



REPUBLIC OF NAMIBIA

**MINISTRY OF AGRICULTURE, WATER AND FORESTRY**  
**EoI 1/18/2 – 02/2011**

**A PRE-FEASIBILITY STUDY INTO:**  
***THE AUGMENTATION OF WATER SUPPLY TO THE CENTRAL AREA***  
***OF NAMIBIA AND THE CUVELAI***



**REPORT ON THE**  
**PUBLIC CONSULTATIONS**  
**FOR PHASE 1 OF THE PRE-FEASIBILITY STUDY**

**AUGUST 2015**

**SUBMITTED BY:**

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## ABBREVIATIONS

|                    |   |
|--------------------|---|
| AMTA               | Agro-Marketing and Trade Agency                   |
| CAN                | Central Area of Namibia                           |
| CoW                | City of Windhoek                                  |
| EIA                | Environmental Impact Assessment                   |
| ENWC               | Eastern National Water Carrier                    |
| GRN                | Government of the Republic of Namibia             |
| IAPs               | Interested and Affected Parties                   |
| LCE                | Lund Consulting Engineers                         |
| MAWF               | Ministry of Agriculture, Water and Forestry       |
| Mm <sup>3</sup> /a | Million cubic metres per annum                    |
| MLR                | Ministry of Lands and Rehabilitation              |
| NAMPA              | Namibia Press Agency                              |
| NamWater           | Namibia Water Corporation Ltd                     |
| NGOs               | Non-Governmental Organisations                    |
| OHL                | Ohlthaver List Group of Companies                 |
| OKACOM             | (Permanent) Okavango River Basin Water Commission |
| PoN                | Polytechnic of Namibia                            |
| SST                | Sustainable Solutions Trust                       |
| TOR                | Terms of Reference                                |
| UNAM               | University of Namibia                             |

## CHAPTER 1 : INTRODUCTION

The public consultation process reported herein is part of the Pre-Feasibility Phase 1 Study to investigate all alternative water sources which can be developed to secure a long-term, affordable water solution for the Central Area of Namibia (CAN), including parts of the Otjozondjupa and Omaheke Regions, and the Cuvelai Area up to 2050.

Both the engineering study and the independent environmental and social study were commissioned in August 2013 by the Ministry of Agriculture, Water and Forestry (MAWF). Together with the MAWF, NamWater and the City of Windhoek (CoW) form part of the joint Project Steering Committee overseeing this study.

The pre-feasibility study is being undertaken by an Engineering Team (comprised of Lund Consulting Engineers CC and Seelenbinder Consulting Engineers CC incorporating other companies) and the independent environmental and social consortium by the Sustainable Solutions Trust for the high level Environmental Impact Assessment (EIA) in collaboration with the Southern African Institute for Environmental Assessment (for the independent external review).

Public consultation forms a vital component of an Environmental Impact Assessment study, in accordance with Namibia's Environmental Management Act of 2007. The MAWF, NamWater and the City of Windhoek all recognize that the independence of the Environmental team is essential to uphold local and international scrutiny in the assessment of options. The aim of the consultation process is to ensure that all persons or organisations that may be affected or interested in the project were informed of the issues and were able to register their views and concerns. The process should also provide opportunities to influence a future feasibility study and project design so that benefits can be maximised and potential negative impacts be minimised.

Two rounds of public consultations were planned in the design of this Pre-Feasibility Study (Figure 1). This report covers the first set of public meetings, which took place in Rundu, Oshakati and Windhoek in July 2015. The aim of these meetings was to engage with Interested and Affected Parties (IAPs) at a strategic level of planning at the end of phase 1 of the Study. At this stage the following tasks were completed:

- An assessment of water demand from the present to 2050
- An analysis of current water supply and the shortfalls likely by 2050
- An investigation of possible further sources of water that could be developed to meet the shortfall
- An analysis, by means of supply and demand modelling, of the best combinations of options to meet short- to medium-term water demand and longer-term requirements
- An environmental and social assessment of options at a strategic level.

These public consultations form an important component of the strategic planning process. The report outlines the methods, a summary of the main points raised, a list of Interested and Affected Parties who registered and those reached, and a transcript of all the comments made in the meetings and received by email.

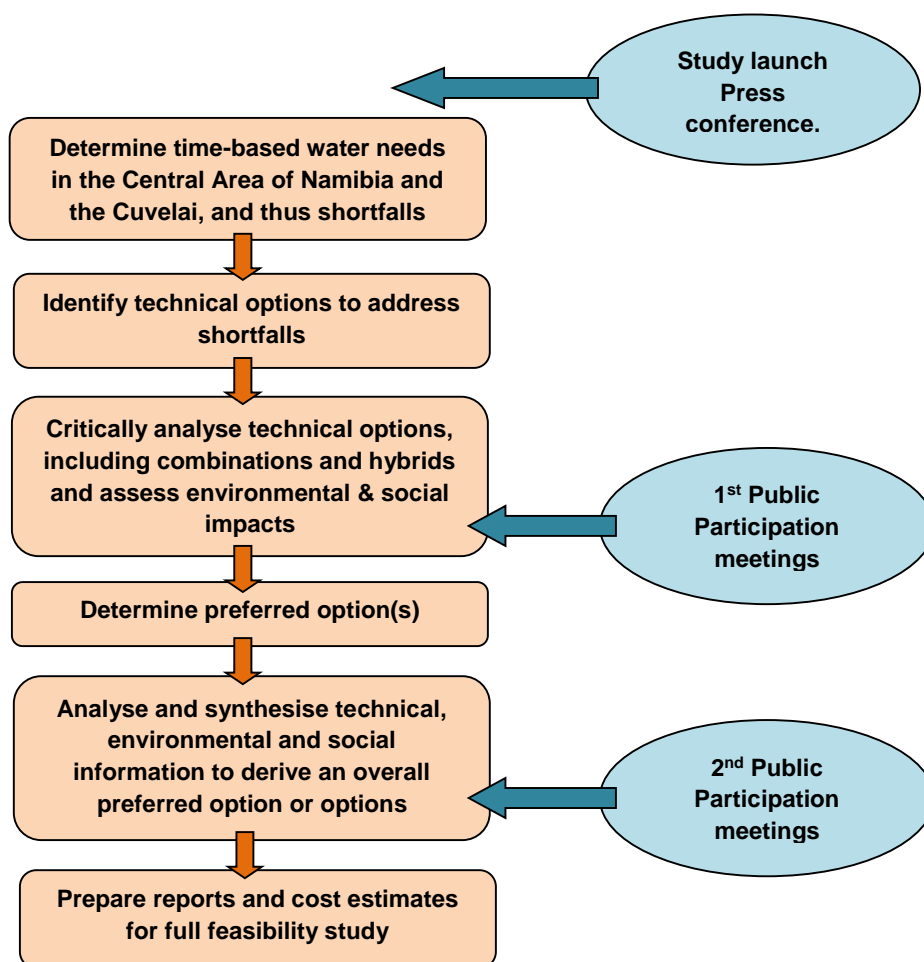


Figure 1. The sequence of events for the Pre-feasibility Study

## CHAPTER 2 : METHODOLOGY

### 2.1 WEBSITE




At the beginning of the Study, an interactive website was established by the Environmental and Social component for the project: <http://www.namibiawateraugmentation.com>. This website has been used to post public information such as the project inception reports, press releases by the MAWF, the official speech by the Hon. John Mutorwa, Minister of MAWF at the launch of the project, press clippings from the event, the engineering studies and the presentations given at the public meetings. It is also a means by which interested and affected parties (IAPs) and all stakeholders can interact and communicate with the teams, the Project Steering Committee and the client.

Results of public meetings and issues raised will also be posted on the website, to which IAPs can further contribute.

## 2.2 ADVERTISEMENTS

Advertisements, inviting interested and affected parties to register and giving notice of the public meetings and how to access the reports, were printed in three national newspapers on two consecutive weeks, in accordance with the Environmental Impact Assessment Regulations (2012). The advert printed in The Namibian on 9<sup>th</sup> July is shown in **Figure 2** and was repeated on the 17<sup>th</sup> July. Similar adverts appeared in The New Era and The Republikein on the same dates.

THURSDAY 9 JULY 2015 35

**Ministry of Agriculture,  
Water and Forestry**

**What are the Long Term Water Solutions for the Central Area of  
Namibia and the Cuvelai?**

The Ministry of Agriculture Water and Forestry (MAWF), NamWater and the City of Windhoek (CoW) are aware that the water supply in the Central Area of Namibia and in the Cuvelai will in the long-term not be secure for the continuing growth in population and economic activities.

In response, the MAWF has commissioned a Pre-Feasibility Study to investigate all alternative water sources which can be developed to secure long-term, affordable water solutions for the two Areas up to 2050. The results of the first part of this work are now ready to be shared with all interested and affected parties and the general public.

Public meetings to share information and to discuss the options and their potential impacts are planned as follows:

|          |  |                                    |
|----------|--|------------------------------------|
| Rundu    | 21 <sup>st</sup> July (Tuesday), 08h30 – 13h00   | Kavango East Regional Council Hall |
| Oshakati | 22 <sup>nd</sup> July (Wednesday), 08h30 – 13h00 | Oshandira Lodge                    |
| Windhoek | 24 <sup>th</sup> July (Friday), 08h30 – 13h00    | NamPower Conference Centre         |

There are five short-term actions that are recommended for water supply to the Central Area. However, these will not meet the Central Area's longer-term water needs. There are currently only two possible longer term options:

1. Bringing water from the Okavango River, or;
2. Pumping desalinated water up from the coast.

Background information and the reports are available on the website at:  
<http://www.namibiawateraugmentation.com>

**You may register as an Interested and Affected Party on the website or contact  
Auriol Ashby at: ashby@aacc.com.na; Cell: 081 254 5342.**

**Figure 2. Example of advertisements that appeared in three national newspapers on Thursday 9<sup>th</sup> and Friday 17<sup>th</sup> July 2015**

A press release was widely distributed to the media by the MAWF which resulted in follow-up calls from over newspapers and radio stations.

## 2.3 REGISTERING INTERESTED AND AFFECTED PARTIES

The advertisements and press release publicised the website address, a contact email address and a cell phone number for anyone to contact if they wanted more information or to be sent the documents. Every email and SMS received was followed up. In addition, invitations to public meetings with background information were sent via e-mail to some 200 organisations and individuals, including national, regional and local government agencies, the private sector, professional bodies, non-governmental organisations (NGOs), traditional authorities, community and citizen groups, tertiary academic institutions and the media. The current list of Interested and Affected Parties is summarised in **Table 1** and is detailed in **Appendix A** and includes all those who registered on the website and those who attended the three public meetings.

**Table 1. Summary of Interested and Affected Parties**

| Stakeholders   |
|--|
| Project Steering Committee – MAWF, NamWater and City of Windhoek           |
| Khomas, Kavango, Oshana, Omusati, Ohangwena and Oshikoto Regional Councils |
| Local Authorities, Traditional Authorities, Communal Land Boards           |
| Key Government Ministries and Parastatals:                                 |
| Office of the President  |
| Office of the Prime Minister   |
| National Planning Commission   |
| Ministry of Agriculture, Water and Forestry                                |
| Poverty Eradication and Social Welfare                                     |
| Ministry of Lands and Rehabilitation (MLR)                                 |
| Ministry of Urban and Rural Development                                    |
| Ministry of Public Enterprises   |
| Ministry of Works and Transport  |
| Ministry of Industrialization, Trade and SME Development                   |
| Ministry of Environment and Tourism  |
| Ministry of Mines and Energy   |
| Ministry of Fisheries and Marine Resources                                 |
| Ministry of Information, Technology and Communication                      |
| Ministry of Higher Education, Training and Innovation                      |
| NamWater   |
| NamPower   |
| Roads Authority (RA)   |
| TransNamib   |
| Bank of Namibia  |
| Polytechnic of Namibia (PoN)   |
| University of Namibia (UNAM)   |



| Stakeholders  |
|---|
| The Private Sector:<br>Chamber of Mines of Namibia<br>National Chamber of Commerce and Industry<br>Engineering Council of Namibia<br>Namibian Institute of Town and Regional Planners<br>Walvis Bay Corridor Group<br>Environmental Assessment Practitioners Association of Namibia<br>Construction Industries Federation of Namibia<br>Mining Companies in the Central Area of Namibia |
| Environmental NGOs and Specialists  |
| General public attending the public meeting and responding to press announcements   |
| Media: Namibia Broadcasting Corporation, newspapers, radio stations   |

## 2.4 NON-TECHNICAL SUMMARY

All IAPs who registered were emailed a non-technical summary which is attached as **Appendix 2**. The Summary gives the objective of the Pre-feasibility Study, the main preliminary findings and how to access the full reports from the website, the timeframe for the project and notice about the public meetings.

## 2.5 CONSULTATION MEETINGS

Three consultation meetings were held in the regions potentially most affected – in Kavango, Oshana and Khomas Regions, as follows:

|                            |          |               |                                   |
|----------------------------|----------|---------------|-----------------------------------|
| 21 <sup>st</sup> July 2015 | Rundu    | 08h30 – 13h00 | the Kavango East Regional Council |
| 22 <sup>nd</sup> July 2015 | Oshakati | 08h30 – 13h00 | Oshandira Lodge                   |
| 24 <sup>th</sup> July 2015 | Windhoek | 08h30 – 13h00 | NamPower Convention Centre        |

The three meetings followed the same agenda as shown in **Figure 3**:

The Honourable Governor of the Kavango Region, Ambassador Dr S. Mbambo, officially opened the consultation meeting in Rundu and gave the closing remarks. Thirty one people attended the meeting including representatives from:

- Kavango Regional Council councillors and officials,
- Rundu town councillors and officers
- Traditional Authorities,
- Communal Land Board,
- MAWF, MLR, RA, UNAM, Rundu Vocational Training Centre, Farmers Associations and NGOs.



|  |  |
|--|--|
| <b>PROGRAMME</b>   |  |
| for the  |  |
| <b>1<sup>ST</sup> PUBLIC PARTICIPATION MEETINGS</b>                                |  |
| on   |  |
| <b>AUGMENTATION OF WATER SUPPLY TO THE CENTRAL AREA OF NAMIBIA AND THE CUVELAI</b> |  |
| 1. Welcome   | The Regional Governor                            |
| 2. Official Study Introduction   | Victor Slinger, <i>MAWF</i> & Chris Brown        |
| 3. Engineering presentation  | Hugh Bruce, <i>Lund Consulting Engineers CC</i>  |
| 1. Water demand to 2050 (CAN & Cuvelai)  |  |
| 2. Current water sources and their potential                                       |  |
| 3. Future options to meet supply`  |  |
| 4. Questions of clarity  |  |
| 4. Environmental presentation  | Chris Brown, <i>Sustainable Solution Trust</i>   |
| 1. Screening of future options from an environmental & social perspective          |  |
| 2. Questions of clarity  |  |
| 5. Discussion and comments   | Auriol Ashby, <i>Sustainable Solutions Trust</i> |
| 6. Word of thanks  | Your Worship, the Mayor of the town.             |

**Figure 3. Programme for the Oshakati Public meeting, as an example**

The meeting held in Oshakati was opened by Michael Mwinga, Special Advisor to Regional Governor, Hon Clemens Kashiupulwa. The meeting was attended by twenty people including:

- the Special Advisor to the Governor of Ohangwena Region,
- the CEO of Oshana Regional Council and Deputy Director for Planning
- the Director of Oshikoto Regional Council
- the CEO of Omusati Regional Council
- representatives of MAWF, AMTA, NAMPA, members of the public and

His Worship Onesmus Shilunga, the Mayor of Oshakati Town Council closed the meeting.

