



FLOOD & DROUGHT MANAGEMENT TOOLS

3rd Project Steering Committee Meeting Report

5-7 April 2017

Volta Hotel

Akosombo, Ghana



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Action items

Item	#	Action	Who	When
<i>Project management – roles and responsibilities</i>	1	In the overview of roles and responsibilities there should be inclusion of the roles and responsibilities of the partner/key stakeholders in each of the basins. PMU to include in the next semi-annual report.	PMU	June 2017
<i>Project outputs (technical applications)</i>	2	Explore Community of Practice (CoP) approach to enable users to share experiences on applying the technical applications and for posing questions. PMU to develop draft to be shared online.	PMU (DHI)	May 2017
	3	UNEP to initiate dialogue with GEF to explore integration of technical applications in the TDA/SAP process. This could be through the upcoming projects in Volta and Amazonas or other upcoming TDA or SAP projects. UNEP to report on options for integration into upcoming projects.	PMU, UNEP, GEF	June 2017
<i>Training and capacity building</i>	4	Continuation of the “expert” trainings with the pilot basins. The expert trainings will focus on capacity building towards key technical staff within the pilot basins. The training will be initiated based on requests from the pilot basins. Pilot basins to request for expert training to the PMU.	PMU, LVBC, VBA	June 2017
	5	Continue and possibly expand webinar-based dissemination and training on the project outputs. PMU to initiate next stage of the webinars in Q3 2017.	PMU	Ongoing
	6	Evaluate options for increasing the training effort through the developed Flood and Drought portal. Access to training material (e.g. videos), interaction with experts through blogs or discussion forums etc. PMU to report to project stakeholders as new initiatives are released.	PMU	Ongoing
	7	Key stakeholders identify ongoing and upcoming projects which could incorporate the technical applications (e.g. VBA SAP Implementation). PMU to request information on relevant projects from key stakeholders and level of assistance required.	PMU, LVBC, HAIL, VBA	December 2017
<i>Gender and social dimensions</i>	8	Explore integration of data sources on gender and vulnerable populations and how this can be used in risk assessment for different hazards. PMU to report as the drought and flood assessment applications are released.	PMU (DHI/IWA)	July 2017

Item	#	Action	Who	When
	9	Finalise draft gender and vulnerable population reports for pilot basins (with a focus on literature review). PMU (IWA) to share final draft.	PMU (IWA)	June 2017
<i>Midterm review</i>	10	Share preliminary findings and recommendations with PSC. Reviewer to share preliminary findings.	Reviewer	May 2017
<i>Communications</i>	11	Discuss with IW:LEARN steps forward to further promoting project and outputs within the IW:LEARN network including through their newsletter, website and webinars. PMU to announce new initiatives in the upcoming newsletters.	PMU, IW:LEARN	April 2017
	12	Continue to identify events (particularly regional events) to promote the project and outputs, raise awareness (and improve capacity), improve buy-in and influence policy makers. PMU to contact stakeholders on relevant upcoming events.	PMU, LVBC, HAIL, VBA, NBI	April 2017 (ongoing)
<i>Social media</i>	13	Share guidelines to encourage the use of social media (e.g. twitter) with partners and stakeholders. Share media kit for use among partners to promote project. PMU to share information with project stakeholders.	PMU	April 2017
<i>Blog</i>	14	Work with partners and stakeholders to develop blogs (improve stakeholder engagement). PMU to contact project stakeholders.	PMU (IWA)	April 2017 (ongoing)
<i>Newsletter</i>	15	Support (where needed) key stakeholders in development of content for newsletter. PMU (IWA) to support project stakeholders.	PMU	April 2017 (ongoing)
<i>Other items</i>	16	Identify potential partners for adaptation of the project outputs (e.g. basin organisations – ORASECOM, ZAMCOM – networks, etc.). PMU and UNEP to discuss possible options.	PMU	Ongoing
	17	Discuss with WHO use of tools/technical applications in WSP implementation (e.g. incorporating relevant technical applications in WSP trainings). PMU (IWA) to discuss with WHO. Outcome to be disseminated to project stakeholders.	PMU, WHO	July 2017
	18	Develop approach for second phase including specific awareness material to promote current activities and future applications and the benefits. Second phase needs to consider the following: <ul style="list-style-type: none"> Inclusion of all basin member states 	PMU, PSC	June 2017

