

NGU Report 99.053

Log Frame Analysis Workshop on:
Sustainable Development of Groundwater
Sources in S. Africa

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Summary: <p>The report describes the background for the Log Frame Analysis Workshop on: Sustainable Development of Groundwater Sources in S. Africa, the methods used and organisational form of the workshop, the views which emerged from it and some of the specific outputs. The workshop made important contributions, i.a. in relation to:</p> <ul style="list-style-type: none"> • Other relevant on-going activities • Linkages between the projects • Indicators • External factors <p>One of the key recommendations was that the stakeholders represented at the workshop should have similar opportunities to comment on the outputs from, and progress in the programme throughout its implementation.</p>			
Keywords: S. Africa	NORAD		hydrogeology
groundwater	rural water supply		sustainable development

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INTRODUCTION

1. Introduction, workshop objective, programme and participants

1.1 Introduction

The Dept. of Water Affairs and Forestry of S. Africa (DWAF) submitted, in August 1998, a proposal for a programme consisting of eight projects directed towards sustainable development of groundwater sources as a means of meeting the needs of rural users under the Community Water Supply and Sanitation Programme, to the Royal Norwegian Embassy in Pretoria (hereafter: "the Embassy"). The proposals were prepared by the Council for Geoscience (CGS), DWAF and the Geological Survey of Norway (NGU). NORAD subsequently carried out a detailed Pre-Appraisal assessment of the proposals (Damhaug & Gleditsch 1998), including discussions with involved parties in S. Africa. The Pre-Appraisal Report included several strategic recommendations and comments on each individual project proposal. It suggested a rapid process towards approval of the Programme, followed by more detailed planning, including the holding of a Log Frame Analysis (LFA) workshop during the first year of the programme. The proposals and the Pre-Appraisal Report were the basis for the provisional approval of NOK 25 million in support for the programme, given by NORAD's top management in February this year: it was stipulated that the LFA workshop should be held prior to resubmission of proposals and final approval of the Programme.

As a separate step the Embassy sponsored a seminar in the LFA method for potential partners in S. Africa in November 1998. Several of the persons involved in preparation of the above-mentioned programme attended this seminar and thus had received a basic training in the LFA method. In the course of the seminar the LFA method was used to develop a Business-Plan format, acceptable to the S. African Ministry of Finance, which could be used for proposals for co-operative projects. CGS, DWAF and NGU reworked the proposals into the agreed Business-Plan format in April 1999.

An application for funding for Norwegian participation in the LFA workshop was submitted to the Embassy on 7.5.99 by NGU. Approval was granted on 12.5.99. Two experienced facilitators, Tore Laugerud and Erik Ravdal (both Norconsult), were engaged to manage the workshop and submit a report on it. Arrangements in S. Africa were made by DWAF and CGS, in whose premises the workshop was held. NGU's contract with NORAD involved a commitment to submit the report by 30.6.99. This report is based on the report submitted to NGU by Tore Laugerud and Erik Ravdal, with additional input from the other co-authors.

1.2 Workshop Objective

The purpose of the workshop was to bring together main programme stakeholders and give them an opportunity to give input to the refinement and completion of the project designs under the Programme. The project designs have been prepared based on the principles of the LFA (Logical Framework Approach), commonly used by NORAD and other donors as a tool to plan and monitor development projects.

Some important elements in the design had not been elaborated sufficiently, such as the establishment of indicators and identification of possible external factors that are likely to influence the project development processes at different levels. The workshop participants were specifically requested to discuss these aspects and give concrete inputs where possible.

Generally, the one-day workshop could also be regarded as a form of programme appraisal by the stakeholders. Follow-up discussions, led by the facilitators, were held on the following day by a more limited number of participants (see Appendix 7).

1.3 Workshop Programme

The Workshop Programme is enclosed in Appendix 1.

1.4 Workshop Participants

The list of participants is presented in Appendix 2.

Around 35 persons participated during the first items of the workshop program (according to the registration list). In the course of the workshop, some of the participants (maybe around ¼) left the venue. Around 40 persons had been invited, which gives a reasonable attendance rate.

The participants were handed over certain papers at the registration, enclosed in Appendix 3. All the participants had also, in advance, together with the workshop invitation, received a general description of the Programme. Detailed descriptions of the individual projects and their elements were, as such, not given to most participants before the workshop but were accessible during it.

2. The LFA concept

2.1 Brief Introduction to the LFA Methodology in General

The workshop moderators gave a brief introduction to the concept of LFA, as most of the participants were not acquainted with the methodology. The overheads shown in the workshop are enclosed in Appendix 4.

In general: The LFA method is a way of structuring the main elements in a project, highlighting logical linkages between intended inputs, planned activities and expected results.

The methodology is used by several donors and development institutions, in one way or another. NORAD has applied the methodology to its projects since the beginning of the 90s. It is important to realise that LFA does not perform “magic” to any project, it is just a *tool*. The *process* of discussion and structuring initiated by the LFA method is more important than the physical structure of the LFA matrix. Once a project is planned according to the LFA principles, however, it is easier to monitor, review and evaluate later on.

LFA helps to:

- clarify purpose/justification of a project
- identify information requirements
- define the key elements of a project
- analyse the project setting at an early stage
- facilitate communication
- identify how success/failure could be measured

The logical sequence of the project elements:

Input → Activities → Outputs/operational outputs

forms the core of the LFA matrix, being “the Project”. The project outputs are what the project management should be able to guarantee as a result of the activities.

The objectives, comprising:

Project purpose/immediate objective → Project goal/development objective

are beyond the immediate reach of the of the project management.

At each level in the project process there are *external factors* influencing the process. These might be considered as “the project environment”.

Indicators should be identified at an early stage in order to measure the achievements (read: successes and failures) of the project.

All the above elements are visualised in a square matrix (for convenience reasons) comprising the *LFA Project Matrix*.

The process of filling in this matrix is often undertaken by a visualisation technique in a workshop:

*** Analysing the situation:**

1. Analysis of participation
2. Problem analysis
3. Objective analysis
4. Analysing alternatives



*** Designing the project**

5. Formulate project elements (Project Matrix)
6. Identify external factors (Project Matrix)

Project indicators could be both qualitative and quantitative, where the latter are preferred as they give a better starting point for monitoring and review. Direct indicators may need to be supplemented by indirect indicators, and several indicators are better than only one.

Indicators should ideally specify:

- Target group (for whom)
- Quantity (how much)
- Quantity (how well)
- Time (by when)
- Location (where)

A good indicator is:

- **Substantial** - it reflects an essential aspect of an objective in precise terms

- **Independent**, at different level. As each indicator is expected to reflect evidence of achievement, the same indicator cannot normally be used for more than one objective.
- **Factual** - the indicator should reflect facts rather than subjective impressions. It should have the same meaning for project supporters and to informed sceptics.
- **Plausible** - the changes recorded can be directly *attributed* to the project.
- Based on **obtainable** data - indicators should draw upon data that is readily available or that can be collected with reasonable extra efforts as part of the administration of the project.

It is important to be aware of these issues at an early project planning stage. The indicators are just *guiding values*.

The *external factors* constitute uncertainties (of positive and negative character), meaning potential risks, or opportunities to the project. The external factors should be established from the bottom of the LFA project matrix upwards. The factors should be expressed as *positive* conditions, and not as absence of factors (for example: Not - “lack of political will”, but - “political will is required”).

The external factors should be ranked based on weightings reflecting the importance of the factor to the project and the probability that it might occur.

2.2 LFA in the Programme

This process had, to a large extent, been undertaken by the key programme participants *prior* to the workshop, as a result of the history of initiation and development of the project idea and scope and the previously held LFA seminar (see Introduction).

The task of the workshop participants was then really to undertake an immediate *appraisal* of the project preparation work so far, and to assist in filling in the remaining part of the Project matrices. Part of the workshop handouts (Appendix 3) were the project matrices for the seven projects with some blanks for indicators and external factors.

3. The Workshop Process

After the introduction to the LFA concept and the application for this in the programme design, the participants were asked to work in smaller groups. The experience is that more participants are active in the discussion in smaller groups than in larger plenary sessions. Three groups were formed, having participants from different stakeholders in each. This, for example, resulted in one group where none of the participants knew each other from before. The members intended for the different working groups A, B and C are listed in Appendix 2, but as mentioned above some of the participants left the venue prior to the group sessions.

The working groups were asked to comment on the content of the project matrices as filled in so far, and to assist in filling the gaps to their best ability. The groups were given the following projects to work on:

Group A:	Projects 1, 3 and 5
Group B:	Projects 2 and 6
Group C:	Project 4 and 7

There were two working group sessions: the first mainly dealing with project outputs, target group roles and responsibilities related to these outputs and the second with identification of external factors and project indicators.

After each working group session, there was a plenary session where one representative from each group presented the group's findings and conclusions. Here the participants of the other groups had a chance to ask questions and comment on the projects that they had not been dealing with.

All comments and questions were noted down on cardboard cards that were stuck on the wall for everybody to see. This technique of asking the person presenting a comment also to formulate the concept in writing proved to work well, as it forced the individual to be as precise as possible and to reflect and quality assure his/her own suggestions.

On the following day representatives of DWAF, CGS, Mvula Trust and NGU met for an all-day meeting, led by the facilitators, in order to follow up the results of the first day. Minutes from their meeting, written by T. Laugerud, are included as Appendix 7.

4. Main Workshop Findings

The workshop did not turn out to be an LFA workshop as such, as the preparatory team had filled in most of the elements in the project matrices. This meant that most of

the participants were stepping in the middle (or rather towards the end) of the project design process. This was reflected in the response and results from the workshop.

As the concept of LFA and the detailed content of the individual projects of the Programme were new to most participants, the outcome of the venue was not as ideally would have been anticipated. The following characteristics of the workshop *process* were noted:

- There were quite some *questions* from the participants as to different activities and outputs of individual projects and the Programme as a whole. This simply reflected the fact that some had not been involved earlier and wanted to know the rationale behind the project designs and whether this or that component was included. This showed that the participants really reflected seriously on the issues raised in the workshop.
- There were some general statements to the Programme as a whole and its inter-linkages with other programmes going on. These also showed the dedication of the participants to giving advice on the design process.
- The use of the LFA matrix as such was not very structured. The discussions in the groups were not stringent in following the LFA textbook on how to organise the discussions. The workshop moderators did not interfere too much in this, in order not to confuse the substance and hamper the good discussions by stressing theory. This, however, resulted in the project matrices *not* being filled in to the extent required, but the key programme participants got a good basis for developing the design further and for filling in the gaps in the matrices later.

A valid observation is that the workshop certainly covered a need for the participants to be updated on the programme preparations and progress. It also showed that there is a genuine and dedicated interest amongst the stakeholders to give their contribution in the development process, something clearly shown in the active group discussions. This means that in order for the workshop not to be a one-off event where the stakeholders have been alibis for fulfilment of a requirement for designing the Programme according to a certain format, the process must be repeated during the programme implementation period.

(The following day, when a smaller group summarised the workshop and discussed more on programme management issues, it was decided to establish a Stakeholders' Reference Group. This group will meet regularly in order to be updated on the project progress and key issues, and to be given an opportunity to comment on the process.)

Appendix 5 shows the results from the workshop in non-prioritised order and in the wording given in the workshop. The statements are related to the different projects or, where this was not possible, to the Programme in general. This “raw” list will be the basis for the key programme participants (mainly CGS, NGU, DWAF and MVULA Trust) to refine the project matrix and fill in some of the main gaps.

The main points that were noted (and elaborated the following day in a smaller forum – see Appendix 7) are listed below

- There is a great need to focus on the linkages between the different projects
- It is important to interact with other on-going sector projects and previous/on-going studies in order to avoid overlap and duplication
- There is a great need for awareness-raising in key issues at community level
- There is lack of local capacity (management, planning, implementation and operation)
- There is a great need for knowledge transfer and training of different targets groups/stakeholders in different topics at different levels.
- There is a need to focus on the implications of the changes in the water management structure in the country
- The Programme must exploit opportunities to contribute to capacity building/training/mentoring within the historically disadvantaged sectors in RSA
- R+D (research +development) must show relevance quickly after the activity. This might also mean spending money on activities before planned, or before having the logical basis for doing. (Could this develop into a killer assumption?).
- Will the workshop outcome have any significant impact on project design “actors”? (This question was answered by a clear: Yes)
- The implementation of groundwater schemes will continue during the Programme (5 years). (The importance of showing results, but at the same time having a close interaction between the Programme and implementation activities in order to benefit from findings)
- One must not inflate the Programme beyond management dimensions, meaning that the programme must not grow faster than the management can handle in relation to the planned objectives and outputs.

