



# Governance of Groundwater Resources in Transboundary Aquifers (GGRETA Project)

## - Phase 2 -

### Stampriet Transboundary Aquifer System (STAS)

**HIGH LEVEL MEETING**  
3-4 November 2016  
UNESCO Headquarters, Paris, France

**- FINAL DRAFT REPORT -**

## **1. BACKGROUND**

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Within the framework of the “Governance of Groundwater Resources in Transboundary Aquifers” (GGRETA) project, funded by the Swiss Agency for Development and Cooperation (SDC), the Governments of Botswana, Namibia and South Africa, jointly with the UNESCO International Hydrological Programme (UNESCO-IHP) are undertaking an assessment of the Stampriet Transboundary Aquifer System (STAS). The importance of the STAS to the region draws from the fact that it is the only permanent and dependable water resource in the area, which covers 87,000 sq. km from Central Namibia into Western Botswana and South Africa’s Northern Cape Province.

The first phase of the project (2013-2015) focused on an in-depth assessment of the STAS which allowed establishing a shared science based understanding of the resource. In accordance to the recommendations and suggestions provided by Member States during the Final Meeting of the first phase of the project, held on 15-16 December 2015 at UNESCO Headquarters, the activities of the second phase of the project (2016-2018) will focus on consolidating the technical results achieved and the tools developed in the first phase, and on strengthening capacity on groundwater governance at the national and transboundary levels in order to support the process of establishment of a Multi-Country Cooperation Mechanism (MCCM). The establishment of the STAS MCCM would be the first example of a mechanism for the management and governance of a transboundary aquifer in Southern Africa.

A work plan of activities for GGRETA Phase 2 (2016-2018) was then prepared and presented to Government Officials during the STAS Technical Inception Meeting held on 19 September 2016 at Birchwood Hotel, Johannesburg, South Africa. Government Officials confirmed the adoption of the main objectives and outcomes presented in the Final Meeting of the first phase of the project and on the project document, and considered the detailed work plan for action to be undertaken in the second phase from September 2016 to April 2017. Discussions undertaken at this meeting would then be officially endorsed by High-Level Government Representatives at a High-Level Meeting to be held on 3-4 November 2016 at UNESCO Headquarters in Paris, France.

## **2. OBJECTIVES OF THE STAS HIGH LEVEL MEETING**

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The Governments of Botswana, Namibia and South Africa, jointly with UNESCO-IHP organized the GGRETA Phase 2 - STAS High Level Meeting on 3-4 November 2016 at UNESCO Headquarters, Paris, France.

The main objective of this meeting was to 1) garner the commitment of the High-Level Government Officials in attendance from the three STAS countries – Botswana, Namibia and

South Africa – to support the project goal of building cooperation among the three countries regarding the STAS and the groundwater stored in it, and 2) discuss and officially endorse GGRETA Phase 2 plan of activities and way forward on the base of the outcomes of the STAS Technical Inception Meeting held with the participation of experts from the three project countries on 19 September 2016 in Johannesburg, South Africa. Discussions held during the meeting were also aimed at endorsing a Message by the participants on Water Cooperation in Africa.

The Agenda of the meeting is attached as Annex 1 to this report. High-Level Government Officials at Permanent Secretary or Director General level from the three project countries were in attendance, as well as Permanent Delegates to UNESCO from all three STAS countries, and from the donor country (Switzerland), and High-Level Representatives from Regional Organizations such as the African Ministers' Council on Water (AMCOW), the Southern African Development Community (SADC), and the Orange-Senqu River Commission (ORASECOM) also attended the meeting. The List of Participants is attached as Annex 2<sup>1</sup>.

### **3. MAIN OUTCOMES OF THE STAS HIGH LEVEL MEETING**

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The main outcomes of the STAS High Level Meeting are listed as follows:

- High Level confirmation of the endorsement to GGRETA Phase 1 final assessment report.
- UNESCO Special Envoy for Water in Africa, H.E. Mwai Kibaki - Former President of Kenya, video message rewarding the cooperative spirit of Botswana, Namibia and South Africa.
- Message on Water and Cooperation in Africa (Annex 3).
- Official confirmation by High-Level Government Officials of the endorsement of the GGRETA Phase 2 plan of activities (Annex 4).
- Adoption of GGRETA Phase 2 organogram (Annex 5).
- Official endorsement for the set-up of a Working Group for the establishment of the STAS Multi Country Cooperation Mechanism (MCCM) (Annex 6).
- Official endorsement to establish National Transboundary Technical Groups (NTTGs) for groundwater modelling, legal and institutional, and gender issues (Annex 7).
- Official endorsement to nourish discussions at Minister's level about the establishment of the STAS MCCM.

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<sup>1</sup> All presentations are available at <https://www.dropbox.com/sh/ogipivabgg5vm78/AACgirgfliuZcqwgZ9IJHOcsa?dl=0>

- Official request by the three Countries to UNESCO-IHP to make the necessary arrangements to present GGRETA results and way forward to Ministers from the project countries at the ORASECOM Forum of the Parties in December 2016.

#### 4. DETAILED SUMMARY OF THE STAS HIGH LEVEL MEETING

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- **Welcome remarks and Opening statements (Day 1)**

Ms Blanca Jimenez-Cisneros (Director, UNESCO-IHP) opened the meeting and welcomed all participants. She conveyed her appreciation and gratitude to the Government of Switzerland and SDC for their support to the UNESCO-IHP programme and that, after having contributed to GGRETA Phase 1, they have taken the momentum generated in the first phase of the project to consolidate results achieved in a new phase of the project. She highlighted that through its Water Family, made up of more than 1500 water practitioners, 36 centres, 44 chairs and 169 IHP National Committees, UNESCO has been a key actor both technically and scientifically in addressing challenges to water security through multidisciplinary approaches to water resources management, including relevant social, economic, political and cultural aspects. She added that groundwater resources play a strategic role of sustaining human development and healthy ecosystems, and that the unique experience gained by UNESCO on the assessment of transboundary aquifers through the Internationally Shared Aquifer Resources Management (ISARM) programme, and the results of recent efforts promoted by the Global Environment Facility (GEF) and led by UNESCO (e.g. Groundwater Governance and Transboundary Water Assessment Programme – TWAP projects) together with the ones of GGRETA Phase 1 have allowed bringing to the global attention the importance of transboundary groundwater resources, and the need to substantially improve their governance. As a result, achieved results represent a timely and strategic contribution to the achievement of the Sustainable Development Goal (SDG) indicator on water cooperation (6.5.2).

H.E. Mr Godia (Ambassador, Permanent Delegate of Kenya to UNESCO) took over and acknowledged the key role of UNESCO-IHP in supporting Member States in the implementation of the Agenda 2030. He introduced a video message by the UNESCO Special Envoy for Water in Africa, H.E. Mwai Kibaki - Former President of Kenya underlining the importance of transboundary groundwater management and cooperation in Africa<sup>2</sup>.

##### Opening statements

H.E. Mr Jauslin (Ambassador, Permanent Delegate of Swiss Confederation to UNESCO) expressed that in the current security context, water is of paramount importance. Resources

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<sup>2</sup> The video message is available online at <https://www.dropbox.com/sh/ogipivabgg5vm78/AACgirgfliuZcqwgZ9IJHOcsa?dl=0>

have become a key element not only in the fight against poverty but also in terms of peace and political stability. Switzerland aims at helping other countries to better exploiting their water resources and to stem any tension, whether at regional or national level between the various users. He said that Switzerland has been particularly committed to the inclusion of water and sanitation issues in the 2030 Agenda, and to the on-going discussions at the United Nations Security Council aimed at preparing a Resolution on Water, Peace and Security. In this regard, he added that in order to meet the existing challenges, Switzerland has put forward its “Swiss Toolbox” which includes instruments such as cooperation for development, humanitarian aid, human security and respect of international law, and bilateral and multilateral implementation.