Item	#	Action	Who	When
		<ul style="list-style-type: none"> Local level data application Business model – maintenance, broaden client base <p>PMU and UNEP to discuss and develop concept and approach for second phase.</p>		
	19	<p>Work with UNEP to prepare final PSC (location: Nairobi, Date: tbd).</p> <p>PMU and UNEP to prepare meeting.</p>	PMU, UNEP	September 2017

1. Project background and expectations

The 'Flood and Drought Management Tool' (FDMT) project (<http://fdmt.iwlearn.org/>) is funded by the Global Environment Facility (GEF) International Waters (IW) and implemented by the United Nations Environment Programme (UNEP), with the International Water Association (IWA) and DHI as the executing agencies. The project is developing a methodology with tools (understood here as technical applications) which can be applied individually or together at the basin or local level to facilitate the inclusion of information about floods, droughts and future scenarios into Integrated Water Resources Management (IWRM) planning, Transboundary Diagnostic Analyses (TDA) and Strategic Action Plans (SAP), and Water Safety Planning (WSP).

The project responds to a growing sense of urgency around the need to improve resilience within transboundary (and national) basins, and for this to become a critical part of water management plans. This drove a need to integrate climate change in all focal areas of GEF. Consequently, the IW focal area of the GEF has identified the increased frequency and unpredictability of floods and droughts as a priority concern in transboundary contexts, along with the other multiple drivers that cause depletion and degradation of shared water resources.

The project is being implemented from June 2014 - June 2018. The project outcomes in the form of technical applications¹ and guidelines are being tested and validated at both basin (basin organisations) and local levels (water utilities) in 3 different pilot basins (Volta, Lake Victoria and Chao Phraya); however it will be available for all other GEF IW basins. This also includes training modules available at the end of the project to ensure that methods can be applied to other basins. The aim is to develop an approach that interfaces with existing planning practices.

¹ The term tools and technical applications are used interchangeably. Tools in this context are defined as the technical applications being developed by the project and are available at <http://www.flooddroughtmonitor.com/home>

2. Project Steering Committee

The Project Steering Committee (PSC) for the UNEP/GEF Project entitled: “Flood and Drought Management Tools” project is established under the Project Document as approved by the collaborating institutions and organisations during the project preparation phase.

A specific responsibility of the PSC is to facilitate liaison with the GEF Implementing Agency (UNEP) regarding overall governance of the project.

The PSC shall:

- Be the decision making body for the project;
- Provide governance assistance, policy guidance and political support in order to facilitate and catalyse implementation of the project, and to ensure relevant project outcomes;
- Annually review program progress and make managerial and financial recommendations as appropriate, including review, amendment and approval of annual reports, budgets and work plans.

To read the full Terms of Reference, please see Annex 3.

3. Day 1 - Site visit

5 April 2017

With the support from the Volta River Authority, a site visit was planned including a visit to the Akosombo Dam, Water Research Institute (WRI) Aquaculture Research and Development Centre and a tour on the Lake Volta.

The Akosombo Dam, also referred to as the Volta Dam, is a hydroelectric dam on the Volta River in southeastern Ghana in the Akosombo gorge and part of the Volta River Authority. The construction of the dam flooded part of the Volta River Basin, and led to the subsequent creation of Lake Volta. Lake Volta is the largest man-made lake in the world by surface area, covering 8,502 km² and with a volume of 148 km³.