APPENDIX 1:

The Workshop Programme

**WORKSHOP: NORAD-ASSISTED PROJECT:
SUSTAINABLE GROUNDWATER DEVELOPMENT FOR COMMUNITY WATER SUPPLY**

Date: 27 May 1999
Venue: Council for Geoscience, Silverton, Pretoria*

Purpose of Workshop

Stakeholder participation in the design and development of a Logical Framework (LFA) for an important five-year DWAF programme assisted by NORAD, on sustainable groundwater development for community water supply. (Day 1 will be a structured cross-pollination and information gathering. On Day 2, 28th May, a smaller group will collate and integrate the results into the LFA structure.)

Preliminary Programme	Time Schedule
Registration	08:30 – 09:00
Welcome (Robbie Kleywegt, Council for Geoscience)	09:00 – 09:05
Introduction, background and purpose of the workshop (Kalinga Pelpola, DWAF)	09:05 – 09:15
NORAD and Development (Ms. Anne Strand, Royal Norwegian Embassy)	09:15 – 09:30
Programme Outline (Eberhard Braune, DWAF)	09:30 – 09:45
Programme outline in the LFA context (Tore Laugerud, Norconsult)	09:45 – 10:15
Questions and clarification (Tore Laugerud, Norconsult)	10:15 – 10:30
Coffee Break	10:30 – 10:45
<u>Introduction to working groups</u> **	
Group work, introduction, purpose and process (Erik Ravdal, Norconsult)	10:45 – 11:15
<u>Working Groups – Session I:</u>	
Discussion of outputs and target group roles and responsibilities related to these outputs	11:15 – 12:15
Lunch	12:15 – 13:15
<u>Plenary Session I:</u>	
Presentation and discussion of group work for session I (Laugerud/Ravdal)	13:15 – 14:15
<u>Working Groups – Session II:</u>	
Identification of assumptions/risks (external factors) and project indicators	14:15 – 15:15
Tea Break	15:15 – 15:30
<u>Plenary Session II:</u>	
Presentation and discussion of group work for session II (Laugerud/Ravdal)	15:30 – 16:30
The way forward: (Eberhard Braune)	16:30 – 17:00
Closure (Robbie Kleywegt)	

* Map attached

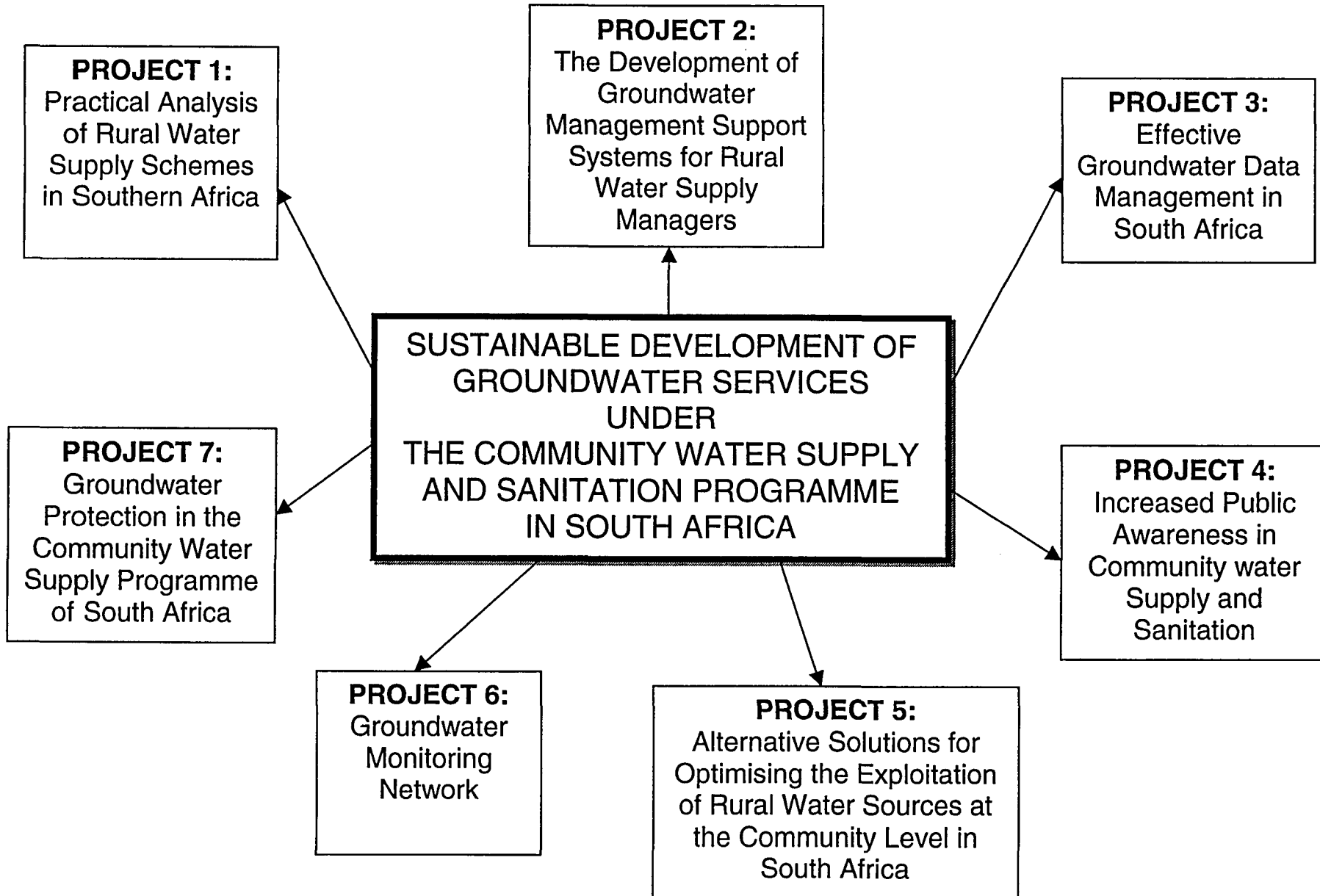
** Three individually facilitated working groups

APPENDIX 2:
List of Participants

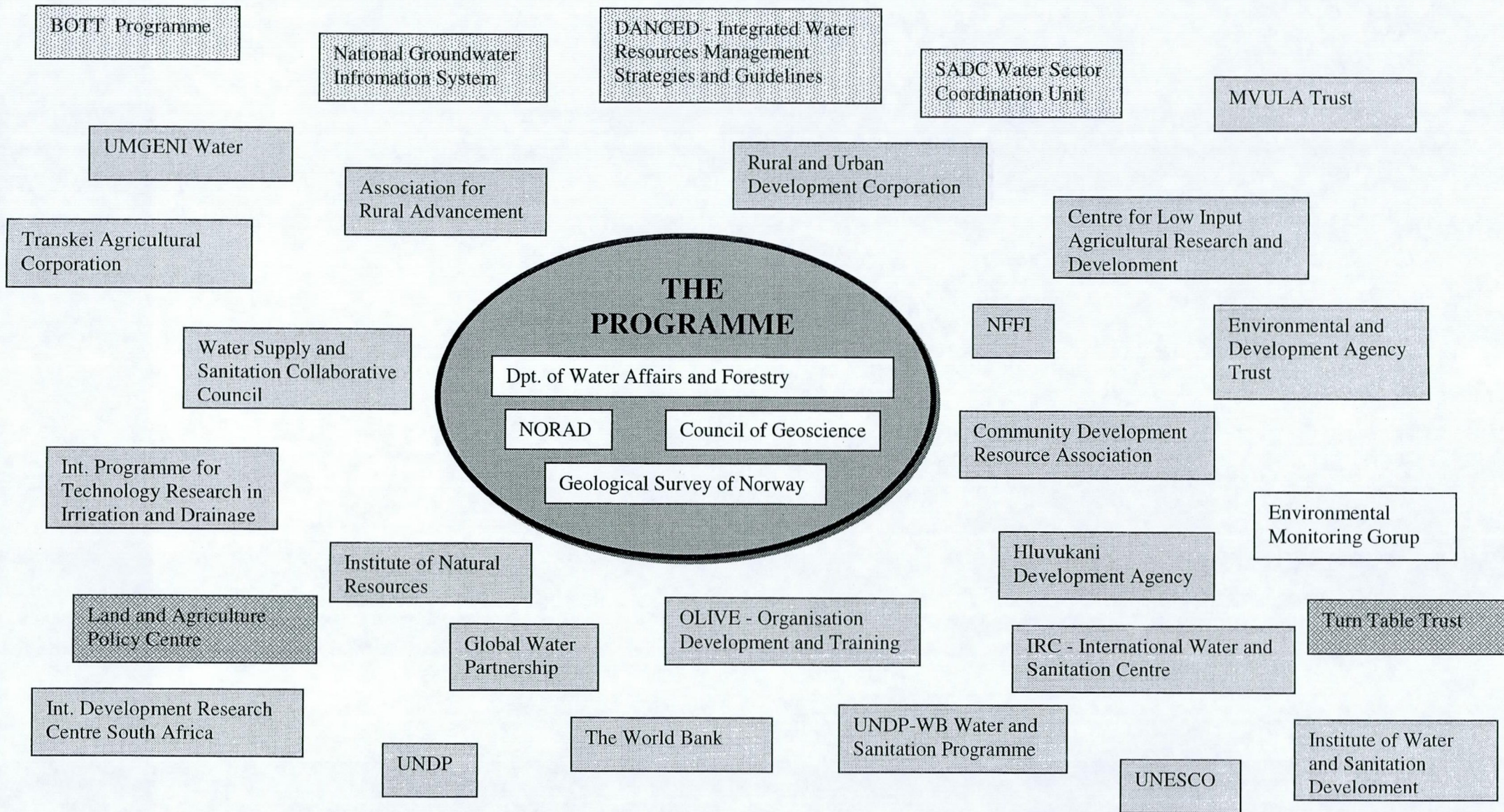
Organisation	Title	Name	Surname	Tel	Fax	E-mail	Gro
Association for Water and Rural Development	Mr.	Grant	Parkinson	015 793 3991	015 793 3992	grant@award.org.za	B
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C S I R	Mr.	Mohammed	Dindar	021 888 2639	021 888 2682	mdindar@csir.co.za	B
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APPENDIX 3:
Workshop Handouts

PROGRAMME COMPONENTS



MAIN PROGRAMME STAKEHOLDERS



- Relevant sector initiatives
- International Organisations
- NGOs and institutions, water
- NGOs and institutions, rural development and agriculture

PROJECT 1 - LFA PROJECT MATRIX

<p>Project Goal To improve existing rural water supply guidelines and practice in South Africa and other southern African countries and to increase regional awareness of the critical factors involved in the planning and implementation of projects.</p>	<p>Indicators An improved success rate for water supply projects, traceable to the influence of this project. (This indicator will not have valid application until the period immediately following the project).</p>	<p>External factors</p>
<p>Project Purpose To compile and analyse the causes of successes and failures of previous rural water supply schemes in southern/eastern Africa through a systematic assessment of previous schemes in order to develop best practices guidelines, and to disseminate the findings and establish of a network for co-operation and interchange of information within the SADC region.</p>	<p>Indicators - Documentation of the reasons for success/failure in the rural water supply projects considered. - Development of recommendations for better practice. - Establishment of networks with users and documentation of their access to, and use of the results (e.g. through case histories, Internet use, etc). (This indicator may not have valid application until the period immediately following the project.)</p>	<p>External factors</p>
<p>Project Outputs</p> <ol style="list-style-type: none"> 1) Assessment of the technical, geological, geochemical, environmental and organisational factors relating to selected rural water supply programmes in southern/eastern Africa, funded by NORAD and other organisations, in terms of sustainability and the causes of their success or failure. 2) Guidelines for rural water supply best practice 3) Establishment of a relational data base of information from southern/eastern African rural water supply projects including geological, technical and geochemical parameters. 4) Desemmination of results in an appropriate form to relevant decision-makers (international (e.g. SADC), national and regional governmental bodies, NGOs, etc.) and to users at the local level. 5) Establishment of a network for co-operation and interchange of information within the SADC region 	<p>Indicators - Number of water supply projects assessed. - Number of data sets established in the project data base. - Establishment of Internet presentation of the project and its results. - Production of the relevant results for users at the local community level in their own languages.</p>	<p>External factors</p>
<p>Project Activities <u>Output 1</u></p> <ol style="list-style-type: none"> 1) To systematically assess the technical, geological, geochemical, environmental and organisational factors related to establishing sustainable rural water supply schemes through a literature survey and to establish a project evaluation protocol. 2) Establish contacts with bodies holding relevant information, both sources of information for use in the project, and regional and international bodies with experience which would be valuable to the project (e.g. 	<p>Project Inputs - Funds - Manpower - Material</p>	<p>External factors</p>

the UNDP-World Bank Water and Sanitation Programme and the Water Supply and Sanitation Collaborative Council's Africa Group).

- 3) Gather information on previous projects funded by NORAD, DWAF and other relevant agencies, to prioritise of project areas.
- 4) Field visit to selected rural water supply projects and responsible agencies in southern Africa in order to evaluate the causes of their success or failure according to the criteria developed in activity 1 and interpretation of data.