H.E. Mr Outlule (Ambassador, Permanent Delegate of Botswana to UNESCO) thanked for the invitation and expressed his deep appreciation to the Government of Switzerland for supporting the STAS study, the strong commitment to multilateralism and the financial support to the implementation of the project. He went further by highlighting the importance of water in all Botswana’s economic sectors, and that water is so important for Botswana that its national slogan mentions and currency *Pula* make reference to water: the source of all good things. In this regard, Botswana has embarked in implementing several policies and strategies such as the National Water and Wastewater Policy, the Water Conservation and Demand Management strategy and an Integrated Water Resources Management Plan. Finally, he appreciated the effectiveness and instrumentality of UNESCO as a mechanism for uniting efforts on regional cooperation over shared water resources, and emphasized that the results of GGRETA Phase 1 will now allow Countries to take necessary action to attain sustainable water resources management.

On behalf of H.E. Ms Ithete (Ambassador, Permanent Delegate of Namibia to UNESCO), Mr Nehemia (Deputy Permanent Secretary, Ministry of Agriculture, Water and Forestry, Namibia) started his statement saying that the meeting takes place in a time where we are witnessing an increase in aridity and desertification intensity along with climate change and increase of water demand, which makes the aquifer management an issue that requires more attention. He emphasized that the sustainable use of groundwater could contribute significantly towards achieving water security for poverty alleviation, as well as mitigation and adaptation to the impacts of climate change and its variability across the globe. Bearing in mind the importance and sensitivity of shared aquifers regarding their management and development, he echoed the importance to promote regional coordination and harmonization of transboundary surface and groundwater management frameworks, set a good example of cooperative management of transboundary aquifer in the SADC region, and strengthen the domestic groundwater governance capacity. He expressed his appreciation with the results of GGRETA Phase 1, and commended Countries to apply the information generated to strengthen cooperation for the benefit of all during GGRETA Phase 2. He stressed that lots of trust between actors has been created and that GGRETA Phase 2 will be crucial in allowing a better understanding of the aquifer and setting up of a consultation mechanism. He finished his

statement by thanking UNESCO-IHP, SDC, the Governments of Botswana and South Africa and all international and regional organizations present at the meeting for their effective participation in the project.

H.E. Mr Molekane (Ambassador, Permanent Delegate of Namibia to UNESCO) started his statement by stressing that thanks to the work that has been done in GGRETA Phase 1, the Groundwater Hydrology Committee of the Orange Senqu River Commission (ORASECOM), which is aimed to oversee groundwater initiatives in the Orange Senqu River Basin shared by South Africa, Lesotho, Botswana and Namibia, has been resuscitated. He added that this a testimony to the effect that ORASECOM considers groundwater as one of the key strategic issues of cooperation for core basin state. Furthermore, the institutional arrangements with regards to governance and management of the resources are already in place with ORASECOM serving as a vehicle. In this regard, he emphasized that Lesotho should be invited to the project as an observer on order to ensure their support to possible future developments. He added that the ground breaking findings and work in GGRETA Phase 1 should also serve at ORASECOM governance for information and other critical decisions so as to get high level political direction and support of Ministers of ORASECOM. Finally, he said that in times where South Africa, Botswana and Namibia are experiencing one of the worst droughts in recent times, cooperation on the STAS to harness this precious resources could not have come at a better time, and closed his remarks by expressing his particular appreciation to observe the level of representation from the three partner countries as it attests to the importance attached to the project.

*Statements by High-Level Officials from the Ministries in charge of Water Resources  
Department in the Stampriet Transboundary Aquifer System (STAS)*

Mr Raphaka (Permanent Secretary, Ministry of Land Management, Water and Sanitation Services, Botswana) thanked UNESCO-IHP, SDC, Namibia and South Africa for their continued support to the project. He highlighted that Botswana, as a semi-arid and water-stressed country, faces important challenges on water supply needs in various settlements, in particular the western part of Botswana where the STAS is located. He stressed that groundwater plays a crucial role in securing water supply in times of recurring droughts as sound governance of groundwater resources could avoid an increasing number of large and expensive transfer schemes which take a long time to build. This has an implication on the livelihoods of the people as well as the sustenance of economic activities in the region. He further emphasized that it is for these reasons, and bearing in mind that most of the world's aquifers are transboundary by nature, that Botswana wants to cooperate and collaborate with its neighbors to explore the opportunities that may be beneficial to all countries. He concluded saying that GGRETA Phase 2 should indeed be used to strengthen governance and the capacity of each country, and expressed his utmost support to GGRETA Phase 2 of the project, as in Phase 1.

In addition to his previous statement on behalf of H.E. Ms Ithete (Ambassador, Permanent Delegate of Namibia to UNESCO), Mr Nehemia (Deputy Permanent Secretary, Ministry of Agriculture, Water and Forestry, Namibia) added that the GGRETA Phase 2 should focus on providing measures to cope with uncertainties on the properties and present state of the STAS, in particular on how it behaves over time, in response to abstractions and climatic variation.

Mr Mkhize (Acting Director General, Department of Water and Sanitation, South Africa) thanked the organizers and started his remarks saying that groundwater is currently underutilized in South Africa as it accounts for 16% of the country's water use. He highlighted that South Africa hosts the SADC Groundwater Management Institute (GMI) as well as the UNESCO Geohydrology Chair. Both institutions work on providing mechanisms to implement groundwater management practices in the region. He reaffirmed his endorsement to the GGRETA Phase 1 final assessment report and went on emphasizing that the project has lead interest to trigger other similar initiatives in the region such as the assessment of the Ramotswa Transboundary Aquifer, shared by Botswana and South Africa. He underlined the successful outcomes of the GGRETA Phase 2 STAS Technical Inception Meeting in September 2016 and convened his support to the establishment of a Working Group that will have the mandate to formulate the structure, composition, mandate, funding, and functioning of the STAS MCCM that should be under the umbrella of ORASECOM. In this regard, he called that ORASECOM should regularly be upraised and updated about the results of the project.

#### Statements by Authorities

Mr Kanagire (Executive Secretary, African Ministers' Council on Water - AMCOW) started his statement saying that he could not miss this meeting because groundwater deserves more attention. He recalled that 75% of African population relies on groundwater and that it will play a crucial role in achieving AMCOW main guiding principles stated in the 2025 Africa Water Vision, and the 2008 Sharm el Seikh and 2015 Ngor Declarations. Although countries such as Tanzania and Kenya are developing very much groundwater use, investment is still limited. He highlighted that there is a need for operationalization and effectiveness of groundwater use frameworks, as in surface water. For setting up these frameworks, establishing institutions and networks will surely make groundwater a vibrant sector. He also noted that gathering of data and discussions for joint management frameworks are essential. In this regard, he recalled that AMCOW decided and reiterated the need to establish a Groundwater Commission for sharing data, formulation of policies and promote cooperation in Africa. Once established, the Groundwater Commission will promote groundwater and raise awareness of river and lake organizations to look at groundwater, and the portrayed ORASECOM as a good example to be followed. He finished his statement saying that the lessons learnt from GGRETA project should be utilized and replicated to other aquifers in order to promote transboundary aquifers, and that the work underway in the STAS will surely feed the political commitment in the region.