The Windhoek meeting was opened by the Honourable Governor of the Khomas Region, Laura Mcloed-Katjirua and was attended by 70 people made up of representatives of:

- Office of the Prime Minister
- Khomas Regional Councillors and officers
- City of Windhoek councillors and officers
- Private sector industries, businesses, town and regional planners, environmental consultants and engineers
- MAWF, NamWater, Roads Authority, NGOs, Namibia Broadcasting Corporation and other media, the Polytechnic of Namibia,

City of Windhoek Councillor, Shaalukeni John Moonde gave the closing remarks.

The signed attendance sheets for each of the meeting are attached in **Appendix C**.

## CHAPTER 3 : ISSUES, COMMENTS AND CONCERNS RAISED

### 3.1 SUMMARY OF MAIN ISSUES RAISED THROUGH PUBLIC CONSULTATIONS

The main issues raised during the public consultations at the three meetings are summarised in **Table 2**. The issues have been grouped by topic for easy reference. The transcripts of the comments are listed under the same topics in **Section 3.2**.

**Table 2. Summary of main issues raised, by topic**

| Topic                                  | Main Issues Raised  |
|--|---|
| Actions Required – Engaging Leadership | <ol style="list-style-type: none"> <li>1. Leaders at all meetings recommended to urgently brief the Cabinet or National Assembly on the urgency of the situation;</li> <li>2. City of Windhoek has the plans in place but not the budget to act and N\$1.5billion is required now to reduce the risk to Windhoek becoming dry; that would badly affect Windhoek’s contribution from just a few key water-reliant industries of over N\$25 million a day to the national economy.</li> </ol>   |
| Actions Required – Raising Awareness   | <ol style="list-style-type: none"> <li>3. Urgently need visible and loud awareness campaigns to save water now.</li> <li>4. Need accurate media reporting.</li> </ol>   |
| International concerns                 | <ol style="list-style-type: none"> <li>5. Have consultations started with Angola and Botswana?</li> <li>6. What is the status of the agreement with Angola?</li> <li>7. What if Angola decides to pull out of the current agreement?</li> <li>8. Will there be an agreement with these riparian States for water abstraction of the Kavango River?</li> <li>9. Need to ensure water quality and quantity received from Angola is acceptable.</li> <li>10. Need to have a second access point to the Kunene River, should access to Calueque ever be denied.</li> </ol>  |
| National Development Implications      | <ol style="list-style-type: none"> <li>11. Instead of taking water to Windhoek, move big water-demand projects and industries to the Kavango and coast, to where the water is.</li> <li>12. Consider incentives to move population to the coastal areas where desalinated water will not be pumped great distances or heights.</li> <li>13. This has huge implications on all Local Authorities affected.</li> <li>14. Should we accept current water use patterns? Irrigation at Hardap and Green Schemes in Kavango and Etunda consumes a huge amount of water and creates less economic value than the jobs needing that water in urban areas (about N\$25 million/day from a few key water-reliant industries in Central Area).</li> <li>15. Paving roads would reduce water consumption needed when maintaining gravel roads.</li> </ol> |
| Concerns of Kavango East Region        | <ol style="list-style-type: none"> <li>16. The Kavango Region is the poorest region and needs water to develop irrigation and for livestock. The people of Kavango are poorly developed from a water perspective.</li> <li>17. The government wants the Kavango Region to produce Namibia’s food.</li> <li>18. The water needs of Kavango Region should be met before water is pumped away. Cannot take water from the region when areas away from the Kavango River do not have good potable water.</li> <li>19. What will be the benefits to the people of Kavango Region of taking their water?</li> </ol>   |

| Topic  | Main Issues Raised  |
|--|---|
| Impact on the Okavango River                                       | <p>20. Climate change is predicted to reduce rainfall over Angola by 250mm by 2045 which will significantly reduce the river flow.</p> <p>21. Angola is expanding its agricultural schemes in the catchment area and from the river so the flow will reduce.</p> <p>22. Many people depend on fish and the river for their livelihoods. Cannot enable people in Windhoek and Oshakati to survive at the expense of others in the river basin.</p> <p>23. Namibia's 7 Green Schemes need 400,000 m<sup>3</sup>/day, equivalent to 47% during low flow.</p> <p>24. If the maximum flow is reduced, the Delta would become saline, like Etosha.</p>  |
| Issues for the Cuvelai Region                                      | <p>25. Climate change is predicted to reduce rainfall which is likely to reduce recharge of both the saline and Ohangwena II aquifers.</p> <p>26. How to reduce the 69% loss between Calueque and Oshakati.</p> <p>27. Recognition of the need for water recycling and consensus it would not be a cultural problem for potable water (Oshakati meeting).</p> <p>28. Local changes in flows in the iishana are natural, not due to developments in Angola.</p> <p>29. Earth dams will only prolong your water supply for cattle for a few months locally; they are not a long term solution.</p> <p>30. Need more technical information on the recharge rates of the Ohangwena II Aquifer, then decide whether to extract sustainably or to mine it and deplete it.</p> |
| Implications for the Central Area of Namibia                       | <p>31. How will the shortfall be addressed if there is no in-flow into the dams next rainy season? Will still need water restrictions for several years to come.</p> <p>32. Need to clean up flow into Swakoppoort Dam from industries, from overflow of Goreangab, overflow from Gammans in Windhoek and sewage works at Okahandja, and from informal settlements.</p> <p>33. Expensive water-saving technologies and recycling of effluent may be more cost effective than desalination from the coast.</p>   |
| Implications for the Economy / Business in the Central Area        | <p>34. When the taps run dry, it will close down the dairy industry and we will lose 700 jobs.</p> <p>35. Any plans to prohibit new water-intensive industries in the Central Area, not just in City of Windhoek?</p> <p>36. Impact of high water costs and price on the consumer.</p>  |
| The Desalination Option Implications                               | <p>37. What are some advantages and disadvantages of desalination?</p> <p>38. Consider a combination of solar and wind energy with desalination;</p> <p>39. Support application to the Green Climate Fund;</p>  |
| Clarifications / Comments on the Engineering Pre-feasibility Study | <p>40. Where do we get more water – from underground or surface water?</p> <p>41. Why don't we make use of the perennial Orange River?</p> <p>42. What is the source of water brought from Grootfontein to Windhoek?</p> <p>43. Would the water from the Okavango River be treated at source?</p> <p>44. Is the Inga Dam in Congo still an option or is it only for electricity?</p>  |
| Comments on the Environmental                                      | <p>45. Challenge from Kavango Region, whether the meeting was to inform or to have an input on what is going to happen.</p>   |

|                                      |   |
|--------------------------------------|---|
| Study and Consultation Process       | <p>46. Criticism that information on Kavango Region's current and future demand had not been included.</p> <p>47. The next public meeting (in Kavango) should include discussions with local people/community.</p> <p>48. Client was commended that it employed professional and independent teams and for a job well done.</p> <p>49. Clarification on difference between the 2010 integrated resource management plans and the need for an Integrated Strategic Environmental Assessment (SEA).</p>   |
| Issues recommended for further study | <p>50. To extend the Terms of Reference (TOR) to examine desalination option in detail.</p> <p>51. To include current and future water demand from the Kavango River for the Kavango regions – both urban and rural, and particularly the Green Schemes.</p> <p>52. Strong recommendation from the Kavango Region stakeholders to conduct a detailed study on current and future water demand and potential impacts, particularly socio-economic, including tourism, of taking water from the Kavango River.</p> <p>53. To consider Angola's current economic expansion and future plans affecting water demand.</p> <p>54. Consider the link from the ENWC into the system of Otjivero dam for Gobabis as a higher risk but lower liability.</p> <p>55. Consider rural areas adjacent to Karibib, Omaruru and Usakos e.g. Omatjete, Okombahe, Uis, Spitskoppe, which are experiencing critical water shortages and poor water quality.</p> <p>56. Consider the capacity of the ministry (MAWF) and the DWA to implement plans.</p> <p>57. Construct a measuring point at Katwitwi</p> <p>58. Not only consider source but also efficient use &amp; reticulation systems.</p> <p>59. Impact on the cost of water to end users.</p> <p>60. Impact of high future cost of water on settlement patterns/decentralisation.</p> <p>61. Has the option of reverse osmosis been considered in the water cycle?</p> <p>62. Has the economic impact of not having water been considered? (Potential loss, → economic impact?)</p> <p>63. What are other countries doing?</p> <p>64. Have water recycling projects been looked at?</p> <p>65. Should develop National Integrated Resource Plans that combine water &amp; electricity.</p> <p>66. Impact of shortages on residents and business.</p> |

### 3.2 DETAILED COMMENTS RAISED

The following report is of all the comments and responses, almost verbatim to preserve their richness, given during the public meetings. The comments have been grouped by topic for easy reference.

**3.2.1 Action Required: Engaging Leadership**

| Type | Name and Place  | Q = Question, C = Comment, R = Response  |
|------|---|--|
| C    | Maj. Gen. P. Nambundunga, Oshangwena RC, Oshakati meeting | My concern is the level attending this meeting. The politicians can have similar briefings on this issue. I know the minister is involved but he is not an expert in the area. It is an advice or request to brief the politicians because they really need to hear it. This same presentation should also reach the politicians at a higher level, to brief the Cabinet or National Assembly.   |
| R    | H. Bruce, Oshakati meeting                                | We can invite some of the politicians to the meeting in Windhoek. The presentation has already been provided to the Minister of MAWF, in Windhoek.   |
| Q    | M Mwinga, Oshana Region, Oshakati meeting                 | The political will is most important. When did the study start? This will has been advocated by the Founding President. There were proposals to seek ways to secure water using perennial rivers. It seems the political will was not there. Climate change is happening. We should now call up the political will involved here so the nation is rescued otherwise we say boreholes will be depleted and in the end we don't have any source of water and human lives will be under threat.   |
| C    | Ben v.d. Merve, Windhoek meeting                          | We have been talking for about 10 years about this possible shortfall in the Central Areas and very little has happened. My view is that we should act now. Even if we spend the N\$1.5 billion, there is the likely probability – a 1 in 1 chance that we run out of water.<br><br>There are a lot of industries and employers dependent on this water. The Windhoek industries contribute about N\$25 million per day to our economy, including Navachab mine. The money we need to give us security of supply can be repaid in 3-5 months' time.  |
| C    | M Mwinga, Oshana Region, Oshakati meeting                 | It is important to go and tell the lawmakers at the national level.  |
| C    | Cllr. S. Moonde; Windhoek meeting                         | Have to mobilise leaders to solve mid-term and long term solutions.  |
| C    | Jeremy, Windhoek meeting                                  | We have a leadership crisis. Cabinet is so big. Israel is a small place but uses its waters wisely, let's learn from them.   |
| R    | V. Slinger, MAWF, Windhoek meeting                        | We need to present the findings of the engineers and the feedback from these consultative meetings to Cabinet and mobilise all institutions of Government.   |
| R    | V. Slinger, MAWF, Windhoek meeting                        | The Permanent Secretary of MAWF is the chairperson of OKACOM and he has told them about this process. I do not think there is a leadership crisis.<br><br>We have to make the people aware of the situation. This needs to be presented to the Cabinet and to the politicians, so they realise we are in real trouble when it comes to water supply, especially in the Central Area.<br><br>People in the Kavango Region are not satisfied with taking water from the river for the Central Areas; when they asked for water inland, they got nothing; we must mobilise our people in government, the water suppliers and the country. |

|   |                                    |  |
|---|------------------------------------|--|
| R | I. Peters, CoW, Windhoek meeting   | CoW has all the plans. If we don't get the funding, we can do nothing. There are other priorities. We say "give us the money and we will do it." |
|   | C.D. Stöck, Windhoek comment sheet | This has been very informative, but urgently requires cabinet commitment for the future development of Namibia.                                  |

### 3.2.2 Action Required: Raising Awareness

| Type | Name and Place                           | Question, Comment, Response   |
|------|--|---|
| C    | Cllr. Moonde; Windhoek meeting           | Have to act fast to raise awareness to save water;  |
| C    | Mary Seely, Windhoek meeting             | CoW used to have a graph up all over town showing how much water we need to save and how we were meeting the target; who should be starting this awareness if it is not NamWater? It needs to be in the newspaper weekly. We need this awareness-raising to start now.  |
| C    | B. v.d.Merwe, ENVES CC, Windhoek meeting | I am concerned about this one "safe" year left because if you want to implement these schemes you will have to get going. To drill a borehole takes about 3 months and there are not many contractors who can do it. I don't think we can wait for another season; it will be catastrophic for the whole country. Submissions were made 2 years ago and nothing has happened. We have to act now; big business needs to inform people higher up; we cannot wait for the tap to get empty. |
| C    | P. Nutt, Windhoek comment sheet          | Accurate media reporting is necessary.<br>We had a meeting with NamWater where the problems with Swakoppoort Dam were totally underplayed (2012/13).  |
| C    | I. Peters, CoW, Windhoek meeting         | We had a visit by the Minister to the Windhoek Artificial Recharge project; we inform the press what our concerns are and what needs to be done but they are not giving the information.  |
| Q    | R. Khiba, PoN, Windhoek meeting          | You say the demand for water should be tightened up. New businesses and activities are erupting all over the city yet the CoW does not allow this. What exactly should happen? Is there a document which tells the people what economic activities are allowed?   |

