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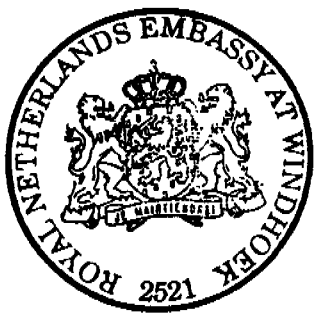
Piped Water, what more?

Options for complementary hygiene education and sanitation in piped water schemes in Owambo, Namibia

A pre-identification for the Royal Netherlands Embassy, Windhoek



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Harare, June 1994

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List of Acronyms

CWC	Central Water Committee
DAPP	Development Aid from People for the People
DRD	Directorate of Rural Development
DRWS	Directorate of Rural Water Supply
DWA	Department of Water Affairs
EHA	Environmental Health Assistant
FINNIDA	Finnish International Development Agency
GO	Government Organisation
IABP	Integrated Area Based Programme, Tsandi (Unicef)
IEC	Information, Education & Communication
LWC	Local Water Committee
MAWRD	Ministry of Agriculture, Water and Rural Development
MoHSS	Ministry of Health and Social Services
NISER	Namibian Institute for Social and Economic Research
NGO	Non Governmental Organisation
PHC	Primary Health Care
PROWWESS	Promotion of the Role of Women in Water and Environmental Sanitation Services, a UNDP/World Bank Programme
RDC	Rural Development Centre
RWEO	Rural Water Extension Officer
SARAR	Self esteem; Associative strength; Resourcefullness; Action planning; Responsibility for follow through. Participatory extension methodology promoted by PROWWESS
UNAM	University of Namibia
VIP	Ventilated Improved Pit latrine
WASP	Water Supply and Sanitation Sector Policy, document of the Government of Namibia
WPC	Water Point Committee
WSS	Water Supply and Sanitation
WSSPOR	Water Supply and Sanitation Project in Ohangwena Region, Finnida supported

Acknowledgements

The mission wishes to thank the individuals who graciously received a rather ill announced mission (never before was I greeted with 'Ah, you must be the latrine lady'..), who gave their time and shared their insights and field reports.

They are Ken Gibbs and Nicholas Dondi at Windhoek's Unicef office, and Sjaak Zijlma and Henk van der Leest at DRWS. Harold Koch at DRWS was courteous and outspoken. His honesty in not entertaining the idea of a DRWS role in health related issues is appreciated. Ms Cornelie van Waegeningh at the Royal Netherlands Embassy has been a pleasure to work for.

The mission was generally impressed with the readiness for change, and the willingness to ponder new and unfamiliar approaches within DRWS. It is regretted that severe manpower limitations stall implementation of the many good ideas. As one of the DRWS staff said: 'At this stage, we don't need more ideas, what we need is time and qualified staff to fulfil our current commitments.'

Perhaps the biggest challenge for an extension programme on fluid topics - water, hygiene - is to overcome the barriers which separate the domains and mandates of the individual ministries and departments. The report will make an attempt to describe how water related extension can be, and deserves to be, a binding force rather than an issue which is kept hanging in the balance between departments.

It is hoped that the mission, although brief and in many ways superficial, has come up with recommendations that deserve, and will receive, follow up.

Harare, June 1994

Summary and Recommendations

The Netherlands support to the water sector of Namibia's North Western region, Owambo, is directed, amongst other things, at several piped schemes which are themselves components of the large bulk supply system which has its intake at the Calueque dam in Angola's Cunene river. The Dutch assistance responds to requests to fund piped schemes or construction works such as purification plants which are planned and implemented under DWA's authority. The Dutch input is not concentrated in a geographically defined area of Owambo and an area approach is not aimed for. The pipelines of the schemes moreover cross administrative boundaries which makes support to district or sub-regional entities unfeasible. (Another limiting factor in this respect is the fact that the geographical domains of line ministries differ from one ministry to another, a situation which obviously operates against multi-sectoral development.)

In addition to implementation of physical works the Dutch Development Cooperation is directed at improvement of mainstream DWA (DRWS) procedures and performance. Three Dutch funded engineers provide technical assistance to the head office in Windhoek as they are working in DRWS' Division of Rural Engineering Services (2) and in the Planning Division of DWA's Directorate of Investigations and Research (1).

The agreement with DWA includes a Dutch funded 'backstopping mission' with the dual purpose of, firstly, review and monitoring of Dutch funded schemes and other inputs on behalf of the Netherlands Embassy, and secondly, of feedback to DWA on the broader implications of the above reviews and professional advice on complementary issues where required. The arrangements for such backstopping missions took a while to be finalized and yet there was consensus between DWA and the Royal Netherlands Embassy to give follow up to some specific content areas which were not elaborated by the 1992 reformulation mission. The current mission was thus asked to recommend a strategy as to how to institutionalize and organize health education and sanitation activities in the Netherlands funded Namibian water supply schemes. Annex 1 gives the Terms of Reference.

The scarcity of perennial surface waters makes 'water' a priority issue in Namibia. Because water is such a key issue its provision offers an exceptional opportunity to inspire a wide range of development efforts. Similarly the provision of water can draw both users and extension workers into committees and working groups which, if well managed, have potential to remain viable.

Information, education and communication (IEC) has so far centred on prevention of water wastage. In the face of water scarcity IEC has not encouraged water use for personal and food hygiene nor have messages on selective use of different sources of water been emphasized.

The piped water schemes in Owambo provide a high service level in terms of reliability, quality and quantity. The convenience of these supplies will not always and not in all seasons outmatch the former supplies as some people will still be nearer to traditional sources. Thus the quality aspect of the improved supplies needs to be brought into the extension messages

to convince those who live far from the water points to start using improved water at least for drinking and cooking purposes.

The efforts of Unicef to pull extension staff of several departments and projects together around water related extension have shown that water is strong enough a pulling factor to do so. Yet what is needed in addition is a lead agency which goes beyond triggering an interest and which is committed to sustain the effort. The Directorate of Rural Water Supply (DRWS) presently has insufficient capacity to be the lead agent and it is unlikely, because of manpower constraints, that this situation will improve significantly in the coming years.

DRWS is in the process of employing its own extension workers, the Rural Water Extension Officers (RWEOs). If all goes well it will at the end of 1994 have 15 trained extension staff based in rural areas in Owambo. This implies that each RWEO will roughly cover an area similar to a Local Water Committee's domain (a main pipeline and its reticulations), and supervise over 60 Water Point Committees (WPCs). The RWEOs will be fully occupied with creating and grooming WPCs and introducing the concepts of community management to piped water users. It is unrealistic to expect the RWEOs to take up health related extension as a priority in the near future. Health related extension could increasingly become part of the RWEOs work in the medium term, say three to five years.

Other government institutions in Owambo have far greater numbers of staff and some, like the Ministry of Health and Social Services actually have several hundreds of extension workers when one includes the large numbers of Community Health Workers (CHWs). Although there are reputedly over 600 trained CHWs in Owambo, they are not, or only in very small numbers, present in the areas of the Dutch funded schemes. This is because they primarily address areas where health services are scarce. Given the variable performance of CHWs, who are volunteers, it would not be wise to totally rely on them. However, where they are present, respected and active, they should be included in health related extension initiatives (as is now being proposed for latrine promotion in the Finnida funded WSSPOR project area).

The comments of extension staff of various departments about their effectiveness as change agents show that, in their own opinion, the approach to extension work is a major obstacle to effectiveness (they use difficult language; instruct or order rather than educate; are themselves 'unsure and confused'; have a bad image). Although this judgement was given in another region, there is no reason to assume that extension staff in Owambo are better equipped. It is thus not enough to draw in extension staff of different departments, they also need assistance to better perform in their job as communicators and change agents. Suitable visual tools and other training materials should be part of this assistance.

The mission is of the opinion that at this stage sanitation in the narrow sense of latrine construction should not be a priority in the context of the Dutch funded piped schemes. This view is based on several factors:

- The lack of options of choice as so far there are no latrines which are affordable, convenient, and environmental-sound (ie requiring little or no timber or burnt bricks).
- The low level of 'felt need' for sanitation programmes which makes the required high coverage unattainable.

- The rapid decline of pathogens in faecal material exposed to the Northern Namibian climate.
- The lack of feasibility to also dispose excreta of livestock.
- The weak link between latrine use and the quality of piped water at the delivery point.

Last but not least: The lack of (government) manpower to pull off such an exercise.

The mission is of the opinion that it would be prudent to watch the projects and programmes that have decided to go for an all out sanitation programme such as the WSSPOR, and to also keep informed on Unicef's stand in this matter as this agency is currently reviewing its sanitation programme based on some of the reservations expressed above.

The mission suggests to create an extension programme around the central themes of water, health and environment including environmental sanitation. This is because such a programme has potential to draw in extension staff of various departments, and because it better fits in with DWA's interests than a more narrowly focused hygiene education programme.

The question as to who should take the lead and make such a programme happen has to be answered in the perspective of time: for the immediate future, and for the medium to long term. While DWA(DRWS) appears the right agency to take this role in the long term, there is no capacity now to take on this extra load.

This report thus addresses the immediate future, say three years. For this period an institute has to be identified which can, with some external assistance, be the lead agent and at the same time help DWA(DRWS) to build up its extension expertise and capacity in order to take the lead role in the medium to long term.

Such an institute needs to be based in Owambo, have a training focus and training facilities, and a flexible management which allows it to expand beyond current duties. The Rural Development Centre in Ongewediva, near Oshakati, could possibly play this role and has expressed interest to do so.

The mission's recommendations are tabulated below, and actions and actors indicated where appropriate. The mission has refrained from 'giving tasks' to DWA(DRWS) as it is felt that the Backstopping Mission (from here on called Review and Support Mission) will be in a better position to discuss and negotiate how and through whom agreed actions should be implemented.

