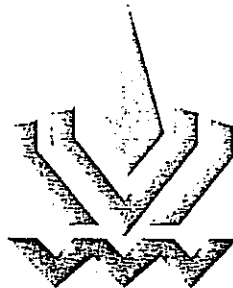


Revised Draft

REPUBLIC OF NAMIBIA
DEPARTMENT OF WATER AFFAIRS
DIRECTORATE OF RURAL WATER SUPPLY

EASSH₂O
Environmental Assessment of
Small Scale Water Supply

GUIDELINES



March 2001

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AfriDev Associates Ltd
in collaboration with
SIAPAC-Namibia



FOREWORD

These guidelines consist of three sections.

Section A provides a *Background Description* of environmental impact assessment in Namibia and explains why and how EIA is intended to be applied. It explains when and how the EASSH₂O method is to be applied for the environmental assessment of small water supply projects in communal areas.

Section B details how the EASSH₂O *Data Compilation* is conducted, and indicates what specific data and information are required for completion of the *Data Compilation Form*.

Section C explains how the *Environmental Assessment* should be undertaken, based on the data compilation. A separate *Environmental Assessment Form* is available for this purpose.

Two separate documents, available from the Directorate of Rural Water Supply, support these guidelines.

A *Discussion Paper* is available which outlines the issues of environmental impact assessment of small projects such as rural water supply, and how these assessments relate to those for larger water projects such as major dams and pipelines.

An *Environmental Policy* and set of *Environmental Standards* for application in rural water supply sets out the institutional guidelines which DRWS follows in planning, considering and approving new water supply projects.



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SECTION A. BACKGROUND AND APPLICATION OF ENVIRONMENTAL ASSESSMENT TO SMALL SCALE WATER SUPPLY PROJECTS

1. INTRODUCTION

These guidelines describe the *Environmental Assessment of Small Scale Water Supply* (EASSH₂O) method for the systematic environmental assessment and planning of small-scale water projects in Namibia. They are intended primarily for use as a planning device for environmental assessment and decision-making on the siting, installation and/or rehabilitation of new water points, small-capacity pipelines, small retention dams and other small scale water developments in communal areas.

2. USE OF THE GUIDELINES

- a. Use and understanding of the guidelines requires a *good knowledge of land and water interactions in Namibia* and the use of these resources by local communities.
- b. Ideally, the guidelines should be used by a *group* comprising:
 - ♦ representatives of the communities requiring an artificial water supply (e.g. a Local Water Committee);
 - ♦ local and/or regional representatives of the Directorate of Rural Water Supply who will process the application for approval and funding;
 - ♦ representatives of government agencies concerned with water, environment and conservation (e.g. Regional Water Extension Officers (RWEO's), Agricultural Extension Officers (AEO's), representatives of the Directorate of Environmental Affairs (DEA), etc.;
 - ♦ environmental consultants or qualified professionals who will procure the environmental and socio-economic data, process the information and provide the assessments; and
 - ♦ facilitator(s) who co-ordinate and lead the group.
- c. The environmental assessment process is intended to be undertaken *in conjunction* with other planning procedures currently in effect for rural water supply. It does not replace any of these. The EASSH₂O procedure requires some of the same information needed for a technical evaluation of a new water point; normally this information can be collected jointly or shared between the technical and environmental evaluators. Where conflicts in procedures are encountered, RWEO's should contact the regional or central offices of DRWS for policy guidance.

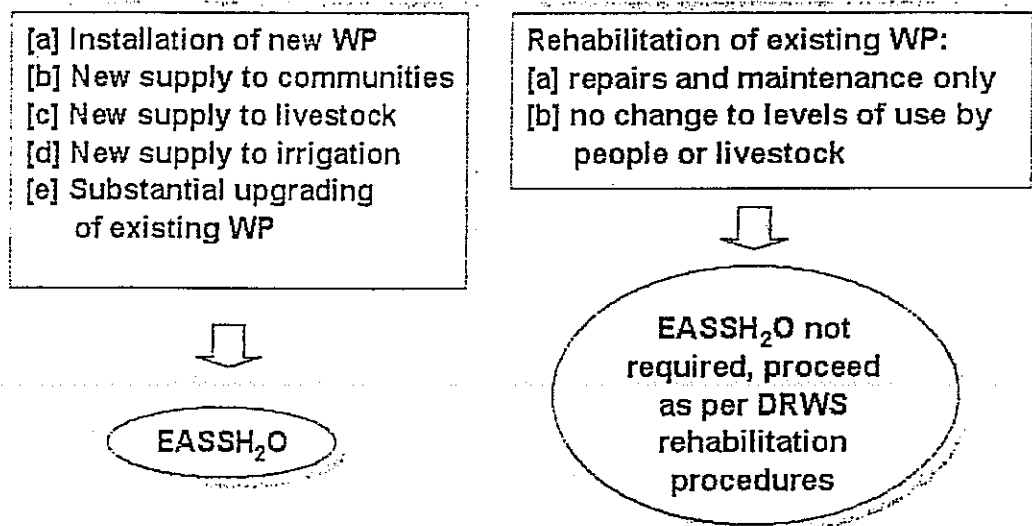
3. CRITERIA FOR APPLICATION

- a. These guidelines are formulated for application to *small water points*, i.e. typically a single borehole supplied with a hand-, wind-, solar- or diesel pump, and attached to storage tanks and local water distribution facilities for both human use and livestock watering. They apply also to small retention dams, small pipeline schemes and similar small scale water distribution facilities. The *size criteria* for such small scale projects are as follows:



Groundwater Abstraction:	Total extraction rate (of all new projects combined) less than 25 m ³ per day
Water Pipelines:	Maximum supply capacity (of single projects) less than 1 m ³ /hr
Retention Dams:	Water surface area less than 10 ha (when dam full)
Levees:	Affecting water flow across an area smaller than 10 ha
Weirs:	Width less than 25 m or maximum height less than 3 m
Irrigation Schemes:	Total command area less than 10 ha.

- b. Projects larger than indicated above should be subjected to a full *Environmental Impact Assessment (EIA)* through the official Namibian EIA process as defined in the Environmental Impact Assessment Policy of 1995. Specific guidelines⁴¹ for such projects are available through the Directorate of Environmental Affairs, Ministry of Environment & Tourism.
- c. *Rehabilitation* may require the application of EASSH₂O, depending on the following flowchart criteria.



4. PURPOSE OF ENVIRONMENTAL ASSESSMENT

Environmental Assessment (or Environmental Impact Assessment [EIA]) is an integral part of the overall *environmental management process*. It is a process whereby:

- the background environment, into which a development is proposed to occur, is systematically examined;
- the effects which the development will have on the environment are predicted and assessed; and
- the effects which the environment will have on the project are predicted and assessed.