### 3.2.3 International Implications

| Type | Name and Place  | Q= Question, C= Comment, R = Response   |
|------|---|---|
| Q    | Maj. Gen. P. Nambundunga Ohangwena RC; Oshakati meeting | I would like to thank the presenters for the information and for the warning bell. Have consultations already started between Namibia, Angola and Botswana regarding the abstraction of water from the Kavango River? |

| Type | Name and Place                                  | Q= Question, C= Comment, R = Response  |
|------|---|--|
| R    | H. Bruce,<br>Oshakati<br>meeting                | The Permanent Okavango River Basin Water Commission, OKACOM, has been informed. The Chairperson of the Project Steering Committee, Abraham Nehemia, is also Acting Permanent Secretary of MAWF and is an OKACOM Commissioner. He has written notification letters to OKACOM and we have been in contact with them for information and data from them so they are fully informed of the project.  |
| Q    | ? Rundu<br>meeting                              | I was serving in OKACOM since 1994. There were long discussions among the three state commissioners about the Kavango (River). Meetings took place in Luanda, and Botswana and Kavango. The idea of taking water to Windhoek was discussed and it was not agreed upon. Have they agreed now?   |
| R    | V. Slinger,<br>MAWF, Rundu<br>meeting           | The Acting PS of Agriculture is a Commissioner of OKACOM. He told us that he has presented this option to OKACOM. We are not doing this alone; we talk to Angola and Botswana; everything that happens to the water should be discussed with the other countries.  |
| C    | H. Göhmann,<br>FSU-Jena,<br>Rundu<br>meeting    | Whatever happens in Angola regarding land use management, such as big agricultural schemes, extending /exploding cities like Menongue, Caiundo, Luena they use water for irrigation and domestic use. There are plans in the headwater catchment of the Cuito River to abstract 120m <sup>3</sup> /sec which are not in the river. Angola will develop. It is really important to strengthen OKACOM for transboundary and transnational strategic water management planning over the three countries; everyone will benefit.   |
| Q    | T. Mutaba, RA,<br>Kavango;<br>Rundu meeting     | What if Angola decides to pull out of the current agreement?   |
| Q    | J. Hamutenya,<br>AMTA,<br>Oshakati<br>meeting   | What is the status of the agreement made between the Angola and us; Is it coming towards an end?   |
| R    | H. Bruce,<br>Oshakati<br>meeting                | The agreement was signed in 1969 between the South African and Portuguese governments. After Independence of Namibia and Angola, subsequent agreements have been signed between the two countries. The 1969 agreement was the third water use agreement and we are now at the 5 <sup>th</sup> or 6 <sup>th</sup> water use agreement. The subsequent agreements all refer back to the 1969 agreement which has been ratified again and there is no indication it will change in the future. A future water use agreement will focus on power supply, either at Baines or one of the other sites on the Kunene River. |
| Q    | M. Elago,<br>Oshana RC,<br>Oshakati<br>meeting  | Namibia would not tamper with the Okavango river without Botswana making a lot of noise but we do not seem to have the same muscle when we come to our friend, our northern neighbour. At the highest level there is that goodwill but the way the local Angolans treat us and take the offtake between the Calueque dam and our border.   |
| R    | H. Bruce,<br>Consultant,<br>Oshakati<br>meeting | Botswana is very vocal but we have no control over what Angola does, which is the concern.   |
| Q    | T. Angula,<br>MAWF, DWA,<br>Windhoek            | Are we engaging Botswana and Angola when considering the Kavango River option? Will there be an agreement with these riparian States for water abstraction?  |



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| R | V. Slinger, MAWF, Windhoek meeting | <p>We will have to get permission through the forums we have.</p> <p>The Permanent Secretary of MAWF is the chairperson of OKACOM and he has told them about this process.</p> <p>I do not think there is a leadership crisis; we have to make the people aware of the situation. This needs to be presented to the Cabinet and to the politicians, so they realise we are in real trouble when it comes to water supply, especially in the Central Area. People in the Kavango Region are not satisfied with taking water from the river for the Central Areas; when they asked for water inland, they got nothing; we must mobilise our people in government, the water suppliers and the country.</p>   |
| C | P. Haynes, Windhoek meeting        | <p>The 1973 Water Master Plan already recognised that in order to augment our supply we would need to gain access to the international rivers at our borders. After Independence, the GRN started with a programme to try and establish Water Provisions on the rivers so we can discuss water issues and that Namibia needs access to such water. It was noted that we are at the bottom of the river with water consuming countries above us, e.g. Orange and Kavango. Did the TOR entitle you to make recommendations on the issue of these transboundary rivers?</p> <p>We have an international treaty enabling us to have access to Calueque. If Angola denies us access to Calueque we need to bring out our army. We can design redundancy to have access to the river so we can use the river until relations have normalised again. We also have access to the Okavango River but we need to talk with Angola to ensure the water quality does not deteriorate. We should not feel threatened about our access to international water.</p> <p>Clearly you looked at a much larger Central Area than just Windhoek. In our discussions with Angola and Botswana on the Okavango River, we have always tried to impress on them that we do not want access to the water for normal supply but as a last resort, when we have made full use of our internal water supplies.</p> |

### 3.2.4 National Development Implications

| Type  | Name & Place                             | Question, Comment, Response  |
|-------|--|--|
| Q     | R. Haironga, KRC, Rundu meeting          | Instead of taking water to Windhoek, why can't we recommend bringing those big water-demand projects, such as big universities and Namibia Breweries to Kavango to where the water is?   |
| R     | H. Bruce, Rundu meeting                  | It is not for us (consultants) to set policy for government to decide where development should happen.   |
| Q     | T. Mutaba, RA, Rundu meeting             | From the road sector, we need water for construction of gravel roads. If there is not enough water, we should consider paving our roads from the beginning which will need a bigger budget but we would save about 40% of our water consumption.                               |
| C     | Cllr. S. J. Moonde; Windhoek meeting     | This has huge implications on all Local Authorities affected.  |
| Q & R | M. Seely, and H. Bruce, Windhoek meeting | <p>Why is everything accepted as the status quo? Do we have to use all that water for irrigation around Hardap Dam? I would like to see more innovation from the engineering side.</p> <p>H. Bruce: We do not have the mandate to tell the Mariental farmers to shut down.</p> |

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|   |  | Seely: Isn't that an alternative? Is everything that exists now, there for ever? If 4 more chicken factories and 2 more breweries want to come, do we just accept them? This is the danger of accepting the status quo.  |
| C | B. v.d. Merwe, ENVESCC, Windhoek meeting           | The frequency of drought in the central area and Hardap is the same so I don't believe it is very useful to have the same source for augmentation. The allocation for irrigation is about 40Mm <sup>3</sup> which is quite significant volume but it is not available every year. Cost-wise, the distance is more or less the same and you have to lift it quite high to get to Windhoek.<br><br>I do not know the contribution to the national economy of Hardap farmers, but if we close down the Windhoek economy, including the Navachab mine, we would lose about N\$25million/day. I do not advocate irrigation in the central area or Hardap, but to take it away would not be so simple. |
|   | Antony Kostopoulos, Windhoek comment sheet         | Consider motivated population migration to the coastal areas where desalinated water is not pumped great distances or heights. i.e. give investment tax breaks/incentives for water use migration closer to the coast if not at the coast where the harbour is close for import export. If a nuclear power plant be built then it will be built by necessity at the coast. Use the +/- 35% unemployment to move a significant part of the population to the coast.   |
|   | S.C. Simasiku, MAGESI Consulting, Windhoek meeting | Namibia's development needs to consider the basic issues collectively – we need water, food and power otherwise even an educated population cannot contribute.   |

### 3.2.5 Impact on Kavango Region

| Type | Name and Place                  | Question, Comment, Response   |
|------|---------------------------------|---|
| Q    | ?, Rundu meeting                | We know that the rainfall is dry this year. We have not seen rain here. There is a lot of water going to irrigation. There is a need to take water to inland to our dry region. Can we provide water to some other people and we do not have any?   |
| C    | H. Mangundu, KRC, Rundu meeting | The long term plan was not well presented, is it to bring water from the sea? Climate change will also affect Kavango which is the poorest region. Now you are saying that from the poor people, the river is to be taken away to Oshakati. I am not supporting this. If the option you are proposing is to take water from the Okavango River, it is not a good decision. We have to look first to this region. People are not drinking potable water. The water here is also like Cuvelai with very salty water. When Namibia gets hotter and drier with climate change, this river will dry up too. This is not an option. |
| R    | C. Brown, Rundu meeting         | The reason why the desalination programme has not been well studied is that it is not in our Terms of Reference. The engineering and environmental consultants feel very strongly that it should be as an option to be looked at. The MAWF is in the process of deciding this. We think it is a very important option: a) for Namibia, b) if we go to the international community we will never be able to justify coming to the Okavango River unless we have studied all the other options in depth.  |
| Q    | T. Mutaba, RA, Rundu meeting    | Were you able to study the agricultural schemes, projected to 2050? Determine how much water will be required for each farm, so you can adjust the planning to see if there will be adequate water to be transported. If desalinated water is brought inland, GRN must look to the regions; the centre of development should be in the regions where water is available. Services must come to the people.  |

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|   | E.C. Kanyinga, KRC, Rundu meeting              | You are not looking at the needs of people here, only at the receiving end. That is totally wrong. We should look first at what the people in this area need.<br>Only when Windhoek is getting dry, do they come up with ideas of getting water to people. When Windhoek was not affected, the people within 200km from the Kavango River, who were crying for water, were not listened to. Should we all live in Windhoek to get action?  |
| Q | M. Hamawoko PoN, Windhoek meeting              | By 2050, the population of Kavango Regions is likely to have doubled by then. Are there plans in place to make sure Kavango people do not experience water shortages?  |
| C | Kaveto, UTA Communal Land Board, Rundu meeting | The people are so concerned how the Kavango Region will be affected. We are the poorest region but this was not considered to be important to uplift our living conditions. We have people living inland who are using contaminated water but the response is not happening. Now the water issue affects the VIPs, those untouchables, they need our assistance. It is not the way. We all need to work on the profile of the poorest regions. People are not accepting this idea due to no assistance in the past.  |
| Q | D. Chipandeka, RUTC, Rundu meeting             | This study was not well done as other options were well studied but this option of taking from the Kavango River should have been well studied. You need to include the future population growth, future industries and agricultural plans, etc; You must go and advise the government that people want the industries here so they can benefit from development.<br>You suggest that Kavango River water will only be taken in the rainy season but we see that NamWater dams are open during rainy season and you through water away. Where will the water go?<br>From my institution, we are against this idea. |
| R | H. Bruce, Rundu meeting                        | The Von Bach Dam has only overflowed three times since 1971 when it was built. The proposal is that this high value water would be stored underground in the Windhoek aquifer so there is no evaporation losses. In Windhoek we also drink recycled water to use the water as efficiently as possible. We were not asked to look at desalination as a serious option and we recommend that this is done.   |
| Q | M. Kanyanga, Rundu Comment sheet               | What will happen after 10 years? We are all aware that the Okavango is variable not like the sea.<br>What are the benefits to Okavango local people?   |
| Q | S. Kantema, KRC, Rundu meeting                 | There is a demand for the water in the Cuvelai and the Central Area. When the water is taken from the Kavango area, what will be the benefit to the inhabitants in this area?  |
| R | H. Bruce, Rundu meeting                        | Maybe government can give subsidies. That is a policy decision which I cannot answer.  |

### 3.2.6 Okavango River Abstraction: Predictions and Impacts

| Type | Name and Place                             | Question, Comment, Response   |
|------|--|---|
| Q    | M. Elago, CRO, Oshana RC, Oshakati meeting | Why is there a question mark on abstraction from the Okavango River in your last slide? |

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| A | H. Bruce,<br>Oshakati<br>meeting             | It is a potential option to supply water to either the Cuvelai or to the central area of Namibia but I doubt there is enough water to supply both. There is a question mark whether it can supply most of Namibia.   |
| C | J. Sikongo,<br>KRC, Rundu<br>meeting         | <p>To take water from desalination is more expensive than to abstract from the Okavango. "<i>Goedkoop is duur koop; duur koop is goedkoop</i>". The abstraction from the Kavango is the cheaper, smaller option, but it will have a huge negative impact on the Kavango Region. Can it be a long term solution? To abstract water from the sea it will not huge negative impacts like this option.</p> <p>To take so much water from the Kavango will have a negative impact on the fish and other species in the water. Some people living along the river make a living from these species so the majority of the people will suffer. The Windhoek people will survive while we will suffer. It is not solving a problem. A good option is the long term, water from the sea. I always dispute with people when they say there is "No money". The problem is how to use it.</p>  |
| C | H. Göhmann,<br>FSU-Jena,<br>Rundu<br>meeting | The water flows coming through here are generated in the highlands of Angola. We made upstream and downstream analysis showing from Caiundo onwards, the river is almost in equilibrium: rainfall balanced by evaporation loss. Everything that happens in Angola will directly affect the flows here. The climate change scenarios from our climate research centre in Hamburg, suggest that with climate change, rainfall will decrease over Angola by 250mm by 2045. This must be taken into the calculations. The Kavango River has a much higher inter-annual variability than the Cuito River which has stable flows. Whatever happens in Angola regarding land use management, such as big agricultural schemes, extending /exploding cities like Menongue, Caiundo, Luena, they use water for irrigation and domestic use. There are plans in the headwater catchment of the Cutchu River to abstract 120m <sup>3</sup> /sec which are not in the river.   |
| C | P. Hilger, FSP-<br>GIZ, Rundu<br>meeting     | <p>Everyone needs water when the river is low. There is a lot of information gathered by the Future of the Okavango made up of 140 researchers, from 33 universities and 8 countries over the last 5 years. The river flow is up and down, the lowest flow is 10m<sup>3</sup>/sec up to 1000m<sup>3</sup>/sec. The 7 green schemes of 4,000 ha need 400,000m<sup>3</sup>/day but when you use that on the low flow the studies by OKACOM min daily flows of 47% taken during the low flow. One Green Scheme can pump 20,000m<sup>3</sup>/hr per pump. They are not efficient with their water. Highly risky with more schemes.</p> <p>At the delta, if you impact the flow, don't get the flow you get salination problems. The ecosystem and the riparian trees are used to the fluctuations. Any changes to the flows you could end up like the Etosha pans. It would impact on tourism in Botswana. It is a World Heritage Site. Abstracting water is not a long term solution. The price tag on desalination.</p> <p>The Linyanti river has gone. We don't want that to happen here. It is our livelihoods for future generations.</p> |
| C | H. Göhmann,<br>FSU-Jena,<br>Rundu<br>meeting | You showed the mean volume of water from the 1940s. When you calculate a trend over that time period, you will have sharply decreasing trends by around 15-20%. Perhaps it would be better to take the last decade, then your proportion will shift from the low flows because you can see decreasing flows at Rundu, Mukwe and Mohimbu.   |
|   | H. Göhmann,<br>FSU-Jena,<br>Rundu meeting    | The medium stage development of all the Green Schemes in Kavango will require 10,000litres/sec and we have reached that level in September /October already reaching maximum offtake with no option for expansion. It does not include the small schemes e.g. Divundu.   |

