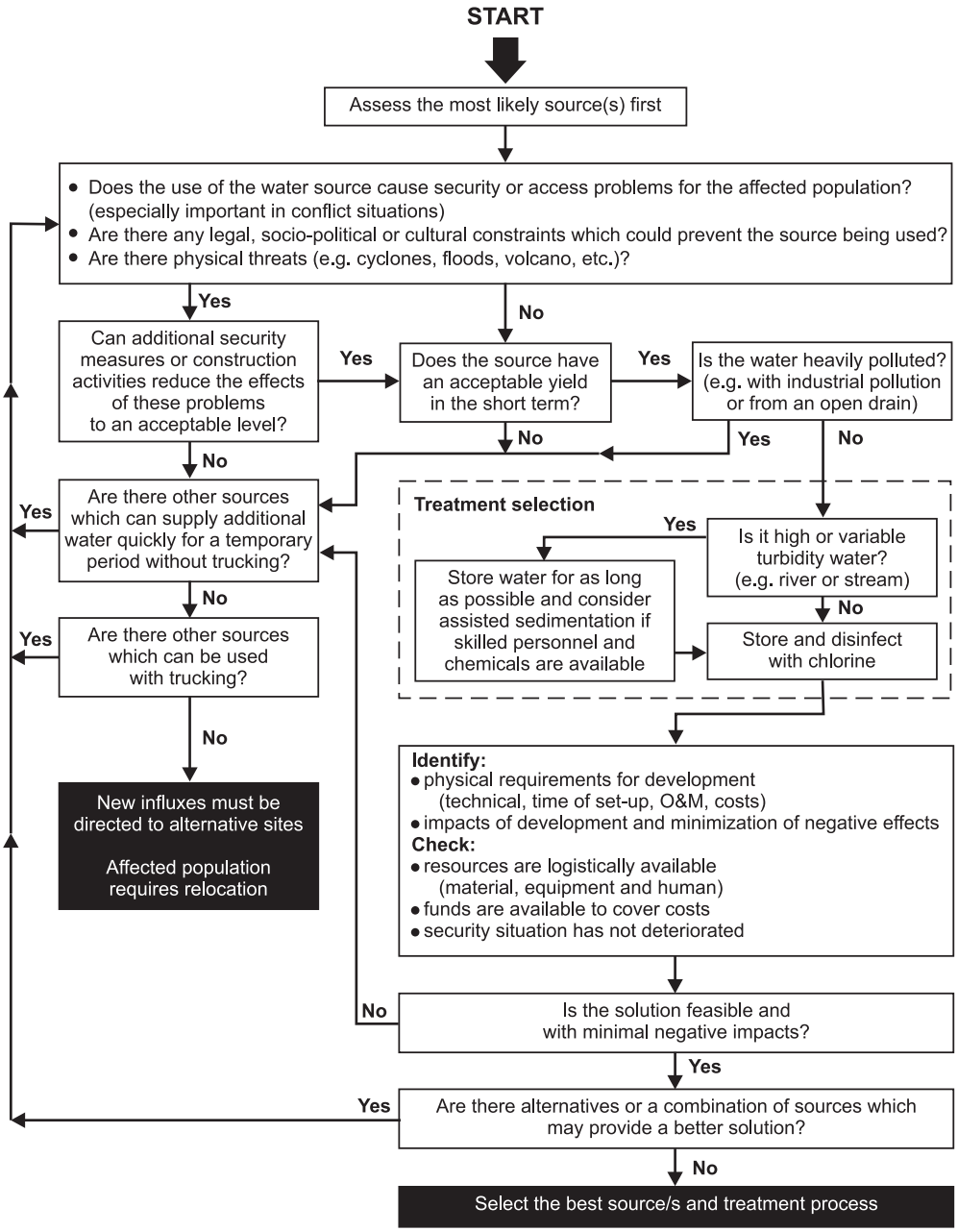
2

Steps for assessing survival supply



Note: For further information, also refer to Figure 3.3, p47 and the source summary table, p48

Source and water treatment process selection for survival supply



Background information gathering and identification of working environment before departure and in-field

Note: The following two checklists and the *Availability of resources / logistics* checklist (pp56-7) may be sent ahead to the field so that information gathering may begin before the arrival of the assessors.