⁴¹ Ministry of Environment & Tourism, Environmental Impact Assessment Guidelines for the Water Sector
(a) Water Infrastructure
(b) Irrigated Agriculture



If correctly and fully undertaken, environmental assessment should realistically contribute to achievement of the main principles of environmental management listed in the draft Environmental Management Act of Namibia as follows.

- ♦ using renewable resources on a sustainable basis
- ♦ involving communities in natural resources management
- ♦ public participation in decision-making
- ♦ equitable access to natural resources
- ♦ equitable access to water of acceptable quality
- ♦ water needs of ecological systems to receive full consideration
- ♦ preventative action to be applied
- ♦ prior environmental assessment
- ♦ sustainable development applied in land-use planning

The *outputs* of the environmental assessment process are:

- ♦ information
- ♦ knowledge
- ♦ understanding
- ♦ awareness
- ♦ planning

Environmental Assessment by itself will not guarantee the wise use of resources such as water and land; only human attitudes and good intentions can achieve that.

5. COMPONENTS OF THE ENVIRONMENTAL ASSESSMENT PROCESS

A *full* environmental impact assessment contains distinct steps such as the following:

- a. Screening – where projects are categorized and the need for, and type of, environmental assessment determined.
- b. Project description
- c. Baseline environmental description
- d. Scoping – where the priorities for study and assessment are determined
- e. Environmental surveys and studies – to obtain essential environmental and social data not already available
- f. Impact prediction – where the future effects of the project on the environment are predicted
- g. Impact assessment – where the significance of environmental impacts are considered
- h. Consultation with interested & affected parties
- i. Environmental management – where undesirable environmental impacts are mitigated, and actual impacts are monitored.

6. BASIC STRUCTURE OF THE EASSH₂O METHODOLOGY

- a. The EASSH₂O method *streamlines* the environmental assessment process as follows.
 - ♦ Screening has already taken place when the EASSH₂O approach is chosen since it applies only to small water supply projects (criteria in Section 3(a) above) while larger projects require a full EIA.
 - ♦ The project description is given by the technical evaluation which accompanies EASSH₂O.



- ♦ Scoping has already been undertaken in that the data compilation required for EASSH₂O focuses only on those items in the environment which, on the basis of past experience, are known to be relevant to water point establishment.
 - ♦ Impact prediction and assessment are very closely linked to the data compilation process.
 - ♦ Consultation with interested & affected parties is automatic since the EASSH₂O process is conducted in the presence of the community who require the water supply (workshop approach) and who submitted the application.
 - ♦ The final design of the project (e.g. amounts of water supplied, location of the water point, lay-out of the water point, etc.) is undertaken last so that the design and intended management of the water-point can meet environmental requirements.
- b. EASSH₂O is a *strategic type of environmental assessment* and seeks to shape the project to the receiving biophysical and social environment as well as assessing the impacts to the environment.
- c. EASSH₂O is intended to be used in close *collaboration with the technical surveys* and planning of new small-scale water-points. Some of the information required is shared between these two approaches, and is most efficiently collected simultaneously.
- d. EASSH₂O is *initiated* when a request for water provision is received by a community and the water supply most likely to meet the needs fits the criteria for small scale assessment (Section 3(a) above).
- e. The *data compilation* form (Annex A) should be completed by a qualified environmental or natural resources professional. This is divided into five parts:
- [i] Background information for new water point
 - [ii] Environmental & resource information
 - [iii] Communities
 - [iv] Livestock
 - [v] Other environmental, social & cultural issues
- f. EASSH₂O uses a system of *data categorization* to make the assessment as simple as possible. This has advantages for ease of application but there is an inherent danger that the situation at a particular water point will not always fit well into the category framework. Users of the method are urged to apply their professional judgement and common sense in filling in the data compilation forms and using the assessment form.
- g. In the *environmental assessment section* (Annex B) a summary is prepared of the main environmental and social aspects of the proposed water point and its receiving area. All the categories which have been marked are listed and an environmental and social impact assessment is then based on their consideration. The conditions underlying the categorization should be prominently brought out in the summary assessment section so that decision-makers will be fully aware of them.
- h. The next part comprises *water point planning* (Annex C) in which information is compiled on:
- [i] the amounts of water required (obtained from the *Technical Evaluation*);
 - [ii] the water point design (obtained from the *Technical Evaluation*);
 - [iii] the fee structure for water use (obtained from the *LWC*);
 - [iv] proposed water point management (obtained from the *community discussions* and from the *LWC*); and
 - [v] proposed livestock management (obtained from the *community discussions* and from the *LWC*).



- i. A *summary statement* (Annex D) is prepared for each of the five categories listed under 6(e) above. A specific form is provided for this purpose. This form should become the top sheet in the submission and is the main source of information to the decision-makers at regional (and possibly central) level.

7. COMMUNITY INPUTS

EASSH₂O works best when communities, through their representatives, take a leading role in providing information and discussing the results of the evaluation. Through this process, the communities will become aware of the environmental and social issues surrounding the installation of water points and their responsibilities in ensuring sound management, especially with respect to livestock and rangelands.

An important component of the community interaction is the *MAP* (Section B.1.7) which is sketched at the workshop, and should be the focal point of deliberations about water supply, surrounding rangelands and associated factors.

8. PARTICIPATION BY OTHER AGENCIES

The use of EASSH₂O will be greatly facilitated if land and land-use planning expertise is available. If a land-use plan exists for the area in question, the agency responsible for that plan should be invited to participate in the completion of the EASSH₂O data forms and assessments. Regional Agricultural Extension Officers should always be invited and encouraged to participate in the methodology.

9. FIELD SURVEYS

Successful completion of the EASSH₂O forms requires a good knowledge of the service area of the future water point. The assessment team, comprising the consultant(s) and the RWEO should inspect as much of the area as possible by road and foot, accompanied by the regional agricultural representatives and community representatives. The method relies on professional judgements of items such as basal cover of the grass and herb layer and the extent of livestock utilization of the service area. Such judgement is best made as a consensus between all the parties in the group. If there is any serious dissent between the parties or individuals, this should be dealt with and removed as an obstacle before the EASSH₂O forms are completed.

10. WORKSHOP APPROACH

A 1-day field workshop in the future service area (at the actual water point site if possible) is the most appropriate method of reviewing the information and carrying out the water planning phase (Section 5(i) above) with the community representatives.

The basic statistics and assessments on community head-counts, numbers of livestock, rangeland conditions, environmental conditions in the service area, etc. should be shown and explained to the community representatives before being incorporated into the data compilation and assessments. Any community disagreements should be heard and resolved before the final statements are made. Although the decision to proceed or not with installation of the water point will be made by DRWS and DEA, the RWEO should ensure that communities are fully aware of any negative items in the reports which will likely have a bearing on the eventual decisions made.