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| C     | H. Göhmann, FSU-Jena, Rundu meeting | When filling up the Von Bach Dam, just look at the Gaborone Dam in Botswana, which is dry. They are planning to fill it up with the water carrier from the north, probably throughout the year. When you see the low flows in the Kavango, this should not happen here as you will affect the environmental flows and the contribution towards the downstream areas and the Delta.                             |
| C     | Lazerus, MLR, Rundu meeting         | You have given no information on the river itself. 20 years ago, I use to swim 100 m from my house and now the river far. That's how rivers behave.  |
| C     | Lazerus, MLR, Rundu meeting         | Regarding conserving the underground water in the central areas, the MAWF should control the drillings of boreholes there. We have close to 1,000 livestock in the communal area, while the commercial farms have 10,000 livestock in the same size of area and they have with 5-10 boreholes while we are maintaining our livestock with only one borehole. Now you propose to take water from here for them. |
| C & Q | C. Stock, ASE, Windhoek meeting     | What will be the effect of climate change on the levels of the Okavango River, plus the additional usage that Angola will have on the system? Although the Okavango River may seem the most economically viable, for the long term I have serious doubts.  |
| C     | C. Brown, SST, Windhoek meeting     | Recent modelling from the Future of The Okavango study, estimates that the rainfall in the catchment of the Okavango, will decrease by about 200mm/year. The impact on the runoff and flow is not clear but could be serious.  |

### 3.2.7 Issues Concerning the Cuvelai Region

| Type | Name and Place                        | Question, Comment, Response  |
|------|---------------------------------------|--|
| Q    | S. Enkono, AMTA, Oshakati meeting     | Is the loss of 69% from Calueque to Oshakati due to evaporation or a combination with people taking it? What are the possible measures to put in place to reduce this? I think most people are relying on the canal. That is a huge loss, especially in years when river levels are low.   |
| A    | H. Bruce, LCE, Oshakati meeting       | It is currently very inefficient. There is a lot of offtake between Calueque and our border by Angolans who regard it as their water. Losses are from seepage and evaporation along the canal, from evaporation at Olushandja Dam, from illegal offtakes along the canal and probably in account billings. The two main options would be to replace the canal with a pipeline and to bypass the Olushandja Dam, which provides enough emergency water storage for only 2 days. |
| Q    | J. Hamutenya, AMTA, Oshakati meeting  | What is the problem of reclamation of Oshakati and Ondangwa water?   |
| Q    | ? Windhoek meeting                    | We have towns that are growing like Ondangwa and Oshakati which do not purify their water; shouldn't they have reclamation plants too, as in Windhoek?   |
| Q    | A. Ashby, SST, Oshakati meeting       | Do you think that is a real cultural block?  |
| C    | M Mwinga, Oshana RC, Oshakati meeting | Given the rate of development and urbanisation, I don't think people will have a problem with it.  |

| Type | Name and Place                             | Question, Comment, Response  |
|------|--|--|
| Q    | A. Kafula, Omusati RC, Oshakati meeting    | Are there plans in future, for the canal to be closed or will it still exist, in parallel to either the Kavango option or pumping up from Ruacana? If the canal is closed, what will happen to the Green Scheme and people who depend on the canal for water for themselves and for their animals?   |
| R    | H. Bruce, LCE, Oshakati meeting            | There is another project funded by GIZ which is looking at whether they should replace the canal with a pipeline but I doubt in the short term if it will be closed.   |
| R    | C. Brown, SST, Oshakati meeting            | I don't think there is any plan to close the supply from Calueque. There is enough water from Calueque to keep us going to 2050 and if we use it wisely, it will take us way beyond 2050, It is only the geopolitical issue that we are dependent on one water source from Angola. If there is a problem and we have no alternative back-up, it would be irresponsible of our political leaders. |
| Q    | M. Asino, Oshikoto RC, Oshakati meeting    | We have climate change; do we have underground climate change affecting boreholes? If there are enough boreholes in Ohangwena and west of Kunene.  |
| R    | H. Bruce, LCE, Oshakati meeting            | The recharge of that groundwater is from rainfall going into the ground. If the rainfall decreases and becomes more variable, that will reduce the amount of recharge and the amount you should abstract over the long term.   |
| R    | C. Brown, SST, Oshakati meeting            | There is another aspect: when the rainfall decreases, the vegetation decreases and when that happens your recharge also decreases. Less water is falling and less water is being absorbed into the ground, particularly on hilly areas.  |
| C    | A. Ashby, SST, Oshakati meeting            | The shallower saline aquifer is recharged by local rainfall whereas the Ohangwena aquifer is thought to be recharged by rain falling in Angola.  |
| Q    | A. Ashby, SST, Oshakati meeting            | What do you think of the suggestion to use the water in the proposed Baines Dam as water storage?  |
| R    | H. Bruce, LCE, Oshakati meeting            | If the Baines Dam was used as a water supply, it is still the same source of water supply and you would have to pump it even further than from Ruacana. The MAWF could negotiate with Ministry of Mines and Energy but the project is being prioritised for hydro-power, not water.  |
| Q    | M. Elago, Oshana RC, Oshakati meeting      | In the Cuvelai, we have small rivers which emanate from Angola, which have completely dried up for many years. What is the reason? Is there interference from the Angolan side upstream? If they have the potential to flow, why is it not discussed?  |
| R    | C. Brown, SST, Oshakati meeting            | There has been a study on the Cuvelai system in Angola and the report is on the website. There have been no developments in the Cuvelai which will affect our iishana. The iishana are very dynamic systems; they are very shallow and small deposits of sand in one area redirects water elsewhere. Some years they flow strongly and not in other years.                                       |
| Q    | O. Shilunga, Oshakati TC, Oshakati meeting | Is it possible to use earth dams to store water during the floods, for use in dry years?   |

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| R | H. Bruce, LCE, Oshakati meeting             | We mentioned constructing an earth dam near Lake Oponono but in dry years there would be no inflow so they would not solve the problem. Earth dams scattered around would be useful for cattle watering otherwise you would have to have lots of small treatment plants which would not be feasible; they would help to prolong your water supply for only a few months.  |
| Q | ? Windhoek meeting                          | With climate change likely to lead to a decrease in rainfall in the Cuvelai so that cropping becomes something of the past, did you assess the increased demand for irrigation which will be needed when rainfall decreases?  |
| Q | M. Nanghanda, NAMPA, Oshakati meeting       | The report of the underground water in Ohangwena Region which will last for 400 years – Are they true or false?   |
| Q | E. Kavetu, Windhoek comment sheet           | It was documented by the British Broadcasting Corporation, that the Ohangwena aquifer will supply the northern region of Namibia for 800 years. This will be the best viable solution as desalination is costly and pumping water from Kavango will cause geopolitical problems with Botswana.  |
| Q | A. Lukas, Windhoek comment sheet            | Is it true that in Ohangwena Region underground water can supply the communities in that area for the next 50 years? If so how viable is it, is there any study about it and will there be any consultation about it? Is government planning to put future boreholes in this region? (Ohangwena aquifer)  |
| R | H. Bruce, LCE, Oshakati & Windhoek meetings | Yes there is a huge volume of water from a very limited number of tests and monitoring boreholes. The BGR project is ongoing to find out the recharge rate. You may not be able to technically extract all of it. If you use it sustainably, you can only extract what is coming into it from recharge from rainfall so you have to establish that recharge rate. If you take more out, you will be mining it and will be depleting it over a period of time. |

### 3.2.8 Central Area of Namibia: Clarifications on situation

| Type | Name and Place                            | Question, Comment, Response   |
|------|---|---|
| Q    | S. Enkono, AMTA, Oshakati meeting         | How will you mitigate the shortfall for the Central Area, if there is no rainfall by June 2016?   |
| R    | N. du Plessis, NamWater, Oshakati meeting | There is the artificial recharge programme from which we can abstract water from the Windhoek Aquifer. In the meantime we need to pray for good rains. It is a serious situation but there is some water there.   |
| R    | I. Pieters, CoW; Oshakati meeting         | For the Windhoek Aquifer system, we take surface water from the NamWater dams and we add reclaimed water in a ratio of about 3:1, and store that water underground. That water will not be sufficient at this stage. Our plan is once the whole artificial recharge system is implemented, together with the water reclamation plant, we will be able to supply Windhoek for about 2 years. But that system is not in place as we never got sufficient funds to implement it. During the next 2-3 years, there will have to have water restrictions.<br>100 years ago, there were springs along the Aus mountains and inside Windhoek but with the abstraction since the 1950s, the water was mined. We want to fill that up again. We will store water underground and use it like a bank. |
| R    | A. Ashby, SST, Oshakati meeting           | So that is how we could use the Okavango water; we take it off when the river is flowing quite hard and then store it in the aquifer. It would not be taken off during low flow.  |



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| R     | N. du Plessis, NamWater, Oshakati meeting          | NamWater is investigating a number of smaller projects to bring water to Windhoek to make sure that we don't run dry, including from Berg Aukas, or from the Karst area to make sure we can supply Windhoek. The biggest saving will be water demand management. We aim to save about 25% of the current demand which will be the single biggest contributor to extending the deadline for Windhoek running dry.  |
| C & Q | C. Stock, ASE, Windhoek meeting                    | For the past 10 years, I have not been able to get my dams full on my farm, 45km from Windhoek. From rainfall patterns since 1971, we are experiencing a higher yearly rainfall but in smaller quantities of 10 -15mm per day whereas in the 1970s and 1980s we often had 60-80mms/day which resulted in huge run-offs which fed the big regional dams. This lower rainfall pattern has improved grazing and groundwater retention but it does not fill up the dams. If you add the climate change prediction for the next 80 years, we will run into these situations more frequently in the central and northern areas. |
| C     | ? Windhoek meeting                                 | The South African Breweries comes in which satisfies employment but creates another big problem; it contaminates the water. The effluent from industry should be cleaned at source before it reaches the dams.  |
| Q     | B. Esslinger, Namibian Breweries, Windhoek meeting | Pollution of the Swakoppoort Dam: The reclamation plant was commissioned and the Northern Industrial areas are charged between N\$20-40/m <sup>3</sup> of effluent. It adds a lot of costs to a business but it is probably the right thing to do. Does this tariff really solve the pollution control at the dam as some polluters are increasing such as informal settlement areas?   |
| Q     | A. Matros-Goreses, PoN, Windhoek                   | How would you clean up Swakoppoort Dam?   |
| R     | C. Brown, SST, Windhoek meeting                    | There is a combination of sources of pollution to Swakoppoort Dam. One could carry out an environmental audit of each industry such as the Tannery, Ramatex, the cattle feed lot and also the large landscape areas generating human waste in the north of the city. We have a large dam here, worth several billion dollars, which we are not looking after and we cannot bring it into proper production. Therefore spending several million to cleaning up the source areas would be an economically wise investment.  |
| R     | H. Bruce, LCE, Windhoek meeting                    | NamWater has six solar powered bees on the dam to circulate the water to try and counter the growth of algae in the dam. Then you need to treat the water, either at Swakoppoort or Von Bach dam and most likely using dissolved air flotation to remove the algae.   |
| R     | N. du Plessis, NamWater, Windhoek meeting          | We are treating the symptoms. There is almost continuous flow into Swakoppoort dam from spillage from the polluted Goreangab dam and from the sewerage plant at Okahandja, which is also developing 500 additional erven, plus the brewery. There are so many sources of pollution; it is difficult to keep the nutrient levels lower so that we don't experience continuous algae blooms.  |
|       | B. Esslinger, Namibian Breweries, Windhoek         | We have looked at internal recycling of water, we have studies and this depends on water price. If you are seriously looking at desalination, then water-saving technologies and recycling of effluent may be more cost effective.  |
|       | W. Kambinda, SLR, Windhoek meeting                 | The realisation of the inefficiency of current systems; notably the water losses at Von Bach Treatment plant.   |