Output 2

- 5) Evaluation of South African rural water supply policy and practices based on experience gained from projects in Eastern and Southern Africa.
- 6) Compilation and interpretation of field data and development of best practice guidelines.

Output 3

- 7) To build up a relational data base of information from southern/eastern African rural water supply projects including geological, technical and geochemical parameters. The technical development of the data base will be carried out in Project 3 of this programme.
- 8) To use the database, possibly with additional new data where necessary, to characterise the regional hydrogeological, technical and organisational factors influencing the usefulness of groundwater in terms of quantity and quality.

Output 4

- 9) To present project results via GIS systems using a user-friendly modern (Oracle) database. CGS/NGU will share responsibility for maintenance of the database on completion of this project; Written documentation adapted to the needs of the individual users and user-groups mentioned above, including political, managerial and scientific users; Brief explanations of the relevant results for users at the local community level in their own languages; and an Internet presentation allowing users with Internet access to the database and to selected results in digital form.
- 10) To use the project as the starting point for a network for co-operation and interchange of information within the region covered by the project (broadly equivalent to the SADC countries) and to assist with the development of institutions involved in training in rural water supply at the community level.

PROJECT 2 - LFA PROJECT MATRIX

<p>Project Goal To establish groundwater management systems for rural water resource managers. This implies a system for data collection so that informed decisions can be made regarding the optimisation of groundwater resources.</p>	<p>Indicators</p>	<p>External factors</p>
<p>Project Purpose To develop strategies for improving the management of rural domestic groundwater supply schemes and to pilot a groundwater management system, which will involve all the relevant stakeholders - from the pump attendant in the community to regional institutions like DWAF.</p>	<p>Indicators</p>	<p>External factors</p>
<p>Project Outputs</p> <ol style="list-style-type: none"> 1) The establishment and monitoring of a pilot groundwater management system involving several communities 2) The establishment of a system of communication channels between rural monitoring networks and the responsible water authority. 3) The establishment of a GIS management system for regional authorities, and training in GIS management. 4) A report on how to set up a groundwater management system. This report will highlight problem areas and make suggestions on how to overcome difficulties 	<p>Indicators</p>	<p>External factors</p>
<p>Project Activities</p> <p><u>Output 1</u></p> <ol style="list-style-type: none"> 1) Identify communities that have groundwater resources which are vulnerable to over utilisation. Communities known to the project team in the Eastern Cape will be targeted. 2) Install monitoring equipment, including water level meters, flow meters and rainfall gauges. 3) Train pump attendants in data collection and transfer as well as basic in data analysis. 4) Provide support and monitoring to identify key training requirements and pitfalls. <p><u>Output 2</u></p> <ol style="list-style-type: none"> 5) Setting up communication channels so that data gathered at the village level will reach the relevant authority. This will involve establishing an appropriate path for the flow of data and management recommendations. Figure 1 shows the envisaged communication flow path. This may involve linking data collected at the community level to the PC-MUNIWATER software. PC-MUNIWATER (groundwater module) is a windows-based application, intended for groundwater data collection at the level of the local authority supported by DWAF, at the same time as providing management support facilities at that level. The system is written in a modular fashion. The 	<p>Project Inputs</p> <ul style="list-style-type: none"> - Funds - Manpower - Material 	<p>External factors</p>

groundwater module is a direct representation of the NGDB data structures. The development is based on Microsoft Access and Visual Basic and runs on 386 or higher order PC's. Beta versions are currently being field tested at selected local authorities.

Output 3

- 6) Setting up a GIS management system for regional authorities in pilot study areas, and training in GIS management. This will involve obtaining existing GIS databases from institutions such as DWAF and other government departments, and adding information that will be required for this study (for example, groundwater data in the region of the pilot study areas). The data to be captured will include village locations, roads, electricity grids, population data, rivers, dams, boreholes, water quality and other data sets which may be available.
- 7) GIS training for staff at the appropriate regional level (for example District Council, Catchment Management Agency, etc) in GIS system operation and management.

Output 4

- 8) Writing up the process to establish a groundwater management system incorporating the lessons learnt from the pilot study and the audit of rural water supply systems (Project1).
- 9) Disseminate findings through meetings with DWAF and any other relevant government department in Pretoria to discuss the findings of the pilot study. This will be the first stage in getting rural groundwater management onto the national agenda on water resources management.

PROJECT 3 - LFA PROJECT MATRIX

<p>Project Goal To ensure the effective use of all relevant information in the execution of future rural water supply programmes in priority areas in South Africa in order to improve the success rate of rural water supply programmes.</p>	<p>Indicators Data documenting effective use of the database in the execution of future rural water supply programmes in priority areas in South Africa.</p>	<p>External factors</p>
<p>Project Purpose To integrate and link the databases of the Dept. of Water Affairs and Forestry and of the Council for Geoscience, and to establish a relational data base of information from southern/eastern African rural water supply projects including geological, socio-economic, technical, and geochemical parameters as a tool for use in other projects in the programme.</p>	<p>Indicators - Linkage of the geohydrological databases of the CGS and DWAF established. - Internet solutions as a common interface for <i>information exchange completed</i> - Tests of the resulting database in other projects within the programme completed.</p>	<p>External factors</p>
<p>Project Outputs</p> <ol style="list-style-type: none"> 1) Linkage of the geohydrologically relevant databases of the CGS and DWAF, as well as other organisations, into a complete user friendly, GIS-oriented database making available geohydrological, geophysical, geochemical data and LANDSAT data of South Africa via an Internet interface. 2) A relational (Oracle based) database to be used for storage, interpretation and presentation of information from southern/eastern African rural water supply projects including geological, technical, socio-economic and geochemical parameters. 3) Establishment of Internet solutions as a common interface for information exchange allowing users and usergroups access to available hydrogeological information. 4) A manual and complete explanation for the effective use of the various databases for various user-groups. 	<p>Indicators</p> <ul style="list-style-type: none"> - Analysis of the current national database structures in SA - Analysis of the need for software upgrading (to e.g. Oracle) - Analysis of the possibility of using parts of the Norwegian database structure - Analysis the current procedures for electronic capturing of all relevant hydrogeological data User-friendly, GIS-oriented database making available geohydrological, geophysical and geochemical data and Landsat data of South Africa via an Internet interface established. The number of «visits» registered provides a measure of its use. - Analysis of the possibility of making the borehole drillers, consultant companies and hydrogeological researchers at universities and at other governmental and local institutions more responsible for the hydrogeological information they give to DWAF. - Manual for the effective use of the database by the various user-groups included electronic capturing of hydrogeological information directly into the databases from the originators of the information completed. 	<p>External factors</p>

	<p>- Open link to the public through Internet allowing users and user-groups access to available hydrogeological information established. The number of «visits» registered provides a measure of its use.</p>	
<p>Project Activities</p> <p><u>Output 1</u></p> <ol style="list-style-type: none"> 1) Assess the status of the DWAF, CGS and NGU database systems and the specifications for the regional database to be prepared for Project 1. 2) Assess the need for software upgrading and planning of the optimal formats for linking existing database structures 3) Software development by GIS and database experts and programmers. <p><u>Output 2</u></p> <ol style="list-style-type: none"> 4) Technical development of the rural water supply data base for project 1. 5) Data capture for project 1 <p><u>Output 3</u></p> <ol style="list-style-type: none"> 6) Assessment of Internet accessibility, confidentiality and security criteria of various databases and the needs for public access 7) Establishment of an Internet site linking all relevant and accessible data bases <p><u>Output 4</u></p> <ol style="list-style-type: none"> 8) Production of the database manual. 	<p>Project Inputs</p> <ul style="list-style-type: none"> - Funds - Manpower - Material 	<p>External factors</p>

PROJECT 4 - LFA PROJECT MATRIX

<p>Project Goal To ensure the optimal utilization and sustainable development of groundwater sources for community water supply.</p>	<p>Indicators</p>	<p>External factors</p>
<p>Project Purpose To develop strategies, tools and approaches to increase awareness about the importance of local groundwater as a water supply and the need to manage it properly.</p>	<p>Indicators</p>	<p>External factors</p>
<p>Project Outputs</p> <ol style="list-style-type: none"> 1) A widely agreed strategy on groundwater awareness-building as part of community water supply 2) A package of tools for awareness building, including leaflets, booklets, posters, models and video films addressing target groups ranging from water service providers to school children and rural communities 3) Internet information setup as a source for different management levels and an assessment of the feasibility of different communication approaches, including the use of the media, the internet, indigenous languages, etc. 4) Awareness regarding the importance and need for improved management created in three pilot areas and networks for continuity of the process established. 5) Documentation of efficient procedures for the implementation of tools 	<p>Indicators</p>	<p>External factors</p>
<p>Project Activities</p> <p><u>Output 1</u></p> <ol style="list-style-type: none"> 1) Detailed planning and integration of participants in the project team and development of a strategy agreed by the major community water supply role-players regarding the role, functioning, integration and funding of groundwater awareness-building as part of community water supply. <p><u>Output 2</u></p> <ol style="list-style-type: none"> 2) The researching of appropriate material internationally, in South Africa and in related fields of health, hygiene, sanitation and environmental conservation and the development of tools for awareness building. <p><u>Output 3</u></p> <ol style="list-style-type: none"> 3) The researching and development of appropriate communication approaches for different stakeholder groups, including internet. <p><u>Output 4</u></p> <ol style="list-style-type: none"> 4) The piloting of the strategy, awareness-building material and the communication approaches in three pilot areas, in co-ordination with other developers, including health and sanitation. <p><u>Output 5</u></p> <ol style="list-style-type: none"> 5) The integration of the above results towards a holistic document with strategies and approaches for sustainable 	<p>Project Inputs</p> <ul style="list-style-type: none"> - Funds - Manpower - Material 	<p>External factors</p>

groundwater development for community water supply.
6) Verification of sustainability and long-term impact of awareness building by pilot site re-visitation.

PROJECT 5 - LFA PROJECT MATRIX

<p>Project Goal To expand water source exploitation alternatives for rural water supply in South Africa. This will result in the exploitation of water resources in the region being re-evaluated from a broader perspective.</p>	<p>Indicators</p>	<p>External factors</p>
<p>Project Purpose To evaluate and develop guidelines for the implementation of alternative water abstraction technologies, pilot their application in a southern African context and provide a means of conveying these alternatives to communities.</p>	<p>Indicators</p>	<p>External factors</p>
<p>Project Outputs</p> <ol style="list-style-type: none"> 1) A manual or guidelines for the selection and implementation of appropriate water supply technologies, including required technical skills for their maintenance and management. 2) Pilot studies within the southern African context to validate their local suitability. 3) Technology transfer in terms of training courses and the printing of brochures of explanations of the potential water supply options for users at the local community level in their own languages so that they can make more informed decisions concerning their water requirements. 	<p>Indicators</p>	<p>External factors</p>
<p>Project Activities</p> <p><u>Output 1</u></p> <ol style="list-style-type: none"> 1) A literature survey of international best practice for water source exploitation and familiarisation with information from previous projects. 2) An evaluation of critical success factors affecting these methods in the southern African context will be undertaken based on a survey of rural water supply schemes using such technologies. Visits to areas of completed projects and field evaluation of projects will obtain first hand information on the functionality and sustainability of rural water supply projects in consultation with the communities and the responsible agency. This activity can be substantially assisted by the rural water supply audit project (project 1) if rural water schemes involving such technologies are included in the audit. 3) An evaluation of the long-term economic sustainability of these systems at a community level based on maintenance and refurbishment requirements. 4) The development of guidelines for the successful implementation of these schemes in a community based rural water supply setting. <p><u>Output 2</u></p> <ol style="list-style-type: none"> 5) The implementation of pilot projects in South Africa to gain local experience with the technologies and evaluate their appropriateness in terms of community acceptance and water demand requirements. This activity will also 	<p>Project Inputs</p> <ul style="list-style-type: none"> - Funds - Manpower - Material 	<p>External factors</p>

include the identification of any required modifications or improvements to the technologies and a check of cost-benefits when compared to conventional methodologies.

Output 3

- 6) The presentation of technologies and technical information to the groundwater and rural water supply industry through workshops, conferences and the initiation of a training programme within the umbrella of established training institutions.
- 7) The dissemination of knowledge gained using brochures aimed at the community level and disseminated through Implementing Agents and community workers involved in rural water supply implementation. This can be piloted through the community awareness project (project 4).