The primary purpose of the Akosombo Dam was to provide electricity for the aluminium industry. The Akosombo Dam was called “the largest single investment in the economic development plans of Ghana”² becoming central to the modernisation programme promising rapid industrialisation. Its original electrical output was 912 megawatts, which was upgraded to 1,020 megawatts in a retrofit project that was completed in 2006.



Akosombo Dam

Downstream of the Akosombo Dam lies the WRI's Aquaculture Research and Development Centre. The public centre focuses on research related to aquaculture development in Ghana. It also supports the aquaculture industry in capacity building of farmers, students and fisheries officers, as well as the production and distribution of broodstock and fingerlings using the local Akosombo Tilapia strain.

² http://www.ghanaweb.com/GhanaHomePage/history/akosombo_dam.php



WRI's Aquaculture Research and Development Centre

A tour of the Lake Volta was organised. The tour helped put in perspective the activities going on in the Volta Basin and the impact of the dam on the environment. It also provided an indication of the importance of protecting the lake and its banks in the interest of sustainability. Aside from the economic value from tourism, the lake is the location of a vast population of fish and large fisheries. Recent development in the region include a large-scale enterprise to harvest submerged timber from the flooded forests, providing source of foreign revenue reducing the dependence of locals on fishing as a primary economic activity.



Lake Volta

4. Day 2 – PSC business meeting

6 April 2017 | Volta Hotel, Akosombo

Agenda available in Annex 1 with links to presentations.



PSC meeting

Opening addresses and remarks

Charles Biney, Director of the Volta Basin Authority (VBA), in his opening address gave a reminder of the context of the Flood and Drought Management Tools (FDMT) project and the relevance for the Volta Basin as a means to secure flood and drought information and future scenarios with respect to their IWRM plans and implementation of TDA/SAP. There are opportunities for VBA to make use of the project outputs, in particular, to address issues within the context of climate change. This can be done through the Volta Basin SAP Implementation Project (VISIP) and a proposed GEF project on SAP implementation – implemented through the GEF agencies of UN Environment (UNEP) and the International Union for Conservation of Nature (IUCN) – with a specific focus on addressing ecosystem degradation. However, attention should also be on ensuring water resource management is embedded in the political agenda of basin member states.

Dr. Biney reminded the Steering Committee to use the meeting as an opportunity to review the project progress and provide feedback and guidance to the Project Management Unit (PMU), on the execution of the project and ensure that all activities agreed upon in the project document are achieved.

Yegor Volovik, UN Environment GEF IW Task Manager, added that the site visit put the project into context. He also pointed out the significance in diversity of the pilot basins to test and validate the methodology and tools in different political environments, for different capacities, as this will help ensure a global approach can be delivered by closure of the project.

Development of a Methodology

The following section will briefly highlight the key achievements under component 1 (Development of a Methodology and Tool) during the last reporting period. For more information, please view the [presentation](#).

Output: Methodologies using tools adopting a basin and local approach, including enhancements for a decision support system, that would allow the integration of flood and drought issues into (i) the TDA/SAP GEF IW or equivalent processes, and (ii) IWRM plans and Water Safety plans

Project status

The FDMT project is developing a more structured and scientific approach to different planning methods, including Integrated Water Resources Management (IWRM) and Transboundary Diagnostic Analysis (TDA) / Strategic Action Programmes (SAP) and the basin level and Water Safety Planning (WSP) at the local (water utility) level. The purpose is to not reinvent the wheel but develop a methodology with tools (or technical applications) that can *support* the existing processes.

Ongoing consultations with stakeholders through meetings, workshops, trainings and other events have been valuable in shaping the direction of the project and continue to inform the development of the methodology and associated tools. A significant change in the methodology has been the shift from a desktop to web-based approach. The rationale behind this was based on the experience in the first round of yearly technical training to simplify the usability of the tools.

The methodology and tools support a planning workflow or cycle from baseline assessment (based on near real-time satellite data), risk assessment, planning, implementation and monitoring (based on indicators and near real-time satellite data) and dissemination and warning (based on an automated reporting tool).