### 3.2.9 Central Area of Namibia: Implications for the Economy

| Type | Name & Place                           | Question, Comment, Response   |
|------|--|---|
| Q    | E. Keys, OHL, Windhoek meeting         | When will the taps be dry as it will have a significant impact on the dairy industry? Without water we will have to close with a loss of more than 700 jobs. How safe are we or should we move the dairy to wherever there is water?  |
| R    | A. Mostert, NamWater, Windhoek meeting | <p>Responsible for coordinating certain aspects of the modelling and working with Bruce. We are in big trouble. Initial water modelling gave us until April 2016 before we run out of water. NamWater and the CoW have been very active and with cooperation from residents to Central Area, we can stretch the water potentially to January 2017. But that entails bringing water from Kombat Mine, bringing Berg Aukas water in, increasing supply from CoW boreholes, also installing new infrastructure to get additional water from boreholes and we are on target with these action plans. But the biggest impact, which we are not achieving, is demand management. We need to cut down 15% of 2014 sales in the Central Area – not Windhoek - from Navachab and Karibib mines, Gross Barmen, Okahandja, Okakarara, the on-line users of small plots, Windhoek – all users! If we do not achieve that, we are back to running out by end of the coming rainy season, if it does not rain.</p> <p>So for the cows, you have 18 months left. The biggest impact is water saving measures and it is not being dealt with enough; the perception of the public is we have no problem. It needs to be seriously addressed by all stakeholders. The consumers have been given ultimatums that if they do not stop your losses, their supply will be cut off. There are pro-active things happening in the background but the public needs to act to take us through two rainy seasons. We need two years safe supply. Why two seasons? We need one year to fast track new supplies e.g. e.g. Abenab Mine to give us three further years of supply. As we don't have two years safe supply now, we kick in emergency sources to the max. We are doing that now. We are utilising every emergency source to the max. Demand management is essential.</p> |
| Q    | D. Welman, OHL, Windhoek meeting       | What is the likely shortage after next year? I am struggling to convince my business as some say there is no problem.   |
| R    | W. Venter, NamWater, Windhoek meeting  | If you need the perspective of the Bulk Supplier, myself or Andre Mostert can make a presentation at short notice.  |
| R    | I. Peters, CoW, Windhoek meeting       | Our message is that once the whole Windhoek Aquifer Recharge Project and the new Reclamation Plant are implemented and the aquifer is recharged, Windhoek would have enough water for at least 2 years, without getting any water from NamWater.  |
| Q    | D. Welman, OHL, Windhoek meeting       | Are there any plans from local or central government to look at the viability of new businesses which will drain on the current water resource in the Central Highlands?  |
| R    | I. Pieters, CoW, Windhoek meeting      | The City Council is resolved to prohibit all water intensive industries from Windhoek.  |

|          |   |   |
|----------|---|---|
| C        | B. v.d. Merwe,<br>ENVESCC,<br>Windhoek<br>meeting                         | Water-using businesses need to conserve water.  |
| C &<br>Q | Mr. H.<br>Horsthemke,<br>Windhoek<br>comment<br>sheet                     | Thank you for a very informative & professionally conducted feedback session.<br>Namib Poultry Industries is looking at saving vast amounts of water through re-use employing reverse osmosis reclamation.<br>In the short term, how will water shortages be regulated in terms of supply security – i.e. water load-shedding? Public vs. industry? Will industrial bulk water users that employ water-saving measures be benefitted above polluting/ wasteful consumers?                       |
| C        | S.C. Simasiku,<br>MAGESI<br>Consulting(EX<br>ECB),<br>Windhoek<br>meeting | NamWater has a difficult issue to be cost reflective as people believe that water is a right and they should not have to pay for it. There is demand for deregulation. The world will not come and invest here if they do not get returns for their investment. You will need the private sector involvement.   |
| C        | S.C. Simasiku,<br>MAGESI<br>Consulting<br>Windhoek<br>meeting             | Need to consider the role of the consumer in the equation. Who tells the consumers if they are using water properly? Neither the utility nor the regulator will do that – only other consumers can do it.   |
| R        | W. Venter,<br>NamWater,<br>Windhoek<br>meeting                            | NamWater (Act of 1997) is subject to cost recovery. We are not making money out of providing water. Anybody can collect water at any place without paying water. You pay for the service of providing quality water to your point of use. A story: From 1904 to 1926 when the Vaal Dam was built for the gold mines of Johannesburg, the rich washed with bottled soda water while the poor people washed in urine. Unless something significant is done, Windhoek may be heading that way too. |

### 3.2.10 The Desalination Option Implications

| Type | Name and Place                                 | Question, Comment, Response  |
|------|--|--|
| C    | A. Matros-Goreses. PoN,<br>Windhoek<br>meeting | Re the Desalination option: the PoN has written a proposal to look at a combination of solar and wind energy with desalination; it sounds sensible to tap into the Green Climate Fund.<br>C. Brown Response: I think we can work together on the desalination. |
| Q    | A. Shikukuma,<br>KRC,<br>Windhoek<br>meeting   | What is the comparative cost of desalination compared with extracting water from the (Okavango) River?   |
| R    | H. Bruce,<br>Windhoek<br>meeting               | Desalination was not included in our terms of reference but we know it will be more expensive than abstracting water from the Okavango River.  |

| Type | Name and Place                                 | Question, Comment, Response  |
|------|--|--|
| Q    | P. Nambundunga, Ohangwena RC, Oshakati meeting | You did not say much about the desalination option. Which option, between water from the Okavango River or desalination is better, in your opinion?  |
| R    | H. Bruce, Oshakati meeting                     | Desalination is not included in our terms of reference. We have identified it as an alternative but we have to negotiate with the MAWF to extend out appointment so we can look at it in more detail. If you consider the two options, supply from the Okavango would be substantially cheaper, at least half the price, much lower energy costs than pumping from sea level; the disadvantage is that you are still dependent on what Angola does upstream in terms of abstraction and you are more vulnerable to climate change effects with potentially lower and more variable flows in future. If you look at desalination advantages, you have infinite source of supply and you are not dependent on any other country; the disadvantages are it will be hugely expensive, most likely beyond the means of Namibia to finance internally. You will have to pump water up almost 2km in the air to get it to Windhoek which will be power intensive. Also desalination requires a lot of power and Namibia does not have the electrical power to implement that option. Both will be evaluated in terms of the social and environmental impacts. |

### 3.2.11 Other Clarifications on the Engineering Pre-Feasibility Study

| Type | Name and Place                                 | Question, Comment, Response   |
|------|--|---|
| Q    | T. Mutaba, RA, Rundu meeting                   | Where do we get more water – from underground or surface water?   |
| R    | H. Bruce, Rundu meeting                        | Windhoek gets only about 8% of its water from groundwater; the rest is from rainfall and surface water  |
| Q    | O. Shilunga, Oshakati TC, Oshakati meeting     | Our country is drier in the southern part, so why don't we make use of the perennial Orange River? South Africa should share it with us.  |
| A    | H. Bruce, Oshakati meeting                     | A 2004 study considered pumping water over 850km from the Orange River to Windhoek. The problem is the Orange is already over-exploited with so many dams in South Africa and it is not really a feasible option of supply to Windhoek. At the moment the border runs on the northern bank of the river so it would need a new agreement. |
| Q    | P. Nambundunga, Ohangwena RC, Oshakati meeting | What is the source of water brought from Grootfontein to Windhoek?  |
| R    | H. Bruce, Oshakati                             | The water comes from Berg Aukas Mine and Kombat Mine from the Karst area and then it travels down the Eastern National Water Canal to the Omatoko Dam.  |
| C    | W. Kambinda, SLR, Windhoek                     | You said there is little information on some aquifers. There are some monitoring boreholes and data on Abenab which could be studied further.<br>H. Bruce Response: These aquifers were studied.  |

| Type | Name and Place                                   | Question, Comment, Response  |
|------|--|--|
| Q    | K. Kambanda,<br>NamWater,<br>Windhoek<br>meeting | Would the water from the Okavango river be treated at source? If so, is there any interaction with NamWater in Rundu as we are about to invest millions to increase the water treatment capacity in Rundu? |
| R    | H. Bruce,<br>Windhoek<br>meeting                 | The proposal would be to pump raw water as it has to go to the Eastern National Water Canal via Omatako dam to Von Bach dam.   |
| Q    | G. Hamupolo,<br>MAWF,<br>Windhoek<br>meeting     | What happened to the DRC project, getting water from DRC to Namibia through a pipeline? What would be the cost implications involved in getting water from DRC to Namibia?                                 |
| Q    | M. Elago,<br>Oshana RC,<br>Oshakati<br>meeting   | The Founding President used to talk about the Inga Dam in Congo. Is it still an option or is it only for electricity?  |

### 3.2.12 Comments on the Environmental Study and Consultation Process

|   |   |  |
|---|---|--|
| Q | S. Kantema,<br>KRC, Rundu<br>meeting            | What is the objective of the meeting? Is it for information or for us to have an input on what is going to happen?   |
| R | H. Bruce, Rundu<br>meeting                      | We are sharing information on the work that has been done to date and to gain any input that you can give us.  |
| C | S. Van Zyl,<br>EAPAN,<br>Windhoek<br>meeting    | I represent EAPAN, the voluntary Environmental Assessment Professionals Association for Namibia, to whom these consultants belong. I want to commend their client for appointing professional people for doing a good job. We want to promote government to use professional people who have the guts to say things that need to be said. Environmental consultants have a tough job and need to be bold to say the truth, even though the clients won't like it. So we want to commend you for a good job done.   |
| C | M. Seely,<br>Windhoek<br>meeting                | I think the environmental assessment was excellent.  |
| Q | A. Matros-Goreses. PoN,<br>Windhoek<br>meeting  | Dr Brown proposed doing an Integrated Water Assessment. Is this different to what has been done previously in 2010, with the integrated resource management plans when the first volume was on water assessment?   |
| R | C. Brown,<br>Consultant,<br>Windhoek<br>meeting | An Integrated Strategic Environmental Assessment (SEA) is a more strategic assessment of national development plans, incorporating all aspects of socio-economic activities, geographic distribution of development plans, where resources are and how they can best be used and exploited, including how to create incentives for various development nodes to be high and low water-use industries and so on. It needs to bring all the resources together of water across the country at a high and in-depth level with a long sustainable development horizon. |

| Type | Name and Place                     | Question, Comment, Response   |
|------|------------------------------------|---|
| C    | S. van Zyl, Windhoek comment sheet | <ul style="list-style-type: none"> <li>- This is a good example for Government to become more pro-active and strategic in its thinking, with environmental &amp; social considerations included at the earliest possible stage.</li> <li>- Commended for using independent, properly qualified consultants (which are not part of engineering team).</li> </ul> |
| C    | M. Kanyanga, Kavango comment sheet | <ul style="list-style-type: none"> <li>- It is a great platform where we look at the impact of climate change.</li> <li>- The next public meeting should consider the local people/community to discuss with them.</li> </ul>   |

### 3.2.13 Issues recommended for further study

|   | Name                                     | Recommendation   |
|---|--|--|
| Q | R. Haironga, KRC, Kavango                | Why was the demand for water in the Kavango Region not studied? We have two towns but others are to be proclaimed and there are other areas which will need to use water, like Namibia's Green Schemes. How much water will be needed for the Kavango Region?  |
| R | H. Bruce, Kavango                        | At this point, we are looking at all the available options. If abstraction from the Okavango River is selected as a serious option, we will have to look at it in more detail - the total abstraction for all the irrigation schemes and what will be required elsewhere in the region.  |
| Q | R. Haironga, KRC, Kavango, Rundu meeting | Why can't that study be done before you have selected it? So we are well informed. What if you find that there is also high demand for Kavango Region. Will you stop or continue the project?  |
| R | H. Bruce, Rundu meeting                  | Fair comment.  |
| Q | A. Shikukuma, KRC, Windhoek meeting      | Which populations and areas would benefit more from the desalination or using the Okavango River water? Most of the water demand is in Windhoek but it is likely that people along whichever pipeline is selected will draw water from it.   |
| Q | T. Mutaba, RA, Kavango; Rundu meeting    | Did you study the economy of Angola, their water supplies and uses?  |
| C | Patrick Hilger, FSP, Rundu Comment Sheet | <p>Please include findings from The Future of the Okavango 2015 Report:</p> <ul style="list-style-type: none"> <li>- Low levels at Sept/Oct of &lt;math&gt;&lt;10\text{m}^3/\text{sec}&lt;/math&gt; at Rundu</li> <li>- Abstraction of 400,000m<sup>3</sup>/day from 7 Green Schemes</li> <li>- Need for biological seasonal fluctuations for the existence of the Okavango Delta to prevent salinization.</li> <li>- Threat to tourism sector (potential loss of N\$320mill); see MCA exit survey.</li> <li>- Investigate Kalahari and NCR Aquifers.</li> </ul> |
| C | P. Haynes, Windhoek meeting              | <p>We are doing a feasibility study for a dam on the lower Orange. Maybe we can pump water from the Neckartal Dam – there will be a lot of water there.</p> <p>Did you consider the link from the Eastern National Water Carrier into the system of Otjivero dam for Gobabis as a higher risk but lower liability?</p>   |
| C | U. Usurua, Karibib, Windhoek             | The project should be inclusive and integrated. Rural areas adjacent to Karibib, Omaruru and Usakos should be considered as well. Areas like Omatjete, Okombahe, Uis, Spitskoppe are facing/experiencing critical water shortages and  |

|   |   |  |
|---|---|--|
|   | comment sheet   | not to mention the water quality situation. I strongly recommend that my genuine concern should be considered. Thank you!!!  |
| C | P. Haynes, Windhoek meeting   | To be able to support these future required developments, serious consideration should be given to the capacity of the ministry (MAWF) and the Department of Water Affairs to make things happen as it administrates the Water Act and the regulations, and serves as a regulator. In the past, with the development of the Windhoek Aquifer, the capacity of the DWA and their three man team, dwindled considerably so things did not happen as planned. |
| Q | ? Rundu meeting   | In 1994, OKACOM commissioners suggested a measuring point in Botswana and at Katwitwi to measure the flow. Have we constructed it?   |
| R | V. Slinger, MAWF, Rundu meeting   | We have not constructed the monitoring point.  |
| C | Winnie Kambinda, Windhoek comment sheet   | <ul style="list-style-type: none"> <li>- Optimization of systems should not only optimize the source (dams, canal etc.) it should look in towns at reticulation systems and the end user's water use.</li> <li>- DWAF has groundwater data that can be used to at least conduct studies to meet in general the short fall in aquifer characters.</li> <li>- Cost of water to the user; how will this be affected?</li> </ul>                               |
| C | S. van Zyl, Windhoek comment sheet  | Desalination will lead to potential significant changes in water price structure with associated settlement patterns changing – e.g. people moving to coast because water is cheaper there? (I know it's not in your TOR, but this and other impacts need to be looked at).  |
| Q | J. Hennes, WML Consulting, Windhoek Comment sheet                                 | Decentralisation of people and industry – is this an option?   |
| Q | B. Esslinger, Windhoek comment sheet  | <p>Interest: Long term sustainable water supply for industry at an affordable price</p> <ul style="list-style-type: none"> <li>- Has the option of reverse osmosis been considered in the water cycle?</li> <li>- Has the economic impact of not having water been considered? (Potential loss, → economic impact?)</li> <li>- What are other countries doing?</li> <li>- Have water recycling projects been looked at?</li> </ul>                         |
| C | W. Venter, Windhoek comment sheet   | May I suggest that the potential of intruder bush in the Central North be considered as a source of energy.  |
| C | P. Nutt, Windhoek comment sheet   | It is necessary to do National Integrated Resource Plans that combine water & electricity.   |
| C | F. Lund, Windhoek Residents and Ratepayers Assoc. (WRRRA); Windhoek comment sheet | <ol style="list-style-type: none"> <li>1) The consequences to the residents of Windhoek</li> <li>2) The consequences of desalination on the marine environment to be thoroughly investigated worldwide</li> <li>3) The consequences of bush thickening on the inflow into the dams</li> </ol>  |
| C | R. Kompat, OHL, Windhoek comment sheet  | <p>Business concerns- Industrial (NBL, Nammilk, Poultry etc.)</p> <p>Please try not to use our bordering rivers.</p> <p>Idea: Cut H<sub>2</sub>O supplying Karibib and use desalination as an option, then in turn tie into the line to Swakoppoort.</p> <p>Purifying/cleaning Swakoppoort H<sub>2</sub>O is an option.</p> <p>Therefore, is it necessary to supply up to Hosea Kutako?</p>  |