Following Mr Kanangire's intervention, H.E. Khimulu (Former Ambassador, Permanent Delegate of Kenya to UNESCO) reaffirmed that the Government of Kenya is currently setting up the formalities to set up the AMCOW Groundwater Commission at the UNESCO Regional Centre on Groundwater Resources Education, Training and Research for East Africa in Nairobi.

Mr Magnin (Water Programme Manager, Swiss Agency for Development and Cooperation - SDC) congratulated the Governments of Botswana, Namibia and South Africa for the work they have done over the STAS in GGRETA Phase 1, and their intention to its further development under a MCCM. He highlighted that this crossborder collaboration is essential in Africa and will serve as role model. Building awareness and developing a cross-border dialogue on groundwater governance is a long process but results show that this project created a true momentum on this issue. The International Water Management Institute (IWMI) is now using the GGRETA methodology to assess the Ramotswa Transboundary Aquifer between Botswana and South Africa, and last year the SADC recommended this methodology and approach to be used in assessing aquifers in Southern Africa. He emphasized that the momentum should be kept alive and further build awareness and promote cooperation on groundwater governance. Groundwater is an essential buffer in period of droughts and there is no doubt aquifers will play a crucial role in the climate change perspective which is predicting an increase in drought intensity and frequency. Additionally, different activities are increasing groundwater exposure to danger and pollution, such as extraction of shale gas for example. This has brought several issues as groundwater use has grown faster than the regulations. In this regard, he noted that GGRETA Phase 2 will support strengthening the much needed domestic groundwater governance frameworks. Finally, he called participants to promote partnerships with the private sector. He said that during the 2016 World Water Week in Stockholm, some big groundwater consumers of the private sector showed their willingness to share their water data with governments and that there is an opportunity here to create a global open data partnership for aquifers.

Mr Ramoeli (Head of Water Division, SADC) provided an overview of SADC activities on water. The SADC Water Division was established in 1996 and its groundwater programme started in 1998. Since then, SADC has been very active on the development of common frameworks for groundwater governance, the preparation of the SADC hydrogeological map, and the "Groundwater Drought Management Programme in the Limpopo Basin" (2008-2010). He highlighted that the "Sustainable Groundwater Management in SADC Member States" started in September 2016 with the launch of the SADC Groundwater Management Institute (GMI) and looks forward for joint activities with UNESCO as GGRETA Phase 2 activities will support SADC-GMI's. Finally, he commended UNESCO-IHP for continuous, long-time support in the water sector.

Mr Thamae (Executive Secretary, ORASECOM) expressed his appreciation for the hospitality and the honor to attend the meeting representing ORASECOM. He said that ORASECOM activities undertaken since its establishment in 2000 have made it one of the best structured River Commissions in the world. He appreciated UNESCO's support throughout these years,

and in particular within the framework of the ISARM programme. He said that demand for groundwater is growing and that there are still knowledge gaps to be filled. He said that in the basin, groundwater is mainly used in rural region, and by farming communities, and that water resources should not be looked at separately (i.e. groundwater vs. surface water) but as a whole. In this regard, ORASECOM launched an Integrated Water Management (IWRM) Plan in 2015 that will provide a strategic plan for the next 10 years in which groundwater has an important component. Current activities related to groundwater consist on operationalizing the Groundwater Hydrogeology Committee, strengthening ORASECOM's Information Management System (IMS), and assessing the impact of invasive alien species and salinization on groundwater in Botswana. With regards to transboundary cooperation, Mr Thamae said that ORASECOM would be honored to dwell mechanisms for the governance of transboundary aquifers and promote conjunctive use of surface water and groundwater within its structure. He finished his statement saying that ORASECOM looks forward to the active participation of its Groundwater Hydrology Committee in GGRETA Phase 2.

- **Overview and objectives of GGRETA Phase 2 (Day 1)**

Ms Aureli (Chief of Section, Groundwater Systems and Settlements, UNESCO-IHP) welcomed participants and started her presentation by giving an overview of UNESCO'S mandate and expertise on the assessment of transboundary aquifers through the ISARM programme since 2000. In this regard, she recalled that IHP efforts have been further acknowledged by IHP Council Resolution XX-3 (2012)<sup>3</sup> as well as the United Nations General Assembly (UNGA) Resolution 68/118 (2013)<sup>4</sup>. She then provided an overview of GGRETA Phase 2 main lines of action, and stressed that while the first phase of the project focused on an in-depth assessment of the STAS which allowed establishing a shared science based understanding of the resource, activities of the second phase of the project will shift its focus to strengthening groundwater governance at the national and transboundary levels, and technical capacity of the countries sharing the aquifer as a means to support the process of establishment of the STAS MCCM. She presented some of GGRETA Phase 1 main achievements, as follows:

- **Improved knowledge and recognition of the importance and vulnerability of transboundary groundwater resources:**
  - *Agreement on the delineation of the STAS.*
  - *Agreement on a STAS hydrogeological conceptual model (covering recharge and discharge areas and rates, groundwater flow, and potential pollution risk areas).*
  - *Development of shared management tools (IMS)*
  - *Compilation of a joint STAS borehole database (around 6000 boreholes).*

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<sup>3</sup> <http://unesdoc.unesco.org/images/0021/002173/217383e.pdf>

<sup>4</sup> [http://www.un.org/en/ga/search/view\\_doc.asp?symbol=A/RES/68/118](http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/68/118)

- *Preparation of 60 thematic maps providing information on groundwater levels, quality*
- **Strengthened cross-border dialogue and cooperation:**
  - *Organization of 6 regional meetings held in the three countries of the STAS in a rotation basis, including 2 stakeholder consultation meetings which counted with the participations of a broader audience (e.g. regional organizations, farmers, NGOs, ...).*
  - *Development of shared management tools (IMS)*
  - *Compilation of a joint STAS borehole database (around 6000 boreholes).*
  - *Preparation of 60 thematic maps providing information on groundwater levels, quality*
- **Facilitation of governance reforms focused on improving livelihoods, economic development and environmental sustainability:**
  - *Presentation of two models for the establishment of a Co-operation Mechanism aimed at facilitating cooperation for the management and governance of the STAS.*
- **Capacity-building trainings:**
  - *International water law: Focused on the principles and practice of international water law; linkages between international water law and domestic water legislation.*
  - *Water diplomacy: Focused on enhancing negotiation and dispute resolution skills, as well as on trust and consensus building.*
  - *Information Management System (IMS): Focused on the GGRETA project IMS functionalities.*
- **Replication and awards:**
  - *The achievements of the project have been presented to the international scientific community and have been received with interest so that the STAS assessment methodology has been considered for replication as in the Ramotswa Transboundary Aquifer*
  - *The SADC Position Paper of 2016 recognizing the interest of the STAS approach recommends that the assessment of transboundary aquifers in the region should follow the same methodology as the one developed in GGRETA project.*

She recalled that the official announcement of GGRETA Phase 2 was made by the Government of Switzerland at the Final Meeting of the first phase of the project, held on 15-16 December 2015 at UNESCO Headquarters. The discussions held at this meeting focused on the finalization of the assessment report, and on receiving recommendations from Government

Officials for the second phase of the project. It was decided that all the information approved on the assessment report should be in public view, and that all other information should be specifically approved by Countries before going public. It was agreed that activities of GGRETA Phase 2 should be generated from the assessment report and decided at an Inception Meeting. It was also agreed that activities under each outcome would be further developed as per country's need, without limiting to GGRETA Phase 2 funds, but also considering co-funding from Countries and existing projects in the SADC region. She said that a work plan of activities for GGRETA Phase 2 (2016-2018) was then established in accordance to recommendations and suggestions provided by Government Officials from Botswana, Namibia and South Africa. She finished her intervention saying that achieved results represent a timely and strategic contribution to the achievement of the Sustainable Development Goal (SDG) indicator on water cooperation (6.5.2).