Recommendations for short term action:

Recommendation	Action by	Remarks
General		
. Use the momentum of provision of piped water for an extension programme that makes the link between water, environmental health and people's health. Do not dissociate hygiene education and environmental sanitation from water management education.	Dutch funded Review and Support mission to explore, refine and operationalize in consultation with appropriate fora (see remarks).	This recommendation needs to be - informally - agreed upon by DWA(DRWS). The Cuvelai Watsan Forum would need to discuss its implications. Action would come when the recommendation is put into practice - see below.
Institutional setting		
. Explore the feasibility of supporting an Owambo based training institute - such as the Rural Development Centre in Ongwediva - as a nodal agency for: . training of extension staff . production of extension materials on water, health and environment related issues . serving as a physical base for extension worker networks	Initiative by Review and Support mission (assuming the line of thinking of this consultant's report is accepted and supported by both DWA(DRWS) and the RNE).	Budget line to be created under 'local consultancies' in Dutch funded Review and Support mission (see below).
. Encourage networking between extension staff of different departments, and support initiatives such as the Extension Officers Collective started by a DRWS staff member in Oshakati		

Recommendation	Action by	Remarks
. Build on the strategies initiated by Unicef, and on the various committees created	Review and Support Mission to keep in close contact with current thinking and developments at Unicef.	Unicef is likely to be interested and supportive as this organisation has given a lot of impetus to the formulation of a National Strategy regarding health and hygiene education in the context of rural water supply.[7] Unicef is not, however, in a position to pursue the strategy in the absence of institutional support of relevant departments and ministries.
Approach & Content		
. Offer training in participatory methodologies to field based extension staff of various departments	The initiative could conceivably lie with the Review and Support mission. A local institution with a training focus and staff capable of being trained as trainers should be identified.	Both the Harare based Institute of Water and Sanitation Development and the Nairobi based UNDP/World Bank RWSG have in-house PROWWESS trainers who can provide such training of trainers. Funding of consultancies for training of trainers and funding of training material design could be drawn from Review and Support mission's budget. Funding of trainees costs (board, lodging etc) and of training material production is yet to be decided.

Recommendation	Action by	Remarks
Arrange for design and production of extension materials which enable and encourage staff to adopt participatory approaches. Materials should be designed to stimulate discussions on . water (resources, distribution, principles of equity, management, cost, importance in women's life, domestic use, use for productive purposes, personal and food hygiene) . environment (resources, distribution, principles of equity, management, importance in women's life, importance for future generations, options for rehabilitation, use for productive purposes, animal management, domestic environment and hygiene) . sanitation and environmental sanitation (human excreta disposal; disposal of small children's stools, protection of water collection point from animal and other waste, water disposal and drainage, options to use waste water to grow tree seedlings near the water point) . health and wellbeing (options to reduce water related diseases such as malaria and diarrhoea, time gained because of improved water supply, division of labour within the household ..)	As above. Again, as above, an institution is required which is committed to supervision of material design (preferably at the institution's premises), to piloting of materials and to further distribution.	The aim is to produce materials which surpass departmental boundaries, and which are seen as useful by extension staff of various sectors. This means that extension staff are given a broad range of materials from which they can choose. The participatory approach, and the focal issues will be the binding factors. Funds for design and piloting of materials could come from the Dutch funded Review and Support Missions' budget. For mass production of materials either DWA(DRWS) should set funds aside, and/or cooperation with Unicef could be sought. Materials in PROWWESS programmes tend to be cheap since they are black and white in A4 size, and therefore can be copied.

Recommendation	Action by	Remarks
Target groups / training of trainers		
. Build on extension staff of various departments including the yet to be trained Rural Water Extension Officers. . Do not solely rely on RWEOs in the short term as these officers will be fully occupied with creating and training water committees. . Make sure that Water Point Committees are a prime target group of the extension staff by including field sessions and follow up in the participatory training		
Sanitation		
. Monitor the performance of latrine construction programmes such as WSSPOR. . Similarly monitor the results of studies commissioned by Unicef to the Social Sciences Division of UNAM and monitor Unicef's stand on latrine construction. . Meanwhile do not pursue latrine construction in the areas addressed by the Dutch funded schemes.	Review and Support Mission to give follow up.	

1 Introduction

1.1 Terms of Reference and their interpretation

The mission sent out by the Royal Netherlands Embassy in Windhoek was a short term, one person assignment as a follow up to the 1992 reformulation mission of the Ogongo-Okalongo and Oshakati-Omakango water schemes.[1*] The current assignment had a fairly narrow focus: to recommend a strategy as to how to institutionalize and organize health education and sanitation activities in the Netherlands funded Namibian water supply schemes. Annex 1 gives the Terms of Reference.

A few annotations on the Terms of Reference:

Firstly, the institutional setting of such activities cannot be looked at in isolation: before one can answer questions like "who should give health education", or "who should promote latrine building", there needs to be an insight in what it is that needs to be done. This is born out by Unicef's experience which will be mentioned in the report.

Secondly, although the task concerns the Netherlands funded works, it can clearly not be limited to the Dutch funded pipelines as these themselves are components of a single scheme: the Owambo water supply network. Pipelines tend to be long and linear ignoring administrative boundaries. Administrative units such as districts are therefore also unsuitable entities when looking at institutional options for piped water related activities. (In addition the administrative units themselves are not consistent as the various ministries each have their own interpretation).

Thirdly, the Dutch Development Cooperation philosophy in Namibia is to support the sector where this support is most required, rather than fund conventional area-bound sectoral projects. The support in Owambo thus goes to construction of pipelines in geographically separate areas or to infrastructure such as purification plants - all of which are initiated and executed by the Department of Water Affairs.

The support aims to go further than provision of hardware as it seeks to assist DWA in identifying and implementing additional measures which could increase both the benefits and the life time of its schemes. These measures interface with the users when concepts of equitable distribution, community management and cost recovery come in - concepts which are supported but not yet brought into practice by DWA's newly created Directorate of Rural Water Supply. Complementary user-oriented activities in Dutch funded schemes thus potentially have a pilot function for all other rural piped schemes.

The understanding of the mission for the current assignment is therefore to broadly look at options for hygiene education and sanitation in the Dutch funded scheme areas

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* Figures in superscript refer to references listed at the end of the report.

in sofar as these options make sense for DWA executed piped schemes in Owambo at large. Options chosen by area-bound projects requiring project field staff are not likely to be replicable in the government setting and are therefore not considered in this report (such projects exist in Owambo but not in the context of piped water).

1.2 Mission's Programme

The mission's timing and content was agreed between the Royal Netherlands Embassy and DWA's Directorate of Rural Water Supply (DRWS). The actual programme, however, was not set and this caused a certain level of embarrassment as appointments had to be made at short notice. As it was, the mission, with help from both the Embassy and Dutch experts at DRWS, only managed to pay a very brief field visit to Owambo. The opinions expressed in this report thus heavily lean on reported field work of other people, notably Unicef and DRWS staff. The mission's programme is attached in Annex 2.

1.3 Note for readers

The report has two main chapters, each with a number of sections. The mission's conclusions and suggestions are printed in italics throughout these sections. Figures in superscript refer to references listed at the end of the report. The term 'Owambo' is used for the communal areas in the 4 Northern administrative regions. The term region in DWA context is also used to denote the whole of Owambo, or the North Western region.

1.4 Hygiene, hygiene education and health

The term hygiene is used to mean 'the practice of keeping oneself and one's surroundings clean, especially in order to prevent illness or spread of diseases.[2]

Hygiene education is then defined as 'all activities aimed at encouraging behaviour which will help to prevent water and sanitation-related diseases'. It thus not only aims to enhance the exclusive and proper use of improved facilities by everyone, but also to encourage additional hygiene practices - for example food preparation and storage - which cut off alternative routes of disease transmission. Hygiene education is oriented to prevention of a specific group of diseases, notably the various types of diarrhoea; worm diseases, including schistosomiasis; skin diseases such as scabies; eye diseases such as trachoma; and malaria. Hygiene education does not, however, provide the full answer to prevention of malaria and only a very partial answer to schistosomiasis prevention.

From the definition it is clear that the domain of hygiene education is determined by the group of diseases it aims to prevent. This brings with it a risk that hygiene education focuses on diseases which are not a real problem for a particular target population, and vice versa, that diseases which are true health problems are

disregarded. It also easily leads to hygiene education becoming a 'mechanistic exercise' with standard phrases and messages which have little relevance for the target population's situation.

Modesty on the part of hygiene educators is called for. As stated in a recent publication on the study of hygiene behaviour[2]

> 'Whereas on a general level we have a fairly good impression about the transmission patterns and preventive measures of water and sanitation-related diseases, our knowledge about links between specific hygiene behaviours and health is much more limited.'

Five domains of hygiene behaviours are commonly differentiated:

- disposal of human faeces
- use and protection of water sources
- water and personal hygiene
- food preparation and storage
- domestic and environmental hygiene

Each domain covers a group of main behaviours. For example 'disposal of human faeces' is subdivided in:

> choice of place for defecation; disposal of faeces; anal cleansing; disposal of cleansing material; handwashing; cleaning of toilet/latrine; maintenance of toilet/latrine; other activities related to faecal matter (such as use of faeces as fertilizer; animals eating faeces; use of faeces for fish production...).

The list makes clear that the domain is not covered by a single standard message 'build and use a latrine'. It is also obvious that discussions on this private domain may cause unease, or be taboo, for all involved.

For the effective interruption of each water and sanitation-related disease it is usually necessary to perform a series of hygiene behaviours, while, on the other hand, one single hygiene behaviour may interrupt the transmission of several diseases at the same time. More often than not a reduction in water and sanitation related diseases can only be achieved by a combination of hygiene behaviours. In one study the following five behaviours were associated with significantly higher rates of diarrhoea in children: mother's hands dirty; water containers in house uncovered; baby bottle on ground or floor; human faeces in living area; and animals in living area.[3]

In the report separate chapters are devoted to 'water related education' and 'sanitation'. This is because the provision of piped water and household sanitation - latrines - are generally separate exercises executed by different institutions. Piped water supply is implemented by engineering departments which may be able to incorporate issues such as community management and measures for environmental sanitation, but which generally do not have the capacity, nor the mandate to assist in latrine construction at household level. Thus, even if there is consensus that 'water,

hygiene education and sanitation' belong together, and should be provided as a package, this does not work out in the practice of piped schemes unless there is a well developed intersectoral coordination mechanism that manages to arrange for these interventions in a meaningful sequence.

2 Water and water related education

2.1 Water in Owambo

Water is an intriguing issue in the northern Namibia setting: abundant at times as it flows in from the Angolan head waters and spreads out through the oshana system, yet ephemeral as most of it is quickly lost by evaporation, adding more salt to the already salty soil. The temporary abundance of water in central Owambo is misleading as the brackish groundwater cannot sustain life after seasonal surface waters are exhausted.