**APPENDIX A LIST OF INTERESTED AND AFFECTED PARTIES**

|  |                         |                              |
|--|-------------------------|------------------------------|
| <b>Project Steering Committee</b>                                  |                         |                              |
| MAWF   | A. Nehemia              | Acting Permanent Secretary   |
| MAWF   | V. Slinger              |                              |
| MAWF   | F. Sibanda              |                              |
| City of Windhoek   | P. van Rensburg         |                              |
| City of Windhoek   | J. de Vos               |                              |
| City of Windhoek   | I. Peters               |                              |
| City of Windhoek   | F. Brinkman             |                              |
| NamWater   | H. Drews                |                              |
| NamWater   | W. Venter               |                              |
| NamWater   | Dr. K. Tjipangandjara   |                              |
| NamWater   | G. Pazvakawambwa        |                              |
| Sustainable Solutions Trust  | Dr. C. Brown            |                              |
| ENVES  | B. van der Merwe        |                              |
| LCE  | G. Burger               |                              |
| LCE  | H. Bruce                |                              |
| LCE  | R. Stoldt               |                              |
| LCE  | G. Brettschneider       |                              |
| SAIEA  | Dr. P. Tarr             |                              |
| SCE  | R. Steyn                |                              |
|  |                         |                              |
| <b>IAPs who registered on the website or by email or SMS</b>       |                         |                              |
| Analytical Laboratory Services                                     | Mr. Silas Amawe         |                              |
| Aqua Services & Engineering; Veolia Water Solutions & Technologies | Christian Stöck         | Director                     |
| Aurecon  | Hannes van Schalkwyk    | Civil Technologist           |
| Aurecon  | Faffa Carstens          |                              |
| AVENG Water Treatment  | Antony Kostopoulos      |                              |
| CGDI & RezerVe Mineral Prospecting cc                              | Lezel R Nel             |                              |
| Cuvelai-Etosha basin Committee                                     | Silvanus                |                              |
| Elwiwa   | Rudi Deck               |                              |
| GoB  | Neil Fitt               |                              |
| Heyns International Water Consultancy                              | Piet Heyns              |                              |
| K7 Radio   | Marlisse                |                              |
| Kenako Investments cc  | Erich Muinjo            |                              |
| Lithon Project Consultants   | Chris Muir              |                              |
| Lithon Project Consultants   | Jacques Esterhuizen     |                              |
| Lithon Project Consultants   | Frikkie Holtzhausen     |                              |
| LM Environmental Consulting  | Lima Maartens           | Director                     |
| Lunganda Trading Enterprises                                       | Penda Kiyala            |                              |
| MAWF   | Veronica Siteketa       |                              |
| MAWF, DWRM   | Nghishiinawa Mundjanima |                              |
| MAWF, DWRM, Cuvelai- Etosha Basin.                                 | Anna T. Haufiku         | Basin Support Officer        |
| MAWF, Hydrology Div; DWA   | Mr. Tobias Angula       |                              |
| MAWF, Hydrology Div; DWA   | Gerson Hamupolo         |                              |
| MAWR   | Tobias Angula           |                              |
| Namib Mills Windhoek   | Elfrieda Roos,          | Assistant Operations Manager |
| Namib Poultry Industries   | Helgo Horsthemke:       | Water Treatment Specialist   |
| Namibia Breweries  | Mr. Bernd Esslinger     | Engineer                     |

|  |                           |   |
|--|---------------------------|---|
| Namibia Dairies                                      | Mr. Gunther Ling          | MD  |
| NamWater   | N.P. du Plessis           |   |
| NamWater   | Jolanda Murangi           |   |
| NamWater   | Hendri Opperman           |   |
| NamWater   | Kambanda Kaliki           |   |
| NamWater   | A.C. Mostert              |   |
| NBL  | Mr. Rainer Kompat         | Engineer                                    |
| NUPROX cc company                                    | Andreas Lukas             | Project Manager                             |
| Ohlthaver & List Group of Companies                  | Dawid Welman              | Group Risk Manager                          |
| Ohlthaver & List Group of Companies                  | Stefanus Annandale        | Group Manager: Occupational Health & Safety |
| Okavango basin management committee                  | Sikongo Stefanus          |   |
| Omusati Regional Council                             | Mr. Kafula                |   |
| Parallel Investments cc                              | Collin Nico Uirab         |   |
| Patagonia Projects                                   | Kai-Uwe Schonecke         |   |
| Polytechnic of Namibia                               | Dirkie Maikhudumu         |   |
| Private  | Carlo van Heerden         |   |
| Pumping Solutions cc                                 | Kenneth Kasita            |   |
| Retired Government Employee USA                      | Anthony G. Gelbert        | Cell: 0812811934                            |
| Ritta Khiba Planning Consultants cc                  | Ritta Khiba               |   |
| Roads Authority                                      | Mr. Mutuba                |   |
| Roads Authority                                      | Mr. Iddi                  |   |
| Roads Authority                                      | Mr. Rittman               |   |
| Rubies Training Research and Business Consultants cc | Imafon Akpabio            |   |
| SABMiller Namibia (Pty) Ltd.                         | Maija-Liisa Prinszonsky   | Corporate Affairs Manager                   |
| SAIEA  | John Pallet               |   |
| SAIEA  | Peter Tarr                |   |
| SASSCAL  | Sylvia Thompson           |   |
| Sentrateg Namibia                                    | Erwin Schwandt            |   |
| Shamvura Camp  | Charlie Paxton            |   |
| SLR Environmental Consulting Pty Ltd                 | Arnold Bittner            |   |
| SLR Environmental Consulting Pty Ltd                 | Winnie Kambinda           |   |
| TriStone Africa (TSA)                                | Joao Bismarck –           | Director                                    |
| TriStone Africa (TSA)                                | Keron Domingos –          | Geologist                                   |
| TriStone Africa (TSA)                                | John Arbuthnott –         | O&G Asset Manager                           |
| United Nations Development Program                   | Tertu Iileka              |   |
| Valco Pipes cc                                       | Astrid Detering           |   |
| Valco Pipes cc                                       | Eric Detering             |   |
| Victor Digital Energy                                | Hannes van der Merwe      |   |
| Water Management & Engineering Solutions             | leonard Shoopala          |   |
| Windhoek Residents & Ratepayers Association (WRRA)   | Freya Lund                |   |
| Windhoek Schlachtereij                               | Mr. Eduard Keys           | GM  |
| WML Consulting Engineers                             | Jurgen Hennes             |   |
| Young Achievers Empowerment Project (Rundu)          | Musore Evalistus Kanyanga |   |
|  | Mirja Sasse               |   |
|  | Hermann Hess              |   |

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|--|-------------------------------|--|
|  | Maike Prickett                |  |
|  | Mary Seely                    |  |
|  | Mike Scott                    |  |
|  | Anne Scott                    |  |
|  | Alex                          |  |
|  | Etuna Josua                   |  |
|  | Harold Kisting                | Town and Regional Planner                                  |
|  | Ms A. Uugwanga                |  |
|  | Quzette Bosman                |  |
|  | Cllr. Shaalukeni John Moonde; |  |
|  | Silas Nangombe                |  |
|  | Martha Sam                    | Student  |
|  | Patrick Hilger                | Mentor for Farmers Support Programme & Tourism Hospitality |
| <b>Targeted for the Kavango East meeting</b>                   |                               |  |
| Rundu Town Council   | Mr. H. Leevi                  | Mayor  |
|  | Mr. Haironga                  | CEO  |
|  | Mr. Haingura                  | Strategic Executive Corporate Services                     |
| Kavango East Regional Council                                  | Hon. Samuel Mbambo            | Regional Governor  |
|  | D.H. Hamutenya                | Regional Governor's Office                                 |
|  | S.H. Kantema                  | Chief Regional Officer                                     |
|  | G.P. Sinimbo                  | Director: Planning & Development Services                  |
|  | M. Nauyoma                    | D/Director Planning & Development Services                 |
|  | M.M. Mangundu                 | Economic Planner   |
| Regional Councillors   |                               |  |
| Traditional Authorities  | Alfons Kaundu                 | Mbunza TA - Chief  |
|  | Angelina Matumbo Ribebe       | Sambyu TA - Chief  |
|  | Kassian Shiyambi              | Gciriku TA - Chief   |
|  | Daniel Sientu Mpasi           | Kwangali TA- Chief   |
|  | Erwin Mbambo Munika           | Hambukushu TA - Chief                                      |
|  | Nairenge Kertuu               | Ukwangali Traditional Authority                            |
| Local Development Committee (LDC)                              |                               |  |
| Land Boards  |                               |  |
| Conservancies in Kavango East Region                           |                               |  |
| Local Authorities  |                               |  |
| Line Ministries (Regional Representatives) and Parastatals     |                               |  |
|  |                               |  |
| <b>Targeted IAPs for the North Central meeting in Oshakati</b> |                               |  |
| Oshana Regional Council  | Clemens Kashuupulwa           | Governor   |
|  | Mr. Martin Elago              | Chief Regional Officer                                     |
| Ondangwa Town Council  | Leonard Negonga               | Mayor  |
|  | Paulus Ndjodhi                | CEO  |
| Ongwediva Town Council   | Jason Asino                   | Mayor  |
|  | Damien Neghumbo               | CEO  |
|  | David Mulokoshi               | Senior Manager for Planning and Technical Services         |

|   |                               |   |
|---|-------------------------------|---|
| Oshakati Town Council                         | Onesmus Shilunga              | Mayor   |
|   | Vicky Phillipus               |   |
|   | Werner Iita                   | CEO   |
| Omusati Regional Council                      | Hon. Erick Endjala            | Governor  |
|   | Amutenya Andowa               | Chief Regional Officer  |
|   | Irene Andjengo                | PA to the CRO   |
| Outapi Town Council                           | Matheus Ndeshitila            | Mayor   |
|   | Matheus Nashilongo<br>Ananias | CEO   |
| Ruacana Town Council                          | Hon. Andreas Shimtama         | Mayor   |
|   | Victoria Kapenda              | CEO   |
| Oshikuku Town Council                         | Mbockoma Mungandjera          | Mayor   |
|   | Julia Kakwambo Nakale         | CEO   |
|   | Cecilia Shilongo              | Personal Assistant to CEO   |
| Okahao Town Council                           | David Ifai                    | Mayor   |
|   | Difbertus Mukulu              | CEO   |
|   | Sofia Iitula                  | Secretary to CEO  |
| Oshikoto Regional Council                     | Hon. Henock Kankoshi          | Governor  |
|   | Mr. Frans Enkali              | Chief Regional Officer  |
| Oshana Regional Council                       | Usko Nghamwa                  | Governor  |
|   | Phillipus Uusiku              | Chief Regional Officer  |
|   | Elizabeth Aimbondi            | Private Secretary   |
| Enhana Town Council                           | Julia Shikongo                | Mayor   |
|   | Walde Ndezashiya              | CEO   |
| Helao Nafidi Town Council                     | Paulus Haikali                | Mayor   |
|   | Inge Ipinge                   | CEO   |
| Ministry of Agriculture - Eenhana             |                               |   |
| Ministry of information-Oshana Region         |                               |   |
| NCCI  | Iindji Tomas                  | Chair of the Northern NCCI  |
| Sam Nuuyoma multipurpose youth centre         |                               |   |
|   |                               |   |
| <b>Targeted for the Khomas Region meeting</b> |                               |   |
| <b>City of Windhoek</b>                       | Muesaa Kazapua                | His Worship, the Mayor  |
|   | Mr. Edward Kaweshe            | Acting CEO  |
|   | Ms. Lydia Amutenya            | Public Relations Officer PRO  |
|   | Cllr. S.J. Moonde             | Councillor  |
|   | Pierre van Rensburg           | Strategic Executive:<br>Infrastructure, Water and<br>Technical Services |
|   | Ferdinand Brinkman            | Chief Engineer: Bulk Water<br>and Waste Water Division                  |
|   | Johan de Vos                  | Chief Engineer: Engineering<br>Services Division                        |
|   | Levinia Araes                 | Executive Secretary:<br>Infrastructure Water Technical<br>Services      |
|   | Mr. Friedrich Koujo           | Manager: Environment<br>Division  |
| Khomas Regional Council                       | Ms. Laura Mcloed-Katjirua     | Governor  |
|   | Moses !Omeb                   | Advisor to the governor   |
|   | Indileni Hamana               | Private Secretary   |
|   | Clemence Maswila              | Chief Regional Officer  |