Mr Puri (Secretary General of the International Association of Hydrogeologists - IAH, GGRETA Project Senior Hydrogeology Advisor) made a presentation on the strong role of science in strengthening cooperation over the STAS. The main thrust of the presentation was to ensure that the mathematical model that has been prepared under previous projects for just the Namibian territory now needs to be expanded to also cover the territory of Botswana and South Africa. The key points in considering GGRETA Phase 2 were summarized as follows:

- GGRETA Phase I has been successfully completed: These are essentially that a good database exists. The information is GIS based and provides a visual assessment that will form the backbone of the modelling. There is a need to consolidate the information that has been collected with some data mining and drilling down into old data bases.
- GGRETA Phase 2 - planning underway & further developments proposed: There are unclarities of the dynamics of the STAS flow system mainly due to the lack of data on the geological and the hydrogeological structures. Activities will focus on clarifying the hydrogeological uncertainties of the mass balance, clarifying and quantifying flows and discharges (e.g. upward leakage into the shallower aquifers), forecasting future alternative scenarios taking into account abstractions in the three countries – both the current trajectories as well as the future possibilities.
- Work structure for the science strengthening:
  - 1) Harnessing the science that will provide the answers and consideration of the data gaps - these provide the upper and the lower limits to the risk management -. The risks are to be evaluated and expressed in terms of the availability of water resources and the time frames.
  - 2) Provide input from scientific analysis to the governance for sound long term management and sustainability – the governance will focus on three aspects – the institutional frameworks, the capacity in the institutions and the legal frameworks that will be adopted both domestically and internationally (the “science” that is required here is the practical / applied approach, rather than fundamental research)

- **Message from the participants on Water Cooperation (Day 1)**

As a means to celebrate the groundbreaking results of GGRETA Phase 1, a message aimed at raising awareness about the importance of water cooperation in Africa and around the world (Annex 3) was prepared and read. **The objective of the message on Water Cooperation was to leave a testimony of the sentiments that inspired cooperation in the GGRETA project, reward the great efforts made by the experts of the three Countries, and reckon the work that UNESCO-IHP has done on the assessment of transboundary aquifers within the framework of the ISARM programme.** The message also makes references to AMCOW recommendations for sound groundwater governance as well as best practices and guidelines for the management and governance of transboundary aquifers (e.g. the Draft Articles on the Law of Transboundary Aquifers).

Participants were then invited to join a Photo Exhibition on STAS landscapes entitled “Namibia Sun Pictures” by Paolo Bozzi.

- **Presentation of GGRETA Phase 1 main findings and achievements (Day 2)**

Mr Piet Kenabatho (STAS Assessment Report Coordinator, University of Botswana) presented GGRETA Phase 1 main findings and achievements. He highlighted that GGRETA Phase 1 project has allowed establishing a shared science based understanding of the STAS. The in-depth assessment of the STAS carried out by a team familiar to the area and composed of professionals of Botswana, Namibia and South Africa who regularly met in the 6 regional meetings that were held in the three countries of the STAS in a rotation basis. Such meetings also included 2 stakeholder consultation meetings which counted with the participations of a broader audience (e.g. regional organizations, farmers, NGOs, ...). **Based on the data collected, analyzed and harmonized by national experts, a joint STAS borehole database with information on more than 10 attributes for approximately 6000 boreholes was set up.** Such database was the cornerstone to prepare more than 60 thematic maps providing information on groundwater levels, yield, and quality. All collected, analyzed and harmonized data was shared Countries and has been uploaded to the Information Management System (IMS) developed by the project in consultation with national authorities.

**In GGRETA Phase 1, Countries have agreed on a hydrogeological conceptual model (covering recharge and discharge areas and rates, groundwater flow, and potential pollution risk areas).** Nevertheless, the findings and combined experiences of the assessment team have revealed a number of challenges. Lack of monitoring data (climate, groundwater abstraction, water levels, water quality) seriously hampers a systematic diagnostic analysis. Groundwater quantity stress has not been observed. Lack of monitoring may be an explanation, but the exceptionally low intensity of groundwater withdrawal certainly plays a major role. Considering the importance of the STAS for the socio-economic development of the area,

particular attention should be given to reach a joint management by the 3 Countries to avoid, that under scenarios of population growth and severe climatic changes, the demand for water in the region increase significantly and consequently prevent overexploitation and non-sustainable management of the STAS. Therefore, it is very important to initiate effective control of groundwater quantity, e.g. by some initial practical steps such as solving the problem of water spillage by leaking boreholes in the Auob aquifer and preventing future problems by improved regulation of drilling. Groundwater quality has its natural variations. Most notable are generally poor conditions in or near the Salt Block zone. Pollution, however, may also lead to groundwater quality degradation elsewhere in the area.

The shallower and usually phreatic Kalahari aquifers are vulnerable to pollution; in particular, in the Namibian sector the pollution risk is often medium to high due to irrigated agriculture (using fertilizers and pesticides) and environmentally unfriendly sanitation and waste disposal practices. Such aquifers have to be managed properly to prevent an increase of pollution; not only to preserve the status of these layers of the STAS, but also to avoid that the deterioration of its quality induce an increase of pumping of the underlying layers (Auob and Nossob confined aquifers), creating conditions of stress and overexploitation in the future.

Partly from the groundwater management point of view and partly for health reasons, there is scope for enhancing water supplies and even more for improving sanitation in the entire area. The assessment report highlights that **measures to prevent or counteract potential depletion and pollution problems** are the following:

- Rehabilitation of leaking wells, by introducing and implementing regulations on well construction and by effective well licensing procedures.
- Improvement of the water and sanitation situation, including sewerage and wastewater treatment provisions.
- Protection of key recharge zones that may contribute to conserve the resources.
- Raising awareness programs among the area's inhabitants.
- Enhancement of the capacity of the institutions responsible for groundwater management in the area.

Finally, he finished his presentation saying that there are still areas of the STAS that present data gaps, and that in order to be able to evaluate how the aquifer system responds to human and natural impacts (e.g. abstraction and climatic variation), **Countries recognized that implementing a monitoring system (groundwater levels and groundwater abstraction) is a priority. Moreover, he stressed that Countries also recognized that a numerical simulation model of the STAS would be indispensable to enable informed decisions on sustainable management of the aquifer system.**

- **Presentation of GGRETA Phase 2 activities (Day 2)**

Mr Carvalho Resende (STAS Coordinator, UNESCO-IHP) started his intervention saying that the second phase of the project will **strengthen the technical capacity of the countries sharing the aquifer as a means to support the process of establishment of a Multi-Country Cooperation Mechanism (MCCM)**. Activities undertaken in GGRETA Phase 2 would also allow to promote a regional dialogue on coordination and harmonization of groundwater governance frameworks and guiding principles both at national and transboundary levels. As presented in the project document, he said that GGRETA Phase 2 project implementation activities will include three outcomes, as follows:

*Outcome 1 – Improved resource knowledge and monitoring based on recognition of the importance and vulnerability of transboundary groundwater resources*