PROJECT 6 - LFA PROJECT MATRIX

<p>Project Goal To establish a network to collect data for planning the exploitation of groundwater resources in terms of both quality and quantity. A secondary goal is the application of such data in the study of medium- and long-term environmental changes in southern Africa.</p>	<p>Indicators Documented improvements in the long-term stability of water supply and quality.</p>	<p>External factors</p>
<p>Project Purpose Piloting of a network to collect data on variations in water level and quality, regionally and in time, as a basis for assessing groundwater resources at regional and national levels.</p>	<p>Indicators - Documented use of the data from the monitoring system in the development and proper management of groundwater resources in the two provinces in which monitoring networks are established. - Establishment of contingency plans for back-up reserves. - Use of the system in monitoring pollution problems.</p>	<p>External factors</p>
<p>Project Outputs</p> <ol style="list-style-type: none"> 1) To establish and bring into operation a groundwater source and aquifer monitoring network in two pilot provinces (Northern Province and KwaZulu-Natal) as part of a general groundwater management procedures operational at any level of groundwater utilisation. 2) Development of appropriate technologies for groundwater monitoring at community or local government level 3) Documentation and guidelines for the implementation of regional and local groundwater monitoring networks 4) A proposed plan for implementation in the country as a whole 	<p>Indicators</p> <ul style="list-style-type: none"> - Report prepared on the implementation of regional and local groundwater monitoring networks - Implementation of the networks in two provinces (Northern Province and KwaZulu-Natal). - Number of stations in the networks. - Report on the implementation study. - A plan for implementation in the country as a whole prepared 	<p>External factors</p>
<p>Project Activities</p> <p><u>Output 1</u></p> <ol style="list-style-type: none"> 1) Network design (what, where, how, by whom, to whom, reporting formats) and inventory of priority sites requiring a groundwater management system 1) Survey of existing monitoring boreholes and networks 1) Establishment of pilot monitoring network 1) Integration of pilot network into existing groundwater management and information systems at all levels, as well as with other monitoring systems as far as possible (surface water, rainfall, water quality) 5) Technology transfer and training to ensure effective execution of the monitoring programme at all levels <p><u>Output 2</u></p> <ol style="list-style-type: none"> 6) Development of appropriate technologies for water level and water quality sampling, field based water quality analysis and data capture <p><u>Output 3</u></p> <ol style="list-style-type: none"> 7) Preparation of guidelines for implementing monitoring 	<p>Project Inputs</p> <ul style="list-style-type: none"> - Funds - Manpower - Material 	<p>External factors</p>

networks

Output 4

8) Development of a strategy and implementation programme for a national scale monitoring network.

PROJECT 7 - LFA PROJECT MATRIX

<p>Project Goal To assist in the development and implementation of uniform approach to groundwater protection in all community water supply and sanitation programs and projects</p>	<p>Indicators</p>	<p>External factors</p>
<p>Project Purpose To provide a guide to local authorities and other relevant community institutions for an appropriate approach to groundwater protection</p>	<p>Indicators</p>	<p>External factors</p>
<p>Project Outputs 1) Best Practice guidelines which address all the common practices which can impact groundwater in the rural and informal urban settlement environment. 2) A widely agreed strategy for groundwater protection in the community water supply environment, anchored in the National Water Act and the Water Services Act.</p>	<p>Indicators</p>	<p>External factors</p>
<p>Project Activities <u>Output 1</u> 1) Assessment of the major human impacts threatening groundwater source sustainability in the community water supply environment. 2) Development of Best Practice guidelines based on international and national experience and local conditions. 3) Testing the guidelines in three pilot areas. <u>Output 2</u> 4) Integration of the guidelines into implementation of water resources protection measures in terms of the National Water Act and the Water Services Act. 5) The integration of the above results towards a holistic document with strategies and approaches for sustainable development for community water supply.</p>	<p>Project Inputs - Funds - Manpower - Material</p>	<p>External factors</p>

APPENDIX 4:

Overhead Slides Presented

LFA = LOGICAL FRAMEWORK APPROACH

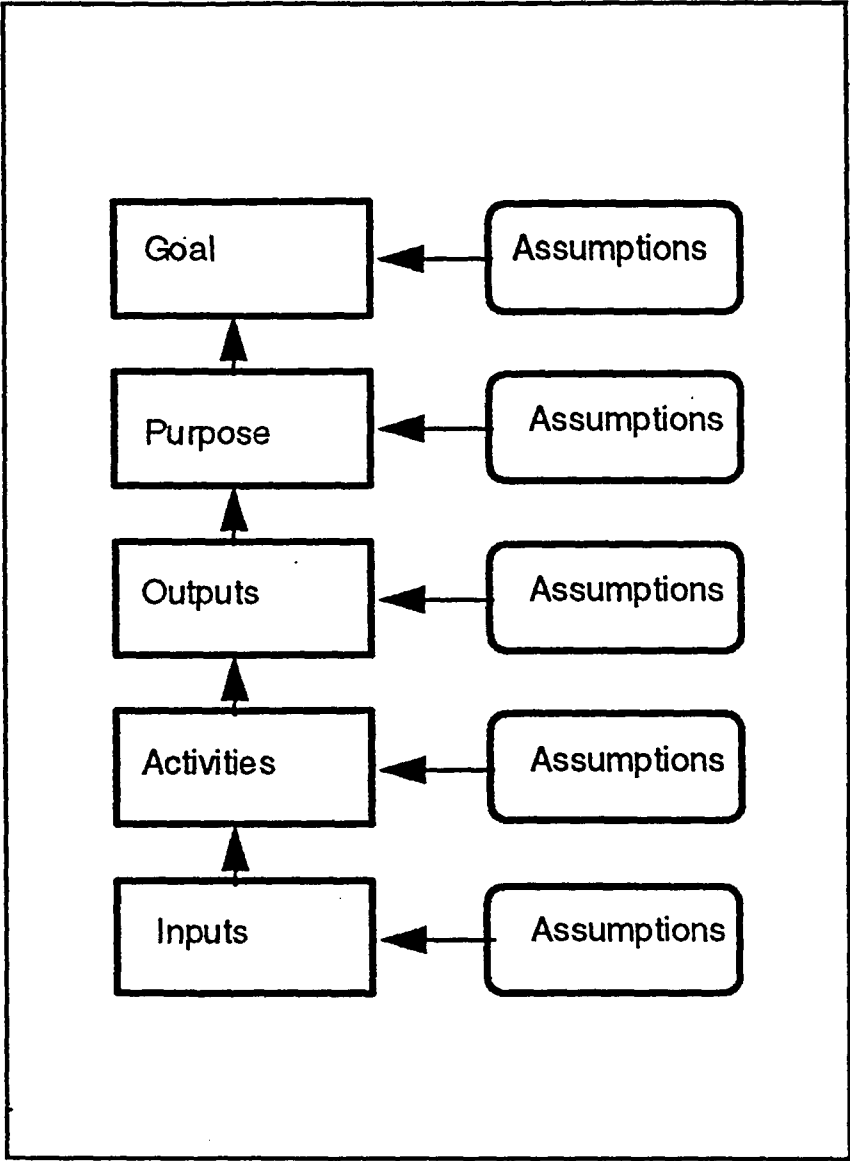
The LFA is an analytical tool for objective-oriented project planning and management

Key words:

- Objectives oriented**
- Target group oriented**
- Participatory**

Using LFA helps:

- ☺ Clarify the purpose of/justification for, a project
- ☺ Identify information requirements
- ☺ Define the key elements of a project
- ☺ Analyse the project's setting at an early stage
- ☺ Facilitate communication between all involved parties
- ☺ Identify how project success/failure should be measured



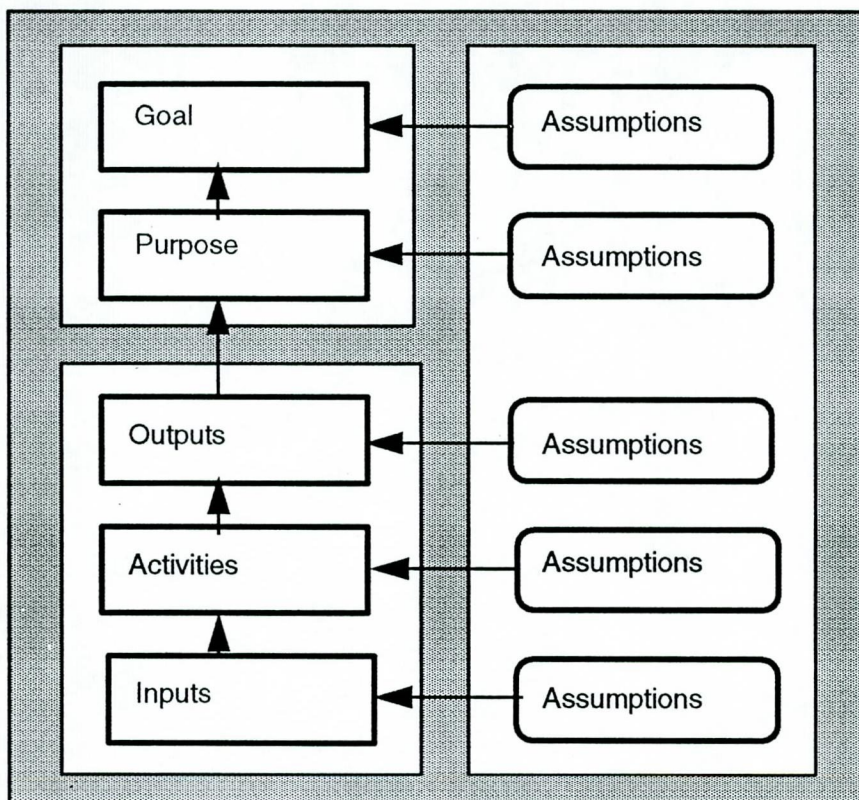
THE PM GIVES AN OVERVIEW OF THE PROJECT,
ITS OBJECTIVES AND ENVIRONMENT

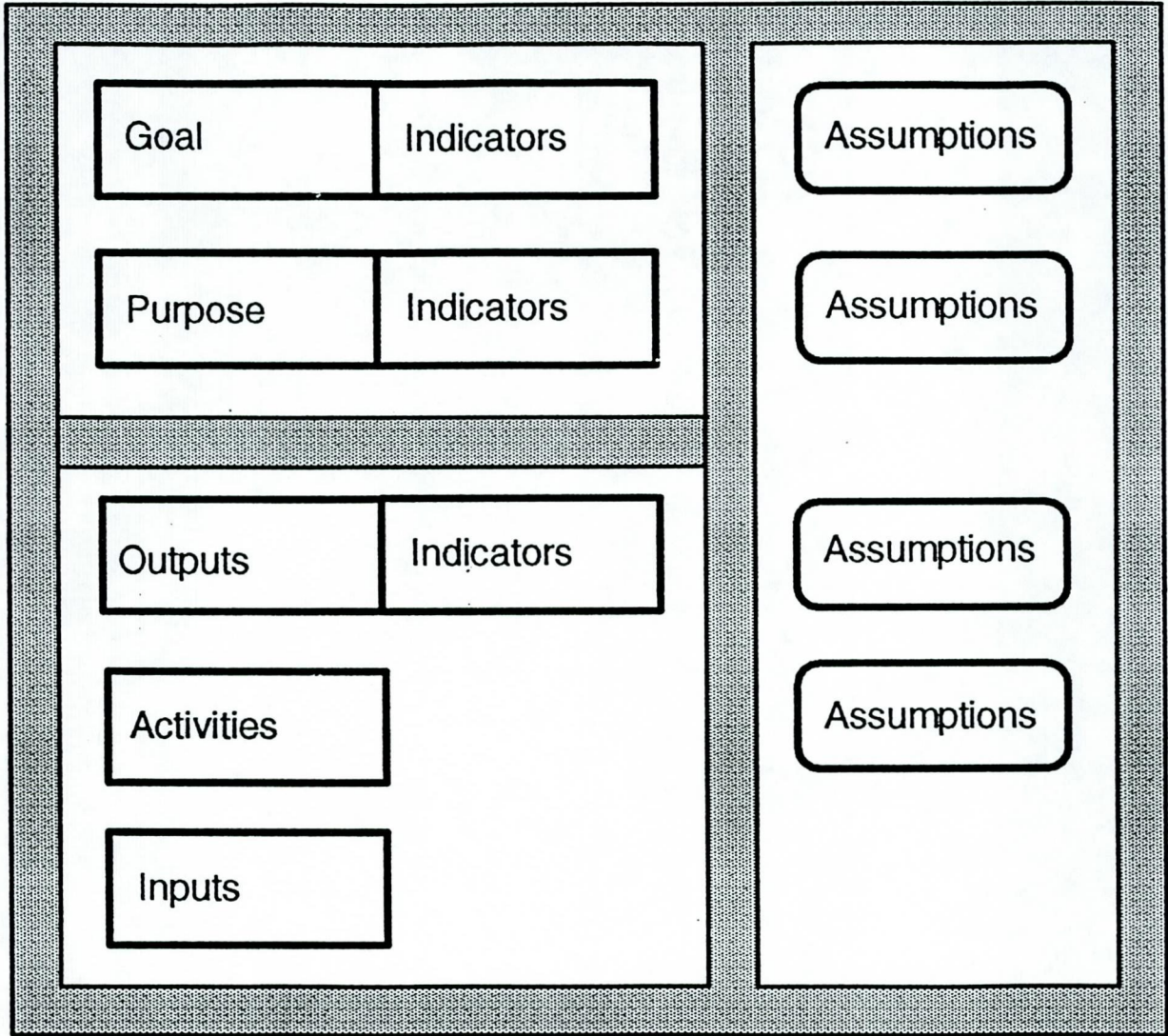
THE
OBJECTIVES

THE
PROJECT

THE PROJECT
ENVIRONMENT

THE BASIC ELEMENTS OF THE PROJECT MATRIX (PM)