As such, 2016 has focused largely on:

- Transition to a web-based approach
- Development of technical content for tools (or technical applications)
- Organisation of trainings and workshops

In 2017, the next steps will be to:

- Finalise the development of technical content for the tools (or technical applications)
- Increase focus on dissemination and increasing capacity

Discussion

Trainings

Improving the capacity of end users, including an understanding of how to apply and interpret the information from the various tools, is essential to the sustainability of the project. The project is designed with a feedback loop approach. Tools are developed to a certain point at which input on the functionality is provided by stakeholders at meetings, workshops and yearly trainings. The input is then used to adjust the tools accordingly. A concern was raised by LVBC and VBA on the frequency of the technical trainings and whether these will ensure the right capacity is developed by closure of the project. The project recognizes that face-to-face and on the job trainings are the ideal situation to ensure the methodology is integrated in the operations and day-to-day activities of stakeholders, however as indicated previously, the yearly trainings are also a consultation process to get feedback from stakeholders.

The project is adopting a more flexible and creative approach to address the concerns raised by LVBC and VBA by engaging with stakeholders in various ways; webinars, existing meetings, events or trainings, video tutorials on YouTube, in order establish a bridge between the yearly trainings.

In December 2016, a more targeted training was provided to HAI (training of trainers concept). This was proposed at the 2nd PSC meeting in Bangkok, Thailand. The idea would be to carry out similar trainings for LVBC (Omari Mwinjaka, Water Resources Management Officer) and VBA (Jacob Tumbulto, Director of VBA Observatory) (and the other key stakeholders).

It is important that the PMU work closely with the key stakeholders to ensure the right staff participate and the same people participate in the technical trainings and targeted trainings to ensure continuity. The PMU relies largely on the stakeholders to ensure that this is the case.

Approach and sustainability

From the experience of NBI (Abdulkarim Seid, Head – Water Resources Management), it is useful to bind the trainings with the workflow of the key project stakeholders. Otherwise the tools become a “just-in-case” tool when it is needed and not a tool to actually use in the workflow. This would also address issues of sustainability at closure of the project. The technical training is targeting actual use cases within the different pilot basins, and the intention is to connect the project outputs to actual issues, and use the technical trainings to demonstrate the technical application of the project outputs.

The PMU is tasked with development of tools and technical validation of the tools through testing, further implementation requires additional resources. The PMU is using this as a justification for a second phase to the FDMT project in which linking to the workflow of the key project stakeholders would be a fundamental element.

However, in the case that a second phase is not granted and therefore consider identifying focal persons from each key project stakeholder who would be tasked with selecting a study or project where they can apply the tools. Dr. Biney pointed out the need to define in the roles and responsibilities of the stakeholders a focal person tasked with the responsibility of applying the developed tools. In such a way they can show a practical example of application, which can be the corner stone for scaling up the use of the methodology and tools.

The project can provide technical support; however, the requirement is that stakeholders need to bear all financial and operation costs to carry out the application activities. This can be included in the roles and responsibilities of the stakeholders.

Action point(s)

- Explore Community of Practice (CoP) approach to enable users to share experiences on applying the technical applications and for posting questions. *PMU to develop draft to be shared online.*
- Continuation of the “expert” trainings with the pilot basins. The expert trainings will focus on capacity building towards key technical staff within the pilot basins. The training will be initiated based on requests from the pilot basins. *Pilot basins to request for expert training to the PMU.*
- Continue and possibly expand webinar-based dissemination and training on the project outputs. *PMU to initiate next stage of the webinars in Q3 2017.*
- Evaluate options for increasing the training effort through the developed Flood and Drought portal. Access to training material (e.g. videos), interaction with experts through blogs or discussion forums etc. *PMU to report to project stakeholders as new initiatives are released.*
- Key stakeholders identify ongoing and upcoming projects which could incorporate the technical applications (e.g. VBA SAP Implementation). *PMU to request information on relevant projects from key stakeholders and level of assistance required.*

Validation and testing at basin-wide level

The following section will briefly highlight the key achievements under component 2 (Validation and testing at basin-wide level) during the last reporting period. For more information, please view the [presentation](#).