Main activities will be devoted to **develop a model for filling existing knowledge gaps** (e.g. through simulation scenarios, estimations), and **upgrading and updating the joint database and monitoring protocols** (e.g. for time series data collection). It was agreed that the model would be developed in collaboration with the FREEWAT project (2015-2018) for which UNESCO-IHP is part of the Consortium. The FREEWAT project is an ICT project funded by the European Commission for improving water resources management through a GIS integrated modelling platform. It intends to integrate several existing free software modules (e.g. QGIS, MODFLOW, MT3DMS) in one single and user-friendly GIS environment (FREEWAT platform). Countries had agreed at the STAS Technical Inception Meeting (September 2016) to nominate a National Technical Transboundary Group (NTTG) that will be trained by UNESCO-IHP to develop the model, simulation scenarios, and estimations. Within the framework of these trainings, national experts will be also trained to become trainers, and consequently to replicate and apply techniques to other groundwater bodies in their respective Countries. The Terms of Reference of the NTTG in charge of the model is presented in Annex 7. A workplan from September 2016 to April 2017 is presented in Annex 5. From September to December 2016, activities will focus on software development and training of the trainers. From January to April 2017, the first application of the model and preliminary simulation results will be undertaken. From April 2017 to April 2018, final calibration and simulation scenarios will be undertaken. Upgrade and update of the joint database and monitoring protocols (e.g. for time series data collection) will be undertaken throughout the modelling exercise.

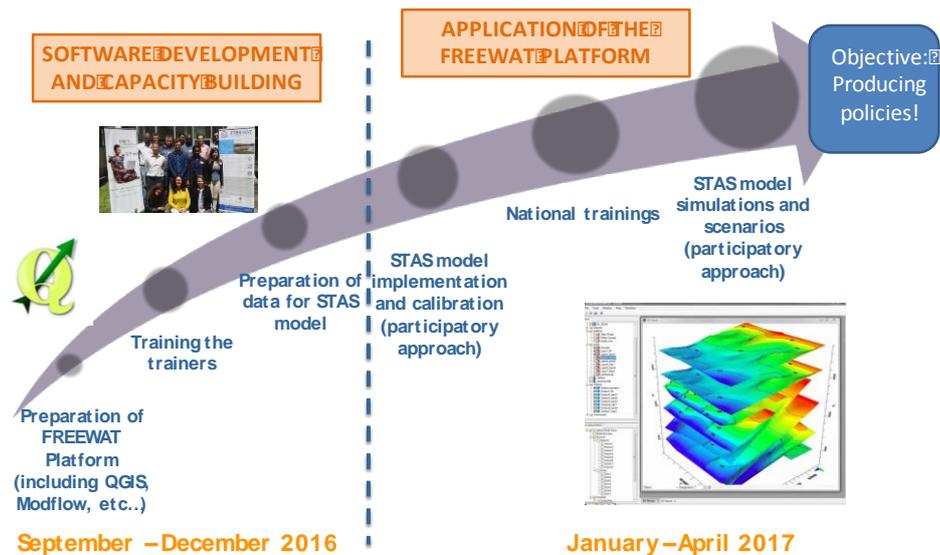


Figure 1 – Work-plan from September 2016 to April 2017 for the development of the STAS simulation model

Outcome 2 - Enhanced cross-border dialogue and cooperation based on development of shared management tools, and recommendations for governance reforms focused on improving livelihoods, economic development, gender equality and environmental sustainability

Main activities will consist in the **setting up and operationalization of a Core Working Group for the establishment of a Multi-Country Cooperation Mechanism (MCCM) for the governance and management of the STAS**. This Core Working Group will be composed by Officials from the Department of Water Affairs and Ministry of Foreign Affairs of each Country. The Terms of Reference of the Working Group are presented in Annex 6.

Outcome 3 – Improved capacity in groundwater governance, hydro-diplomacy and gender, and effective communication aiming at replication of project experiences and approaches

Main activities will consist on **capacity-building training modules** from 2016 to 2018 on:

- Modelling (see Outcome 1),
- Legal and institutional aspects including groundwater governance at domestic and transboundary level, and hydro-diplomacy (see Outcome 2),
- Gender aspects (see Outcome 2).

These trainings will have a **“training for trainers” approach** and will come as cross-cutting support to Outcomes 1 and 2. It was agreed at the STAS Technical Inception Meeting (September 2016) that an NTTG would be established for each module and that next trainings on legal and institutional (international and domestic water law) and gender aspects would be held during the 2<sup>nd</sup> Regional Meeting on Tools for the Sustainable Management of Transboundary Aquifers that will be organized by UNESCO-IHP, the International Water

Management Institute (IWMI) and the SADC Groundwater Management Institute (GMI) in end November 2016. A component of the meeting will be devoted to a training specifically devoted to the Draft Articles on the Law of Transboundary Aquifers (UN General Assembly Resolution 63/124). The Draft Articles are specific recommendations prepared by hydrogeologists from different regions with the support of UNESCO-IHP, and are a contribution to the work of the UN International Law Commission (ILC) that has developed the codification of technical guidelines into a draft Convention for Transboundary Aquifers.

On the second half-day, Mr Burchi (International Association for Water Law – AIDA Chairman, GGRETA Project Senior Legal Advisor) gave a presentation illustrating the legal basis, the structure, the mandate, and the financing of six known bi- and multi-lateral transboundary aquifer commissions or committees from different regions of the world:

- three from Africa:
  - the Sahara and Sahel Observatory (OSS) for the North Western Sahara Aquifer System (NWSAS),
  - the Joint Authority (JA) for the Nubian Sandstone Aquifer System(NSAS),
  - Consultation Mechanism for the Iullemeden Taoudeni/Tanezrouft Aquifer System (ITTAS).
- one from Europe:
  - the Genevese Aquifer Commission.
- one from the Middle East:
  - the Joint Technical Committee for the Al-Sag/Al-Disi Aquifer.
- one from South America:
  - the Guarani Aquifer Commission.

The presentation attracted considerable interest, and questions, which highlighted the participants' desire to receive more detailed information on existing examples of cooperation mechanisms for TBAs, and on how groundwater is addressed by known transboundary river/lake/basin commissions or committees in Africa and other regions. A sense of genuine and intense government commitment to the project goal and objective of fostering and ultimately institutionalizing cooperation among the STAS countries clearly emerged from the discussions.

- **Reaction to GGRETA Phase 2 workplan and way forward (Day 2)**

A dialogue between participants about the modalities for institutionalizing the STAS-centered cooperation (stand-alone tri-lateral “cooperation mechanism” or under ORASECOM) was raised in reaction to Mr Burchi’s presentation. The participants requested that examples be provided of whether and how transboundary groundwater is addressed by known transboundary river/lake/basin commissions or committees. Mr Burchi replied saying that

there is no one-fit-all solution and that the examples presented are aquifer-specific. One example that could be considered is the one for the Guarani Aquifer that lies within the Plate Basin because Countries decided to hook the Guarani Aquifer Commission to the Plate River Commission. However, the Guarani Aquifer Agreement has not entered into force as it has not been ratified by all Countries. Mr Burchi said that most of the time River Basin Commissions have only a residual attention to groundwater, when groundwater is hydraulically linked to the river. Ms Aureli and Mr Puri recalled AMCOW's recommendation to include groundwater management in River Comissions' mandate, and that capacity of River Basin Commissions should be strengthened for that – especially when dealing with transboundary groundwaters as the aquifer and the surface water basin delineations may not coincide, thus leading to higher management complexity. Mr Kanangire also said that AMCOW Member States have very uneven levels on working domestically and that a regional policy would be relevant because it would certainly improve harmonization and provide guidelines to the Countries. He highlighted the importance that the existing regional institutions are highly dependent on donors' funding. Finally, he said that if aquifer and surface water basins overlap, having one institution is better as there is a need to reduce a heavy institutional burden.