Background information gathering before departure and in-field

Information

- ❑ Maps (topographic, geological, road, hydrogeological, demographic, land-use, rainfall)
- ❑ Aerial photographs / landstat images
- ❑ Regional details
  - ❍ *Climate (including rainfall data)*
  - ❍ *Industrial and agricultural practices*
  - ❍ *Populations (culture, religion)*
  - ❍ *Economy*
  - ❍ *Political situation*
  - ❍ *Exchange rate*
- ❑ Previous surveys / studies (organizations' database or library)
- ❑ Other agencies working in the field
- ❑ Organizational structure of employing agency and policy and mandate
- ❑ Specific job information
  - ❍ *Job description*
  - ❍ *Responsibilities and chain of command*
  - ❍ *Other agency personnel in the field*
  - ❍ *Logistical and financial constraints*
  - ❍ *Communication procedures*
- ❑ Structure of government and local government (including which store information and which make decisions)
- ❑ Contacts in key departments (water and sewerage, water resources, planning, surveying, meteorological)
- ❑ National policies and development projects
- ❑ Existing national emergency plans
- ❑ Capacity of the government to cope with the water demands of the affected population
- ❑ Background to the crisis and projected developments

Sources of information

- ❑ Government departments of donor country (geological, land survey, environment, military)
- ❑ Government departments of host country (water resources, water and sewerage, surveying, meteorological, military, social, planning)
- ❑ Specialist shops (e.g. for maps: Stanfords, London, UK)
- ❑ Consulting engineers
- ❑ University departments (geography, geology, environmental science, civil engineering, mining, surveying)
- ❑ Employing organization head office (verbal from head office and returned personnel; reports from past projects)
- ❑ Organization field staff and experts in the area
- ❑ Government embassy
- ❑ Press reports
- ❑ Books, journals
- ❑ Travel guides
- ❑ The Internet
- ❑ 'District Surveys' in libraries for ex-colony countries
- ❑ Donor country briefings
- ❑ Checklist pp68-9

Identification of working environment

Information

- ❑ Field organizational structure of employing agency / organogram (chain of command, logistics, administration, technical, health education, medical personnel)
- ❑ Areas of responsibility for yourself and others
- ❑ Personnel from other organizations working in water or sanitation in the area (government, international and local)
- ❑ Operational structure for co-ordination between organizations and government including role of UNHCR, organization and national and local government contacts, and employment agreements
- ❑ Decision-making structure re: water source selection. Are you working for the lead organization? Which camps or populations are you responsible for supplying?
- ❑ Communication channels with affected and local populations and community structures (contacts), and role of UNHCR and governments in communication
- ❑ Organization's policy for supporting local populations
- ❑ Team members / access to local personnel (translators, surveying assistants, driver)
- ❑ Working facilities (office space, telephone / radio, fax, email, photocopying, storage space for equipment and workshops, power sources, security, vehicle)
- ❑ Methods of payment

Sources of information

- ❑ Employing organization staff
- ❑ Other organization staff (including UNHCR)
- ❑ National and local government

Reconnaissance of the area

(including existing water usage situation, features of the source, requirements for development, constraints and impacts)

Regional orientation

Information

- ❑ Physical features (high and low areas, vegetation, water sources)
- ❑ Location and type of water source (developed? not developed?)
- ❑ Human features (settlements, industry, agriculture, roads)
- ❑ Distances between users and water sources
- ❑ Distances and approximate heights between features
- ❑ Areas vulnerable to natural threats (cyclones, mudslides, earthquakes, etc.)
- ❑ Areas with high security risk (e.g. mined areas)
- ❑ Areas subjected to extreme weather conditions

Sources of information

- ❑ Observation
- ❑ Published and unpublished maps, aerial photographs, etc. as collected in background information gathering
- ❑ Simple surveying (GPS, Abney level / clinometer, altimeter)
- ❑ National and local government
- ❑ Local and affected populations
- ❑ Other field staff
- ❑ Natural threat monitoring stations
- ❑ *Catchment mapping: maps and symbols* pp154-60
- ❑ *Catchment mapping: surveying* pp161-8

Methods

- ❑ Mapping
- ❑ Panoramic photographic records

Settlement orientation

Information

- ❑ Boundaries, present subdivisions (including ethnic or clan divisions), possible areas for expansion (include distances)
- ❑ Population density where settlements are dispersed or mobile
- ❑ Slope of ground (and existing drainage channels – if any)
- ❑ Water sources (and areas susceptible to flooding or other physical threats)
- ❑ Areas with buildings / shelters, open spaces and communal areas
- ❑ Access roads
- ❑ Sanitation facilities including excreta disposal, refuse dumps / collection areas and graveyards
- ❑ Administration centres and feeding centres
- ❑ Chemical stores
- ❑ Lighting
- ❑ Security arrangements

Sources of information

- ❑ Observation from high ground (using binoculars) and by walking around the camp
- ❑ Aerial photographs
- ❑ Simple surveying (pacing, Abney level / clinometer, GPS)
- ❑ Other field staff
- ❑ Local government
- ❑ Local and affected population
- ❑ *Catchment mapping: maps and symbols* pp154-60
- ❑ *Catchment mapping: surveying* pp161-8