**SECTION B. DATA COMPILATION****1. BACKGROUND INFORMATION FOR NEW WATER POINT****1.1 Responsible RWEO**

Give name and normal home base of RWEO who will assume responsibility for completing the EASSH₂O forms and submitting the water point application on behalf of the community.

1.2 Person Responsible for the Compilation

Give the name and designation of the person or group who leads the workshop or group discussion and who assumes responsibility for entering the data and leading the assessment.

1.3 Other GRN Agencies Assisting

Provide names and positions of any GRN staff (in addition to DRWS) assisting with the environmental assessment, e.g. Agricultural Extension Officer. This includes provision of important data, attending community participation meetings associated with the assessment, etc.

1.4 Community Participation in Assessment

List *names* and respective *titles* of community representatives who participated in the environmental assessment and who are leading the community submission for a new water point. If the community representatives are already serving on a Local or Regional Water Committee then indicate their positions on the committees (chairperson, secretary, treasurer, etc.). If no such committees have been formed then indicate the member's community title (headman, chief, member, etc.)

1.5 Proposed Water Point**1.5.1 Region**

Caprivi	Erongo	Hardap
Karas	Kavango	Kunene
Ohangwena	Omaheke	Omusati
Oshana	Oshikoto	Otjozondjupa

1.5.2 Location**(a) Name and Co-ordinates**

Use same name and GPS co-ordinates as on the technical evaluation.

(b) Description

Provide approximate distances and directions from nearest towns, centres or large villages, or local major land-marks. Indicate best route for vehicle access.



1.5.3 Type of Project

Indicate the type of project being considered:

Borehole

Piped Supply

Small Dam

Other - specify

1.6 Local Infrastructure

Describe all major roads in the service area and which points they link.

Note if electricity is available in the service area.

Note if telephones are available in the service area.

Name and describe all schools in the service area, and indicate their location on the map.

Name and describe all hospitals, clinics & health services in the service area, and indicate their location the map.

Note any shops or other retail outlets in the service area.

Note any industries (including home-based industries) in the service area.

1.7 Map

A map (scale 1:20 000 to 1:50 000) must be attached to the EASSH₂O data form, showing the regional area and the service area of the proposed water-point. The exact location of the water point and all relevant communities must be marked exactly and named. The nearest existing water point's, both artificial and natural should be shown. Distinguish between natural water sources which offer permanent water and those which are only seasonal. Any features relevant to the water point must also be indicated, e.g. location of clinics, local centres, dips, crush pens, livestock sales yards, etc.

2. ENVIRONMENTAL AND RESOURCE INFORMATION

2.1 Background Description

2.1.1 Climate

Provide a broad climatic description. Arid areas receive from 50 to 200 mm rainfall annually (western and southern regions of the country), semi-arid areas 150-400 mm (northern, central and western regions), sub-humid areas 500-600 and higher (north-eastern corner).

Drought Frequency

Number of years in past decade which have been officially declared drought years.

2.1.2 Area Serviced by New Supply

Boundaries

Indicate on map.

Boundary description

Describe briefly characteristics of area boundaries, e.g. river, range of hills, roads, etc. on all sides



Approximate Size of Area:

Estimated size of area (in ha) serviced by new WP as mapped

2.1.3 Land Resource Base

The information available from agro-ecological zone maps and descriptions should be used as much as possible. This is broad-scale information. The information should be supplemented by area-specific and site-specific information from any available land-use plans, previous surveys and site specific surveys conducted during this assessment.

Agro-Ecological Zone

Indicate classification given on agro-ecological zone map of Namibia (Annex E).

Landform

Indicate classification given for agro-ecological zone in which service area falls (given in key on agro-ecological zone map).

Dominant Soil Types

Indicate official classification from agro-ecological zone map, soils maps or land use plans, if available, otherwise describe on the basis of physical structure and observed depth

Indicate the soil nutrient status on a 3-point scale: low, fair or good.

Agricultural Suitability

Indicate classification given for the area based on agro-ecological zone mapping or land use maps. The best areas in Namibia are suitable for livestock grazing plus short-term crops. Many areas are suitable only for livestock grazing and some for sheep and goats only. Desert areas along the west coast and elsewhere are not suitable for agriculture.

Indicate the suitability given for large- and small livestock and for crop production on a 3-point scale: low, fair or good.

2.2 Vegetation**2.2.1 Vegetation Types**

Use vegetation description given in vegetation map of Namibia (Annex F), plus description of any extensive modifications through cultivation, land clearing, tree cutting, burning, and infrastructural developments (roads, villages, major projects, etc.) for service area and specifically for the proposed water point site.

2.2.2 Carrying Capacity for Livestock

Note the grazing capacity for the service area (expressed as hectares required per large animal unit (LAU, equivalent to a 350 kg beast or 6 adult sheep or goats). A broad scale map of carrying capacities in Namibia is shown in Annex G. More area-specific figures are usually available from the Agricultural Extension Service, agricultural research stations or the Ministry of Agriculture, Water & Rural Development.

The grazing capacity of the service area is categorized on a 3-point scale as

Low - >35 ha per LAU

Moderate - 16-35 ha per LAU

High - <16 ha per LAU

2.2.3 Vegetation Status in Water Point Service Area

A reconnaissance of the service area should be made before the EASSH₂O data form is filled in. At least *five* widely spaced areas should be examined to provide estimates of rangeland



condition based on grass and herb *basal cover*, on *perennial proportions* of the grasses present (neither parameter is significantly affected by season), evidence of soil erosion, and the *density* and *degree of utilization* of the tree and shrub cover. All vegetation parameters are estimated according to simple 3-point scales.

(a) Grass & Herbs

Basal Cover

Good – four or more steps in every twenty taken by a walker encounters the rooted portion of a grass or herb plant (on average)

Moderate – two to four steps in every twenty taken by a walker encounters the rooted portion of a grass or herb plant (on average)

Poor – one or zero steps in every twenty taken by a walker encounters the rooted portion of a grass or herb plant (on average)

Proportion of Perennials (grasses which grow over a number of years) to Annuals (grasses & herbs which germinate, grow and die within one year)

Perennials dominant – more than two-thirds of observed grasses are perennials

Equal proportions – approximately equal amounts of each type present

Annuals dominant – more than two-thirds of observed grasses are annuals.

Erosion & Runoff Indications should be noted – these include presence of gullies (dongas), large patches of bare ground on slopes with no vegetation and no topsoil, and/or pedestal formation (when soil is washed away around the base of plants leaving the roots exposed).