Output: Strategic recommendations for inclusion of flood and droughts consideration in IWRM, TDA, Water-Safety and other basin land and water planning tools in the 3 selected pilot basins.

Project status

The FDMT project is applying and validating the developed methodology and associated tools at the basin scale, primarily with basin organisations or authorities.

The purpose is to support the planning workflow or cycles, that exist within basin level planning processes, namely IWRM and TDA/SAP. At the basin level, a number of technical applications have been developed or are undergoing development. These are listed below with a brief overview (*Tool – Planning step – Overview*):

- **Data and Information:** Access to data is a key issue in most basins and without it you cannot do planning. A data and information application was developed providing near real time satellite based data, seasonal and medium range climate forecast, climate change projections and different types of data and information relevant for basin and local planning.
- **Drought and flood assessment:** Enables an assessment of the drought and flood related hazards, the associated impact and the risk towards different vulnerable areas or sectors.
- **Issue analysis:** Evaluates the causes behind environmental issues by listed the environmental impacts and evaluating the causes based on Causal Chain Analysis (CCA) and Water Resources Issues Assessment Method (WRIAM).
- **Water Indicator:** Assist users in selecting relevant indicators for measuring the state of a specific issue. It provides information about the required data and the processing steps, and the application of the indicators.
- **Basin planning:** Evaluate different planning options based on an existing model (currently MIKE HYDRO Basin).
- **Reporting:** Enable automated reports covering different aspects of the planning process.

An updated overview of the tools is available at www.flooddroughtmonitor.com. As the tools will be released throughout 2017, all registered users will be notified when a new tool is made available.

In 2017, the next steps will be to:

- Finalise development of technical content for tools
 - Focus on economic and socio-economic aspects in relation to indicators but also how to evaluate these aspects for basin planning
 - Focus on application and interpretation of the project outputs
- Use case specific trainings for the basin organisations

The next section will demonstrate how the technical applications can be applied to support basin planning. For more information, view the [presentation](#). A presentation was also provided addressing the support of TDA/SAP, view the [presentation](#).

Application of project outcomes in basin planning: Improving resiliency of crops to drought

The purpose of this presentation was to show how the project outcomes (technical applications) can be used in basin planning based on a use case. For this example, the objective of the use case is to provide information enabling decision makers to improve the resilience of the agricultural sector towards drought by strengthening the national and regional planning.

The presentation was used to exemplify how the project outputs could be used to support the planning process for an issue connected to operational planning with focus on the agricultural sector.

Within the context of a TDA/SAP process a similar approach can be used, where the key steps under the TDA is supported by the availability of global data sets, the analysis of such information to identify and prioritise transboundary problems. Evaluating planning options and the impact of these planning options can help to inform the SAP process while the implementation of the SAP can be monitored using near real-time data to monitor the state of the basin.

Discussion

Tools (Technical applications)

The Water Indicator application guides a user to relevant indicators for a specific issue. The tool provides a factsheet with information on, for example, how to calculate, how to use the indicator, the data needed, the limitations, etc. In the Flood and Drought assessment, there are indicators based on satellite data used to make the assessment; rainfall deviation, reservoir storage. It is easy to come up with many indicators, but it is hard to identify the right indicators to use.

The idea to develop this application comes from the fact that each basin starts on a fresh sheet of paper when defining indicators. This triggered a need to identify the indicators that are available and in common use. While there are a lot of overlaps and variations across indicators, none are the same. The idea is to then establish a more structured system to identify indicators with relevant and complete information. People can add new indicators as they need making for a flexible, user friendly system.