|  |                         |                                |
|--|-------------------------|--------------------------------|
| Windhoek West Constituency                               | Hon. George Trepper     | Councillor                     |
|  | Aina Shikukumwa         | Chief Control Officer          |
| Tobias Hainyeko Constituency                             | Hon. Zulu shitongeni    | Councillor                     |
| Khomasdal North Constituency                             | Sam Niilenge            | Chief Control Officer          |
| Katutura Central Constituency                            | Hon. Ambrosius Kandji   | Councillor                     |
|  | Festus K. Akulo         | Chief Control Officer          |
| Windhoek East Constituency                               | Hon. Nic Kruger         | Councillor                     |
|  | shawn Fredericks        | Chief Control Officer          |
| Moses Garoeb Constituency                                | Hon. David Martin       | Councillor                     |
|  | Hon. Johanna Shilongo   | Chief Control Officer          |
| Windhoek Rural Constituency                              | Hon. Fredrick Arie      | Councillor                     |
|  | Nastali Kashila         | Chief Control Officer          |
| John Pandeni Constituency                                | Hon. Rachel Jacob       | Councillor                     |
|  | Ashipala Petrus         | Chief Control Officer          |
| Katutura East Constituency                               | Hon. Elima Ndapuka      | Councillor                     |
|  | Helena Makumbi          | Chief Control Officer          |
| Samora Machel Constituency                               | Hon. Abisa Anghula      | Councillor                     |
|  | Sakaria Amupanda        | Chief Control Officer          |
| <b>Targeted for All Meetings</b>                         |                         |                                |
| <b>Ministries and Parastatals</b>                        |                         |                                |
| Office of the President                                  | Samuel /Goagoseb        | Permanent Secretary            |
| Office of the Prime Minister                             | Nangula Mbako           | Permanent Secretary            |
| Ministry of Agriculture, Water and Forestry              | Mr. Abraham Nehemia     | Acting Permanent Secretary     |
|  | Hon. John Muturua       | Minister                       |
| Department of Water Affairs                              | Mr. Abraham Nehemia     | Deputy Secretary: Water        |
| Ministry of Mines & Energy                               | Mr Simeon Negumbo       | Permanent Secretary            |
|  | Mr. Erasmus Shivolo     | Mining Commissioner            |
|  | Teopolina Haseela       | Chief Public Relations Officer |
|  | Mr. Obeth Kandjoze      | Minister                       |
|  | Gaby Schneider          | Director: Geological Survey    |
| Ministry of Fisheries and Marine Resources               | Dr Moses Maurihungirire | Permanent Secretary            |
| Ministry of Works and Transport                          | Mr. Willem Goeieman     | Permanent Secretary            |
| Ministry of Environment & Tourism                        | Dr. Malan Lindeque      | Permanent Secretary            |
|  | Theo Nghitila           | Environmental Commissioner     |
|  | Dr. Freddy Sikabongo    | Dep. Dir DEA                   |
|  | Saima Angula            | Chief Development Planner      |
| National Planning Commission                             | Tom Alweendo            | Director General               |
|  | Andries Leevi Hungamo   | PS, NPC                        |
|  | David Mulenga           |                                |
| Ministry of Information, Technology and Communication    | Mbeuta Ua-Ndjarakana    | Permanent Secretary            |
| Ministry of Industrialization, Trade and SME Development | Gabriel Sinimbo         | Permanent Secretary            |
| Ministry of Finance                                      | Ericah Shafudah         | Permanent Secretary            |
|  | Mr Calle Schlettwein    | Minister                       |
|  | Hon. Natangwe Ithete    | Deputy Minister                |
| Poverty Eradication and Social Welfare                   | I-Ben Nashandi          | PS                             |
| Ministry of Public Enterprises                           | Frans Tsheehama         | PS                             |

|   |                            |                          |
|---|----------------------------|--------------------------|
| Ministry of Land Reform                               | Peter Amutenya             | PS                       |
| Ministry of Higher Education, Training and Innovation | Alfred Van Kent            | Permanent Secretary      |
|   | Hon. Becky Ndoze-Ojo       | Deputy Minister          |
|   | Hon Katrina Hanse-Himarwa  | Minister                 |
| Ministry of Education, Arts and Culture               | Sanet Steenkamp            | Permanent Secretary      |
| Ministry of Labour and Social Welfare                 | Bro-Mathew Shinguandja     | PS                       |
| Ministry of International Relations and Cooperation   | Amb.Selma Ashipala-Musavyi | Permanent Secretary      |
| Ministry of Defence                                   | Mr. Petrus Shivute         | Permanent Secretary      |
| Ministry of Urban and Rural Development               | Sophia Shaningua           | Minister                 |
|   | Mghidinua Daniel           | Permanent Secretary      |
| NamWater  | Vaino Shivute              | <u>CEO</u>               |
| NamPower  | Paulinus Shilamba          | Managing Director        |
|   | Horst Mutschler            | Environmental Manager    |
| TransNamib  | Hippy Tjivikua             | CEO                      |
| Roads Authority                                       | Mr. Conrad Mutonga Lutombi | CEO                      |
| Telecom   | Theo Klein                 | CEO                      |
| Bank of Namibia                                       | Ipumbu Shiimi              | Reserve Bank Governor    |
|   | Ebson Uanguta              | Deputy Bank Governor     |
| <b>Private Sector and Specialists</b>                 |                            |                          |
| Chamber of Mines of Namibia                           | Malango, Veston            | General Manager          |
| Chamber of Mines of Namibia                           | Doreen Meyer               | PA to GM                 |
| National Chamber of Commerce and Industry             | Mr. Tarah Shaanika         | CEO                      |
| National Chamber of Commerce and Industry             | Ms. A Negongo              | PA to the CEO            |
| Engineering Council of Namibia                        |                            |                          |
| Namibian Institute of Town and Regional Planners      | <u>Harold Kisting</u>      |                          |
| Walvis Bay Corridor Group                             |                            |                          |
| Construction Industries Federation of Namibia         |                            |                          |
| B2Gold  | M. Dawe                    |                          |
| Omitiomire  | K. Hartmann                |                          |
| Navachab  | M. Bell                    | Environmental Scientist  |
| Navachab  | R. Uwe                     |                          |
| Ohorongo Cement                                       | H.W. Schütte               |                          |
| A Speiser Environmental Consultants                   | A. Speiser                 | Director                 |
| AMUSHA  | Harald Schutt              | Director                 |
| Ashby Associates cc                                   | Auriol Ashby               | Social Consultant        |
| Coastal Tourism Association of Namibia (CTAN)         | Peter van Ginkel           |                          |
| Desert Research Foundation of Namibia, DRFN           | Dr. Martin Schneider       | Director                 |
| EAPAN   | Stephanie Van Zyl          | Chairperson              |
| Earthlife Namibia                                     | Kohrs, Bertchen            |                          |
| Ecoserve  | Scott, Mike & Ann          | Environmental consultant |
| EnviroMEND  | Henschel, Joh              | Executive Director       |

|  |                        |                            |
|--|------------------------|----------------------------|
| Gogabeb Training and Research Centre                           | Theo Wassenar          | Executive Director         |
| Hospitality Association of Namibia                             | Gitta Paetzold         |                            |
| Namibia Environment and Wildlife Society (NEWS)                | Hilda-Marie Botha      | Office Coordinator (NEWS)  |
| Namibia Scientific Society                                     | Manager                |                            |
| Namibian Coast Conservation and Management Project (NACOMA)    | Cameron Kandjii        | Acting Project Coordinator |
| National Botanical Research Institute (NBRI)                   | Loots, Sonja           | Curator / Red List officer |
| NBRI   | Irish, John            |                            |
| NBRI   | Rügheimer, Silke       |                            |
| NNF  | Angus Middleton        | Director                   |
| NNF  | Lawrie Harper-Simmonds | Economist                  |
| Polytechnic of Namibia   | Hauptfleisch, Morgan   |                            |
| Polytechnic of Namibia   | Strohbach, Ben         | Remote sensing             |
| Quaternary Research Services cc)                               | Kinahan, John          | Director                   |
| RAISON   | Dr John Mendelsohn     | Land Use                   |
| SLR Consulting   | Bittner, Arnold        | Hydrogeologist             |
| SLR Consulting   | Werner Petrick         | -                          |
| Southern Africa Institute for Environmental Assessment (SAIEA) | Tarr, Peter            | Independent Reviewer       |
| Sustainable Solutions Trust                                    | Dr Chris Brown         |                            |
| TASA (Tour and Safari Association of Namibia)                  | Nathaly Ahrens         |                            |
|  | Cunningham, Peter      | Chairperson                |
|  | Gerald Kolb            |                            |
|  | Dr. Jackie King        |                            |
|  | C. Mannheimer          | Botanist                   |
|  | Mr. Uda Nakamhela      | Lawyer                     |
| <b>Media</b>   |                        |                            |
| NBC  |                        |                            |
| NBC National Radio   |                        |                            |
| The New Era  |                        |                            |
| The Republikein  |                        |                            |
| Algemeine Zeitung  |                        |                            |
| The Namibian   |                        |                            |
| Informante   |                        |                            |
| Insight  |                        |                            |
| Windhoek Observer  |                        |                            |
| Channel 7  |                        |                            |
| Radio Wave 96.7FM  |                        |                            |
| Namibia Economist  |                        |                            |
| Radio 99FM   |                        |                            |





**Ministry of Agriculture,  
Water and Forestry**

**THE SEARCH FOR A LONG TERM WATER SOLUTION FOR THE  
CENTRAL AREA OF NAMIBIA AND THE CUVELAI**

The minimal inflow into the three dams in the Central Area of Namibia this past rainy season has reinforced the reality of crippling water shortages in the near future. If the next rainy season is as bad as this year's and nothing is done to save water now and to increase supply it is possible that the area will run dry by May / June 2016.

These are some of the latest results emerging from an engineering study commissioned in August 2013 by the Ministry of Agriculture, Water and Forestry (MAWF). Together with the MAWF, NamWater and the City of Windhoek (CoW) form part of the joint Project Steering Committee overseeing this study. The objective of the pre-feasibility phase of the study is to investigate all alternative water sources which can be developed to secure a long-term, affordable water solution for the Central Area of Namibia (CAN), including parts of the Otjozondjupa and Omaheke Regions, and the Cuvelai Area up to 2050. The pre-feasibility phase of this work is expected to be finalized by mid-2016.

The pre-feasibility study is being undertaken by an Engineering Team (comprised of Lund Consulting Engineers CC and Seelenbinder Consulting Engineers CC incorporating other companies) and an independent environmental and social consortium - the Sustainable Solutions Trust (for the EIA) in collaboration with the Southern African Institute for Environmental Assessment (external review).

The Engineering Team estimated the water demands in the Central and Cuvelai Areas up to 2050 and compared these with the yields (capacities) of the current water sources which supply these areas with water. The yields of other potential water sources were investigated in order to determine whether these sources could be used to augment or provide back-up to the existing water supply to these areas to help meet the expected increase in future water demands. Potentially feasible options to link additional water sources to the Central and Cuvelai Areas of Namibia for either augmentation or back-up have been prepared.

Computer modelling has been used to investigate the expected water demand / supply situation in the CAN for the next 35 years. Due to the precarious nature of water supply in this area, two strategies have been put forward to reduce the expected future supply shortfalls:

- A short-to-medium-term strategy which can be implemented in phases over about 3-5 years, with the aim of reducing shortfalls up to 2022/23,
- A long-term strategy which must be implemented simultaneously with the short-to-medium-term strategy, with the aim of securing the water supply up to 2050.

The next phase of the project will now commence where the Environmental team will screen the available options to identify all environmental and social impacts, whether any of these are critical and how impacts could be best mitigated or avoided. The final judgement on the favoured option(s) will be made on the basis of the results obtained from the feasibility study and subsequent EIA which will most likely form part of the next phase.

**Public meetings** to share information, discuss the options and their potential impacts are planned as follows:

| Place    | Date and time                                     | Venue                              |
|----------|---|------------------------------------|
| Rundu    | 21 <sup>st</sup> July, Tuesday<br>08h30 – 13h00   | Kavango East Regional Council Hall |
| Oshakati | 22 <sup>nd</sup> July, Wednesday<br>08h30 – 13h00 | Oshandira Lodge, Oshakati          |
| Windhoek | 24 <sup>th</sup> July, Friday<br>08h30 – 13h00    | NamPower Conference Centre         |

### Preliminary Information

Focusing on the CAN, five medium-term actions are recommended for implementation in the next 3-5 years to alleviate supply shortfalls in the next approximately 7 or 8 years. Together these are estimated to cost about N\$1.3 billion.

By 2022/23, the water demands in the Central Area of Namibia will be so great that even with all five of these medium-term projects implemented, there would still be a high and growing probability of water shortages.

Having studying the projected future water demands and all the supply options, the Engineering Team has narrowed down the long term supply possibilities to two options:

1. Bringing water from the Okavango River, or;
2. Pumping desalinated water up from the coast.

From the modelling, the engineers propose that the abstraction of water from the Okavango River, which will be conveyed towards the CAN along the Eastern National Water Carrier (ENWC) canal, should increase at almost the same rate as the increase in water demand in the CAN. By 2049/50, the median extraction is estimated to be 40.5 Mm<sup>3</sup>/annum whilst the maximum abstraction is estimated to be about 64 Mm<sup>3</sup>/annum. These abstraction levels represent about 0.75 and 1.2% respectively of the average annual Okavango River flow at Rundu, and 0.41% and 0.65%

respectively of the average annual flow of the Okavango River near the point of entering Botswana.

By comparison, the option of desalinated water would require the production of slightly less water as the losses in conveying this water to the CAN are smaller with piped transfer (desalination option) compared with losses along the ENWC canal (Okavango option). By 2050, the maximum anticipated production of desalinated water would be 57 Mm<sup>3</sup>/annum.

It is doubtful whether either option can be fully implemented in less than 10 years and until then, water supply shortfalls in the CAN may be expected until full implementation of one of these sources.

Background to this study and a set of reports on progress to date are available on the **Study website**: [www.NamibiaWaterAugmentation.com](http://www.NamibiaWaterAugmentation.com)

Interested and Affected Party (I&AP) are invited to register on the website to be informed about new reports and further public meetings. You can also register with: Auriol Ashby, [ashby@aacc.com.na](mailto:ashby@aacc.com.na). Cell: 081 254 5342.