(b) Trees & Shrubs

For each dominant (or most common) species, indicate

Density on a 3-point scale

Very dense – more than 5 trees and/or shrubs of the species in a 10m radius circle

Dense – 2 to 5 trees and/or shrubs of the species in a 10m radius circle

Sparse – maximum of 1 tree and/or shrub of the species in a 10m radius circle

Utilization on a 3-point scale

Heavy – distinct signs of browsing by livestock or wildlife on trees and/or shrubs of the species (especially browse-lines on the lower parts of the canopies of trees)

Moderate – some signs of browsing by livestock or wildlife on trees and/or shrubs of the species

None (or very slight)

(c) Fire History

Based on community recollections, indicate the number of years within the past 10 in which fire occurred within the water point service area. Categorize fire severity on a 3-point scale as

Heavy – 1 year in every 2 on average

Moderate – intermediate between heavy and low

Low – less than 1 year in 10

2.2.4 Range Management in Water Point Service Area

Indicate if any portions of the water point service are left ungrazed in some years for purposes of range recovery. If they are, indicate what proportion, as reported by the communities, of the

EASSH₂O



water point service area was left ungrazed for the past wet season (less than a quarter, between one quarter and a half, more than a half).

Based on the extent of rotational grazing practiced and the extent of awareness of management importance on the part of the community, categorize the range management status as:

Good – rotational grazing practiced and results evident from field surveys

Fair – some rotational grazing but room for improvement

Poor – inadequate attempts at rotational grazing

2.2.5 Vegetation Resources

(a) Wood

Record any evidence of tree-cutting for purposes of wood collection on a 3-point scale:

Extensive – large and small trees noticeably affected by cutting within the area

Moderate – some obvious cutting of smaller trees, large trees mainly untouched.

None or very little

(b) Occurrence of Medicinal Plants

Record any specific species of medicinal plants collected and/or used in the service area. Use scientific or English names where known otherwise indicate the local name.

(c) Occurrence of Poisonous Plants

Record any specific species of plants poisonous to livestock known to occur in the service area. Use scientific or English names where known otherwise indicate the local name.

2.3 Croplands

2.3.1 Existing Croplands

For the water point service area, record the types of crops, the total area cultivated, and the extent of any area under any form of irrigation. Where possible, indicate the actual area under cultivation, but if not available then provide a suitable description, e.g.

“Small maize and vegetable plots at each household”

“Estimated 5 ha maize cultivated at _____ (village name)”

Provide above data for both the existing situation and the proposed situation for when the water point is operational.

2.3.2 Proposed Croplands

Determine from community intentions what areas of *new cropland* might be expected if the new water point is established, and whether any of these new areas are required to receive irrigation water (from the water point or elsewhere).

2.4 Biodiversity

Based on community consensus, enter the general abundance of the most important wildlife and natural vegetation groups on a 3-point scale, using the following criteria.



	Number of different species in service area		
	High	Moderate	Low
Large mammals	More than 5	2 - 4	Less than 2
Small mammals	More than 7	3 - 7	Less than 3
Birds	More than 40	15 - 40	Less than 15
Snakes, lizards & frogs	More than 15	5 - 15	Less than 5
Plants	More than 50	15 - 50	Less than 15
Insects	More than 50	15 - 50	Less than 15

There is usually a correlation between the levels of biodiversity in various ecosystem components. Provide an overall assessment (*high, moderate, low*) of the overall biodiversity in the water service area.

3. COMMUNITY INFORMATION

3.1 Community Served by New Supply

As accurate a head count of the villages requiring access to the new water supply should be obtained. This can be back-checked against household estimates given by the communities and by published data (2000 census) and other sources.

Number of households in each village

Number of people, including children, living permanently (> 10 months per year) in each village

Chief/headman or leader of each village

Distance of each village from proposed water point

All estimates should be corroborated with community representatives and with data from local centres, clinics, etc.

Categorize the size of the community requiring access to the new water supply:

Small - less than 25

Medium - 26 - 40

Large - more than 40

3.2 Community Demographics

Respective community representatives should provide basic data for their communities on

Major Income Sources for each Community (including agriculture, permanent or seasonal employment, GRN pensions, etc.)

Permanency of Community

Indicate how long each community has lived in the area where the new water point is required (arrived this year, arrived last year, few years, ten years or more). Less than 2 year's residency is marked as "*recent*".



3.3 Present Water Supply

3.3.1 Natural Sources

Includes all communal drinking and washing water derived from naturally occurring sources.

Type

River, oshana (including those that have been excavated), spring, marsh/vlei, ephemeral stream, other (specify)

Distance of Each Source from New WP

For major sources (e.g. a perennial river), provide an estimate of the actual distance (in metres or kilometres) from the new WP to that source. If many natural sources present (e.g. seasonally flooded pans), give estimate of numbers (many, few) and general distances in terms of travel time for both humans and livestock from there to new WP.

Availability

Indicate whether natural sources likely to provide water supply from one year to the next (perennial) or likely to dry up each year (seasonal). Mention each separate natural type separately.

Categorize overall water availability from natural sources as:

Seasonal

Perennial further than 2.5 km

Perennial within 2.5 km

3.3.2 Artificial Water Points at Present Site

If the new water point is required to replace one at the present location, explain the reasons for the upgrading.

3.3.3 Artificial Water Points

Includes all artificial and supplemented supplies of communal drinking and washing water and livestock water within linear distance of 15 km from site of new WP. All such sites must be indicated on map and described as below.

Type

Use same descriptions as in Section 2.1.

Distance of Each Source from New WP

Provide an estimate of the actual linear distance (in kilometres) from the new WP to alternative source.

Availability

Indicate whether alternate WP's provide water supply from one year to the next (perennial) or dry up each year (seasonal). Mention each alternate WP separately.

Categorize overall water availability from natural sources as:

Seasonal

Perennial within 2.5 km

Perennial at present site



3.4 Community Health Data

Reliable data should be sought from local clinics or MHSS offices. Community supplied data should be indicated as such, and consensual estimates derived from several community sources.

Indicate the measured or estimated prevalence in the communities of the important water-borne diseases (diarrhoea, bilharzia, parasitism (helminthiasis), other). Note any significant features of the disease occurrence (seasonality, age-susceptibility, etc.). Categorize the incidence of water-borne diseases as:

None or low incidence (<5% of community)

Moderate (intermediate between low and severe)

Severe (>25% community affected)

4. LIVESTOCK

4.1 Livestock Use of New Water Point

4.1.1 Community Livestock

Provide details and numbers of community livestock expected to utilize new water point. It should be assumed that all community livestock in the service area will make use of water point supply unless some specifically-mentioned alternative source(s) are available. This should be explained.

Cattle in each community

Sheep & Goats in each community

Equines (horses and donkeys) in each community

Compute the community livestock biomass (in Large Animal Units) as per the following standards:

1 LAU = 1 adult cow, steer or equine or 6 small livestock.

Large bulls and oxen = 1.5 LAU's; calves = 0.5 or 0.75 LAU's depending on size.