There has been extensive collaboration with ongoing programmes, in which the outputs have been integrated into the tool, demonstrating a good example of collaboration in the project. An example is the [Transboundary Waters Assessment Programme](#) (TWAP).

On the basin planning tool, the functionality requires that a user link up to an existing model (WEAP, Mike Hydro, etc.). For the Africa region, WEAP is a global and freely available model. However, a maintenance agreement would need to be drafted to update the tool when a new version of MIKE Hydro Basin or WEAP comes out. Without such an agreement, users would be restricted to the latest version of MIKE Hydro Basin or WEAP after closure of the project.

Data

As the project is a global project, the outputs need to be globally applicable, satellite based data is being provided in the data and information tool. Validation of the data with ground data (observed data), is beyond the scope of the project. The assessment of satellite data would need to be carried out by stakeholders themselves by downloading the provided satellite data and validating within your own system. Sutat Weesakul, Director of the Hydro and Agro Informatics Institute, indicated that in Thailand, validation of data is occurring, so the possibilities are there for this, but the initiative needs to come from the end users.

There needs to be some consideration of the spatial scale at which information is provided. Outputs are valid for a complete basin; however targeting small sub-basins would be useful as they would have the capacity to restrict planning for more specific areas. The data made available and the web based applications can be used at basin, catchment and local scale as most of the data sources are made available with a resolution of 1 to 5 km.

The data and information tool should be understood as a data provider rather than a storage tool. A common request during the recent technical trainings in Accra, Ghana (27-31 March 2017) was for user to add their own data to the system. The experience from DHI (Oluf Jessen, Project manager) is that users are reluctant to upload data for security issues. The suggestion is for users to download the data and apply this within their systems complementing observed data that they have available. The project understands that data quality is critical in decision making, but is required on the request of the GEF to develop a global approach.

TDA/SAP

One of the challenges with SAP implementation projects is the political dimension as actions are usually taken at the national levels. The TDA/SAP always includes plans or actions at the national level. When an assessment of each decision is made on a transboundary level, it would be useful to

downscale this to the boundary of each member state, as the information can be better used. It maintains that national plans are still linked to the regional plan, however, the spatial context and conditions are taken into account.

The SAP process takes a long period, but a review using new information and data can be used to provide updated information to the SAP as it is being implemented. Furthermore, the technical applications can be used to update the TDA to ensure that it stays relevant. However, there is a difficulty in applying the project outputs to the TDA/SAP process as it is difficult to identify ongoing TDA/SAPs. A dialogue with GEF will be useful to define how to integrate the outputs in the TDA/SAP process, for example as a monitoring tool or to assess how the SAP is performing.

Validation and testing at local level

The following section will briefly highlight the key achievements under component 3 (Validation and testing at local level) during the last reporting period. For more information, please view the [presentation](#).

Output: Recommendations for inclusion of flood and drought issues in WSP and other local planning methods in the 3 pilot basins with integration of urban and (agro-) industrial water users perspectives and realities.

Project status

The FDMT project is applying and validating the developed methodology and associated tools at the local level, primarily with water utilities, supporting Water Safety Planning (WSP) and the link to catchment management.

At the local level, the tools applicable include:

- **Data and Information:** Used in the baseline assessment. The application can provide information to identify current and future climatic hazards (e.g. water scarcity, increased temperatures) that will affect the water supply system.
- **Issue analysis:** Used in planning to identify key issues and the underlying causes which would help pinpoint what a utility can do to address a risk.
- **Drought and flood assessment:** Used in risk assessment to evaluate the impacts of a hazard (flood or drought).
- **Water Indicator:** Used in planning to assist in selecting relevant indicators that can be used to measure the effectiveness of control measures to address hazards.
- **Basin planning:** Used in planning but is more relevant for catchment based utilities (e.g. utilities that manage their water source) to assess water availability (for various abstraction locations) or reliability of water demands for different sectors (including water supply) now and in the future.
- **Reporting:** Used in monitoring, dissemination and warning. The reporting functionality would enable users to consolidate their WSP and disseminate data, information and results.