Direct indicators may need to be supplemented by indirect (proxy) indicators:

Example:

<u>Purpose</u>	<u>Direct indicator</u>	<u>Indirect indicator</u>
Increased income for small farmers	Crop sales	- purchase of consumer goods - tin roofs on houses

Indicators should (ideally) specify:

- ⇒ Target group (for whom)
- ⇒ Quantity (how much)
- ⇒ Quality (how well)
- ⇒ Time (by when)
- ⇒ Location (where)

A good indicator is:

- ❖ Substantial
- ❖ Independent, at different levels
- ❖ Factual
- ❖ Plausible
- ❖ Data must be obtainable

FORMAT OF PROJECT REVIEW, SCOPE OF WORK

⇒ EFFICIENCY

⇒ EFFECTIVENESS

⇒ IMPACT

⇒ RELEVANCE

⇒ SUSTAINABILITY

❖ POLICY SUPPORT MEASURES

❖ INSTITUTIONAL ASPECTS

❖ FINANCIAL/ECONOMIC CONDITIONS

❖ TECHNOLOGICAL FACTORS

❖ SOCIO-CULTURAL/GENDER FACTORS

❖ ENVIRONMENTAL ASPECTS

APPENDIX 5:
Workshop Outputs

WORKSHOP OUTPUTS

The workshop participants were divided into three groups, and were asked to work on selected related projects under the programme:

Group A: Project 1, Project 3 and Project 5

Group B: Project 2 and Project 6

Group C: Project 4 and Project 7

In specific, the participants were asked to refine the outputs of the projects and identify possible indicators by which the projects' success and failure could be measured, in addition to some external factors.

Below are listed the outputs from the workshop exactly as they were stated and written by the participants in un-prioritised order, and even if they were duplicated in different forms. In a few cases only the editor has corrected obvious spelling misprints or changed terminology to make the meaning clearer. In some cases the editor has made his own comments to the statements in order to clarify them. Such comments are put in brackets and italic letters: <...nnnn...>.

I. Refinement of Project Outputs

Project 1 (Group A)

- Output 1: Add to the first output instead of "organisation": institutional, social factors and project implementation factors
- Output 3: Include environmental, institutional and social issues
- Output 4: Delete " in an appropriate form". (Reason: how do you establish appropriateness?)
- Output 5: Report must address: technical factors, geological factors, geochemical factors, environmental factors, project implementation factors, institutional factors and social factors. In addition: Current and previous audits
- General: Use available data, reports for S. Africa - DWAF has many.

Project 2 (Group B)

- New output: Community trained and regularly informed

Project 3 (Group A)

- <No specific>

Project 4 (Group C)

- Output 3: Mass media campaign to spread the awareness of and need for groundwater management, using radio, TV, internet.
- New Output 6: Trained facilitators in groundwater awareness + community water supply <new activity refers>
- Proposal for new sequencing of outputs: 1- strategy, 2- tools, 5-manual, 6-trained facilitators, 3-media, 4a-three pilots, 4b-establishment of networks.

Project 5 (Group A)

- Outputs: will have to make allowance for illiterates in knowledge transfer
- Output 1: Bear in mind similar DWAF study due for completion Aug. 99 (Contact: H. Sussens)

- Output 1-3: take note of WRC project (by WSM) on appropriate technology and shallow wells in Maputaland (already piloted) + educational material already exist

Project 6 (Group B)

- Results of groundwater monitoring system must feed directly in the groundwater management system. (Project 6 → Project 2)

Project 7 (Group C)

- Output 1: “Best practices” must be clearly specified and agreed to (consensus)
- Output 4a: 3 pilot projects/areas where awareness regarding the importance and need for improved management has been created
- Output 4b: Networks established to ensure continuity

II. Indicators and External Factors

Project 1 (Group A)

	Indicators	External factors
Goal		- RWS - given funding required and continue to have priority - Guidelines not implemented
Purpose		
Output	Output1: extra indicator identification of projects for assessment - they must be relevant to this programme Output1: of projects assessed, in terms of protocol. Report progress as a % of total no. of projects to be assessed Output2: Consideration + approval of guidelines by user groups Output3: Data capture is part of Project 1 (should be moved from Project 3) Output4: Dissemination: - Web site on line - Reports delivered to users - Info. meetings held Routines for data base access established Output5: Holding of first meeting for info exchange	Output1: - No/conditional release of data - Data not preserved - not collected previously Output5: - Political support assumed - Funds available

Project 2 (Group B)

	Indicators	External factors
Goal	Significant decrease in number of complaints (at ministerial level)	- Community participation skills needed for technology transfer - Build HRD capacity or willingness to participate at local authority level - “turf politics”, e.g. CMA (catchment management Agency <18 CMAs will soon be established in the country>
Purpose	- Improvement of cost recovery (for O&M from users) - Incorporated groundwater monitoring function into O&M procedures (internalised)	- Community participation skills needed for technology transfer - Build HRD <Human resources Development> capacity or willingness to

	- Stakeholders adequately trained	participate at local authority level - “turf politics”, e.g. CMA
Output	<p>Output4:</p> <ul style="list-style-type: none"> - Guidelines <the document itself> - Appropriate number of pilot areas established - Acceptance by community to willingly participate - Socio-economic survey to determine by community of the established management system - Management (efficient and meaningful). Recommendations made using Management System (Report) - Criteria for establishment of successful management system - Degree of full integration of GIS system into DWAF - All data is collected - Are decisions made by community using data ? - Accuracy + reliability (of data) - Monitor pump rate versus recommended 	<ul style="list-style-type: none"> - Community participation skills needed for technology transfer - Build HRD capacity or willingness to participate at local authority level - “turf politics”, e.g. CMA

Project 3 (Group A)

	Indicators	External factors
Goal		Users not using data base due to lack of skills or hardware/software complications
Purpose		
Output		<p>Output1:</p> <ul style="list-style-type: none"> - Different database platforms in use - data system must be compatible - Implication of software development (more partners relative to each other <u>and</u> users) <p>Output4: <5th point on indicator listing></p> <ul style="list-style-type: none"> - “External” entry of data - Policy - Funding - Capacity - Quality control

Project 4 (Group C)

	Indicators	External factors
Goal		<ul style="list-style-type: none"> - Funding - Civil unrest (ref. activity 6) - Traditional acceptance - The “breakdown” of institutional partner (provincial, local etc.) - Internet server breakdown/lightning <p>(Ref. Importance/probability matrix below)</p>
Purpose		As above
Output	<ul style="list-style-type: none"> - Baseline study on aspects of public awareness <p>Output1: Approved and accepted strategy document, at central,</p>	As above

	provincial, community etc, levels Output2: Delivery of the tool specified, tested in the field and accepted the by project team. Output3: - Set-up of infrastructure (e.g. web page) - Quality of infrastructural context Output4: Other developers including Health/sanitation	
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Project 5 (Group A)

	Indicators	External factors
Goal	Good technologies applied consistently in southern Africa	<ul style="list-style-type: none"> - Emphasis on rapid implementation as a political goal. - Resistance of IA <Implementing Agency> to adopt new technology
Purpose		
Output	Output1: Guidelines prepared Output2: Pilot projects implemented in identified areas Output3: Training dissemination completed	<ul style="list-style-type: none"> - Allocation of funds by DWAF - Community acceptance of pilot projects - Political problems in choosing a pilot project in an area over another area. Community wants benefit of pilot project for free.

Project 6 (Group B)

	Indicators	External factors
Goal		<ul style="list-style-type: none"> - Community participation skills needed for technology transfer - Build HRD capacity or willingness to participate at local authority level - "turf politics", e.g. CMA
Purpose		As above
Output	<ul style="list-style-type: none"> - Improvement in the general health status on the community - Are monitored tools used effectively (appropriate) by community ? 	As above. <ul style="list-style-type: none"> - Cost of monitoring equipment

Project 7 (Group C)

	Indicators	External factors
Goal		<ul style="list-style-type: none"> - Funding - Civil unrest - Traditional acceptance - The "breakdown" of institutional partner (provincial, local etc.) - Internet server breakdown/lightning (Ref. Importance/Probability matrix)
Purpose		As above
Output	Output1: <ul style="list-style-type: none"> - Agreed guidelines published - Frequency of guideline use by other stakeholders Output2: <ul style="list-style-type: none"> - Accepted documented strategy 	As above

	- Implementation period should be extended to include the possibility to evaluate indicators at this stage	
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III. Other topics coming up during the workshop. Target Groups etc.

At Programme Level

- Strong link between Projects 3 and 4
- Strong link exists between Projects 2 and 6, i.e. data collected during Project 2 is used for planning and exploitation of groundwater
- Factors for sustainability projects: Physical, Institutional, Economical, Financial, Social <PIEFS>
- Change “manpower” to “staffing”
- Change word “exploitation” on all projects.
- Sustainability evaluations conducted nationally by DWAF and the Mvula Trust have revealed that a key problem is a lack of integration between social and technical aspects. This programme seems to have strong technical bias - how will ISD be addressed ?
- Project elements - does sequence (of the projects) have anything to do with which one has to be tackled first
- Comment: A lot of existing processes and projects are underway in water services. Don't duplicate.
- What kind of assistance from NORAD to secure success of programme
- How do we ensure capacity building at a technical level in previously disadvantaged people through this programme?
- To address the issue of sustainability, are you thinking of making rural community to pay for the cost of supply ?
- Integration of other projects/programmes into the programme ?
- How are Projects 1-7 related to each other ? How do they tie into a broad strategy ?
- Programme must focus on all factors of sustainability.
- DWAF project implementation impact on overall project <meaning: How do the other groundwater projects which will be implemented by DWAF during the implementation of the Programme, influence on the programme and visa versa?>
- How does the programme take into account community knowledge and “systems” <interpreted as involvement of the local user groups at an early stage to build the programme on local appropriate practices and experience ?>
- Baseline study: pre-programme data versus post-programme data

Project 1

- Project goal: this has regional implications. Perhaps there is a need to find a working relationship with SADC WSCU. It is a regional project.
- Output 1: Activity 1: a) literature survey , b) establish project evaluation protocol. <Split one activity into two>
- Output 1: Activity 2: e.g.'s should include: a) AUSAID <Australian Aid> sustainability evaluation report, b) DWAF Revisiting Schemes evaluations
- Output 3: What happens to Database after project ? a) Who maintains it ? b) Who is overall responsible
- Make use of international literature eg. World Bank

Project 2

- GIS: relationship to national GIS system, and what will be the new local platform ?

- Development of criteria to select project areas.
- Build on current project focusing on groundwater management at community scale
- Communication from pump attendants, local authorities, regional authorities and regional DWAF
- Require capacity building at all levels, especially at pump attendant level - to complete the cycle of communication (Point 2)
- Target group: Pump attendants, Regional/District Council. Communication - vertical between pump attendant and local council
- Capacity building for key water managers especially pump operators implemented in pilot areas.