Compare the total biomass using the water service area^{**} to the area carrying capacity (Section 2.2.2) and categorize as follows:

Within grazing capacity

Moderately exceeds grazing capacity (not more than 20% in excess)

Severely exceeds grazing capacity

4.1.2 Other Livestock Expected to Use Water Point

Provide details of other livestock expected to make use of the new water point. This includes livestock from communities outside the service area, livestock being moved across country, non-resident owners, etc. If exact numbers are not available, then estimates (few, less than hundred, hundreds, etc.) should be used.

Compute *total* livestock biomass (community livestock *plus* all others) as per the data sheet compilations and categorize as follows:

^{**} if the area used by livestock is not easily determined, divide the number of computed LAU's into 20,000 to give a rough estimate of hectares per LAU stock biomass



Within grazing capacity

Moderately exceeds grazing capacity

Severely exceeds grazing capacity

4.1.3 Expected Frequency of Livestock Use of Water Point

Provide best estimates of expected seasonality of use of new water point by livestock (local communally owned plus others). Indicate numbers where possible, otherwise proportions (none, all, 50%, etc.)

Year-Round

Dry Season Only

Other (Specify)

4.1.4 Herd Management Around Water Point

Provide a description of how communities propose to control livestock at the water point. Examples of concerns include:

Will livestock be herded to and from the water point? At what times of the day will livestock be permitted to drink? Will they be herded back to grazing areas after drinking?

Community attitudes towards herd management around the water point should be gauged on a 2-point scale:

Good – communities intend to restrict livestock to own watering areas, supervise livestock during time spent at water point, and herd them back to grazing after drinking.

Fair – intermediate between good and poor.

Poor – communities indicate intentions to control livestock to some extent, but knowledge and practices could be improved through extension. Communities may not intend to exercise control over livestock.

4.1.5 Alternative Water Supply

What water sources will be available to livestock if the supply at the new water point is insufficient for all needs? What seasons will this water be available? Categorize the alternative water supplies as :

Available on perennial basis

Available on seasonal basis

Not available

4.1.6 Expected Wildlife Utilization of Water Point

List the most common wildlife species (large herbivores mainly) known to occur in the water point service area and the extent of their possible use of the water point (based on community knowledge of past patterns and the availability of other water supplies for wildlife).

4.2 Livestock Management

4.2.1 Livestock Grazing in Water Point Service Area

A map of the water point service area should be prepared in a workshop setting with the community representatives. The baseline map should be approximately to scale and should indicate the location of the water point and the communities who will use it. Main topographic landmarks such as rivers, roads and larger centres should be shown.

Communities should then indicate broadly the areas grazed by livestock in each season by each community or community sub-division. Locations of seasonal and/or alternative water sources

EASSH₂O



should be shown. Indicate whether the communities have set aside any reserve fodder areas for livestock in times of food shortages.

The final map product should indicate the extent of livestock utilization of the service area, any significant seasonal use patterns, the extent of overlap between community grazing areas, and the extent to which non-community livestock make use of the grazing resources.

4.2.2 Marketing & Disposals

Describe any marketing and disposals of livestock normally carried out by local communities. If they sell livestock, indicate the buyers and the numbers sold over the past year.

4.2.3 Animal Health Care

Describe any veterinary services available to area livestock, including routine inspections for ticks and parasites, dipping, inoculations, etc. Specify which diseases are or have been inoculated against. Mention if significant mortalities from any disease have occurred within the past 5 years.

4.2.4 Overall Livestock Management

Categorize the overall likely levels of livestock management in the new water point service area as :

Good – rotational grazing practised, provisions made for reserve fodder areas, some degree of animal health care practised, livestock disposals do occur.

Fair – intermediate between good and poor

Poor – no rotational grazing, no provision for reserve fodder areas, animal health care neglected, no attempt at limiting herd size through disposals.

5. OTHER ENVIRONMENTAL, SOCIAL AND CULTURAL ISSUES

This section should be used to record any information provided by the community and/or recovered by the RWEO which is considered to be of possible significance to the decision to install and maintain a water point at the proposed site. Policy information and items raised by other agencies and ministries can also be recorded here, e.g. the development of land use plans for the area. The local presence of culturally important areas such as burial sites, initiation sites, etc. should be recorded here.



SECTION C. ENVIRONMENTAL ASSESSMENT AND PLANNING

1. ENVIRONMENTAL ASSESSMENT

The *first part of the assessment* (Environmental Assessment Form) analyses and compares the categorized information and develops simple profiles of the background environment, the condition of the environment, the nature of the community requiring the water supply, and a description of the livestock which will have access to the water.

2. SUMMARY STATEMENT

The *second part of the assessment* (Summary Statement Form) is a summary for the purposes of informing the decision-makers in DRWS, DEA and other agencies on the situation prevailing at the proposed water-point. It presents key information on the water point site, the background environment, the communities, the livestock held by the communities and by others who will utilize the water point, and any other pertinent environmental information which the RWEO, consultants or others in the assessment team wish to bring to the attention of the authorities.

2.1 Background Information for New Water Point

- (a) Summarize the key information from Section 1 of the data compilation. Indicate water point name, region, type of water point, power source, and intended supply system for human and livestock use.
- (b) Mention if the water point is new or replaces an existing artificial water point.
- (c) Summarize the main infrastructure present in the service area.

2.2 Environmental and Resource Information

- (a) Describe briefly the climate of the service area.
- (b) Mention the agro-ecological zone in which the service area falls.
- (c) Summarize briefly the main features of the landforms, soils and agricultural suitability of the service area.
- (d) Name the vegetation types in the service area (and at the water point site if different due to different site conditions, land-use, etc.)
- (e) Summarize the overall vegetation condition in the service area for the various vegetation layers (grass, herbs, trees and shrubs). Mention any past occurrence of fire.
- (f) Summarize community use of vegetation resources, specifically mention the most important resources.
- (g) Summarize the types and extent of cultivated crops present and indicate whether irrigation is used. Mention any proposed extension to these areas and types if the new water point is established.
- (h) Summarize the biodiversity in the area for the major groups of fauna and flora.



2.3 Community Information

- (a) Show number of communities, number of households and number of people to be supplied from new water point.
- (b) Summarize the major income of all the communities in the service area and the permanency of the community.
- (c) Describe the prevalence of water-borne diseases in the service area.
- (d) Indicate whether the water point will be within a 2.5 km distance of all users.