The key entry point for utilities is WSP. Therefore, aside from the tools indicated above relevant at the local level, the project is developing a WSP support tool, to support utilities in their WSP implementation within the context of climate change, while the other tools provide inputs relevant for the WSP process. The WSP tool supports the 11 modules (see <http://www.wsportal.org/what-are-water-safety-plans/>).

In 2017, the next steps will be to:

- Further develop support of WSP modules
 - This would be done with continued consultation with water utilities and internal PMU discussion
- Link WSP support tool with other tools

- Comprehensive risk assessment and analysis
- Integration of catchment information into utility planning
- Consolidate and test the functionality
 - This would be done through the remaining technical trainings in pilot basins; and through other channels (e.g. webinars, existing WSP trainings and/or programmes, etc.)
- Integrate tools into WSP training, auditing, etc.
- Continue collaborating with external partners (e.g. WHO and UNICEF)

The next section will demonstrate how the technical applications can be applied to support water utilities to adapt to climate variability and change. For more information, view the [presentation](#).

Application of project outcomes in utility planning: Enabling water utilities to adapt to climate variability and change

WSP, as the entry point to support water utilities in their planning, addresses water security (quantity) and safety (quality) planning. The outputs of the project targets both short-term and seasonal management (operational) to long-term investment (strategic) for water utilities.

Water utilities are aware of need to integrate information at the catchment level; however this is not always an integral part of their current planning. In the case of many utilities, there is little control or engagement with the wider catchment and control measures to address hazards focus from the intake with an emphasis on treatment for water quality. Using the project outputs, climate information and catchment information can be integrated into WSP.

Within the context of the 11 modules defined by WSP, the use case demonstrates how climate risks and impacts can be addressed in a water utility's operational and strategic planning. Water utilities are able to recognise how the water supply system may be affected and so improve their capacity to anticipate, respond to, cope with, recover from and adapt to stress and change to ensure the system is able to keep on functioning.

The following table provides an overview of the 11 modules and how the project outputs support the different steps.

WSP module	FDMT tool(s)	Description
1. Assemble WSP team	WSP support tool	Assembling a qualified, dedicated team of managers, engineers, water quality control staff, technical staff involved in day-to-day operation as well as climate change experts.
2. Describe the water supply system	WSP support tool	Baseline assessment of the supply system.
3. Identify the hazards and assess the risks	WSP support tool Flood assessment and Drought assessment tool Issue analysis tool	As part of the baseline assessment, the data and information tool informs the identification of climatic hazards, while an assessment of the information using an array of indicators will provide an indication of the severity of the risk. The issue analysis tool is useful to assess and prioritise hazards. It should be noted that the team is required to identify all hazards to their system (not just climate related hazards).
4. Determine and validate control measures, reassess and prioritise the risks	WSP support tool	Determine and validate control measures and reassess and prioritise the risks. The WSP team would also identify control measures that build on improved water resources management and that reduce climate related risks to acceptable levels.