Project 3

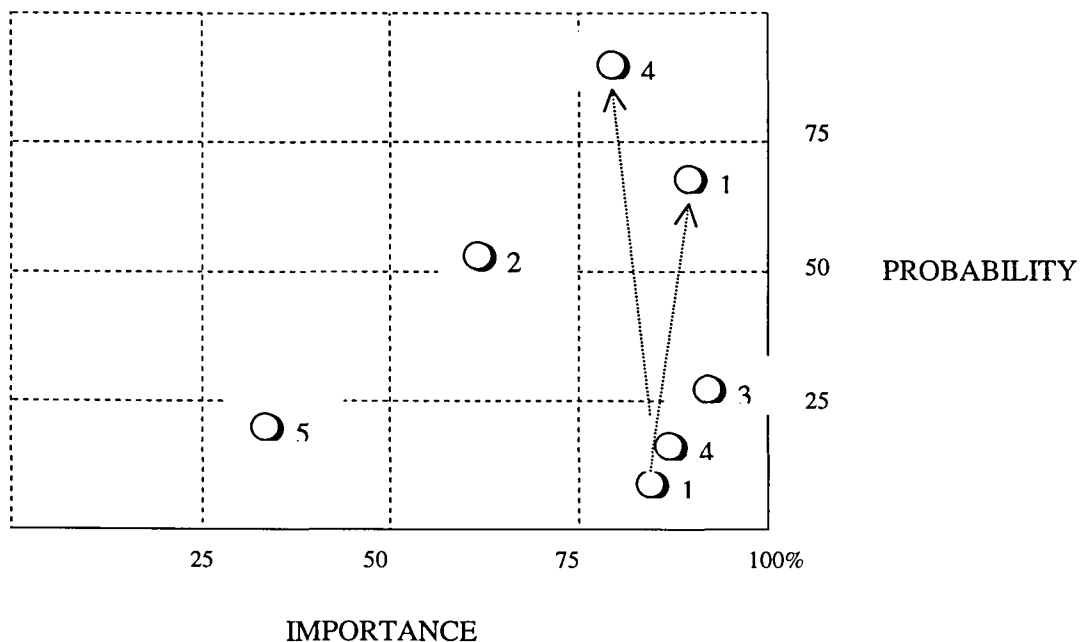
- Output 1: How does this fit in with Geohydrology's NGIS ?
- Activity 1: Geohydrology's NGIS must be fitted into the project.
- Target groups: DCD (Department of Constitutional Development), SALGA.
- WSA access to database ?
- Must use user-oriented means to spread results (not just internet)

Project 4

- Must use appropriate target-oriented means to spread results (not just internet)
- New activity <ref. new output>: training of facilitators very early in the programme period.
- Provincial government should be included in project management. Involve SALGA, National NGO Coalition, organised private sector.
- Dept. of Health should be included in project management
- **Importance/probability Matrix**

Factors:

1. Funding
2. Civil unrest (Activity 6)
3. Traditional acceptance
4. The "breakdown" of institutional partners
5. Internet/server breakdowns, Lightning



<Comment to the matrix: There was discussion in the group on where factor 1 and 4 should be on the probability scale, and the range is shown in the matrix. These factors could "easily" be "killer factors" to the project>

Project 5

- Linkage between Projects 1 and 5, i.e. pilots should test best practice guidelines as well as alternate technologies
- Using participatory methodologies
- Target both users and IA's - different materials and training

Project 6

- Consider a needs based water quality level appropriate to rural water supply *<Upcoming discussion on this important topic was stopped due to time limitations in workshop>*
- Clarify parameters to be measured linked to purpose.
- Establish acceptable operating ranges for quality and quantity
- Focus on monitoring development of adequate tools for local interpretation of the resource *<meaning: collected and understand the resource data by local pump attendant and his immediate superior>*
- The responsibility for monitoring + collection must be integrated into additional job functionality *<meaning: the job description of the pump attendant and his superior>*

Project 7

- Activity related to Output 2: Consensus procedure on “Best practices” in order to define them
- Activity related to Output 4a: Implementation of Best Practices Guidelines
- There is concern that the steering of the project should be done by several institutions in order to secure wide possible use of professionals in the field work *<meaning. Dept. of Health and Provincial Government should be included>*

APPENDIX 6:
Revised LFA matrices

PROJECT 1 - LFA PROJECT MATRIX

<p>Project Goal To improve existing rural water supply guidelines and practice in South Africa and other southern African countries and to increase regional awareness of the critical factors involved in the planning and implementation of projects.</p>	<p>Indicators An improved success rate for water supply projects, traceable to the influence of this project. (Not valid until the period following the project).</p>	<p>External factors - RWS - given funding required and continue to have priority - Guidelines not implemented</p>
<p>Project Purpose To compile and analyse the causes of successes and failures of previous rural water supply schemes in southern/eastern Africa through a systematic assessment of previous schemes in order to develop best practices guidelines, and to disseminate the findings and establish of a network for co-operation and interchange of information within the SADC region.</p>	<p>Indicators - Documentation of the reasons for success/failure in the rural water supply projects considered. - Development of recommendations for better practice. - Establishment of networks with users and documentation of their access to, and use of the results (e.g. through case histories, Internet use, etc). (Not valid until the period following the project.)</p>	<p>External factors</p>
<p>Project Outputs 1) Assessment of the technical, geological, geochemical, environmental, institutional, social and project implementation factors relating to selected rural water supply programmes in southern/eastern Africa, funded by NORAD and other organisations, in terms of sustainability and the causes of their success or failure. 2) Establishment of a relational data base of information from southern/eastern African rural water supply projects including geological, technical, geochemical, environmental, institutional and social parameters. 3) Guidelines for rural water supply best practice 4) Dissemination of results to relevant decision-makers (international (e.g. SADC), national and regional governmental bodies, NGOs, etc.) and to users at the local level. 5) Establishment of a network for co-operation and interchange of information within the SADC region</p>	<p>Indicators 1) Identification of projects relevant for assessment - Number of water supply projects assessed, also as % of total no. Relevant. 2) Number of data sets established in the project data base. 3) Approval of guidelines by user groups 4) Establishment of Internet presentation of the project and its results, reports delivered to users and information meetings held. Routines for database access established.. - Production of the relevant results for users at the local community level in their own languages?? 5) First meeting for information exchange held.</p>	<p>External factors 1) No/conditional release of data. - Data not preserved or not originally collected. 5) - Political support assumed - Funds available</p>
<p>Project Activities <u>Output 1:</u> 1) Systematic assessment of the technical, geological, geochemical, environmental and organisational factors related to establishing sustainable rural water supply schemes through a literature survey and to establish a project evaluation protocol. 2) Establish contacts with bodies holding relevant information, both sources of information for use in the project, and regional and international bodies with relevant experience (e.g. UNDP-World Bank Water and Sanitation Programme + Water Supply and Sanitation Collaborative Council's Africa Group). 3) Gather information on previous projects funded by NORAD, DWAF and other relevant agencies, to prioritise project areas. 4) Field visit to selected rural water supply projects and responsible agencies in southern Africa in order to evaluate the causes of their success or failure according to the criteria developed in activity 1 and interpretation of data. <u>Output 2</u> 5) Evaluation of S. African rural water supply policy and practices based on experience gained from projects in eastern and southern Africa. 6) Compilation and interpretation of field data and development of best practice guidelines.</p>	<p>Project Inputs - Funds - Manpower - Materials</p>	<p>External factors</p>

Output3

- 7) To build up a relational data base of information from southern/eastern African rural water supply projects including geological, technical and geochemical parameters. The technical development of the data base will be carried out in Project 3 of this programme.
- 8) To use the database, possibly with additional new data where necessary, to characterise the regional hydrogeological, technical and organisational factors influencing the usefulness of groundwater in terms of quantity and quality.

Output4

- 9) To present project results via GIS systems using a user-friendly modern (Oracle) database. CGS/NGU will share responsibility for maintenance of the database on completion of this project; Written documentation adapted to the needs of the individual users and user-groups mentioned above, including political, managerial and scientific users; Brief explanations of the relevant results for users at the local community level in their own languages; and an Internet presentation allowing users with Internet access to the database and to selected results in digital form.
- 10) To use the project as the starting point for a network for co-operation and interchange of information within the region covered by the project (broadly equivalent to the SADC countries) and to assist with the development of institutions involved in training in rural water supply at the community level.

PROJECT 2 - LFA PROJECT MATRIX

<p>Project Goal To establish groundwater management systems for rural water resource managers. This implies a system for data collection so that informed decisions can be made regarding the optimisation of groundwater resources.</p>	<p>Indicators Significant decrease in number of complaints (at ministerial level)</p>	<p>External factors - Community participation skills needed for technology transfer - Human Resources Development (HRD) capacity or willingness to participate at local authority level - «turf politics», e.g. Catchment Management Agencies (CMA) (18)</p>
<p>Project Purpose To develop strategies for improving the management of rural domestic groundwater supply schemes and to pilot a groundwater management system, which will involve all the relevant stakeholders - from the pump attendant in the community to regional institutions like DWAF.</p>	<p>- Improvement of cost recovery (for O&M from users) - Incorporated groundwater monitoring function into O&M procedures (internalised) - Stakeholders adequately trained - Documentation that the systems are being followed</p>	<p>- Community participation skills needed for technology transfer - Build HRD capacity or willingness to participate at local authority level - «turf politics», e.g. CMA</p>
<p>Project Outputs 1) The establishment and monitoring of a pilot groundwater management system involving several communities 2) The establishment of a system of communication channels between rural monitoring networks and the responsible water authority. 3) The establishment of a GIS management system for regional authorities, and training in GIS management. 4) A report on how to set up a groundwater management system. This report will highlight problem areas and make suggestions on how to overcome difficulties</p>	<p>1) - Criteria for establishment of successful management system - Management recommendations made (report) - Willing agreement to participate by communities - Appropriate number of pilot areas established 3) - Degree of full integration of GIS system into DWAF 4) - All data collected - Accuracy + reliability (of data)</p>	<p>- Community participation skills needed for technology transfer - Build HRD capacity or willingness to participate at local authority level - «turf politics», e.g. CMA</p>
<p>Project Activities <u>Output 1</u> 1) Identify communities that have groundwater resources which are vulnerable to over utilisation on the basis of a set of agreed criteria. Communities known to the project team in the Eastern Cape will be targeted. 2) Establish a dialogue with the communities selected and maintain this throughout the lifetime of the project. 3) Install monitoring equipment, including water level meters, flow meters and rainfall gauges. 4) Train pump attendants in data collection and transfer as well as basic in data analysis. 5) Provide support and monitoring to identify key training requirements and pitfalls. <u>Output 2</u> 6) Setting up communication channels so that data gathered at the village level will reach the relevant authority. This will involve establishing an appropriate path for the flow of data and management recommendations. Figure 1 shows the envisaged communication flow path. This may involve linking data collected at the community level to the PC-MUNI WATER software. PC-MUNI WATER (groundwater module) is a windows-based application, intended for groundwater data collection at the level of the local authority supported by DWAF, at the same time as providing management support facilities at that level. The system is written in a modular fashion. The groundwater module is a direct representation of the NGDB data structures. The development is based on Microsoft Access and Visual Basic and runs on 386 or higher order PC's. Beta versions are currently being field tested at selected local authorities. <u>Output 3</u> 7) Setting up a GIS management system for regional authorities in pilot study areas, and training in GIS</p>	<p>Project Inputs - Funds - Manpower - Material</p>	<p>External factors</p>

management. This will involve obtaining existing GIS databases from institutions such as DWAF and other government departments, and adding information that will be required for this study (for example, groundwater data in the region of the pilot study areas). The data to be captured will include village locations, roads, electricity grids, population data, rivers, dams, boreholes, water quality and other data sets which may be available.

- 8) GIS training for staff at the appropriate regional level (for example District Council, Catchment Management Agency, etc) in GIS system operation and management.

Output 4

- 9) Writing up the process to establish a groundwater management system incorporating the lessons learnt from the pilot study and the audit of rural water supply systems (Project1).
- 10) Disseminate findings through meetings with DWAF and any other relevant government department in Pretoria to discuss the findings of the pilot study. This will be the first stage in getting rural groundwater management onto the national agenda on water resources management.

PROJECT 3 - LFA PROJECT MATRIX

<p>Project Goal To ensure the effective use of all relevant information in the execution of future rural water supply programmes in priority areas in South Africa in order to improve the success rate of rural water supply programmes.</p>	<p>Indicators Data documenting effective use of the databases in the execution of future rural water supply programmes in priority areas in South Africa.</p>	<p>External factors Users not using data base due to lack of skills. Hardware/software complications</p>
<p>Project Purposes To integrate and link the databases of the Dept. of Water Affairs and Forestry and of the Council for Geoscience. To establish a relational data base of information from southern/eastern African rural water supply projects including geological, socio-economic, technical, and geochemical parameters as a tool for use in other projects in the programme.</p>	<p>Indicators - Linkage of the geohydrological databases of the CGS and DWAF established. - Internet solutions as a common interface for information exchange completed - Tests of the resulting databases in other projects within the programme completed.</p>	<p>External factors</p>
<p>Project Outputs 1) Linkage of the geohydrologically relevant databases of the CGS and DWAF, as well as other organisations, into a complete user friendly, GIS-oriented database making available geohydrological, geophysical, geochemical data and LANDSAT data of South Africa via an Internet interface. 2) Establishment of Internet solutions as a common interface for information exchange allowing users and usergroups access to available hydrogeological information. 3) A manual and complete explanation for the effective use of the various databases for various user-groups. 4) A relational (Oracle based) database to be used for storage, interpretation and presentation of information from southern/eastern African rural water supply projects including geological, technical, socio-economic, geochemical, institutional, social and project implementation parameters.</p>	<p>Indicators 1) - Analysis of current national database structures in SA - Analysis of need for software upgrading (to e.g. Oracle) - Analysis of possibility of using parts of the Norwegian database structure - Analysis of current procedures for electronic capturing of all relevant hydrogeological data 2) User-friendly, GIS-oriented database making available geohydrological, geophysical and geochemical data and Landsat data of South Africa via an Internet interface established. The number of «visits» registered provides a measure of its use. - Analysis of the possibility of making the borehole drillers, consultant companies and hydrogeological researchers at universities and at other governmental and local institutions more responsible for the hydrogeological information they give to DWAF. 3) - Manual for the effective use of the database by the various user-groups included electronic capturing of hydrogeological information directly into the databases from the originators of the information completed. - Open link to the public through Internet allowing users and user-groups access to available hydrogeological information established. The number of «visits» registered provides a measure of its use. 4) Database tested and accepted for use in Project 1.</p>	<p>External factor 1) - Different database platforms in use - data system must be compatible - Implication of software development (partners relative to each other <u>and</u> users) 3) Willingness to accept - «External» entry of data - related policy, funding, capacity and quality control matters.</p>
<p>Project Activities <u>Output 1</u> 1) Assess the status of the DWAF, CGS and NGU database systems and the specifications for the regional database to be prepared for Project 1. 2) Assess the need for software upgrading and planning of the optimal formats for linking existing database structures</p>	<p>Project Inputs - Funds - Manpower - Material</p>	<p>External factors</p>

3) Software development by GIS and database experts and programmers.