2.4 Livestock

- (a) Show the numbers of cattle, small stock and equines belonging to the community which will use the new water point.
- (b) Show the numbers of cattle, small stock and equines belonging to people outside the communities which will use the new water point.
- (c) Show the total numbers of cattle, small stock and equines which will use the water point on a year-round basis and which will use the water point seasonal basis only.
- (d) Indicate whether the biomass of the livestock supported at the water point will be within the estimated long-term capacity of the surrounding rangelands.
- (e) Summarize how the communities propose to manage the livestock at the water point.
- (f) Describe the probable seasonality of use by livestock.
- (g) Summarize any information on alternative water supplies for livestock.
- (h) Mention if the communities have any reserve fodder (grazing areas or alternate fodder sources) for their livestock in cases of food shortages.
- (i) Summarise any disposals made or to be made by the communities in terms of livestock (selling, slaughtering, moving to new areas, etc.)
- (j) Summarize expected wildlife use of the new water point as heavy, moderate or slight.

2.5 Other Environmental, Social and Cultural Issues

Summarize any significant other aspects of the environment or social or cultural issues which should be taken into consideration in relation to installation of a new water point.

3. WATER POINT PLANNING

The third part of the assessment (Water Point Planning Form) brings the salient facts from the technical evaluation of possible water supply into context with the environmental assessment, and summarizes the following.

3.1 Amounts Of Water Required

Amounts required for human use and for livestock use, based on standard allowances for consumption and for human population increase, considering the long-term sustainability of the groundwater resource.

3.2 Proposed Water Point Design

The main features of the proposed design, including type, power source, flow rates, storage, outlets, facilities for human and for livestock, and design of the water-point site.



3.3 Proposed Fee Structure For Water Use

The decisions of the community on fees to be charged for community use and for outsiders, and the basis for cost recovery.

3.4 Proposed Water Point Management

A description of how the LWC intends to manage the water point and its day-to-day use by the community. Should also describe how livestock will utilize the facilities (timing, location, etc.)

3.5 Proposed Livestock Management

A description of how the LWC and the community intend to manage their livestock on the service area, including any plans for rotational use of the grazing areas, reservation of fodder areas, livestock upgrading and sales, etc.

3.6 Summary & Recommendations:

A final summary of the environmental and community situation at the proposed water point, the numbers and management of livestock, and a recommendation on the approval or otherwise of the installation of the water point. Any specific design changes to the water point to accommodate environmental concerns should be pertinently mentioned.



Annex A: Data Compilation Form

DATA COMPILATION

1. BACKGROUND INFORMATION FOR NEW WATER POINT

1.1	Responsible RWEQ	Name
		Headquarters
1.2	Person Responsible for	Compilation
1.3	Other GRN Agencies Assisting	

Notes:

1.4 Community Participation in Assessment

Name	Title

1.5 Proposed Water Point

1.5.1	Region	
1.5.2	Location (GPS co-ordinates)	
1.5.3	Type of Project	<input type="checkbox"/> Borehole <input type="checkbox"/> Piped Supply <input type="checkbox"/> Small Dam <input type="checkbox"/> Other - specify

Notes:

1.6 Local Infrastructure

Roads	
Electricity	
Telephones	
Schools	
Hospitals, Clinics & Health Services	
Shops	
Industries	

1.7 Map Attached?

	Yes	No	
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2 ENVIRONMENTAL AND RESOURCE INFORMATION

2.1 Background Description

2.1.1 Climate

Classification	<input type="checkbox"/>	Arid	<input type="checkbox"/>	Semi-Arid	<input type="checkbox"/>	Sub-Humid
Drought Frequency	<input type="text"/>					

2.1.2 Area Serviced by New Supply

Boundaries	<i>Attach map</i>
Approximate Size of Area (ha)	<input type="text"/>
Boundary Description	<input type="text"/>

2.1.3 Land Resource Base

Agro-Ecological Zone	<input type="text"/>					
Landform	<input type="text"/>					
Dominant Soil Types	<input type="text"/>					
Soil Nutrient Status	<input type="checkbox"/>	Low	<input type="checkbox"/>	Fair	<input type="checkbox"/>	Good
Agricultural Suitability						
Large Livestock Suitability	<input type="checkbox"/>	Low	<input type="checkbox"/>	Fair	<input type="checkbox"/>	Good
Small Livestock Suitability	<input type="checkbox"/>	Low	<input type="checkbox"/>	Fair	<input type="checkbox"/>	Good
Crop Production Suitability	<input type="checkbox"/>	Low	<input type="checkbox"/>	Fair	<input type="checkbox"/>	Good

2.2 Vegetation

2.2.1 Vegetation Types

Within Service Area	<input type="text"/>
At WP Site	<input type="text"/>

2.2.2 Carrying Capacity for Livestock

<input type="checkbox"/>	Low	<input type="checkbox"/>	Moderate	<input type="checkbox"/>	High
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2.2.3 Vegetation Status in WP Service Area

	Grass & Herb Basal Cover	Proportion of Perennials to Annuals	Erosion & Runoff Indications
Sample Area 1			
Sample Area 2			
Sample Area 3			
Sample Area 4			
Sample Area 5			
Overall Basal Cover	<input type="checkbox"/> Poor	<input type="checkbox"/> Moderate	<input type="checkbox"/> Good
Proportion Of Annual Grasses	<input type="checkbox"/> Dominant	<input type="checkbox"/> Not dominant	
Erosion Indicators	<input type="checkbox"/> Extensive	<input type="checkbox"/> Present	<input type="checkbox"/> Not present

Trees & Shrubs	Dominant Species	Abundance	Utilisation
Sample Area 1			
Sample Area 2			
Sample Area 3			
Sample Area 4			
Sample Area 5			

Tree & Shrub Density	<input type="checkbox"/> Sparse	<input type="checkbox"/> Dense	<input type="checkbox"/> Very dense
Tree & Shrub Utilization by Livestock	<input type="checkbox"/> Heavy	<input type="checkbox"/> Moderate	<input type="checkbox"/> Slight
Fire incidence	<input type="checkbox"/> High	<input type="checkbox"/> Moderate	<input type="checkbox"/> Low

2.2.4 Range Management in WP Service Area

Are portions of the WP service left ungrazed in some years?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
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If "Yes", what proportion of the WP service area was left ungrazed for the past wet season?	<input type="checkbox"/> Less than a quarter
	<input type="checkbox"/> Between one quarter and a half
	<input type="checkbox"/> More than a half

Range management	<input type="checkbox"/> Poor	<input type="checkbox"/> Fair	<input type="checkbox"/> Good
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2.2.5 Vegetation Resources

Tree Utilization by Cutting	<input type="checkbox"/> Extensive	<input type="checkbox"/> Moderate	<input type="checkbox"/> None
Occurrence of Medicinal and Food Plants	<input type="checkbox"/>		
Occurrence of Poisonous Plants	<input type="checkbox"/>		