The seasonal surface waters themselves are heavily contaminated as there is indiscriminate faecal disposal of both man and beast in and around the oshanas. The phrase 'water is life' - one of the slogans put forward in water education campaigns - thus rings true to some extent only: water is obviously a prerequisite for life but water is also a hazard. Clearly there is reason for distinguishing the life saving and life threatening qualities of water in Owambo.

People living in such conditions obviously have had to come to terms with them in order to survive. The Owambo language in its wide range of water related words and phrases testifies to local people's insights and to the importance attached to water. It follows then, that in Owambo water related education is a challenge which should not be tackled by pre-conceived messages but which instead should build on the local population's practices and beliefs.

The recently adopted Water Supply and Sanitation Sector Policy indicates the following three policy principles for rural water supply schemes [4]:

- maximum involvement of the end user
- delegation of responsibility to the lowest possible level
- environmentally sound utilization of water resources

The current government's zest to provide sufficient numbers of protected water sources in Owambo obviously addresses a real need. It is also obvious, however, that the present pace of construction of piped water supplies outstrips the capacity, and perhaps the political commitment, to also secure the mechanisms that enable realization of the above three principles. Thus long term considerations are compromised for short term output.

Long term viability at acceptable recurrent cost levels requires genuine community participation which, if well groomed, could lead to 'community management' of the

schemes. These processes need planning and patience, capacity and understanding, communication skills and diplomacy - in other words: well trained; committed and supervised extension staff. This is quite rightly a major focus, and also a major concern, of DWA's newly established Directorate of Rural Water Supply. *It is the mission's opinion that additional water related education - such as hygiene education - should not at this stage divert DWA from this priority.*

2.2 The conventional view

A 1991 Unicef document states the by now conventional view that[5]

> 'Improved technologies alone are unlikely to lead to health improvement unless accompanied by substantial modifications in behavioral patterns.'

Similarly a 1991 DWA document 'Perspective on Water Affairs' states[6]

> 'The provision of a wholesome water supply clearly does not always produce the desired improvement in health because of contamination of water during transportation and storage. ... The population should also be advised to reduce or avoid water consumption from traditional and open water sources which yield contaminated water. The construction of rural water supply schemes therefore has to be accompanied by a community health education programme so as to realize the full potential health benefits.'

According to the above document 'the ultimate objective should be to incorporate the message into the health and education system of the country through workshops for all types of extension officers, clinic staff and teachers, as well as through educational material and the media'.

The above still holds and is the central issue of the mission. The question is : How can one make it happen?

2.3 The target group

The privileged traveler who visits Owambo by air will have a bird's eye view on the striking settlement pattern of scattered and relatively large homesteads surrounded by farmland and separated by communal grazing areas and woodland. Each homestead, or kraal, contains a number of huts together accommodating an extended family.

In the central oshana area the settlement pattern is dense with up to 100 people per square kilometre, yet there are no villages in the conventional sense of clusters of households. (There are, however, clusters of shops.) This has implications for an extension programme which aims to reach households.

One implication is that mobility of extension staff is a prerequisite. Secondly, one would need to look for opportunities where people naturally gather as in church, or

at these small 'shopping centres'.

2.4 The initiatives

Water, hygiene and sanitation education have been given a fair amount of thought in Namibia during recent years. Unicef played the main role in the conception of a "National Strategy for water, hygiene and sanitation education' with the Department of Water Affairs as the key partner among the government agencies.[7] This strategy was launched in October 1992 at the height of the drought. The aim was to 'promote water, hygiene and sanitation education among rural households as an emergency response to the drought situation and to lay a foundation for long term IEC relating to water among rural communities'.

The specific objectives were

- To develop the needed water, hygiene and sanitation Information, Education and Communication strategy
- To develop, pretest, finalise and disseminate appropriate materials in support of the strategy
- To initiate in the field activities and process with the capacity to institutionalise water, hygiene and sanitation education and practices among rural communities
- To enhance sensitization and mobilization of communities to assume greater responsibility for the management of water related affairs
- To stimulate coordination and team work among extension workers and institutions which can contribute significantly to the dissemination of water, hygiene and sanitation messages in the community.

The following tasks were defined:

1 Implement an intensive multi-media campaign
2 Involve extension workers in IEC activities
3 Intensify information and demonstration activities in the community and at schools
4 Work intensively with 3-4 regions to develop models
5 Initiate water educational activities at the time of commissioning of all new rural water supply schemes
6 Recruit staff and provide them with orientation and support that will facilitate their work
7 Develop and disseminate educational material in key areas of water, hygiene and sanitation.

The main thrust of the programme initially was on the development of posters and pamphlets - the seventh task above. This was preceded by a rapid assessment to identify the 'problem behaviours' of the target groups, the underlying reasons for problem behaviour, and the possible IEC messages which could address these problems. There was considerable pressure to work fast as all this was to be an

emergency response. Unicef staff stated they had not been in a position themselves to follow through the dissemination of the materials. Materials were distributed, but it was unclear if materials had actually reached their peripheral destinations.

A series of regional workshops concerned with drought awareness, water, health and sanitation was initiated in conformity with the fourth task above. The workshops were well attended and their reports testify to the interest taken by participants of many departments and NGOs.[8] The workshops' stated aims were, amongst others, to develop appropriate strategies to address issues relating to water, hygiene and sanitation and to develop regional plans to mobilize resources for implementation of water, hygiene and sanitation educational activities. A follow up was given in some areas, for example in Katima Mulilo, but not in others.[9]

In Oshakati an inter-agency IEC workshop was held which sought, amongst other things, to identify the role of the participants - officers representing 10 government departments and NGOs - in the implementation of a water and sanitation related IEC programme for the Owambo region.[10] The workshop's report indicates the rationale for such an endeavour but does not operationalize the requirements to make it happen.

Unicef itself is now of the opinion that perhaps one ought to look more closely at the target population's practices and beliefs before identifying the desired behaviours and corresponding IEC messages. A recent report by Oshakati based Unicef staff states[11]

> 'The availability of baseline data on community perception on water, hygiene and sanitation matters hold the key to a healthy start of the educational programme. Without it selection of educational content and areas requiring emphasis can only be based on speculation and intuition.'

This is one of the reasons why the National Strategy is no longer actively pursued in the way it was originally planned. The Social Sciences Division of UNAM has been commissioned to execute regional studies on water and sanitation related practices and beliefs.

Meanwhile the mechanisms to make things happen in Owambo have been initiated: the sensitization of key actors was reportedly successful as 'great enthusiasm has been generated among government departments and NGOs to participate in the implementation of the IEC strategy. The commitment has been demonstrated best by education officers.'[11]

The programme coordination mechanisms were also initiated, or reinforced where these were present already. They are, firstly, an inter-regional team composed of senior officers of key government directorates and NGOs and secondly, 4 regional teams of implementors consisting of extension workers. It is unclear to what extent these teams are active now given the uncertainties on the actual strategy described above. What is clear, though, is the potential for enthusiasm and cooperation of both extension staff and senior officers around the theme of water.

Concluding: The programme resulting from the IEC Strategy was to be delivered within the existing government and NGO structures. Its achievement depended on active and sustained involvement of a large number of people. It counted on DWA as a main actor and initiator. This proved to be the main stumbling block as DWA's manpower requirements - point 6 above - were not fulfilled.

The faltering momentum was partly a result of lack of capacity of DWA, Unicef's partner in this exercise. In addition there was no focal point at regional level to pull extension staff of different institutions together on a sustained basis. In the end the actual focus and content of the programme were felt to be shaky as there was insufficient insight in the practices and beliefs of the programme's target group, the users.

The programme did succeed in pulling together the actors, and it follows that any extension programme should start from the various coordination mechanisms in place. The government departments involved are discussed below.

2.5 The implementors

The government ministries, departments and directorates involved in rural water related extension in Owambo are

- Community Development (Ministry of Local Government & Housing)
- Health (MoHSS)
- Social Services (MoHSS)
- Rural Water Supply (MAWRD)
- Education and Culture (Ministry of Education & Culture)
- The Rural Development Centre, which falls under the MAWRD's Directorate of Rural Development.

The responsibility for water hygiene and sanitation practices is squarely put with the Ministry of Health and Social Services (MoHSS). This is obvious from the organogrammes depicted in official documents such as the 1993 Water Supply and Sanitation Sector Policy and earlier documents describing the relationship between water consumers and various government agencies.[12] Thus when it comes to environmental health, hygiene education, and sanitation, extension staff of the Ministry of Health has a clear mandate. Refer to Annex 3 for the job description of Environmental Health Assistants. The job description of Community Health Workers differs per district (personal communication Mrs L.Hamunyela, Regional PHC Coordinator, Oshakati) but invariably includes water related education and household hygiene.

The mission found, however, that the cadres of Health Inspectors and Environmental Health Assistants (EHA) largely focus on control of communicable diseases such as malaria, plague, and, as at the time of the mission, meningitis. The Office of Public Health in Oshakati in charge of the (9) health districts of Owambo states it is fully occupied with 'outbreak control' and so are the (6) district based EHA's (3 districts

have no district based EHA for want of accommodation).

It is therefore not surprising that the water supply and sanitation programmes and projects in need of extension capacity have not put their eggs in the health basket alone : they all work through multidisciplinary groups of extension workers and other resource persons such as teachers, church ministers and traditional leaders. The consensus appears to be that individual government agencies have too little impetus and field presence. In addition the job descriptions of different ministries' extension staff are sometimes hard to distinguish - Social Services touches on the domain of Community Development while also Rural Development and Community Development have overlapping aims.

Area based projects generally have employed full time extension staff and in addition have secured involvement of departmental staff of various departments. The government staff on deputation in area based projects such as the Unicef funded Integrated Area Based Project in Tsandi generally perform well and also themselves enjoy the focus and professional incentives inherent in such projects (personal communication I.Ithete, Directorate of Community Development, Windhoek).