Methods

- ❑ Mapping
- ❑ Photographic records

Demographics, present water use and water demands

Information

- ❑ Water user numbers — affected population:
  - ❍ *Individuals*
  - ❍ *Livestock large and small (and average number per family)*
  - ❍ *Other users / uses **if specific supply is within remit**: e.g. health centres (in-patient, out-patient and cholera centres); feeding centres*
- ❑ Water user numbers — local population:
  - ❍ *As affected population (above)*
  - ❍ *Industries and agriculture*
- ❑ Present water source (type, location, level of service, distance to collection point). Note: The populations' own coping mechanisms should be identified and potentially built upon.
- ❑ Current water consumption
- ❑ Does the affected population have adequate containers for water collection?
- ❑ Are the populations static or mobile?
- ❑ Diseases prevalent in the local and affected populations (e.g. cholera, dysentery, typhoid, malaria, fluorosis, diarrhoea to those new to the area, skin diseases)

Sources of information

- ❑ UNHCR
- ❑ Employing organization staff members
- ❑ Other field staff
- ❑ Local government (water and sewerage, social, statistical office)
- ❑ Local and affected population
- ❑ Observation
- ❑ Medical practitioners (traditional and non-traditional)
- ❑ Checklists pp70-1

Methods

- ❑ Calculation of water demand for affected and local populations using employing organization water demand figures or those given on p141

Availability of resources / logistics

Information

Resources

- ❑ Materials and equipment (details and availability)
- ❑ Human resources (available locally: tradespeople, water technicians, supervisors, health educators / community development personnel)
- ❑ Local construction techniques (details)
- ❑ Water treatment processes used locally (details)

Logistics

- ❑ Conditions of roads at present and in the approaching season (identify areas susceptible to flooding or other physical threats)
- ❑ Security (on access roads and within settlements)
- ❑ Access to international freight (airstrips, ports, railways, road links)
- ❑ Airport / port handling facilities
- ❑ Customs clearance procedures
- ❑ Availability and reliability of freight transporters
- ❑ Journey time for freight

Sources of information

- ❑ Observation
- ❑ National or local government (water and sewerage, building)
- ❑ Local contractors
- ❑ Local suppliers
- ❑ Head office modular kit lists
- ❑ Other field staff
- ❑ Local and affected populations
- ❑ Customs authorities
- ❑ National threat monitoring stations
- ❑ *Mobile water treatment units and modular kits* table pp283-4
- ❑ Checklist pp56-7

Physical features including yield and quality

COLLECT FOR EACH SOURCE

Information

- ❑ Source name / number, type and location
- ❑ Ground and water levels
- ❑ Layout / dimensions
- ❑ Yield estimation (volume / flows, variation with season, recharge capacity)
- ❑ What are the major pollution risks?
- ❑ Rough idea of present water quality and in approaching season
- ❑ Is the source heavily polluted? (e.g. an open drain or industrially polluted)
- ❑ Is the water turbid?
- ❑ Is the source affected by extreme weather conditions (e.g. below 0°C)

Sources of information

- ❑ Observation
- ❑ Local and affected populations (including users and landowner)
- ❑ National or local government (may have pumping test records)
- ❑ Water diviners
- ❑ *Measurement of yield and water levels* pp143-7
- ❑ *Water quality assessment: Assessment routines* pp148-53
- ❑ *Water quality analysis* pp169-203
- ❑ *Catchment mapping: maps and symbols* pp154-60
- ❑ *Catchment mapping: surveying* pp161-168
- ❑ Checklist pp64-5
- ❑ Checklist pp66-7

Methods

- ❑ Detailed sketch of source and abstraction point
- ❑ Flow measurement
- ❑ Catchment mapping
- ❑ Water quality analysis
- ❑ Sanitary investigation / observation

Management, legal, security, socio-political and cultural issues

COLLECT FOR EACH SOURCE

Information

- ❑ Present demands on the source
- ❑ Ownership of the land and source
- ❑ Present O&M arrangements (responsibility, tariff)
- ❑ Legal, security (especially important in conflict situations), socio-political or cultural constraints and accessibility
- ❑ Natural threats in the vicinity of the source (cyclones, earthquakes, mudslides, etc.)