2.3 Croplands

2.3.1 Existing Croplands

Type	Extent	Irrigated

2.3.2 Proposed Croplands

Required Irrigation From New Water Point	
Non-irrigated	

Cropland irrigation

<input type="checkbox"/>	Not present or planned	<input type="checkbox"/>	Present and/or planned
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2.4 Biodiversity

Large Mammals	
Small Mammals	
Birds	
Snakes, Lizards & Frogs	
Plants	
Insects	

Overall Biodiversity

<input type="checkbox"/>	Low	<input type="checkbox"/>	Moderate	<input type="checkbox"/>	High
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3. COMMUNITY INFORMATION

3.1 Community Served by New Supply

Village	Number of Households/ Number of People	Chief/ Headman	Distance from WP (km)
		<input type="checkbox"/> Totals	

Size of Community Small Medium Large

3.2 Community Demographics

Village	Major Income Sources		Permanency of Community
Permanency of Community	<input type="checkbox"/>	Recent	<input type="checkbox"/> Established

3.3 Present Water Supply

3.3.1 Natural Sources

Source	
Description	
Available Amount	
Distance from New WP	
Availability	
Seasonal Constraints	
Quality	

Present Water Supply from Natural Sources

<input type="checkbox"/>	Seasonal
<input type="checkbox"/>	Perennial further than 2.5km
<input type="checkbox"/>	Perennial within 2.5km

3.3.2 Artificial WP's

Type(s)	
Name(s)	
Distance(s) from New WP	
Availability for Communal Use	
Availability for Livestock Use	

Present Water Supply from Artificial Sources

<input type="checkbox"/>	Seasonal
<input type="checkbox"/>	Perennial within 2.5km
<input type="checkbox"/>	Perennial at present site

3.4 Community Health Data

Prevalence of Water-borne Diseases


Diarrhoea	
Bilharzia	
Parasitism	
Other (Specify)	


Water-borne Disease Incidence Severe Moderate Low

4. LIVESTOCK

4.1 Livestock Use of New Water Point


4.1.1 Community Livestock Expected to Utilise New Water Point


Community Name	Cattle	Sheep & Goats	Equines
Totals 			

Estimated No. LAU's		
	Total LAU's 	

Community Livestock Biomass Using Water Point		Severely exceeds grazing capacity
		Moderately exceeds grazing capacity
		Within grazing capacity

4.1.2 Other Livestock Expected to Use Water Point

Ownership	Cattle	Sheep & Goats	Equines
Totals 			

Estimated No. LAU's		
Add Community Livestock LAU's		
Totals		
	Total LAU's 	

All Livestock Biomass Using Water Point		Severely exceeds grazing capacity
		Moderately exceeds grazing capacity
		Within grazing capacity

4.1.3 Expected Frequency of Livestock Use of Water Point

Cattle	<input type="text"/>
Sheep & Goats	<input type="text"/>
Equines	<input type="text"/>

Seasonality of Livestock Watering at New Water Point Year-Round Dry Season Only

4.1.4 Herd Management Around Water Point

Likely Standard of Livestock Management around Water Point Poor Fair Good

4.1.5 Alternative Water Supply for Livestock

Alternative Water Supply for Livestock Not available
 Available on seasonal basis
 Available on perennial basis

4.1.6 Expected Wildlife Utilisation of Water Point

Species	Expected Extent of Use
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

4.2 Livestock Management

4.2.1 Livestock Grazing in Water Point Service Area

Use Map

4.2.2 Marketing & Disposals

4.2.3 Animal Health Care

4.2.4 Overall Livestock Management

Standard of Livestock
Management in Service Area

Poor

Fair

Good

5. OTHER ENVIRONMENTAL, SOCIAL AND CULTURAL ISSUES



Annex B: Environmental Assessment Form

**REPUBLIC OF NAMIBIA
DEPARTMENT OF WATER AFFAIRS
DIRECTORATE OF RURAL WATER SUPPLY**

EASSH20

**Environmental Assessment of
Small Scale Water Supply**

Region:

Water Point Name:

Water Point No:

Environmental Assessment
compiled by:

Date of Submission:



Environmental Background Description

Climate Classification	<input type="checkbox"/> Arid	<input type="checkbox"/> Semi-Arid	<input type="checkbox"/> Sub-Humid
Soil Nutrient Status	<input type="checkbox"/> Low	<input type="checkbox"/> Fair	<input type="checkbox"/> Good
Large Livestock Suitability	<input type="checkbox"/> Low	<input type="checkbox"/> Fair	<input type="checkbox"/> Good
Small Livestock Suitability	<input type="checkbox"/> Low	<input type="checkbox"/> Fair	<input type="checkbox"/> Good
~ Crop Production Suitability	<input type="checkbox"/> Low	<input type="checkbox"/> Fair	<input type="checkbox"/> Good

Environmental Condition Description

Carrying Capacity for Livestock	<input type="checkbox"/> Low	<input type="checkbox"/> Moderate	<input type="checkbox"/> High
Overall Basal Cover	<input type="checkbox"/> Poor	<input type="checkbox"/> Moderate	<input type="checkbox"/> Good
Proportion of Annual Grasses	<input type="checkbox"/> Dominant	<input type="checkbox"/> Not dominant	
Erosion Indicators	<input type="checkbox"/> Extensive	<input type="checkbox"/> Present	<input type="checkbox"/> Not present
Tree & Shrub Density	<input type="checkbox"/> Sparse	<input type="checkbox"/> Dense	<input type="checkbox"/> Very dense
Tree & Shrub Utilization by Livestock	<input type="checkbox"/> Heavy	<input type="checkbox"/> Moderate	<input type="checkbox"/> Slight
Fire Incidence	<input type="checkbox"/> High	<input type="checkbox"/> Moderate	<input type="checkbox"/> Low
Range Management	<input type="checkbox"/> Poor	<input type="checkbox"/> Fair	<input type="checkbox"/> Good
Tree Utilization by Cutting	<input type="checkbox"/> Extensive	<input type="checkbox"/> Moderate	<input type="checkbox"/> None
Cropland Irrigation	<input type="checkbox"/> Not present or planned	<input type="checkbox"/> Present and/or planned	
Overall Biodiversity	<input type="checkbox"/> Low	<input type="checkbox"/> Moderate	<input type="checkbox"/> High

Based on assessment of above factors, service area is:	<input type="checkbox"/> Very extensively degraded
	<input type="checkbox"/> Extensively degraded
	<input type="checkbox"/> Moderately degraded
	<input type="checkbox"/> Slightly degraded
	<input type="checkbox"/> Not degraded