A number of reports mention poor cooperation between extension staff of different ministries working with communities. The insight of extension workers when reviewing 'why the target population fails to change undesirable behaviour' is noteworthy. Failure to change is because communicators and extension workers[8]

- use difficult language
- instruct or order rather than educate
- are themselves 'unsure and confused'
- have a bad image

One of the issues discussed in the Drought Awareness workshops was lack of effectiveness of extension workers. They 'are not coordinated in their work and find it difficult to motivate communities to participate in development activities'. The following underlying causes were mentioned:

- Ministries and different agencies do not work in consultation and their roles are not clear.
- Historic distrust among different groupings.
- Laziness
- Lack of commitment
- Lack of transport
- Low pay
- Negative competition between extension workers
- Political differences
- Inability to give an informed answer on communities' questions
- Lack of communication between extension workers of different ministries/agencies
- Duplication of efforts between some ministries, departments and NGOs.

One of the recommendations was to promote networking and information sharing between agencies.

It was also recommended to use all available channels and human resources to disseminate water related education: extension workers of both governmental and non-governmental organisations; teachers; school children; church leaders; traditional leaders and local councils.

A recent initiative of a DRWS staff member in Oshakati is to create such a network consisting of field based extension staff of several departments and projects in one of the 4 Northern regions. The aim is to share experiences, skills and education tools with a long term view to replicate formation of such a network in other Northern regions. The focus is not exclusively on water, as the aim is to increase extension workers' ability to handle a range of multisectoral issues.

It would appear that support to this type of informal local bodies in which field staff participate because they take an active interest, and because they feel it has something to offer, is worthwhile and perhaps serves a more immediate purpose than the somewhat ethereal cooperation at bureaucratic levels.

2.6 The content of water related extension

2.6.1 Content identified by extension staff

Extension staff in one of the Drought Awareness Workshops defined six key areas for water related messages. These messages are still relevant:

- Use water economically
- Protect water points and water equipment, keep them clean and in good repair
- Use safe drinking water
- Maintain a high standard of personal and environmental hygiene
- Be involved in management and maintenance of water points
- Conserve the environment by cutting down less and planting more and more trees.

2.6.2 Content identified by the target population

All respondents in a knowledge, attitude and behaviour study in areas in northern Namibia recently supplied with piped water expressed a need for education of their communities on water, hygiene and sanitation.[13] This expressed interest contrasted sharply with findings in other study areas not supplied with drinking water, where respondents were not inclined to dissuss issues such as hygiene and sanitation (the latter study took place at a time of severe water shortage during the 1992 drought). Respondents quite understandably grumbled 'where is the water we are going to learn to use' and felt that 'education without action (providing water) is useless'.

The respondents in the northern Namibia study listed the following issues on which the desired education should focus:

- how to save water & limit the amount of water used
- how to use water without wasting
- how to take care of water

- how to handle water equipment
- how to prevent disease
- how to keep water points clean
- how to connect and repair taps

Issues which came up less frequently were:

- dirty water brings sickness
- clean drinking water for health
- high cost of piped water
- the duty of all users to report damages
- latrine construction and use
- the nuisance of standing water around the water point
- coverage and storage of water (at home)
- contamination of (drinking) water by indiscriminate faecal disposal.

The same study looked into perceptions of water quality. Tap water was the water of choice since

- it has no bacteria unlike well and oshana water
- it can be used without boiling
- it does not stain clothes
- it is 'protected and hygienic'
- it is easy to get
- it does not taste salty.

Despite these perceived benefits respondents were not always in a position to draw protected water. Those who lived far from the water point stated they would make an effort to draw tap water for beer brewing, when children were around to help fetch water, and generally at times when other chores were not pressing.

At the time of the drought in most rural areas water was simply not available for washing one's body. Children reportedly went without bathing for over a month and families shared a weekly bowl of water for hand washing. Other striking examples about water scarcity given were [13]:

> 'People sleep at the well waiting for water to come.'
> 'Sometimes there is no water to take medicine given at the clinic.'
> 'Children are restricted to drinking water - they may only take it 2-3 times a day.'

In such situations messages on personal hygiene are misplaced and in apparent conflict with the more urgent 'water saving messages' (which themselves were in some cases also ill received as people felt they needed water rather than education).

Yet the evidence from studies on the impact of improved water supply is that reduction of water related diseases such as diarrhoea is a function of water volumes used even more than of water quality. Water related health education should thus also

focus on personal hygiene and food hygiene which are ways of blocking the various routes of faecal-oral contamination.

The design criteria of piped schemes are tabulated below in Table 1.

Table 1: Water consumption design criteria

Consumer	Daily consumption l/unit
person in remote rural areas	10
person residing within 4 km from pipeline	25
person with piped water connection	200
day scholars at school	10
equivalent large stock unit	45
clinic (per out patient)	450
irrigation (per ha)	50 000

Source: Planning Division, Department of Water Affairs, Republic of Namibia, Master Water Plan for the Owambo Region, March 1990.

It appears the design criteria allow a less tight stand on water use. There is no logic in discouraging people from using the water after having gone to such lenghts, and costs, to provide it in sufficient quantities. The message "don't waste water" still holds, naturally, if only for cost considerations. This message, and the message that cattle need to be watered at traditional sources, will reinforce themselves through introduction of metered water charges.

Concluding, the above illustrates a number of points :

1 *Users appreciate water as a scarce and valuable commodity.*
2 *Users see hygiene education and water management education as related topics and their separation into isolated issues would be undesirable.*
3 *Users have a comprehensive grasp of water related issues.*

The lists which were generated by 'yet to be educated villagers' brings home what it is that extension staff should pursue: discussions during which the combined wisdom of all people participating in such sessions is shared and fed into joint decision making on locally appropriate solutions. This will be elaborated in section 2.9.

The mission is of the opinion that in those areas where a reliable supply of good quality water is now provided - as in the piped schemes - the message 'don't waste water' should be complemented by messages which encourage people to use and enjoy

the water for vital functions such as drinking and bathing, and for rebuilding their environment. In addition the safety of the piped water should be stressed and for those who live far from a tap selective use of the tap for drinking water and water for cooking should be advocated.

2.7 Water and the environment

A booklet produced by the Desert Research Foundation of Namibia depicts and describes how oshanas sustain people, environment and development and how this balance is threatened as people and livestock increase in numbers.[14] The authors emphasize the relationship between people and their environment:

> 'People and the environment are closely linked and nothing shows this more clearly than changes in health and settlement patterns accompanying an increase in numbers of people and environmental degradation. Further impoverishment of the environment would lead to a reduction of human health and living standards.'

The authors recommend that primary health care be tackled on a multi-sectoral level and that understanding of the relationship between environmental health and human health be promoted through educational and other extension programmes.

The mission is of the opinion that the provision of piped supplies in Owambo offers an exceptional opportunity to pursue the idea of extension programmes linking environmental and human health and wellbeing. This is, firstly, because in Owambo the link between health and wellbeing, environment and water is both strong, emotive and straightforward. It thus does not require long and tedious arguments to convince people in Owambo that water and environment determine health and wellbeing, and that healthy water and a healthy environment could make a big difference to their quality of life.

Secondly, the environmental concerns are major and at the same time complex and difficult to address without the help of a new momentum. The provision of piped water could well provide this momentum as no issue beats improved water supply as a felt need. Thirdly, the environmental lobby is strong, capable and creative compared to health manpower resources. Linking environmental and human health would draw in these resources and extension staff of various sectors, including DWA's staff some of whom already devote their time to publications on water related environmental issues. Lastly, the trend among environmentalists is to increasingly focus on 'the human element' rather than on 'conservation of nature'. Linking human and environmental health would fit in with this trend.

The mission is aware that such education programmes would go beyond what is conventionally understood by 'hygiene education', but then, the value of the conventional hygiene education is itself debatable. Hygiene education, like all education, needs to address issues of importance to the target group. If it fails to do that, it will be unconvincing nor will it capture the interest and creativity of the extension workers. Hygiene education should not make people yawn ..

2.8 Education Materials

Towards the end of 1992 Unicef, in cooperation with DWA, developed a set of materials for use in what was to be a national water, hygiene and sanitation education programme. They were four pamphlets and six posters which were pre-tested before being distributed.[15] The pamphlets' messages were:

- three ways to save water
- protect water points
- safe water for health
- clean for health

The posters in addition had messages on the life giving role of water and on latrine building. Examples of the 'Clean for health' materials are depicted in Annex 4.

Apart from these materials the mission did not find evidence of any tools for water, hygiene and sanitation education. This is remarkable since there is in Namibia an abundance of documentation on 'water awareness' aiming at the literate readership and presented in very attractive publications (for example the publications of the Desert Research Foundation of Namibia).

There also is a series of - so far - two issues on 'Water in Namibia' aiming at school pupils with a similar focus on water awareness and conservation.[16] Staff of DWA has contributed to these and other water related publications such as the fold out poster 'help to conserve water' which was done by DWA and the Wildlife Society of Namibia. The illustrations on this poster come very close to drawings one could use in participatory extension, only their current application is not directed to such an approach (the public is told what the pictures are about rather than stimulated to draw their own conclusions).

The mission paid a visit to the IEC Unit of the MoHSS. This unit is severely understaffed and has great difficulty to even produce materials with a typical health focus. The IEC Unit does not have, nor does it produce any water and sanitation related materials. Also when one visits peripheral health units such materials are missing.

It is the mission's belief that the availability of suitable extension materials would be a great stimulus to make 'water' a core issue for extension staff of different departments, and vice versa, that without such materials it will be hard to create sufficient momentum for an inspired and sustained extension effort. It must be concluded that

1 *There is a need for development of water and hygiene education material, both for the literate and the illiterate public.*
2 *There also is a need for visual tools addressing the wider spectrum of 'water education'. This should include materials for use with water point committees, and address issues such as community management, cost recovery and use of*

water for productive purposes.

3 *The above - health related water education and other water related education - should preferably be developed as one set, in an attractive format which would encourage use by extension staff of all relevant sectors - section 2.5 refers.*

4 *Where 'water education' is already being addressed, as in the booklets for school pupils, this package could be extended with health aspects of water and environmental sanitation rather than creating a new series on health related water education.*

The mission found that material design is a problem as good artists who are both committed, reliable and willing to properly field test their products are hard to find. Material production is in many countries - and Namibia is no exception - an underrated subject as the task to produce proper materials and to field test them, is underestimated. Design and production of education material works best when there is a committed nodal agency with an in-house artist who is closely guided and given feedback on his or her work. Common sense requirements of materials are that they should be durable and replicable. The actual application of materials is briefly discussed below.