Sources of information

- ❑ Observation
- ❑ Local and affected populations (including users and land owner)
- ❑ National and local government
- ❑ Natural threat monitoring stations
- ❑ *Management, legal, security,socio-political and cultural issues and checklists* pp108-24
- ❑ *Guidance on undertaking assessments and report writing* pp103-4
- ❑ Checklist pp68-9
- ❑ Checklist pp70-1

Requirements for development

COLLECT FOR EACH SOURCE

Information

- ❑ Technical requirements (protection, abstraction, treatment, transmission, storage, distribution)
- ❑ Resources/logistics (material, equipment, human)
- ❑ Time of set up (technical requirements versus resources/logistics and other constraints)
- ❑ O&M requirements (human and material)
- ❑ Costs (materials, equipment, human, logistical)

Note: Early systems should be designed with a possibility for expansion at a later date.

Sources of information

- ❑ Past technical solutions
- ❑ Head office WATSAN division
- ❑ Agency modular kit and equipment lists
- ❑ Standard textbooks
- ❑ Local government and other organizations in-field
- ❑ *Mobile water treatment units and modular kits* table pp283-4
- ❑ *Requirements for development* pp131-5
- ❑ Checklist p61

Impacts of development

COLLECT FOR EACH SOURCE

Information

- ❑ Effects of development on existing users of the source: local populations at the point of abstraction, upstream and downstream (what are the effects, how can they be minimized, what compensation can be made)
- ❑ Effects of water treatment and waste disposal (how to store and dispose of chemicals and waste)

Sources of information

- ❑ Local populations
- ❑ National or local government
- ❑ *Management, legal, security, socio-political and cultural issues with checklists* pp108-124
- ❑ *Impacts of development* pp136-40
- ❑ Checklist p62
- ❑ Checklist pp70-1

Conversations / observations log

Name / organization	Notes (including location and date)

Conversations / observations log

Name / organization	Notes (including location and date)

Addresses

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Published information log

Publication details ■

(including title, author/s, organization, date, contents, location)

Relevance ■

Published information log (continued)

Publication details ■	Relevance ■
(including title, author/s, organization, date, contents, location)	

Resources log

Resources:

❑ Materials and equipment ❑ Human ❑ Construction techniques and water treatment processes used

Resource ■	**Details** (numbers, cost, quality, logistical constraints where known) ■

Resources log (continued)

Resources:

❑ Materials and equipment ❑ Human ❑ Construction techniques and water treatment processes used

Resource ■	Details (numbers, cost, quality, logistical constraints where known) ■

Reconnaissance of the area

(including existing water usage situation, features of the source, requirements for development, constraints and impacts)

Regional orientation

Draw a map of the area including details noted in the checklist p17.

Settlement orientation

Draw a map of the settlement including details noted in the checklist p17.

Demographics, present water use and water demands

Water user numbers from affected population:

People: _____ Livestock: (large) _____ Livestock: (small) _____ Other users: _____

Water user numbers from local population:

People: _____ Livestock: (large) _____ Livestock: (small) _____

Other users: (e.g. industry agriculture) _____

Comment on reliability of figures: _____

Calculation of total water demand:

Present water sources in use: (type, location, level of service, distance to collection point).
Note: The populations' own coping mechanisms should be identified and potentially built upon.

Current water consumption:

Do affected population have adequate containers for water collection?

Are the populations static or mobile?

Diseases prevalent in the local and affected populations:

Logistics (also see 'Resources log')

Condition of roads and areas susceptible to flooding and other physical threats (at present and in approaching season)

Security conditions (on access roads and in settlements)

Access to international freight (airstrips, ports, railways, link roads)

Airport / port handling facilities

Customs clearance procedures

Availability and reliability of freight transporters

Journey time for freight

Other logistical issues

Physical features including yield and quality ■

Source name / number, type and location (including grid reference)

Ground and water levels

Layout / dimensions (attach sketch)

Yield estimation (volumes / flows, variation with season, recharge)

What are the major pollution risks and the present degree of protection?

Rough idea of the water quality at present and in the approaching season

Is the source heavily polluted? (e.g. an open drain or industrially polluted)

Is the water turbid?

Is the source affected by extreme weather conditions (e.g. below 0°C)

Management, legal, security, socio-political and cultural issues ■

Present demands on the source

Ownership of the land and source

Present O&M arrangements (responsibility, tariff)

Legal, security (especially important in conflict situations), **socio-political or cultural constraints and accessibility**

Natural threats in the vicinity of the source (cyclones, earthquakes, mudslides, etc.)

Requirements for development

Technical requirements (protection, abstraction, treatment, transmission, storage, distribution)

Resource and logistical requirements (material, equipment, human)

Time of set up (technical requirements versus resources / logistics and other constraints)

O&M requirements (human and material)

Costs (capital, O&M)

Impacts of development

Effects of development on existing users of the source: local populations at the point of abstraction, upstream and downstream (what are the effects?, how can they be minimized?, what compensation can be made?)

Effects of water treatment and waste disposal (how to store and dispose of chemicals and waste)