Ms Aureli said that the setting of the STAS is very similar to the one of the North Western Sahara Aquifer System (NWSAS) shared by Chad, Egypt, Libya and Sudan considering that both aquifers are the main source of fresh water in their respective areas.

Ms Mochotlhi (Deputy Director General, Department of Water and Sanitation, South Africa) highlighted that the possibility of building up the STAS-specific MCCM on existing institutions such as ORASECOM should be carefully explored because establishing new institutions is a lengthy and costly process. **She added that although the STAS is not a high priority for South Africa, her Country fully supports the process that will lead towards the establishment of the STAS-MCCM as the lessons learnt from this process will surely spin off to other ongoing processes, e.g. the Ramotswa Transboundary Aquifer.** She finished her intervention saying that bearing in mind the lengthy process to set up an MCCM and the results of GGRETA Phase 1, there is now a need to have political commitment at the highest level, i.e. Minister's level. In this regard, she suggested that necessary arrangements to present GGRETA results and way forward to Ministers at the ORASECOM Forum of the Parties in December 2016 should be done. Her suggestion was supported by High-Level Representatives from Botswana and South Africa, Mr Raphaka and Mr Nehemia respectively. Mr Thamae then said that ORASECOM would support this initiative and would provide the necessary procedure to be followed to include such presentation in the agenda of the meeting. Following this decision, Mr Kanangire said that GGRETA activities could also be presented at the next AMCOW meeting that would be held in July 2017 and that arrangements should start in April 2017. Mr Nehemia added that the issue of informing Ministers is really relevant and that before going to AMCOW, discussions need to go at the sub-regional level. Finally, Mr Sekwele (Scientific Manager, Department of Water and Sanitation, South Africa) added that South Africa looks forward to

enhancing and promoting a regional dialogue on conjunctive surface and groundwater management by involving institutions such as AMCOW and SADC in GGRETA Phase 2 activities. Ms Mbugua (Senior Principal Water Research Officer, Ministry of Water and Irrigation, Kenya) fully supported Mr Sekwele's statement by saying that the lessons learnt from the STAS will be of great importance to the preparation of the assessment of the Kilimanjaro Aquifer, shared by Kenya and Tanzania.

Participants then discussed about the workplan for GGRETA Phase 2. The workplan of activities was cleared by Countries upon some minor changes mostly related to language, which are now reflected in Annex 4. In this regard, the GGRETA Phase 2 organogram (Annex 5), the set-up of a Working Group for the establishment of the STAS MCCM (Annex 6), and the establishment of National Transboundary Technical Groups (NTTGs) for groundwater modelling, legal and institutional, and gender issues (Annex 7) were officially adopted. Mr Magnin also praised the importance of adaptive management and that the logframe should be a flexible instrument.

- **Closing remarks (Day 2)**

Mr Raphaka expressed his great satisfaction with the decisions taken during the meeting and said that Botswana is keen on keep sharing information to facilitate the establishment of the STAS MCCM. He noted that a proof of Botswana's willingness is the fact that the Country is a member of four Basin Commissions, namely: Okavango (OKACOM), Zambezi (ZAMCOM), Limpopo (LIMCOM), and ORASECOM. He acknowledged the existing data gaps in Botswana and said that the Government of Botswana will allocate resources for this endeavor. Finally, he said that it is through collaboration like the one in the STAS that the Global Sustainable Development Goals (SDGs) can be realized.

Mr Nehemia expressed his appreciation to the decisions taken during the meeting and highlighted that the objectives have been met. He expressed Namibia's full support to the endeavor that should lead to the establishment of the STAS MCCM. He highlighted that the involvement of institutions such as ORASECOM and SADC will be crucial to ensure and sustain the momentum created in GGRETA Phase 1. He also praised the fact that GGRETA Phase 2 will enable continued and improved groundwater governance, and that the Working Group for the establishment of the STAS MCCM will be essential.

Mr Mkhize also expressed his appreciation to the decisions taken during the meeting and reaffirmed South Africa's support to the project, the process of establishing the STAS MCCM, and that the Working Group that will have the task to discuss the structure, composition, mandate, funding, and functioning of the STAS MCCM will be crucial in this endeavor.

## Annex 1 – Final Agenda

**DAY 1 • Thursday, 3 November 2016**

### Objectives

- To celebrate the starting of the second phase of the Stampriet Aquifer Project Coordination (GGRETA Phase 2)
- To highlight the pilot role of the three countries in paving the way for Water Cooperation in Africa
- To underpin the role of science in decision making in the context of transboundary aquifers cooperation;

14:00	Registration
14:30	Opening of the meeting
14:30-15:30	Statements from National Authorities
<p>Chair of the session: Ms Alice Aureli, Chief of Section Groundwater Systems, UNESCO-IHP</p>	<ul style="list-style-type: none"> <li>• <b>Welcome remarks</b> <ul style="list-style-type: none"> <li>▪ <i>Ms Blanca Jiménez-Cisneros, Director of the Division of Water Sciences, Secretary of the International Hydrological Programme, UNESCO</i></li> </ul> </li> <li>• <b>Video Message from H.E. Mr Mwai Kibaki, Former President of Kenya, UNESCO Special Envoy for Water in Africa,</b></li> <li>• <b>Opening Statements</b> <ul style="list-style-type: none"> <li>▪ <i>H.E. Mr Jean-Frederic Jauslin, Permanent Delegate of Swiss Confederation to UNESCO, Ambassador</i></li> <li>▪ <i>H. E. Mr Samuel Otsile Outlule, Permanent Delegate of Botswana to UNESCO, Ambassador</i></li> <li>▪ <i>H.E. Ms Frieda Nangula Ithete, Permanent Delegate of Namibia to UNESCO, Ambassador</i></li> <li>▪ <i>H. E. Mr Rapulane Sydney Molekane, Permanent Delegate of South Africa to UNESCO, Ambassador</i></li> </ul> </li> <li>• <b>Statements by High-Level Officials from the Ministries in charge of Water Resources Department in the Stampriet Transboundary Aquifer System (STAS)</b> <ul style="list-style-type: none"> <li>▪ <i>Mr Thato Raphaka, Permanent Secretary, Ministry of Land Management, Water &amp; Sanitation Services (Botswana)</i></li> <li>▪ <i>Mr Abraham Nehemia, Deputy Permanent Secretary, Ministry of Agriculture, Water and Forestry (Namibia)</i></li> <li>▪ <i>Mr Sifiso Mkhize, acting Director General, Department of Water and Sanitation (South Africa)</i></li> </ul> </li> <li>• <b>Introduction of the participants and adoption of the agenda</b></li> </ul>