2.9 Extension methodologies

All evidence points to the fact that the people targeted by extension workers' messages are very well able to generate these messages themselves. This is particularly so when the messages are not so much on factual instruction (eg how to build a latrine or how to maintain a pump) but on emotive issues about which people have their own thoughts and opinions. An example of an extension method which builds on the target population's perceptions and knowledge is 'the story with a gap' which is illustrated in Annex 5. The drawings in this example are copied from a booklet on Drought and Desertification in Namibia.[17]

This is but one example of the UNDP World Bank promoted SARAR* methodology which is increasingly used in water and sanitation related extension, and which has applications in all people-focused development sectors. Annex 6 shows some examples from the water sector. The reader will notice that the drawings do not really differ from some of the pamphlets - those without words - produced by Unicef examples of which are given in Annex 4. It is the application which is different, and the thinking behind it.

The methodology differs from the current approaches followed in (piped) water related extension work in Namibia. Many examples come to mind, one of which is the Handbook for Water Point Committees, which lists the do's and dont's for WPC members.[18] Another publication on a related topic 'Training together to start water point committees' instructs, as the name suggests, extension workers on formation of

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* The acronym SARAR stands for Self esteem; Associative strength; Resourcefullness; Action planning; Responsibility for follow through.

water committees. It includes suggestions for group discussions and role play but its zest is on top down guidance by extension staff.[19] The illustrations in both booklets illustrate the text and are not intended to serve as materials for discussion. The quality of the drawings is generally poor.

The SARAR methodology (better known as PROWWESS, another acronym which is the name of the UNDP/World Bank programme promoting the methodology), is particularly useful in situations where extension staff are familiar with the problem issues, but are unclear about their messages as in Owambo. The methodology works towards action based on joint problem analysis and planning with the target group. The methodology heavily relies on visual tools which never have a message, or even a text, but which are used to set off discussions. This may sound very open ended and unorganized, but in practice the extension workers do steer the discussion through their choice of extension materials.

A particular strength of the SARAR methodology is that the role of women is brought into discussions in a natural way, without forcing the issue but rather as a matter of course. This again is a result of the choice of visual tools, and of SARAR's focus during the training.

The mission recommends that training in participatory extension approaches is arranged and that this training is combined with, and followed up by, development of participatory extension materials which stimulate discussions on:

- *water (resources, distribution, principles of equity, management, cost, importance in women's life, domestic use, use for productive purposes, personal and food hygiene),*
- *environment (resources, distribution, principles of equity, management, importance in women's life, importance for future generations, options for rehabilitation, use for productive purposes, animal management, domestic environment and hygiene)*
- *sanitation and environmental sanitation (human excreta disposal; disposal of small children's stools outside the yard, protection of water collection point from animal and other waste, water disposal and drainage, options to use waste water to grow tree seedlings near the water point e g within the fenced area of the tank)*
- *health and wellbeing (options to reduce water related diseases such as malaria and diarrhoea, time gained because of improved water supply, division of labour within the household ..)*

The above lists show how closely related these issues really are and that there is little point in categorizing them as separate issues. The mission hesitates to include population issues on the above list although the 'human carrying capacity' of Owambo is clearly an increasingly critical issue and discussing this would be a more or less natural next step in the hands of skilled extension staff.

The participatory training should already during the training work with water committees as a prime target group of the extension workers. Primary schools are

another target group but school programmes have their own formal requirements which are probably better addressed in a follow up stage. A school programme would need to be coordinated with the Ministry of Education and with Unicef as this organisation is already active in this area.[20]

The Institute of Water and Sanitation Development (formerly known as the Regional Training Centre for Water and Sanitation) based in Harare, Zimbabwe, would be a suitable institute to give the participatory skill training since it has PROWWESS training capacity. The UNDP/World Bank's Regional Water and Sanitation Group in Nairobi, Kenya also offer the same.

If this recommendation is taken up there is in addition a requirement for a nodal agency with a physical presence in Owambo, and with a training focus. Such an agency, which ideally would already have a 'water focus' would be involved from the start and would be given responsibility to give follow up to the above suggested participatory training and to material development. This is elaborated in the next section.

2.10 Proposed institutional setting

The Unicef National Strategy for water, hygiene and sanitation education is sound in its choice to work through informal multidisciplinary networks of extension workers. However, a sustained interest in water related education and sanitation through such networks also requires a nodal agency with a physical presence at regional level (a region in this context consists of the 4 Northern regions, i.e. the whole of Owambo).

DWA's DRWS would be the natural choice to take up this role but is as yet not in a position to do this. The MoHSS, although responsible for water related health education and sanitation, is also not geared for this task.

The Rural Development Centre in Ongwediva could possibly fulfil this role as it appears to have a number of strong points[21]:

- RDC resorts under the MAWRD's Directorate of Rural Development.
- RDC's project manager is chairing the region's intersectoral Development Coordination Committee, which has various subcommittees one of which deals with water supply and sanitation.
- RDC has a water and sanitation focus. It assists families to acquire or make practical household assets a fair proportion of which is WSS related.
- It has a down to earth focus on the target population as it trains some 900 people per year in skills which are in demand.
- It addresses the region, and is not bound by district or other administrative boundaries. It is well situated at Ongwediva.
- It aims to complement existing initiatives of both NGOs and GOs and it assists a wide range of organisations in their activities,
- It has working relations across the sectors, and it spreads out through the Agricultural Development Centres (one is now being built at Okalongo).

- Its semi-autonomous status and able management make it flexible and responsive to needs of the target group. It is not hindered by an abundance of red tape and can thus be creative.
- It is environment-aware. A tree nursery of Forestry is accommodated at RDC.
- Established in 1988 it has a strong reputation and is highly visible. It has catering and conference facilities. It has attracted many distinguished guests including Namibia's President.

RDC is unusual in that it has a governmental setting and a non-governmental mode of operation. The RDC is also unusual in that it has a backstopping consultancy arrangement with a Namibian consultancy firm which also is entrusted by MAWRD's Directorate of Rural Development with RDC management.

The mission had a brief discussion to probe the acceptability of the above ideas with RDC staff and found that the idea of RDC expanding its role along the lines described above was well received by RDC's Project Manager.

Strengthening extension workers' skills in participatory approaches with particular focus on the WSS sector was felt to be 'an excellent idea'. It is not presently part of RDC's work as RDC is dealing directly with the target population, but if a funding agency would support this, RDC could host and (co)facilitate.

RDC would be happy to help produce water & environmental sanitation related extension materials, notably simple visual aids, to help extension workers to work in a participatory way with the target group. RDC could make the materials available on a large scale through its affiliated Agricultural Development Centres and other working partners such as PHC, Teacher Training College etc.

The mission sees as a possible drawback of this option that Dutch support will go to the whole region rather than to localized areas covered by Dutch funded piped schemes. On the other hand, the option would benefit DRWS' general performance in the four regions of Owambo which has been a deliberate choice of the Dutch Development Cooperation - see section 1.1. Furthermore the mission sees extension support to a pipeline's domain as unfeasible - see section 1.1. (It would, however, be possible at a later stage when Local Water Committees addressing exactly this domain are in place and trained for this purpose.)

The mission thus recommends to further explore the option of assisting the RDC, Ongwediva to become a nodal agency for participatory training of extension staff in Owambo with particular reference to water, environment and environmental sanitation. The target group would be extension workers, notably the new cadre of RWEOs, the multidisciplinary working groups created by DRWS, and the sub-regional teams created by Unicef (there is likely to be overlap). Furthermore the extension workers in RDC's network of Agricultural Development Centres, and other work contacts of RDC - Teacher Training College, Primary Health Care staff - would be targeted. At a later stage representatives of Local Water Committees and Water Point Committees could be trained so that extension workers' input can be reduced.

If it would appear that in a number of years DRWS could take the role of nodal agency for all water related extension RDC involvement could be scaled down. The mission estimates a minimum period of three years of RDC involvement.

It is also recommended to test the acceptability of this recommendation in a suitable forum of agencies. At national level this would be the NGO Coordinating Committee, an initiative of DWA's DRWS which appears to draw in all agencies involved in the sector, including government institutions.[22] In Owambo the Cuvelai WatSan Forum (formerly called the Northern Ad Hoc Water and Sanitation Technical Support Committee) would need to discuss the implications.

2.11 Committees

The mission was not in a position to study the performance of the various water committees. Yet these committees are to be the main stay of all water related interactions between providers and users. Committees are also target groups to act as change agents for water and hygiene education. They will thus be both recipients and actors in water and hygiene related extension, and in addition have many other tasks relating to water management.

An overview of the committees is thus appropriate even though it must be realized that the overview gives the planned rather than the actual set up. The overview is very sketchy as this is beyond the mission's brief. It is based on one of the sector strategy papers recently produced by DRWS[23]:

Each region will have a Central Water Committee the main function of which will be to stimulate the development of rural water supply schemes and to coordinate the activities of the various Local Water Committees in the region. The Central Water Committee is in place in Owambo and it is reputedly the strongest CWC of the whole country.

Local Water Committees will be established which will be in charge of a group of individual water points which together form a distinct entity such as a pipeline and its reticulations.

Water Point Committees are established, as the name indicates, at water points - which may comprise several taps. WPC tasks are, amongst other, operation and maintenance, monitoring, user education on proper use and environmental hygiene, and collection of water fees.

Both the Ogongo-Okalongo and the Oshakati-Omakango schemes have a Local Water Committee. Local Water Committees enter into a formal agreement with DWA/DRWS when the scheme - upon completion and after a joint inspection - is formally handed over to be managed by the LWC. The Dutch funded Ogongo-Okalongo scheme is the first scheme where this procedure is followed to the letter.

Some WPCs have been installed at the Onaanda and Okahao South schemes which

were the first rural schemes for which a deliberate effort was made to involve the recipient communities in all stages from planning to operation and maintenance.[24] DWA/DRWS however has no capacity to follow up on these WPCs and the mission was told that an Oshakati based DRWS staff member fits in field visits to these committees during week-ends.

The Dutch funded Ogongo-Okalongo scheme is the first rural piped scheme where all water points have a committee selected. This is because the consultant responsible for construction engaged extension staff for this purpose. The other Dutch funded scheme, the Oshakati-Omakango scheme, has no WPCs yet although the scheme is near completion. It is clear that DRWS faces a formidable task for which it is presently ill equipped. DRWS hopes that the RWEOs, once installed, will catch up on this and other backlogs.