### Study Timeframe

| Planned Timeframes        | Main Project Components  |
|---------------------------|--|
| February 2014             | Project launch by the Minister of the MAWF, Hon. John Mutorwa  |
| February 2015 - June 2015 | Assess water demand up to 2050;<br>Identify water source options to address shortfall;<br>Model and critically analyse technical options, including combinations and hybrids;<br>Scoping assessment of environmental and social impact issues for each option. |
| July 2015                 | 1 <sup>st</sup> round of public meetings – Rundu, Oshakati & Windhoek  |
| August-September 2015     | Update findings;<br>Agree on preferred option(s) requiring more detailed study (not more than 3 options).  |
| October –January 2016     | Further investigate, analyse and synthesise technical, financial, environmental and social investigations including impacts, implications & potential mitigation;  |
| First Quarter 2016        | 2 <sup>nd</sup> round of public meetings – Rundu, Oshakati & Windhoek  |
| Second Quarter 2016       | Prepare Pre-feasibility Study Report & Environmental Scoping Report;<br>Prepare Terms of reference for full feasibility study & EIA on preferred option(s).  |

**Issued by:**

**Margaret S. Kalo**

Chief Public Relations Officer  
Ministry of Agriculture, Water and Forestry  
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Cell: 0812581511/081122 6797  
Email: [kalom@mawf.gov.na](mailto:kalom@mawf.gov.na)

**Abraham Nehemia**

Under Secretary Department Water Affairs and Forestry  
Ministry of Agriculture, Water and Forestry  
Tel.: 061-208 7699  
Cell: 081 127 5151  
Email: [NehemiaA@mawf.gov.na](mailto:NehemiaA@mawf.gov.na)

**Victor Slinger**

Project Co-ordinator  
Ministry of Agriculture, Water and Forestry  
Tel.: 061-208 7268  
Cell: 081 140 0086  
Email: [slingerv@mawf.gov.na](mailto:slingerv@mawf.gov.na)

## APPENDIX C SIGNED ATTENDANCE SHEETS

### Kavango East Consultative Meeting



Ministry of Agriculture,  
Water and Forestry



#### THE SEARCH FOR A LONG TERM WATER SOLUTION FOR THE CENTRAL AREA OF NAMIBIA AND THE CUVELAI

Date: 21<sup>st</sup> July 2015

Time: 08h30

Venue: Kavango East Regional Council Hall

| Your name               | Name of Organisation     | Your Position              | Email – Large clear letters please | Cell                  |
|-------------------------|--------------------------|----------------------------|------------------------------------|-----------------------|
| S.H. Kantwa             | Kavango R. Council       | CRO                        | shkantwa@kavango.gov.na            | 0811 244390           |
| U.H. HAUSIYIKU          | DIRIKU TA                | LAND Board                 |                                    | 0813896503            |
| M. SHIKONGO             | KRC                      | <del>Commissioner</del>    |                                    | 0812398701            |
| H.K. Mangundy           | Kavango Regional Council | Councillor                 | mangundyhk@gmail.com               | 081 211 9914          |
| <del>M.T. Mpareke</del> | <del>MAWF-DWSSC</del>    | <del>NER. DD. Acting</del> | <del>mparekem@mawf.gov.na</del>    | <del>0812717136</del> |
| M.T. Mpareke            | MAWF-DWSSC               | NER. DD. Acting            | mparekem@mawf.gov.na               | 0812717136            |
| A-M-Sizuba              | R-TWN Council            | Councillor                 | ajensety                           | 0812960740            |
| Chris Brown             | SST                      |                            | chrisbrown.namibia@gmail.com       | 061 402373            |
| Romana HAROSA           | RTC                      | C.E.O                      | kavango@ruralforum.org             | 0811281865            |
| Hr. S.K. Mbanda         | Governor's office        | Reg. Commr Ext             |                                    | 267243                |



Ministry of Agriculture,  
Water and Forestry



**THE SEARCH FOR A LONG TERM WATER SOLUTION FOR THE CENTRAL AREA OF NAMIBIA AND THE CUVELAI**

Date: 21<sup>st</sup> July 2015

Time: 08h30

Venue: Kavango East Regional Council Hall

| Your name          | Name of Organisation                    | Your Position             | Email – Large clear letters please | Cell         |
|--------------------|---|---------------------------|------------------------------------|--------------|
| John Heita         | Kavango RC                              | Town & Regional planner   | he@iway.na                         | 081229272    |
| Evalistus Musore   | Young Achievers<br>Empowerment          | Co-ordinator              | evanskmusore@gmail.com             | 0813868704   |
| Floriano R. KAUMBA | MAWF – DGS                              | SNR. Adm'n. Officer       | Kaumbafo@mawf.gov.na               | 0811555154   |
| Patrick Hilge      | FSP-G12                                 | Mentor                    | hilgep@ckay.na                     | 081-2881038  |
| Hendrik Göhmann    | FSU - <del>FSU</del><br>Hendrik Gohmann | Researcher/Academic Staff | Hendrik.gohmann@uni-jena.de        | /            |
| NP du Plessis      | NamWater                                | Environmentalist          | Plessisn@namwater.com.na           | 081 127 9040 |
| H.I. PETERS        | City of Windhoek                        | Section Engineer          | Immo.Peters@windhoekcc.org.na      | 081140 2467  |
| B.F. JOHNSON       | SNUSCC                                  | CONSULTANT                | BFJ@SNUSCC.CO.NA                   | 081 1282469  |
| L.H. THILLOTHO     | KRC                                     | Director                  | lthillotho@kavango.gov.na          | 0811 080561  |
| A.T. MAKONGWA      | KRC                                     | Director                  | atmakongwa@kavango.gov.na          |              |



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Ministry of Agriculture,  
Water and Forestry



**THE SEARCH FOR A LONG TERM WATER SOLUTION FOR THE CENTRAL AREA OF NAMIBIA AND THE CUVELAI**

Date: 21<sup>st</sup> July 2015

Time: 08h30

Venue: Kavango East Regional Council Hall

| Your name          | Name of Organisation | Your Position | Email – Large clear letters please  | Cell       |
|--------------------|----------------------|---------------|-------------------------------------|------------|
| KK MURIKI          | KRC                  | COUNCILOR     | murikik@yahoo.com                   | 0812944687 |
| S. WATUDIMU        | MRC                  | COUNCILOR     | Watudimu@inteli.com.na              | 0812169002 |
| KAVE TO            | UTACL                | CHIEF COUNCIL |                                     | 0812812684 |
| Amb Dr. St. Mbando | GOVERNOR             | GOVERNOR      | Sakanba_scm@gmail.com<br>0811555405 | 0811555405 |
| Syebile Aifons     | OTBMC                | MEMBER        | Sheliambu@a@mail.com<br>0812272952  | 0812272452 |
| T. QHUYENDERE      | HTA                  | MEMBER        | mbungatugheyenda@yahoo.com          | 0812926074 |
| LH. HAMUTENYA      | CCM                  | SECRETARY     | lizhamutenya@gmail.com              | 0812178930 |
| A. M. ASHBY        | Consultants          |               | ashby@aacc.com.na                   | 0812409678 |
| H. BRUCE           | LCE                  | ENGINEER      | bruceh@lce.com.na                   | 081223339  |



Ministry of Agriculture,  
Water and Forestry



**THE SEARCH FOR A LONG TERM WATER SOLUTION FOR THE CENTRAL AREA OF NAMIBIA AND THE CUVELAI**

Date: 21<sup>st</sup> July 2015

Time: 08h30

Venue: Kavango East Regional Council Hall

| Your name     | Name of Organisation | Your Position | Email – Large clear letters please | Cell       |
|---------------|----------------------|---------------|------------------------------------|------------|
| EC. Kamnjing  | KRC                  | S.A.O.        | ordy.ek2@gmail.com                 | 0811800100 |
| SIKONKO J.S.  | KRC                  | COUNCILLOR    | -                                  | 0812202560 |
| Lazarus       | MCR                  | Chief Officer | Lazaruskahat@mcr.gov.na            | 0812367076 |
| Saheteo Elwig | MAWF                 | AT            | -                                  | 0815496253 |
| T.K. Mutaba   | Roads Authority      | Area Manager  | mutabat@ra.org.na                  | 0812122336 |
| AS Hakusembe  | Land Board           | Member        | annahakusembel@gmail.com           | 0811511554 |
|               |                      |               |                                    |            |
|               |                      |               |                                    |            |
|               |                      |               |                                    |            |
|               |                      |               |                                    |            |





Ministry of Agriculture,  
Water and Forestry



**THE SEARCH FOR A LONG TERM WATER SOLUTION FOR THE CENTRAL AREA OF NAMIBIA AND THE CUVELAI**

Date: 21<sup>st</sup> July 2015

Time: 08h30

Venue: Kavango East Regional Council Hall

| Your name          | Name of Organisation  | Your Position | Email – Large clear letters please | Cell       |
|--------------------|-----------------------|---------------|------------------------------------|------------|
| 1. Chipandeka S.V. | RUTC                  | VE-T-Trainee  | chipandekadenis@gmail.com          | 0812834553 |
| 2. Mufenda S.N     | Women engaged in Army | Chairperson   | snmufenda@yahoo.com                | 0812061479 |
| 3. Ac. Pysamba     | UNAM - Rundu          | ESTATE D      | antsamba@unam.na                   | 0812785414 |
|                    |                       |               |                                    |            |
|                    |                       |               |                                    |            |
|                    |                       |               |                                    |            |
|                    |                       |               |                                    |            |
|                    |                       |               |                                    |            |
|                    |                       |               |                                    |            |
|                    |                       |               |                                    |            |

North Central Consultative Meeting



Ministry of Agriculture,  
Water and Forestry



THE SEARCH FOR A LONG TERM WATER SOLUTION FOR THE CENTRAL AREA OF NAMIBIA AND THE CUVELAI

Date: 22<sup>nd</sup> July 2015

Time: 08h30

Venue: Oshandira Lodge, Oshakati

|    | Your name       | Name of Organisation (or member of the public) | Your Position     | Email – Large clear letters please | Cell         |
|----|-----------------|--|-------------------|------------------------------------|--------------|
| 01 | P Nambundurog   | Oshana <sup>RC</sup>                           | SPECIAL Advisor   | gouetn02 & Oshangwanarc.gov.na     | 0816229925   |
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|    | SILAS NANGOMBE  | MEMBER OF public                               | public member     | -                                  | 0812409091   |
|    | MARTIN ELAGO    | OSHANA RC                                      | CRD               | melago@oshanarc.gov.na             | 0811287286   |
|    | N. MAVULU       | "  | DD. PLANNING      | nmarulu@oshanarc.gov.na            | 0811283029   |
|    | B JOHANNES      | AWSSC OSHANA                                   | SRWSO             | johannesbertus49@gmail.com         | 0813216045   |



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**THE SEARCH FOR A LONG TERM WATER SOLUTION FOR THE CENTRAL AREA OF NAMIBIA AND THE CUVELAI**

Date: 22<sup>nd</sup> July 2015

Time: 08h30

Venue: Oshandira Lodge, Oshakati

| Your name       | Name of Organisation (or member of the public) | Your Position | Email – Large clear letters please | Cell         |
|-----------------|--|---------------|------------------------------------|--------------|
| A. KAPWA        | OMUNDA RL                                      | CEO           | info@omunda-rl.gov.na              | 0813104069   |
| Michael Asind   | Ohuhwambo Regional                             | Director      | masimo@ohuhwambo.na                | 0811485684   |
| Lucas A         | DWSSC Changwena                                | SAT           |                                    | 0812672242   |
| Simson NANGHAWA | DWSSC Changwena                                | SUWSD         | Nanghawa.S@mwf.gov.na              | 0811480973   |
| M. NANGHAWA     | NAMP   | JOURNALIST    | mathiasn@namp.org                  | 0812518979   |
| A. Ashby        | Sustainable Solutions T.                       | Consultant    | ashby@aacc.com.na                  | 081 240 9678 |
| Chris Brown     | " " "  | "             | chrisbrown                         |              |
|                 |  |               |                                    |              |
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Date: 22<sup>nd</sup> July 2015

Time: 08h30

Venue: Oshandira Lodge, Oshakati

| Your name          | Name of Organisation<br>(or member of the public) | Your Position | Email - Large clear letters please | Cell         |
|--------------------|---|---------------|------------------------------------|--------------|
| Onesimus Sthilungu | Oshakati Town Council                             | Mayor         | Themayer@o1466-na                  | 08 11 248598 |
| Ileni Namdyata     | Informante  | Reporter      | nesmuna@fgh.na                     | 087 2021667  |
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Windhoek Consultative Meeting



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THE SEARCH FOR A LONG TERM WATER SOLUTION FOR THE CENTRAL AREA OF NAMIBIA AND THE CUVELAI

Date: 24 July 2015 ..... Time: 08:30 ..... Venue: Nampos Convention Centre

| Your name         | Name of Organisation | Your Position        | Email – Large clear letters please | Cell             |
|-------------------|----------------------|----------------------|------------------------------------|------------------|
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| PETER NIIT        | OT-CAE-ARC           | CEO                  | detepna@inag.na                    | +264 81 124 1609 |
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| Erwin Schwandt    | Sentamer             | Technical Operations | erwin.schwandt@sentamer.com.na     | 081 146 3737     |
| Andreas Lukas     | NUPROX CC            | Project Manager      | andreaslukas@nuprox.com.na         | 0815 782 376     |
| Esra Kavetu       | World Possible       | Country director     | esra@worldpossible.org             | 0816743466       |
| RIAN STEN         | SCE                  | Director             | rian.sten@sce.com.na               | 081 127 5006     |
| Jerrisa Kuhn      | Ashby Associates     | Consultant           | jerrisa.kuhn@gmail.com             | 081 2911 795     |



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**THE SEARCH FOR A LONG TERM WATER SOLUTION FOR THE CENTRAL AREA OF NAMIBIA AND THE CUVELAI**

Date: 24<sup>th</sup> July 2015 ..... Time: 08:30 ..... Venue: Nampos Convention Centre

| Your name         | Name of Organisation | Your Position          | Email - Large clear letters please | Cell       |
|-------------------|----------------------|------------------------|------------------------------------|------------|
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**THE SEARCH FOR A LONG TERM WATER SOLUTION FOR THE CENTRAL AREA OF NAMIBIA AND THE CUVELAI**

Date: 24<sup>th</sup> July Time: 8:30 Venue: Nampower Convention Centre

| Your name         | Name of Organisation | Your Position          | Email - Large clear letters please    | Cell        |
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| Your name        | Name of Organisation | Your Position        | Email – Large clear letters please | Cell         |
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Date: 24<sup>th</sup> July Time: 8:30 Venue: Nampower Convention Centre

| Your name          | Name of Organisation       | Your Position              | Email – Large clear letters please | Cell         |
|--------------------|----------------------------|----------------------------|------------------------------------|--------------|
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| Your name             | Name of Organisation   | Your Position         | Email – Large clear letters please | Cell         |
|-----------------------|------------------------|-----------------------|------------------------------------|--------------|
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| G. Tshipa             | City of Windhoek       | Environmentalist      | Grazje.Tshipa@windhoekcc.na        | 290 2373     |
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| Your name     | Name of Organisation | Your Position          | Email – Large clear letters please | Cell         |
|---------------|----------------------|------------------------|------------------------------------|--------------|
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| Your name      | Name of Organisation    | Your Position | Email - Large clear letters please | Cell         |
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| M. Munton      | Channel 7 Radio         | News Reporter | marlise@k7.com.na                  | 0811288517   |
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| L. Kangandjela | Late Global Invest      | Member        | lishite2@live.com                  | 0811273646   |