<b>15:30-16:00</b>	<b>Coffee break</b>
<b>16:00-17:00</b>	<b>Statements from Authorities</b>
<p>Chair of the session:  <i>Mr Youssef Filali-Meknassi, Programme Specialist, UNESCO IHP</i></p>	<ul style="list-style-type: none"> <li>▪ <b>Mr Canisius Kanangire</b>, African Ministers' Council on Water (AMCOW), Executive Secretary</li> <li>▪ <b>Olivier Magnin</b>, Swiss Federal Department of Foreign Affairs (FDFA), Swiss Agency for Development and Cooperation (SDC)</li> <li>▪ <b>Mr Phera Ramoeli</b>, Southern Africa Development Community (SADC), Head of Water Division</li> <li>▪ <b>Mr Lenka Thamae</b>, Orange-Senqu River Commission, Executive Secretary</li> </ul>
<b>17:00 – 18:00</b>	<b>Presentation of the “Governance of Groundwater Resources in Transboundary Aquifers (GGRETA)” project - Phase 2</b>
<p>Chair of the session:  <i>Mr Abou Amani, Chief of Section Hydrological Systems and Water Scarcity, UNESCO-IHP</i></p>	<ul style="list-style-type: none"> <li>• Overview and objectives of the Stampriet Aquifer Project Phase 2 (GGRETA2) <ul style="list-style-type: none"> <li>▪ <i>Ms Alice Aureli, UNESCO-IHP</i></li> </ul> </li> <li>• The role of science in decision making in the context of transboundary aquifer cooperation <ul style="list-style-type: none"> <li>▪ <i>Mr Shaminder Puri, International Association of Hydrogeologists (IAH), Secretary General</i></li> <li>▪ <i>Discussion</i></li> </ul> </li> <li>• Closing remarks of the day and announcement of the second day programme  <i>Mr Youssef Filali-Meknassi, UNESCO-IHP</i></li> </ul> <p style="text-align: center;"><b>Message on Water Cooperation</b></p>
<b>18:00</b>	<b>Closing</b>
<b>18:30-19:00</b>	<b>“Namibia Sun Pictures” Photo Exhibition at UNESCO ground floor – Hall Miro</b>
<b>19:00-20:00</b>	<b>Social Dinner, Restaurant “La Terrasse du 7eme” – 2 Place de l’Ecole Militaire</b>

**DAY 2 • Friday, 4 November 2016**

**Objectives**

- Technical presentations of GGRETA Phase 2 workplan
- Discussions among members of the Permanent Delegations to UNESCO, Government Officials, Representatives of Regional Organisations and Technical teams

<b>9:30-11:00</b>	<b>Presentation of the “Governance of Groundwater Resources in Transboundary Aquifers (GGRETA)” project - Phase 2 (ctd)</b>
<p>Chair of the session:  <i>Mr Youssef Filali-Meknassi, Programme Specialist, UNESCO IHP</i></p>	<ul style="list-style-type: none"> <li>• GGRETA Phase 1 main findings and achievements <ul style="list-style-type: none"> <li>▪ <i>Mr Piet Kenabatho, University of Botswana, STAS Assessment Report Coordinator</i></li> </ul> </li> <li>• GGRETA Phase 2 activities <ul style="list-style-type: none"> <li>▪ <i>Mr Tales Carvalho Resende, UNESCO-IHP, STAS Coordinator</i></li> </ul> </li> <li>• Presentation of FREEWAT project: Development of a simulation model for the STAS <ul style="list-style-type: none"> <li>▪ <i>Mr Youssef Filali-Meknassi, UNESCO-IHP</i></li> </ul> </li> <li>• Background on existing coordination mechanisms looking forward to the GGRETA Phase 2 Legal and Institutional Component <ul style="list-style-type: none"> <li>▪ <i>Mr Stefano Burchi, AIDA</i></li> </ul> </li> <li>• Water Cooperation and the STAS Coordination Mechanism <ul style="list-style-type: none"> <li>▪ <i>Ms Alice Aureli, UNESCO-IHP</i></li> </ul> </li> <li>• Discussion</li> </ul>
<b>11:00-11:30</b>	<b>Coffee break</b>
<b>11:30-12:30</b>	<b>Reactions to GGRETA Phase 2 workplan and way forward</b>
	<ul style="list-style-type: none"> <li>• Reactions from Member States</li> <li>• General discussion and feedback</li> </ul>
<b>12:30-13:00</b>	<b>Closing Remarks</b>
<p>Chair of the session:  <i>Ms Alice Aureli, Chief of Section Groundwater Systems, UNESCO-IHP</i></p>	<ul style="list-style-type: none"> <li>• Final remarks by Member States <ul style="list-style-type: none"> <li>▪ <b><i>Mr Thato Raphaka</i></b>, <i>Permanent Secretary, Ministry of Land Management, Water &amp; Sanitation Services (Botswana)</i></li> <li>▪ <b><i>Mr Abraham Nehemia</i></b>, <i>Deputy Permanent Secretary, Ministry of Agriculture, Water and Forestry (Namibia)</i></li> <li>▪ <b><i>Mr Sifiso Mkhize</i></b>, <i>acting Director General, Department of Water and Sanitation (South Africa)</i></li> </ul> </li> </ul>

## Annex 2 – List of participants

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### **Annex 3 – Message from the participants on Water Cooperation**

*We, the participants of the Stampriet High Level Meeting gathered at UNESCO Headquarters the 3-4 November 2016, wish to highlight that availability of freshwater in Africa is perhaps the biggest challenge facing the continent today, that cooperation on shared water resources is an essential element to build peace and to support economic and social development, that one-third of humanity depends entirely on groundwater for their daily needs, that most of the planet earth's accessible freshwater is found in aquifers, and that the UNESCO International Hydrological Programme (IHP), has inventoried 592 transboundary aquifers shared by two or more countries, out of which 72 are in Africa.*

*We wish to recall the recommendation of the African Ministers' Council on Water (AMCOW) to water decision-makers, that sound governance of aquifer systems comprises the adoption of responsible collective action to ensure control, protection and socially sustainable utilisation of groundwater resources.*

*We acknowledge the need to raise the awareness and to strengthen the political will to promote the conservation and protection of groundwater and to act with urgency to improve groundwater governance in the light of increasing population, climate change, and dwindling resources.*