Various reports express misgivings about the way the Water Committees came into being. A review by the consultant contracted for the Okahao South and Onaanda piped schemes states[25]

> 'The WCs were nominees pushed into their roles at a public meeting when the President himself was present. Thus some of the WC members have been unwilling participants, bound by a public duty thrust upon them'..

The same report also states that 'The new approach (i e community involvement) and a voluntary labour force undoubtedly presented problems in the field which DWA staff could not overcome. The tight time schedule for the new community based projects did not allow DWA staff to adjust the time schedule to a more realistic pace dictated by the time villagers had to spare.'

It would be useful for DRWS to also learn the experience of the consultant engaged for the Ogongo-Okalongo scheme. The mission gathered a number of insights from this consultant which could provide ammunition against the pressure of hasty, top-down implementation. One of the lessons brought up was that increasing the preparation time and using this time for planning with and through water committees - both LWCs and WPCs - would in the end save time and costs and improve scheme quality (a small example is safeguarding PVC pipes from damage by sunlight and thus avoiding leakages. This and other things should be general knowledge of the future users).

Concluding: Water Point Committees are an important target group of water related extension, particularly given the scattered settlement pattern in Owambo where it will be very time consuming to approach the actual target group - households - on an individual basis. It is at this level where 'water related extension' will have to make sense and combine issues of water management and health and hygiene issues. WPCs should be the prime target group during and after participatory training of extension staff as proposed in section 2.9. It is advised for their training to rely on the large numbers of extension staff of several departments, rather than only on the small number of yet to be trained RWEOs. The mission is of the opinion that suitable training material and joint training in communication skills will need to be a binding

force and also an incentive for this to happen.

3 Sanitation

3.1 Sanitation in Owambo

The consensus on the importance of water and its management is in stark contrast with opinions on sanitation. Where sanitation is understood as environmental sanitation all agree on the importance of drainage and cleanliness of water points and of avoiding litter in public places (the latter both for health and for aesthetic reasons). These messages are un-controversial.

When it comes to sanitation in the sense of human excreta disposal the opinions vary. Some say 'of course there should be safe excreta disposal and people should build latrines'. Others have second thoughts on the priority of latrine construction. They argue that:

- The multitude of livestock and other animals which by nature defecate indiscriminately as they freely roam around in the communal areas makes control of excreta disposal of one species - human beings - futile.
- The prevailing (very) hot and arid weather conditions guarantee a speedy reduction of pathogens in any faecal material left exposed.
- The latrine models promoted through various projects in Owambo all have drawbacks. None is both affordable, environmental-conscious, and convenient to the user.
- The traditions in Owambo are that people use the bush and have done so since time immemorial.

The last point is in itself not an argument against the professional justification for latrine promotion, but it does indicate one of the barriers which extension agents will have to overcome. The experience gained in the Finnida supported WSSPOR indicates that 'a demand exists but it is not very strong'.[26]

Excerpts of knowledge, attitude and practice studies confirm the misgivings of potential users of latrines : latrines smell; latrines bring flies and mosquitos; the soil structure in many places requires pit lining; latrines attract scorpions.[8] Or simply: it feels better in the open air.[13]

The last point may seem trivial but the traditional latrines are all spacious and without a roof. Their palisade fence of sticks and poles does not offer a lot of privacy, but then, entering a bright silver coloured galvanized iron cabin may be equally embarrassing.

It is noteworthy that even at schools there often is no latrine at all, and if there is a latrine it often is merely a secluded space without pits. At times one sees real latrines

at such schools: they are spacious buildings of about 6 square meter with a large pit excavated preferably in old termite hills. The rationale for utilizing termite hill soil appears to be the improved leaching compared to normal soil. This points to a drawback of latrines constructed on the prevailing soil type: when fluids do not percolate latrine pits fill up and smell. (Poor leaching of the soil is also demonstrated in the oshanas and in the puddles of standing water around water points).

A recent Finnconsult report quotes the sanitation coverage of rural households in Northern Namibia as 5-28% with the highest figure - 28% - representing *areas which have been addressed for three years by sanitation programmes.*[26] The report states that without sanitation projects coverage is a mere 5%. This indicates the low level of spontaneous latrine construction and the absence of significant government initiatives in this area. Of the institutions clinics are with 86% well covered while school coverage is only 14%.

3.2 Sanitation: An unconventional view

It is an accepted view that water, sanitation and hygiene education belong together. Part of this view is based on the fact that improved water supply by itself has had little demonstrable health impact. In donor funded programmes water, sanitation and hygiene education are regarded as a package the components of which are complementary and mutually reinforcing. Programmes which find that at the end of the day their money is mostly spent on water supply and none on sanitation strive to correct this imbalance and go to great lengths to also establish a 'sanitation component'.

The justification for the above view is that faecal matter contaminates (drinking) water and therefore should be contained and that in addition hygiene education should be given to inform people how to avoid faecal matter from entering their body, which can be through drinking contaminated water, eating contaminated food, soiled hands and utensils - the so called faecal-oral routes of contamination.

However, contrary to point sources which are contaminated at source by faeces, the quality of piped water at the water delivery point is not normally affected by the way in which the users dispose their excreta. The main rationale for latrines complementing piped water supplies is to avoid that faecal material contaminates water during or after water collection at the tap, and to lessen the risk of contamination through other faecal-oral routes. These risks are primarily addressed by proper environmental sanitation around the tap and by hygiene education of user households.

Indiscriminate disposal of faeces will still be a communal health risk - think of various worm diseases -, but will not compromise the quality of piped water at the delivery point provided there is adequate environmental sanitation around the water collection point. If alternative faecal-oral routes are blocked at individual and household level, 'latrines' are perhaps not the highest priority in the context of a piped water supply programme. The above does in itself not make a strong case for dissociation of piped

water and latrine provision in Owambo. Subsequent sections will provide additional arguments.

3.3 The target group

Following the above argument the target group of sanitation (latrine) programmes are those households which have a felt need for latrines. These will generally be households with one or more of the following characteristics: large number of people, an above average income, lack of privacy in the surrounding bush because of deforestation and/or nearby homesteads. The lack of privacy is problematic for women especially.

Such households should have a range of technology options from which they can choose at their own initiative. This is in line with the approach of RDC in Ongwediva which offers a range of appropriate technologies, from wells to ovens, plus advice and skills to instal them. (RDC also has its own latrine option, but so far has not included sanitation options of other projects in its assortment).

Schools are another important target group of latrine construction programmes. The current sanitation coverage of schools is alarmingly low. The mission at present has insufficient insight why this is so and recommends to await the results of Unicef's review on the merits and demerits of its institutional VIP programme.

3.4 The initiatives

There is no uniform approach and technology in the field of sanitation in Owambo. All latrine models in an attempt to economize on building materials feature small cabins, which tend to be uncomfortable and hot, especially when the walls are of galvanized iron plates. Those which are cheap use wood as building materials. Those which use burnt bricks are no less detrimental to the environment. None has a provision for emptying the pit which in the case of lined pits means a large part of a household's investment is lost when the pit gets filled up.

The sanitation programmes in Owambo are summarized in table 2 below which draws on a recent workshop report.[27]

Table 2: Overview of rural sanitation programmes in Owambo

Agency	Target group	Technology	Cost
Unicef	institutions	Double pit VIP	> N$ 4,000
IABP, Tsandi, Unicef	hholds; institutions	Single pit VIP; Double pit VIP; Ombili plat	N$ 380-410 N$ 20 slab only (N$ 150 structure plus slab)
DAPP	hholds; institutions	Single pit VIP	N$ 150-450
WSSPOR/Finnida	hholds; institutions	Single pit VIP; Double pit VIP; Compost latrine	N$ 300-500 > N$ 5,000 N$ 600
RDC, Ongwediva	hholds; institutions	Single pit VIP	N$ 325

Source: Arto Hurtta, Chander Badloe, Ad hoc Water Supply and Sanitation Technical Support Committee Meeting on Standardization of Sanitation Facilities, Report of a one day Workshop held at WSSPOR Ongwediva, February 1994.

One of the recommendations of the workshop was to promote the Ombili plat because of its affordability. The next phase of the Finnida sponsored WSSPOR programme has also opted for promotion of traditional latrines with an Ombili plat. The Ombili plat, or san-plat, is basically a smooth concrete slab with foot rests and a squat hole. It is an added feature to a traditional latrine, and leaves the choice of pit and super structure entirely to the users. The low financial cost of such latrines is explained by the use of local materials - wood - for pit lining, platform and superstructure.

The workshop further recommended to also invite the MoHSS for future meetings, which is perhaps indicative of the low level of involvement of this ministry at present.

3.5 The implementors

Like in most countries, in Namibia rural sanitation is a bit of a grey area as the implementation for private households is in the hands of 'informal consumer representatives' while the accompanying health and environmental aspects and user education are the domain of the Ministry of Health and Social Services - vide WASP document.[4]

Also in most developing countries substantial rural sanitation programmes only materialize with strong funding support to the implementing agency or department, and with high subsidies to the households concerned. (Sanitation is a rare example of

private property - latrines - being heavily subsidized! This is, as indicated in section 3.2, because excreta are regarded as a communal health risk when not adequately disposed at household level.)

Adding a sanitation component to a rural water supply project in practice proves to be difficult as the institutional rooting of latrine construction programmes is awkward and also differs from the water supply component's setting. In addition Ministries of Health are seldom geared to pull off the hardware part of latrine programmes, i e the actual construction. Ministries of Health simply have no tradition nor experience or transport facilities for large scale construction.

The implementors of sanitation programmes in Owambo are projects fed by donor funding - see section 3.4. An exception is the RDC in Ongwediva which operates like a sanitation market where interested clients can buy facilities and get advice on how to instal them.

3.6 The content of sanitation programmes

Unicef has decided to review the experience gained so far with its VIP latrine construction programme in Owambo. It is felt that the message 'build and use a latrine' might need to be reconsidered for the following reasons (personal communications K.Gibbs; C.Badloe):

- The health risks of traditional open air defecation and faecal disposal are probably exaggerated in the Owambo setting.
- None of the conventional latrine models offers a convincing alternative in terms of cost (money, wood) and performance (leaching, smell; flies).
- The argument of convenience could be further exploited as in situations where the privacy of bush defecation is no longer attainable - where there is severe deforestation and/or high population density - people have been more readily convinced to construct a latrine.