Output 2

4) Technical development of the rural water supply data base for project 1.

5) Data capture for project 1

Output 3

6) Assessment of Internet accessibility, confidentiality and security criteria of various databases

7) Establishment of an Internet site linking all relevant and accessible data bases

Output 4

8) Production of the database manual.

PROJECT 4 - LFA PROJECT MATRIX

<p>Project Goal To ensure the optimal utilization and sustainable development of groundwater sources for community water supply.</p>	<p>Indicators</p>	<p>External factors - Funding - Traditional acceptance - Stable administrations (provincial, local etc.) (See importance/probability matrix below)</p>
<p>Project Purpose To develop strategies, tools and approaches to increase awareness about the importance of local groundwater as a water supply and the need to manage it properly.</p>	<p>Indicators</p>	<p>External factors As above</p>
<p>Project Outputs 1) A widely agreed strategy on groundwater awareness-building as part of community water supply 2) A package of tools for awareness building, including leaflets, booklets, posters, models and video films addressing target groups ranging from water service providers to school children and rural communities 3) Internet information set-up as a source for different management levels and an assessment of the feasibility of different communication approaches, including the use of the media, the internet, indigenous languages, etc. 4) Awareness regarding the importance and need for improved management created in three pilot areas and networks for continuity of the process established. 5) Documentation of efficient procedures for the implementation of tools</p>	<p>Indicators 1) - Baseline study on aspects of public awareness - Approved and accepted strategy document, at central, provincial, community etc, levels 2) - Delivery of the tool specified, tested in the field and accepted the by project team. 3) - Set-up of infrastructure (e.g. web page) - Quality of infrastructural context 4) - Other developers including Health/sanitation</p>	<p>External factors As above</p>
<p>Project Activities <u>Output 1</u> 1) Detailed planning and integration of participants in the project team; development of a strategy agreed by the major community water supply role-players on the role, function, integration and funding of groundwater awareness-building in community water supply. <u>Output 2</u> 2) Research on appropriate material internationally, in SA and in related fields of health, hygiene, sanitation and environmental conservation and the development of tools for awareness building. <u>Output 3</u> 3) The researching and development of appropriate communication approaches for different stakeholder groups, including internet. <u>Output 4</u> 4) The piloting of the strategy, awareness-building material and the communication approaches in three pilot areas, in co-ordination with other developers, including health and sanitation. <u>Output 5</u> 5) The integration of the above results towards a holistic document with strategies and approaches for sustainable groundwater development for community water supply. 6) Verification of sustainability and long-term impact of awareness building by pilot site re-visitiation.</p>	<p>Project Inputs - Funds - Manpower - Material</p>	<p>External factors</p>



PROJECT 5 - LFA PROJECT MATRIX

<p>Project Goal To expand water source exploitation alternatives for rural water supply in South Africa.</p>	<p>Indicators Good technologies applied consistently in southern Africa</p>	<p>External factors - Emphasis on rapid implementation as a political goal. - Resistance of implementing agencies (IA) to new technology</p>
<p>Project Purpose To evaluate and develop guidelines for the implementation of alternative water abstraction technologies, pilot their application in a southern African context and provide a means of conveying these alternatives to communities.</p>	<p>Indicators</p>	<p>External factors</p>
<p>Project Outputs 1) A manual or guidelines for the selection and implementation of appropriate water supply technologies, including required technical skills for their maintenance and management. 2) Pilot studies within the southern African context to validate their local suitability. 3) Technology transfer in terms of training courses and the printing of brochures of explanations of the potential water supply options for users at the local community level in their own languages so that they can make more informed decisions concerning their water requirements.</p>	<p>Indicators 1) - Guidelines prepared 2) - Pilot projects implemented in identified areas 3) - Training dissemination completed</p>	<p>External factors - Allocation of funds by DWAF - Community acceptance of pilot projects - Political problems in choosing a pilot project in an area over another area. Community wants benefit of pilot project for free.</p>
<p>Project Activities <u>Output 1</u> 1) A literature survey of international best practice for water source exploitation and familiarisation with information from previous projects. 2) An evaluation of critical success factors affecting these methods in the southern African context based on a survey of rural water supply schemes using such technologies. This activity can be substantially assisted by the rural water supply audit project (project 1) where rural water schemes involving such technologies are included in the audit. 3) An evaluation of the long-term economic sustainability of these systems at a community level based on maintenance and refurbishment requirements. 4) The development of guidelines for the successful implementation of these schemes in a community based rural water supply setting. <u>Output 2</u> 5) The implementation of pilot projects in South Africa to gain local experience with the technologies and evaluate their appropriateness in terms of community acceptance and water demand requirements. This activity will also include the identification of any required modifications or improvements to the technologies and a check of cost-benefits when compared to conventional methodologies. <u>Output 3</u> 6) The presentation of technologies and technical information to the groundwater and rural water supply industry through workshops, conferences and the initiation of a training programme within the umbrella of established training institutions. 7) The dissemination of knowledge gained using brochures aimed at the community level and disseminated through Implementing Agents and community workers involved in rural water supply implementation. This can be piloted through the community awareness project (project 4).</p>	<p>Project Inputs - Funds - Manpower - Material</p>	<p>External factors</p>

PROJECT 6 - LFA PROJECT MATRIX

<p>Project Goal To establish a network to collect data for planning the exploitation of groundwater resources in terms of both quality and quantity. A secondary goal is the application of such data in the study of medium- and long-term environmental changes in southern Africa.</p>	<p>Indicators Documented improvements in the long-term stability of water supply and quality and in the general health of the community..</p>	<p>External factors - Community participation skills needed for technology transfer - Build HRD capacity or willingness to participate at local authority level - «turf politics»</p>
<p>Project Purpose Piloting of a network to collect data on variations in water level and quality, regionally and in time, as a basis for assessing groundwater resources at regional and national levels.</p>	<p>Indicators - Documented use of the data from the monitoring system in the development and proper management of groundwater resources in the two provinces in which monitoring networks are established. - Establishment of contingency plans for back-up reserves. - Use of the system in monitoring pollution problems.</p>	<p>External factors As above</p>
<p>Project Outputs 1) Development of appropriate technologies for groundwater monitoring at community or local government level 2) To establish and bring into operation a groundwater source and aquifer monitoring network in two pilot provinces (Northern Province and KwaZulu-Natal) as part of a general groundwater management procedures operational at any level of groundwater utilisation. 3) Documentation and guidelines for the implementation of regional and local groundwater monitoring networks 4) A proposed plan for implementation in the country as a whole</p>	<p>Indicators 1) Effective use of the monitoring system by the community. 2) Report on the implementation of regional and local groundwater monitoring networks - Implementation of the networks in two provinces - Number of stations in the networks. 3) Report on the implementation study. 4) A plan for implementation in the country as a whole prepared</p>	<p>External factors As above. - Cost of monitoring equipment</p>
<p>Project Activities <u>Output 1</u> 1) Network design and inventory of priority sites requiring a groundwater management system 2) Survey of existing monitoring boreholes and networks 3) Establishment of pilot monitoring network 4) Integration of pilot network into existing groundwater management and information systems at all levels and with other monitoring systems (surface water, rainfall, water quality) 5) Technology transfer and training to ensure effective execution of the monitoring programme at all levels 6) <u>Output 2</u> 6) Development of appropriate technologies for water level and water quality sampling, field based water quality analysis and data capture <u>Output 3</u> 7) Preparation of guidelines for implementing monitoring networks <u>Output 4</u> 8) Development of a strategy and implementation programme for a national scale monitoring network.</p>	<p>Project Inputs - Funds - Manpower - Material</p>	<p>External factors</p>

PROJECT 7 - LFA PROJECT MATRIX

<p>Project Goal <i>To assist in the development and implementation of uniform approach to groundwater protection in all community water supply and sanitation programs and projects</i></p>	<p>Indicators</p>	<p>External factors - Funding - Traditional acceptance - Stable administrations (provincial, local etc.) - Internet server breakdown/lightning (Ref. Importance/Probability matrix)</p>
<p>Project Purpose <i>To provide a guide to local authorities and other relevant community institutions for an appropriate approach to groundwater protection</i></p>	<p>Indicators</p>	<p>External factors As above</p>
<p>Project Outputs 1) Best Practice guidelines which address all the common practices which can impact groundwater in the rural and informal urban settlement environment. 2) A widely agreed strategy for groundwater protection in the community water supply environment, anchored in the National Water Act and the Water Services Act.</p>	<p>Indicators 1) Agreed guidelines published - Frequency of guideline use by other stakeholders 2) Accepted documented strategy - Implementation period should be extended to include the possibility to evaluate indicators at this stage</p>	<p>External factors As above</p>
<p>Project Activities <u>Output 1</u> 1) Assessment of the major human impacts threatening groundwater source sustainability in the community water supply environment. 2) Development of Best Practice guidelines based on international and national experience and local conditions. 3) Testing the guidelines in three pilot areas. <u>Output 2</u> 4) Integration of the guidelines into implementation of water resources protection measures in terms of the National Water Act and the Water Services Act. 5) The integration of the above results towards a holistic document with strategies and approaches for sustainable development for community water supply.</p>	<p>Project Inputs - Funds - Manpower - Material</p>	<p>External factors</p>

APPENDIX 7:
Minutes from Day 2

**SUSTAINABLE DEVELOPMENT OF GROUNDWATER SERVICES
UNDER
THE COMMUNITY WATER SUPPLY AND SANITATION PROGRAMME
IN SOUTH AFRICA.**

Minutes of Meeting

Date : 28 May 1999
Place : Council of Geoscience, Pretoria
Referees : Tore Laugerud, supplemented by Erik Ravdal, Ron Boyd and Eberhardt Braune

1. PURPOSE OF THE MEETING

The purpose of the meeting as stated by Eberhard Braune was to discuss the outcomes of the previous day's workshop and the bearing of these outcomes on the content, scope and formulation of the programme. In addition, strategic issues were discussed, as well as the "way ahead", and roles and responsibilities.

2. PARTICIPANTS

The participants comprised a selected group of participants from the previous day's workshop, the enclosed list of participants in Enclosure 2 refers. . Steven Marais from DWAF participated only during the first three items on the agenda. Richard Holden represented the MVULA Trust and attended the full meeting.

Erik Ravdal was the main chairman during the day.

3. MEETING OUTCOME

The items below refer directly to the agenda of the meeting. The "LFA method" of visualising statements made from the floor was practised also in this meeting.

3.1 Implications of the LFA Workshop

The workshop facilitators, Tore Laugerud and Erik Ravdal, summarised the general impression of the workshop and listed the main points related to the programme. The other participants supplemented the list. The following points were specifically mentioned as related to the workshop outputs:

- The discussion in the workshop showed that the participants were dedicated and gave significant and useful input to the process of refining and improving the programme design and content.
- Some of the participants, not having been involved in the preparatory work of the programme, needed clarification on several topics through questions and statements of more general character in the workshop.
- There is a great need to focus on the linkages between the different projects
- It is important to interact with other ongoing sector projects and previous/ongoing studies in order to avoid overlapping and duplication
- There is a great need for awareness raising in key issues at community level
- There is lack of local capacity (management, planning, implementation and operation)
- There is a great need for knowledge transfer and training of different targets groups/stakeholders in different topics at different levels.

- There is a need to focus on the implications of the changes in the water management structure in the country
- The Programme must exploit opportunities to contribute to capacity building/training/mentoring within the historical disadvantaged sectors in RSA
- R+D (research +development) must show relevance quickly after the activity. This might also mean spending money on activities before planned for or having the logical basis for doing. (Could this develop into a killer assumption ?).
- Will the workshop outcome have any significant impact on project design “actors” ? (This question was answered by a clear: yes)
- The implementation of groundwater schemes will continue during the Programme (5 years). (The importance of showing results, but at the same time have a close interaction between the Programme and implementation activities in order to benefit from findings)
- One must not inflate the Programme beyond management dimensions, meaning that the programme must not grow faster than the management can handle. In relation to the planned objectives and outputs.