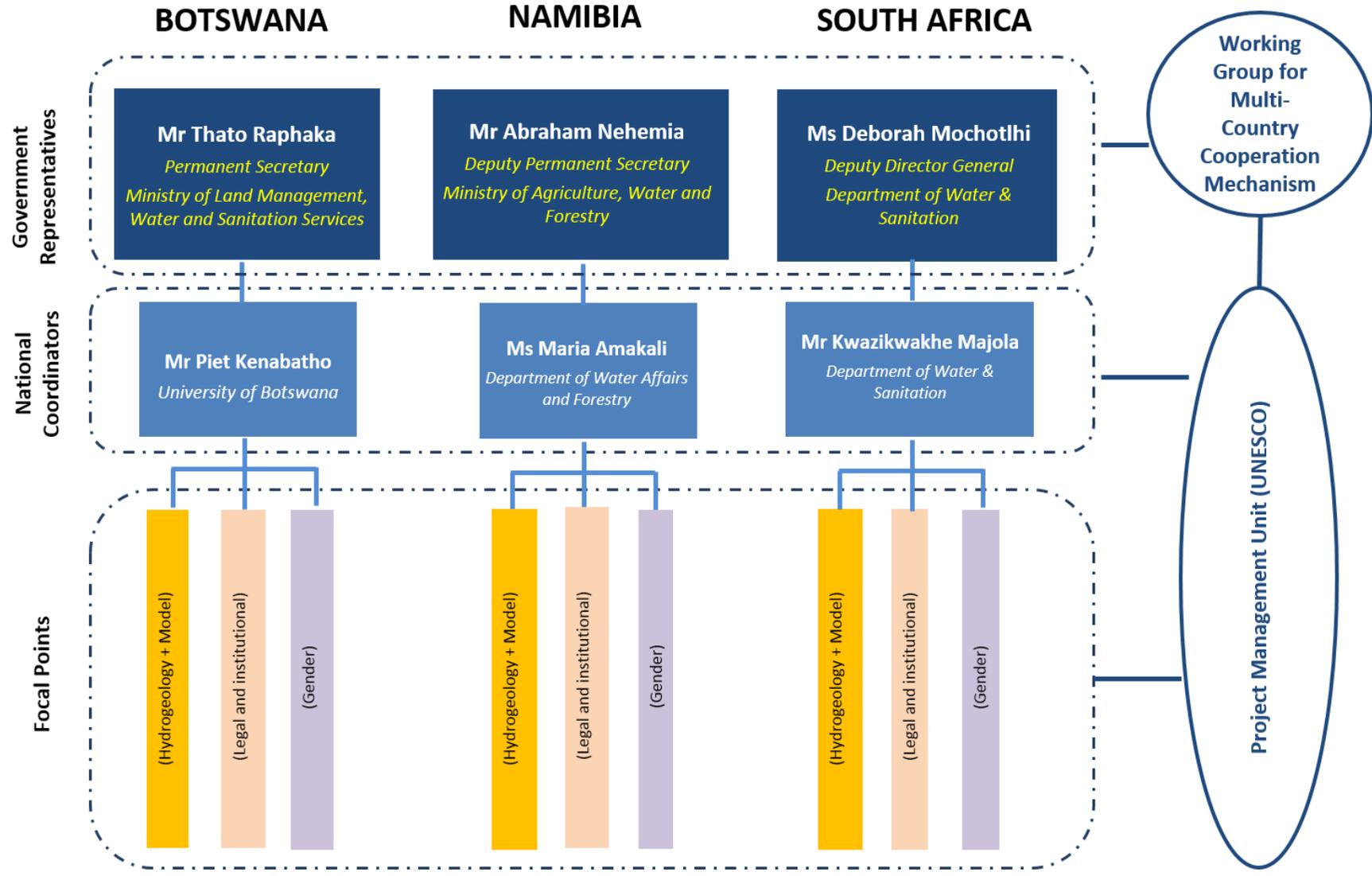
*We are mindful of the United Nations General Assembly (UNGA) Resolution 63/124 of 11 December 2008 encouraging the UNESCO-IHP to provide scientific and technical support to States sharing transboundary aquifers in order for the Member States to draw more attention to and to consider the guidelines provided by the draft articles on the law of transboundary aquifers.*

*We recognize, in particular, that it is necessary to improve capacity for the establishment of mechanisms for cooperation in the development and management of transboundary aquifers for the benefit of humankind and of dependent ecosystems.*

*We appreciate the contribution provided by the project "Governance of Groundwater Resources in Transboundary Aquifers" in engaging with scientists and various actors with a common aim of enhancing skills in managing transboundary aquifers.*

*We also consider the importance that appropriate and effective action is always taken to protect aquifer systems from degradation and, to this end, that mechanisms and strategies are developed geared towards enhanced cooperative management and governance of shared aquifers and of the groundwater resources stored in it.*

## Annex 4 – GGRETA Phase 2 organogram



## Annex 5 – Adopted Workplan for GGRETA Phase 2 activities from July 2016 to April 2017

<b>Governance of Groundwater Resources in Transboundary Aquifers (GGRETA) Project - PHASE 2</b> <b>ADOPTED WORKPLAN - JULY 2016 / APRIL 2017</b>											
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ACTIVITIES / ACTIONS	PHASE II										
	2016						2017				
	7	8	9	10	11	12	1	2	3	4	
<b>Outcome 1: Improved resource knowledge and monitoring based on recognition of the importance and vulnerability of transboundary groundwater resources.</b>											
<i>Output 1.1: Improved knowledge of the resource</i>											
1	STAS model set up on MODFLOW including nomination of Countries' Focal Points (in partnership with FREEWAT project)										
2	STAS model application: preliminary results (in partnership with FREEWAT project)										
<i>Output 1.2: Joint database and monitoring protocols prepared</i>											
3	Update of the STAS joint borehole database (including time series data)										
4	Preparation of data for STAS model										
<b>Outcome 2: Enhanced cross-border dialogue and cooperation</b>											
<i>Output 2.1: The Stampriet Core Group for the sustainable management of the aquifer established</i>											
5	Technical meeting for workplan adoption (Johannesburg, South Africa)										



## Annex 6 – Terms of Reference of the Working Group for the establishment of the STAS MCCM

<b>Composition</b>	<p><b>Ideally (not restricted):</b></p> <ul style="list-style-type: none"> <li>- 1 High-Level Representative from the Ministry of Water Affairs from each Country supported by its respective GGRETA project National Coordinator</li> <li>- 1 Official from the Ministry of Foreign Affairs from each Country or from the Legal Department of the Ministry of Water Affairs</li> <li>- 1 Rapporteur from the NTTG for modelling</li> <li>- 1 Rapporteur from the NTTG for legal and institutional aspects</li> <li>- 1 Rapporteur from the NTTG for gender aspects</li> <li>- Support by UNESCO-IHP experts</li> </ul>
<b>Tasks</b>	<ul style="list-style-type: none"> <li>• Formulate proposals for the structure, composition, mandate, funding, and functioning of a Multi-Country Consultation Mechanism for the governance and management of the STAS</li> </ul>

## Annex 7 – Terms of Reference of the National Transboundary Technical Groups (NTTGs) for groundwater modelling, legal and institutional, and gender issues

<b>Composition</b>	<b>Ideally (not restricted):</b> <ul style="list-style-type: none"> <li>- 1-2 Representatives of the Department of Water Affairs</li> <li>- 1-2 Representatives at University or Independent consultants</li> </ul>
<b>Tasks</b>	<ul style="list-style-type: none"> <li>• Undertake the “training for trainers” prepared by UNESCO-IHP for the utilization of the modelling platform (FREEWAT platform)</li> <li>• Assist in the preparation of the STAS model in close collaboration with UNESCO-IHP</li> <li>• Liaise with national decision-makers and provide guidance on simulation scenarios to be undertaken</li> <li>• Prepare and deliver national trainings for the utilization of the modelling platform in collaboration with UNESCO-IHP</li> <li>• Report to the Working Group for the establishment of the STAS MCCM through a designated Rapporteur</li> </ul>

<b>Composition</b>	<b>Ideally (not restricted):</b> <ul style="list-style-type: none"> <li>- 1 Representative of the Department of Water Affairs</li> <li>- 1 Representative at University or Independent consultants</li> </ul>
<b>Tasks</b>	<ul style="list-style-type: none"> <li>• Assist in the refinement of Country assessments of domestic legislation and institutions conducted under GGRETA Phase 1.</li> <li>• Assist in the preparation of tools and materials for national training courses on domestic water legislation in support of transboundary groundwater cooperation</li> <li>• Report to the Working Group for the establishment of the STAS MCCM through a designated Rapporteur</li> </ul>

<b>Composition</b>	<b>Ideally (not restricted):</b> <ul style="list-style-type: none"> <li>- 1 Representative of the Department of Water Affairs</li> <li>- 1 Representative at University or Independent consultants</li> </ul>
<b>Tasks</b>	<ul style="list-style-type: none"> <li>• Assist in the preparation of tools and materials for the collection and assessment of sex-disaggregated data</li> <li>• Assist in the gender analysis of current water policies</li> <li>• Report to the Working Group for the establishment of the STAS MCCM through a designated Rapporteur</li> </ul>