The current opinion among the Unicef experts is that too little information is available about the target population's preferences and practices to warrant a one-for-all message promoting one type of latrine, particularly when there are doubts on the professional validity of this advice and on the technology of choice. Unicef therefore executed an internal review of its VIP latrine programme the results of which are amongst other that [28] [29]:

> 'A VIP may not be the ideal choice for this (Cuvelai) situation; and that we may need to reassess what we seek to do with our respective programmes. The VIP latrine is expensive and appears not to function as it is said to function. Perhaps other, less expensive types should be tried; like the OmbiliPlat which is an alternative being used in the IABP area of Uukwaludhi.'

Other agencies and in particular Finnida's WSSPOR have recently opted for an all out sanitation effort aiming for high coverage (80% of households; 100% of schools and

clinics) through a low cost technology (the Ombili plat) which is to be promoted by Community Health Workers in the Western Ohangwena project area.[24] The programme as proposed aims for a very high user contribution - 90% of the construction cost - and it will be interesting to watch how it is received and performs.

The mission recommends to monitor decisions and progress in both the Unicef and the WSSPOR's sanitation programme. Based on these data the position not to go for a sanitation component in the Dutch funded piped scheme areas could be revised or refined on a yearly basis.

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Annex 1

Terms of Reference

Terms of Reference
pre-identification mission
institutional & organisational options
for introducing sanitation and hygiene education
in water supply projects

Background

Apart from two projects in the Namibian water sector for which financial support has already been received, the Government of the Netherlands has shown interest in funding an additional three projects in the water supply sector. These projects, all of which are situated in Owambo, are as follows:

(a) Oshakati-Omakango Water Scheme:

This scheme consists of a 32 km long bulk water supply pipeline running between Oshakati and Omakango from which 57 km of secondary pipelines branch off to supply the surrounding rural areas. The primary function of the main pipeline is to supply water directly to the existing Herringbone network from Oshakati instead of from Ondangwa. The project is being undertaken by DWA and construction is expected to be completed by April 1994. User communities have been involved in construction of the branchlines and will take on the responsibility for the operation and maintenance of the branchlines and the water points.

(b) Ogongo-Okalongo Rural Water Scheme:

This water supply system will consist of a 26 km long main line running from Ogongo in the south to Okalongo in the north from which branchlines extend in easterly and westerly directions which have a combined length of 150 km. A total of 169 taps will be built along the route at 64 water points. The main objective of the project is to supply water to the rural communities in the area. Construction of the main pipeline commenced in January 1993. Similarly to the first project, the beneficiary communities are involved in the planning and construction and will later be responsible for the operation and maintenance of the scheme. The physical construction of the scheme will be completed by March 1994.

(c) Calueque-Olushandja Phase II:

This project proposal involves repairs to and rehabilitation of existing water supply infrastructure at Calueque and Olushandja Dams as well as the installation of new pumping equipment at both dams. The project is currently in the planning phase.

During November 1992, a joint reformulation mission was fielded by the Dutch and Namibian Governments following initial queries in The Hague about the environmental impact and sustainability of the Oshakati-Omakango and Ogongo-Okalongo schemes. In the subsequent report of the mission, proposals were made to improve the sustainability of the two schemes. These proposals include amongst others:

- improvement of the planning of the location of water points
- improvement of water point design
- provision of additional capacity for DWA at HQ and Planning Office at Oshakati via integrated experts
- monitoring of the two schemes during early years
- provision of technical training at all levels

Other observations/recommendations were made as to community participation, training of extension officers and water committees, cost recovery, institutional capacity building and the need to link to/integrate health and sanitation activities in the other supporting activities for rural water supply.
Although the Department of Water Supply (DWA) is the implementing body for the rural water supply scheme, the mandate for health and sanitation actvities is assigned to other line ministries.

Overall task
To recommend a strategy as to how to institutionalise and organise health education and sanitation activities (based on gender specific community participation) in the Netherlands Namibian water supply schemes.
sub-tasks to be executed:
-To identify the various actors (governmental and non governemental) and their respective roles in the field of hygiene education and/or sanitation in relation to watersupply in rural areas (particularly in the Ovambo-region);
-to inventory the projects that are (to be) executed in this region pertaining to this field of activity;
-to assess aspects such as -the methodology advocated by these actors, -the ways and means of coordination and cooperation these actors pursue with other institutions supporting rural water, etc.
- any other task that is considered appropriate in the context of the overall objective.

Reporting
The consultant will report to the Royal Netherlands Embassy in Windhoek within a month upon termination of the mission.

11 March 1994

Annex 2

Mission's Programme

Mission Programme

March 20th 1994	Travel from Harare via Johannesburg to Windhoek
March 21st (Public Holiday)	Briefing C.M. van Waegeningh (RNE); read documents
March 22nd	Meeting H.Koch; I.G.Zijlma; H.van der Leest (all DWA, Directorate of Rural Water Supply) Meeting K.Gibbs (Unicef)
March 23rd	Meeting A.P.Dammon (MoHSS; Public Hygiene, Environmental Health Services) Meeting A.Suominen (WSSPOR, Ohangwena)
March 24th	Meeting H.Mc Pherson (GTZ advisor to DWA/DRWS) Meeting E.Indongo (MoHSS;IEC Unit) Meeting A.Nehemia (DWA/DRWS, Oshakati)
March 25th-26th	Field visit accompanied by I.G Zijlma to Oshakati. Meeting accompanied by J.Akawa (DWA) with S.Hinalulu; F.Amulungu and P.Ndjodhi (MoHSS, Office of Public Health) Meeting with Regional Director MoHSS, K.Shangula Meeting L.Hamunyela, Regional PHC Coordinator. Field visit to Oshakati-Omakango scheme Meeting J.A.Ingram (RDC, Ongwediva) Field visit to Ogongo-Okalongo scheme accompanied by H.Marais (consultant Burmeister van Niekerk), I.G.Zijlma and J.Akawa.
March 28th	Meeting N.Dondi (Unicef) Meeting S.Bethune (DWA, water ecologist) Preliminary Debriefing C.M.van Waegeningh (RNE) and H.Koch (DWA/DRWS)
March 29th	Meeting I.Ithete, Directorate of Community Development Draft report
March 30th	Field visit to Oshakati cancelled Draft report
March 31st	Meeting T.van Helvoort, Namibia Catholic Development Commission Meeting C.Badloe, Unicef. Return various documents. Meeting R.Davis, Namibia Resource Management Consultants
April 1st	Return to Harare

- **Organogramme Ministry of Health & Social Services** *

- **Job Description Environmental Health Assistant**

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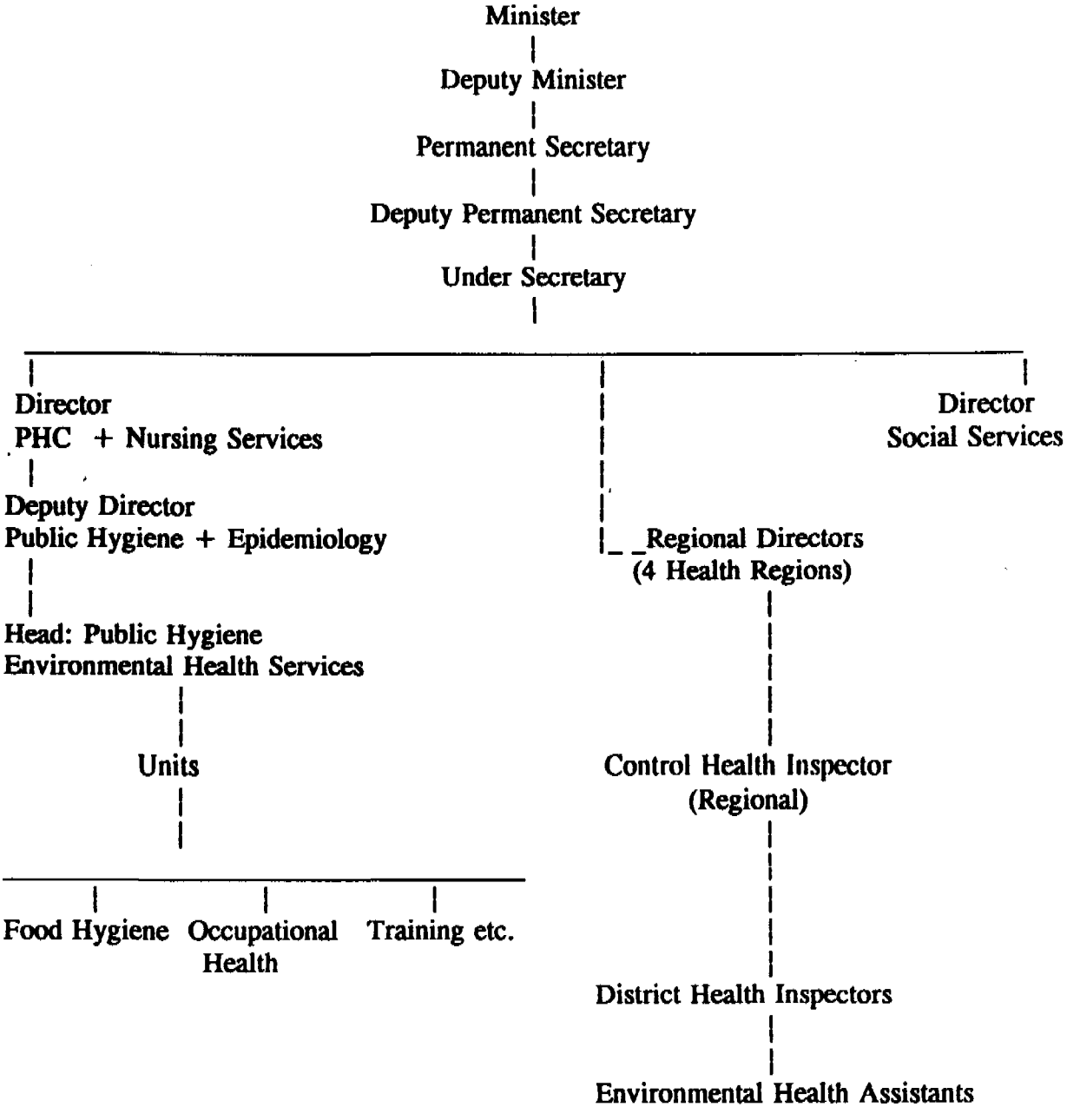
* Source: A.P.Dammon, MoHSS; Public Hygiene, Environmental Health Services.