During the constructive discussion following the above summary several relevant topics were revealed, of which the main ones are listed below (in un-prioritised sequence):

- The Programme must put energy into the “softer” side of sustainability. The technical capacity in RSA exist. (There were different opinions to this last statement. It was on the one hand claimed that there is sufficient technical expertise in RSA to handle water supply development. On the other hand it seems evident that the technical expertise is geared at large scale piped schemes based on groundwater and not at rural water supply systems based on groundwater).
- Is there ample hydrogeological expertise in RSA ?
- Lack of hydrogeological capacity in DWAF. Need “gap bridging” (from outside professionals). Local hydrogeologists have limited skills in rural water supply
- There is a lack of black/coloured technical expertise in RSA.
- Local capacity to manage the groundwater supply must be built
- **The Programme must integrate efficiently with other programmes, and bridge the gaps in existing programme to form holistic “concepts”.**
- The programme funding should thus be used to complement other programmes
- There is a lack of community extension workers
- South African “community facilitation” is too dependant on graduates, whereas other African countries utilise networks of “foot soldiers” type of extension workers. (One probably would need both categories in the programme, and a boost to develop the latter must be encouraged).
- Project 1 should focus on specific projects and schemes (not national level experience)
- Project 1 must be aimed at central DWAF level. It should be aimed only at policy making/implementation. Develop a policy as output.
- Project 1 must not create another problem statement (“report”). It must give implementation solutions!
- Focus research on existing use of groundwater (springs, handpumps)
- The Programme should look at complementary sources
- Should the programme budget items be re-allocated to reflect adjustment of program focus (from technical to also include a larger extent of “softer” components) ?
- The Programme should be entirely under DWAF control
- There should be one programme, but with an opening for multiple funding sources
- There must be advocacy within DWAF to create synergies between the different programmes
- Additional programme objective: DWAF staff should perform programme work themselves, meaning they must **actively participate in the project work** - not only in the management. Mentoring and training should be provided to ensure that staff are able to achieve goals of the Programme.
- The following criteria for selection of pilot provinces should be considered:
 1. Capacity of DWAF (in the province) to participate in the project

2. Capacity and willingness of local government to participate and ensure long term sustainability

3. Pilot areas to look at different:

- aquifer conditions
- rainfall patterns
- sources (springs, boreholes, shallow well)
- alternative sources (rivers, bulk schemes)

4. Involvement of tertiary education institutions (3rd class)

5. Matching funding from regional DWAF or other departments

6. Integration with other programmes (capacity building)

- It was stressed that the Programme will in fact help DWAF towards improved internal coordination and “to speak with one voice”. **If the Programme does not have a major impact on the performance and operation of DWAF, it has failed!**
- An independent person/company should look at the Rural Water Supply Guidelines, to see whether they are too rigid under the prevailing situation.

3.2 Capacity Building Related to Programme

The following topics were introduced during the discussion:

- The issue was extensively raised during the workshop the previous day and the meeting expressed a great concern in properly incorporating training and capacity building activities into the Programme. Especially the need for increased hydrogeology expertise in the regions was again stressed.
- In specific, the need to train and involve black/coloured skilled technical and scientific personnel was taken up. The black/coloured population in RSA constitutes around 65% of the population, but only 15% of the skilled professionals.
- The question of why the University of Western Cape had been chosen, was discussed. National Community Water Supply and Sanitation Training Institute (Northern Province) was mentioned as a possible partner for lower level training. This institution is supported by EU, and these funds could be used to complement the programme training funds.
- The training under the Programme must be defined from the start, related to topics, level and cadres to be trained.
- There is a need for training in DWAF in **rural water supply management**.
- ISD (Institute of Social Development) is now part of DWAF, and this department will eventually be involved in the Programme (reflected in the work plans, they are now in a “learning” stage, as regards technical terminology etc.. This is one piece in the massive transformation within DWAF, reflecting the new national policy of “people first”, where staff without technical skills are taken on board. This process also means an enhancement of “horizontal” cooperation in the organisation.
- The training activities under the Programme must interact with existing training activities in the country

4. Damhaug Project Evaluation - Remaining Elements

Ron Boyd presented a list of key recommendations in the Pre-Appraisal Report, and addressed the level of fulfilment in the Programme as per today (Enclosure 3 refers). The following comments were made, directly related to the points in Enclosure 3:

P. 10	Have been discussed and will be addressed in revised document
P. 11	- Will be taken care of - Dept. of Agriculture did not participate in the workshop. Today there could be two water supply systems in each village: one for agriculture and one for potable water. There are financial constraints in the Programme to cover agriculture to the full extent, but Dept. of Agriculture will be taken on board mainly through consultations. - Water licensing issues will not be covered - Piloting in one province - piggybacking taken care of. Some criteria for selection of pilot area was formulated in the meeting (Section 3.2 above refers) - SADC participated in the workshop and will pro-actively be involved, invited to meetings etc. - The international liaison will be taken care of
P. 12	OK
P. 13	- ISDD is OK - Baseline study was also mention in workshop, will be taken case of - Pilot coordination, the issue will be taken care of
P. 14	Will be addressed (Section 6 below refers)
P. 15	An updated list of major donor supported projects will be prepared by DWAF.
P. 17	A good liaison strategy will be developed with universities and WRC
P. 18	Section 6 below refers

5. Project Linkages and Scheduling

Karim Sami introduced the topic by showing the proposed *Time Chart for the Implementation of the Projects in Phase I* (Enclosure 4 refers), and explaining the linkages between the different Projects.

It was emphasised that activities under Project 5 has started already under other programmes. It should be re-phrased to be complementary to ongoing projects - filling gaps. Activities under Project 4 are also running already.

There are clear linkages between Projects 1 and 3, Projects 2 and 6 and Projects 4 and 7. The projects must be initiated and run in such a way so that a continuing dialogue between the project teams (which might have a significant overlaps) and between them and the user-groups is ensured.

The Programme must tie in with other projects already going on.

6. Programme Management

Erik Ravdal initiated the discussion by briefly presenting the common principles for project management applied by NORAD, and addressing the roles of the different parties:

- Management structure as commonly required by NORAD:
 - Annual Meeting
 - Steering Committee, usually cross-sectorial
 - Programme Management Unit, lead by a Programme Manager
- NORAD's normal project development procedure:
 - Project Proposal

- Appraisal of project
- Appropriation Document to Boards of Directors
- Contract Agreement with one “Partner” Agency

- Normal management and control mechanisms:

NORAD’s involvement:

- Annual Meeting, often combined with country to country consultations. NORAD would require programme documents in good time before the meeting
- Mid-term programme review, joint team

Reporting:

- Annual Report
- Final Report

After a constructive discussion, the meeting agreed to a draft for a management set-up in the Programme, shown in Figure 1.

The mandate of the **Steering Committee**, which could preferably meet twice per year, would broadly be:

- to review the overall programme performance
- to review and approve the progress reports
- to review and approve annual reports, accounts and budgets to be presented to the Annual Meeting
- approve any major changes in the programme policy, scope, outputs, and the way forward.....

There will be Agreed Minutes from every Steering Committee meeting.

DWAF will provide the Programme Manager, either from present staff, or through head hunting outside. The Programme Manager will be a permanent employee of DWAF.

The characteristics of the **Programme Manager** should be:

- Proven experience in programme management
- broad knowledge of the water supply sector
- development oriented
- have good communication skills (down, horizontal and upwards)
- ability to work without daily supervision
- have the right personality
- have sufficient authority and “punch” to be heard and respected by all levels. Deputy Director level in DWAF.

The **Stakeholders’ Reference Group** would meet at important programme milestones and/or once per year. This meeting/workshop will give the programme an opportunity to present the progress and status of the Programme to the stakeholders and get useful comments and questions back. Some of the stakeholders will be more closely involved in the programme work, and these will also have a chance to interact more often with the Programme, get copies and comment upon more reports etc. The meeting could also be open for the press/media, in order to get an appropriate coverage of the event.

The participants in the different projects will come from different stakeholders as required.

The **Programme Management Team** will comprise the Programme Manager, the NGU Senior Advisor and the Project managers of the *active* projects at any one time. This team could meet regularly, once a week or every second week depending on the project activity level, and would inter alia.e.: review the status of the individual projects, the interaction between the projects *within* the Programme, the coordination with *outside* projects, in addition to other matters related to the operation of the Programme.

8. The Way Forward

The most salient results from the workshop will be written up by the facilitators before leaving RSA. Also a draft of the Minutes of Meeting for this meeting will be prepared by the facilitators and be left with the Programme.

A first oral report on the workshop will be given to the Embassy at a meeting on 1st June. This meeting will also focus on NORAD's requirements as to the administrative structure of the programme and on the steps to be taken before final approval of the programme.

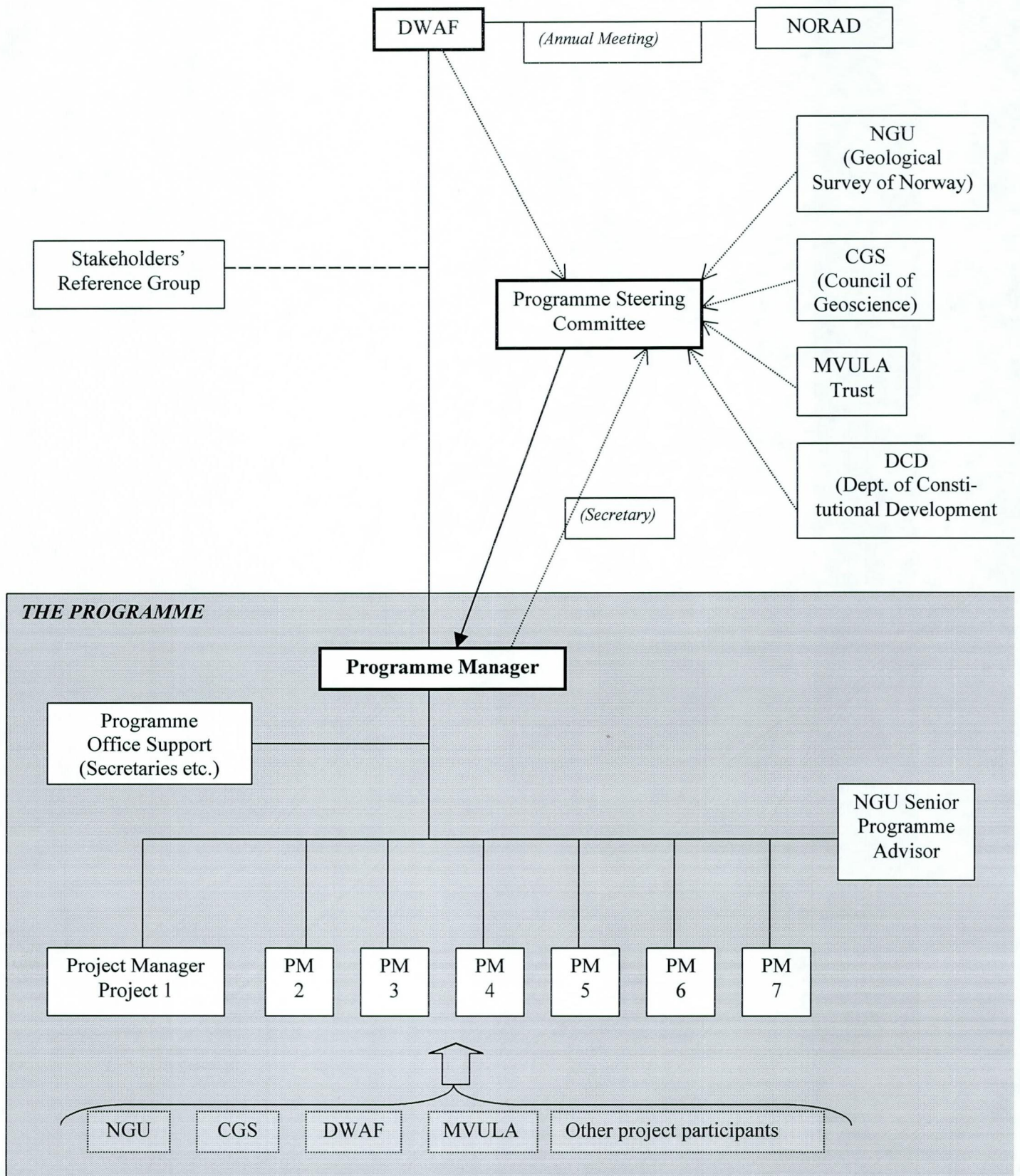
The Workshop Report will be submitted to NGU electronically hopefully by 8 June. The report will without delay be forwarded CGS for distribution.

The Workshop report will form the basis for the revised Business Plan, which will be forwarded NORAD a few days before 15 June. This might allow NORAD to prepare the final appropriation document before the Norwegian summer holiday, so that the Programme hopefully can start in September 1999.

The working meetings with the main stakeholders (DWAF, NGU, CGS and MVULA) were agreed and the division of responsibilities in relation to the preparation of the final Business Plan was agreed.

The report on the workshop will be submitted by NGU to NORAD by 30th June, after receipt of input from CGS and DWAF.

FIGURE 1: PROPOSAL FOR PROGRAMME MANAGEMENT CHART



_____ : Line of command - - - - - : Line of communication : Line of participation