Community Description

Size of Community	<input type="checkbox"/> Small	<input type="checkbox"/> Medium	<input type="checkbox"/> Large
Permanency of Community	<input type="checkbox"/> Recent	<input type="checkbox"/> Established	
Present Water Supply from Natural Sources	<input type="checkbox"/> Seasonal	<input type="checkbox"/> Perennial further than 2.5km	<input type="checkbox"/> Perennial within 2.5km
Present Water Supply from Artificial Sources	<input type="checkbox"/> Seasonal	<input type="checkbox"/> Perennial within 2.5km	<input type="checkbox"/> Perennial at present site
Water-borne Disease Incidence	<input type="checkbox"/> Severe	<input type="checkbox"/> Moderate	<input type="checkbox"/> Low

<input type="checkbox"/>	Small; recently established; not all within 2.5 km of new WP; existing water supply not secure
<input type="checkbox"/>	Small or medium; recently established; not all within 2.5 km of new WP; existing water supply not secure
<input type="checkbox"/>	Small to large; well-established; not all within 2.5 km of new WP; existing water supply not secure
<input type="checkbox"/>	Small; well-established; within 2.5 km of existing water supply; existing water supply not secure
<input type="checkbox"/>	Large or medium sized community; well-established; within 2.5 km of new WP; existing water supply not secure

Based on above profile, community is classified as:

Livestock Description

Community Livestock Biomass Using Water Point	<input type="checkbox"/> Severely exceeds grazing capacity	<input type="checkbox"/> Moderately exceeds grazing capacity	<input type="checkbox"/> Within grazing capacity
All Livestock Biomass Using Water Point	<input type="checkbox"/> Severely exceeds grazing capacity	<input type="checkbox"/> Moderately exceeds grazing capacity	<input type="checkbox"/> Within grazing capacity
Seasonality of Livestock Watering at New Water Point	<input type="checkbox"/> Year-Round	<input type="checkbox"/> Dry Season Only	

Environmental Assessment of Small-Scale Water Supply

Likely Standard of Livestock Management around Water Point	Poor	Fair	Good
Alternative Water Supply for Livestock	Not available	Available on seasonal basis	Available on perennial basis
Standard of Livestock Management in Service Area	Poor	Fair	Good

	Very poor; LAU's far exceed range carrying capacity; range in poor condition; new WP will aggravate situation
	Poor; LAU's more than 20% in excess of range carrying capacity; range in poor to moderate condition; new WP will aggravate situation
<i>Based on above profile, livestock management can be classified as:</i>	Needs improvement; LAU's not more than 20% in excess of range carrying capacity; rangelands not more than moderately degraded; new WP may aggravate situation
	Needs improvement; LAU's not more than 20% in excess of range carrying capacity; rangelands in good condition; new WP will not aggravate situation
	Good; numbers within carrying capacity; rangelands in good condition; new WP will not lead to excessive range degradation



Annex C: Water Point Planning Form

Water Point Planning

1. AMOUNTS OF WATER REQUIRED

2. PROPOSED WATER POINT DESIGN

3. PROPOSED FEE STRUCTURE FOR WATER USE

4. PROPOSED WATER POINT MANAGEMENT

5. PROPOSED LIVESTOCK MANAGEMENT

6. SUMMARY & RECOMMENDATIONS:

Summary prepared by:



Annex D: Summary Statement Form

Summary Statement

1. BACKGROUND INFORMATION FOR NEW WATER POINT

2. ENVIRONMENTAL & RESOURCE INFORMATION

3. COMMUNITY

4. LIVESTOCK

5. OTHER ENVIRONMENTAL, SOCIAL & CULTURAL ISSUES

6. SUMMARY & RECOMMENDATIONS:

Summary prepared by:



Annex E: Agro-Ecological Zones of Namibia



Annex F: Vegetation Map of Namibia



Annex G: Grazing Capacity Map of Namibia



Annex H: Policy Background To Environmental Impact Assessment Of Water Projects

Article 95(1) of the Namibian Constitution states that the State shall promote and maintain the welfare of the people by adopting policies aimed at the maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future.

The *Namibian Environmental Assessment Policy* (1995) states the following basic principles underlying sustainable environmental management and associated impact assessment .

The principle of achieving and maintaining sustainable development must underpin all policies, programmes and projects undertaken within Namibia. In particular, the wise utilization of the country's natural resources, together with the responsible management of the biophysical environment, must be for the benefit of both present and future generations.

Namibia shall place a high priority on

- (i) maintaining ecosystems and related ecological process, in particular those important for water supply, food production, health, tourism and sustainable development;
- (ii) observing the principle of optimum sustainable yield in the exploitation of living natural resources and ecosystems, and the wise utilization of non-renewable resources;
- (iii) maintaining representative examples of natural habitats; and
- (iv) maintaining maximum biological diversity by ensuring the survival and promoting the conservation in their natural habitat of all species of fauna and flora, in particular those which are endemic, threatened, endangered, and of high economic, cultural, educational, scientific and conservation interest.

The *Water Supply and Sanitation Sector Policy (WASP)* was adopted by the Cabinet in 1993 and has the following objectives.

- Essential water supply and sanitation services should become available to all Namibians, and be accessible at a cost which is affordable to the country as a whole.
- The equitable improvement of services should be a result of the combined efforts of the government and the beneficiaries, based on community involvement, participation and responsibility.
- Communities are to have the right - with due regard for environmental needs and resources available - to determine which solutions and service levels are acceptable to them. The beneficiaries shall contribute towards the cost of the services and at gradually increasing rates for standards exceeding those determined by the basic needs.
- The environmentally sustainable development, harnessing and utilization of the water resources of the country is to be pursued to accommodate the various needs.
- Provision of improved water supply should
 - contribute towards improved public health;
 - reduce the burden of collecting water;
 - promote community based social development taking especially into account the role of women;
 - support basic needs; and economic development.

In 1997 the Namibian National Cabinet approved a *Community Based Management (CBM)* strategy which seeks to devolve responsibility of development and maintenance of local water



supplies to local communities over a 10-year period commencing 1 August 1997. This places the basic procedures of water point planning, assessment and primary decision-making in the hands of local communities, through their respective Water Point Committees (WPC's) and Local Water Committees (LWC's). Technical guidance and assistance are to be provided by the DRWS, primarily through RWEO's.

The Namibian National Agricultural Policy of 1995 includes the following policy statements of direct relevance to water development.

- ♦ Agricultural growth shall not be pursued at the expense of the environment.
- ♦ Where possible, decision-making power and resource management initiatives will be devolved to the lowest possible level.
- ♦ Government will address the serious problems of desertification and environmental degradation.
- ♦ Land-use options must be compatible with the country's fragile ecosystems.
- ♦ The implementation of the Environmental Impact Assessment Policy will be strictly enforced.
- ♦ To safeguard the environment natural resource user fees will be introduced.
- ♦ Idle and under-utilized land must be put to more productive use.
- ♦ Private ownership will be respected only if land is used in a socially and environmentally responsible and productive way.
- ♦ The Government will encourage proper management techniques of wild foods.