Ministry of Health and Social Services *



* Source: A.P.Dammon, MoHSS; Public Hygiene, Environmental Health Services. Note that this is a partial organogramme only.

JOB DESCRIPTION OF ENVIRONMENTAL HEALTH ASSISTANTS[a]

The environmental health assistants will be required to undertake the following tasks and activities:

- Mobilization of community groups and leadership for action to improve the environment.*
- Attendance at community meetings.(*)
- Education of individuals, families, groups and communities on measures to promote health, prevent disease and use actively the provided services and facilities.*
- Monitoring of environmental hazards and control of nuisances.*
- Advise and provide assistance for building houses with designs for improvement of healthy living within the available resources.
- Monitoring of local small water supplies.*
- Motivation for and assistance in building satisfactory latrines.*
- Improve the environment of schools, markets, health facilities, small abattoirs, shopping areas.*
- Inspection of meat at local slaughtering places.
- Participation in case finding and other control measures for Tuberculosis, Leprosy and Schistosomiasis.
- Participates in malaria control and spraying.
- Participates in control of other vector borne disease such as plague.
- Improvement of environment of squatter areas.(*)
- Provide advice on domestic refuse disposal and assistance in the organization of communal refuse disposal.*
- Work in a coordinated way with extension agents from other sectors and agencies.(*)
- Team work with health staff for community and outreach work.(*)
- Follow up and contact tracing of cases or outbreaks of communicable diseases such as measles, poliomyelitis, hepatitis, dysentery, plague and meningitis.[b]
- Assistance to communities, work places and schools in the prevention of accidents and control of occupational diseases.
- Regular visits to food and drink premises and advice to management of improvement of hygiene.*
- Write regular reports to superior officer.
- Undertakes any other activities as required by the supervising environmental health officer, or head of the local health institution to which attached.

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[a] Items with * indicate water & (environmental) sanitation related responsibilities.

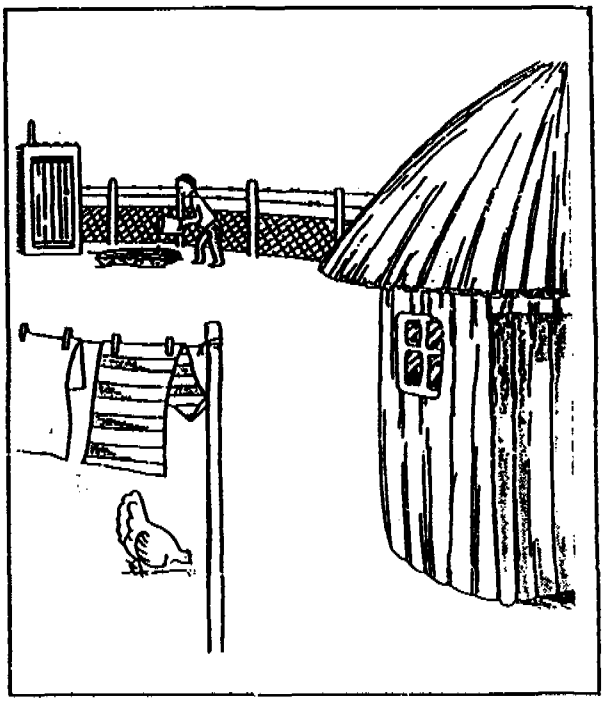
[b] Note that this task appears to fully occupy the Public Health Service in Oshakati and in the districts. It focuses on secondary prevention i.e damage limitation and thus is re-active and short term rather than pro-active and sustained.

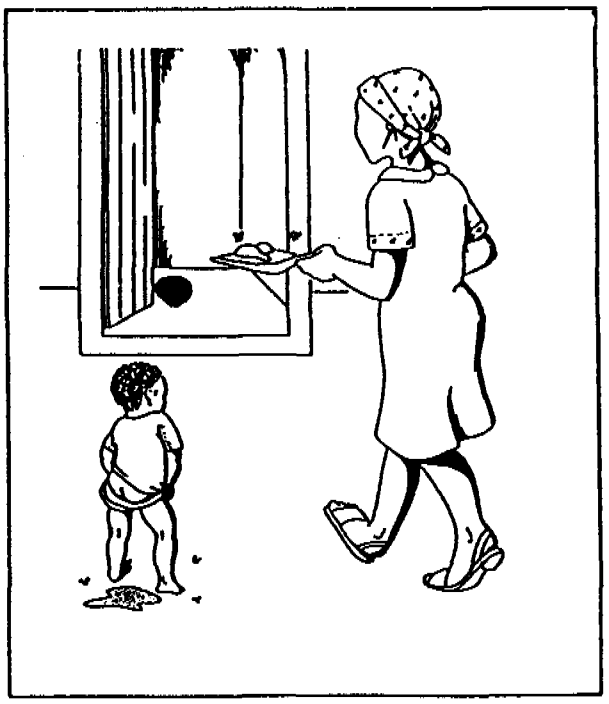
Annex 4

Examples of education materials developed by DWA/Unicef in 1992

PAMPHLET .: **CLEAN FOR HEALTH**

WITHOUT WORDS





Story with a gap, example on desertification *

The story with a gap is just one example of a participatory technique which can be successfully applied in any sector, for any situation that can be depicted (wellnourished versus malnourished baby; functioning / defunct handpump; flourishing / worn out woman ...)

The principle is that of, firstly, analysis - what went wrong and caused a healthy situation to deteriorate - and secondly, planning (what can be done to reverse the situation). The planning step naturally leads into action, for which guidance by extension staff may or may not be required. Such techniques are especially useful to solicit joint decision making and action at community level on emotive issues that are of concern to all.

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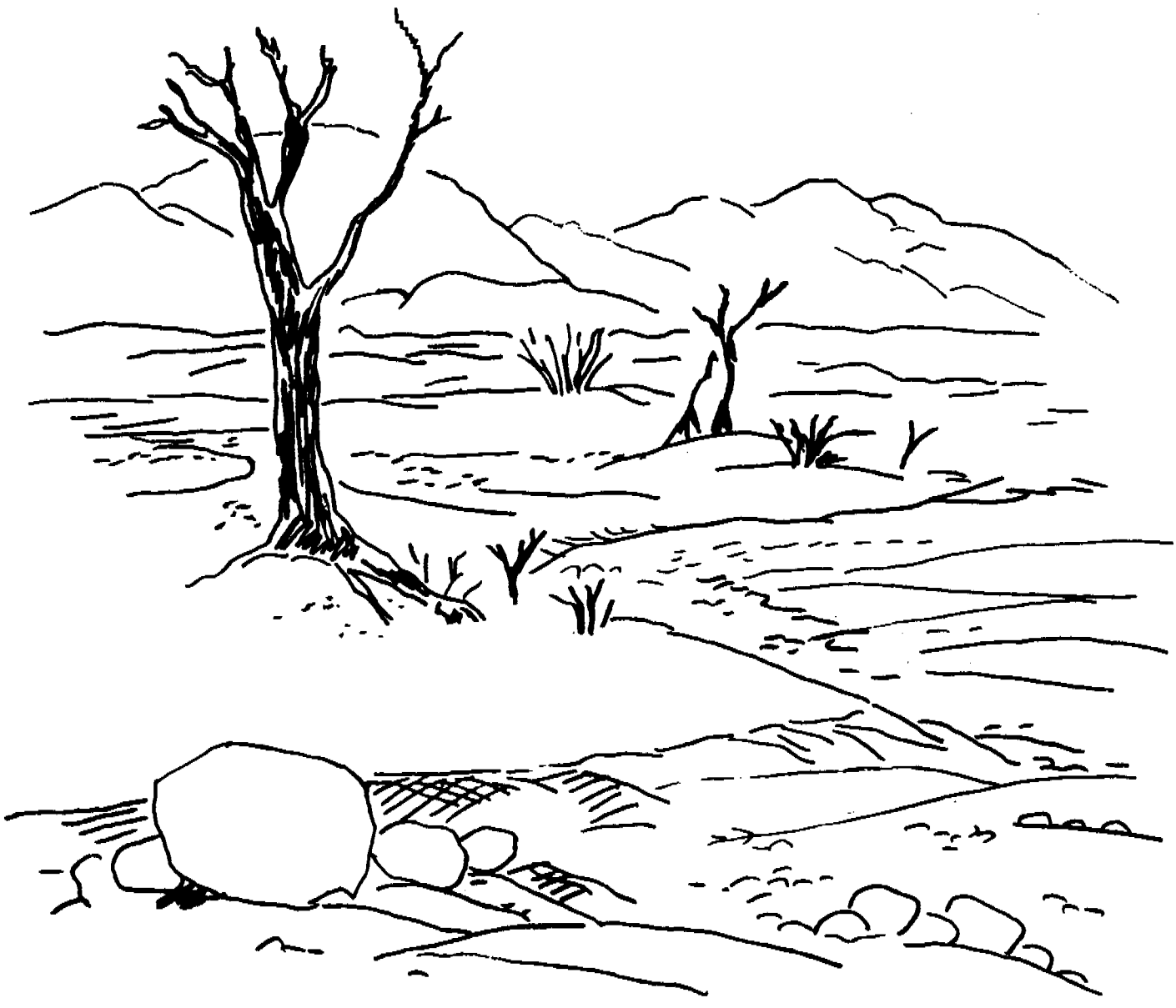
* Adapted from a publication by Mary Seely, Desert Ecological Research Unit of Namibia, Namibia Drought and Desertification, Gamsberg MacMillan Publishers Ltd, 1991.



Participatory tools, examples from the water sector [a]

[a] Examples from WASHE Programme (1987), Western Province, Zambia. Artist Lou Sifuniso.

Examples of posters used in participatory sessions. They are done in A4 size in order to fit into plastic files for easy handling. These posters are explained and sorted out by participants in 2 piles : beneficial or harmful to health.