	Indicator builder tool	
5. Develop, implement and maintain an improvement plan	WSP tool Basin planning tool Indicator builder tool	In the event of an ineffective control measure, the WSP team is required to put together an improvement plan. Utilities, through the implementation plan, can link to the Basin planning tool to influence their abstraction points and impacts at the catchment level that affect water quality. Indicators can be identified and used to evaluate the performance of improvement plans.
6. Defining monitoring of control measures	WSP support tool Indicator builder tool	Using the WSP tool and indicator builder tool, the team is able to identify possible indicators to monitor the control measures (this depends on the type of water utility indicators uploaded to the application). Based on an analysis of the monitoring process, corrective actions could be established when operational targets are not met.
7. Verify the effectiveness of the WSP	WSP support tool	Provide evidence that water produced by the water supply system is compliant with the supplier's water quality objectives. As such the team is able to confirm that the WSP is being implemented as intended and designed, and is able to address any risks that threaten the ability to produce safe water.
8. Prepare Management Procedures	WSP support tool	Defines actions to be followed during normal conditions and in incident or emergency situations. The team would consider climate-related emergencies when developing their management procedures.
9. Develop supporting programmes	WSP support tool	Defines activities that support the development of people's skills and knowledge, and their capacity to manage systems to deliver safe water. The team can upload documentation of supporting programmes which manage new climate risks e.g.: Training on awareness of climate change Engagement with relevant agencies to find out latest science and updates on climate risks Training on new technologies and management of new water sources
10. Plan and carry out periodic review of the WSP	WSP support tool Indicator builder tool	Review and feedback procedures are established to ensure relevance of WSP. Indicators should be used to include catchment level/climate indicators that are useful to the utility to monitor and provide alerts; e.g. water scarcity issues.
11. Revise the WSP following an incident	Reporting tool	Reporting tool facilitates the dissemination of data, information and results. With such information available, the review and updating of the WSP is supported.

Discussion

The WSP support tool is a supporting tool to guide people in their water safety process. The tool will ensure that information is stored in one place and easily accessible by the WSP team. Essential to the success and positive uptake of the supporting tool is to ensure that all 11 modules are supported

as WSP is a step-by-step process which requires all steps to be completed to ensure water safety and security for the utility. Nevertheless, the approach is different for utilities based on the capacity and mandate. For example, In South Africa, Rand Water controls the catchment which enables them to manage the water in the catchment, while KIWASCO focuses on the treatment and delivery of potable water.

Essential to an effective WSP is looking beyond the traditional boundaries of a utility, to look beyond the abstraction point and understand the important in investing or influencing actions at the catchment level.

A key aspect that is being addressed is the confidentiality of the information. This is ensured if utilities establish private working groups within the portal to restrict accessibility to just team members.

It is important to note that the project does not support water quality forecasting as this is beyond the scope. The project also does not support real-time operation of water utilities.

Action point(s)

- Discuss with WHO use of tools/technical applications in WSP implementation (e.g. incorporating relevant technical applications in WSP trainings). *PMU (IWA) to discuss with WHO. Outcome to be disseminated to project stakeholders.*

Capacity building and dissemination

The following section will briefly highlight the key achievements under component 4 (Capacity building and dissemination) during the last reporting period. For more information, please view the [presentation](#).

Output:

- *Learning package including technical specifications and training materials for the application of the new methodology with DSS tools is tested in 2-3 trainings with basin officials, utility and industry management and operational staff, and representatives from civil society with 15-30 people per training.*
- *Communication approach developed to disseminate F&D methodology within pilot basins, GEF basins, and to other relevant end users.*
- *2-3 Experience Notes and other documents and audio-visual materials produced for IW LEARN dissemination mechanisms and website.*
- *Development of materials (4-5) developed and disseminated at major water events: WWF, Water Week, GEF IWC 7/8/9, and IWA Conferences.*

Project status

Under component 4, the activities undertaken contribute to capacity development and dissemination of project outputs. To ensure the sustainability of the project and uptake of the project outputs, capacity building activities are carried out to ensure stakeholders see the value in project outputs and to understand how to use and interpret the tools and the information they provide. Of equal importance has been the ongoing efforts of collating the experiences and know how gained through the project and from stakeholder, and making this available to enrich the global dialogue on water security and adaptation to climate variability.

In 2016, a number of technical trainings and workshops were carried out to demonstrate the technical content of various tools developed to date within the project. These events have also been useful in

receiving valuable feedback from stakeholders on further development of the methodology and technical content of the tools.

- Lake Victoria Basin – 26-29 January, 2016 – yearly technical training with basin level organisation and water utilities
- Volta Basin – 8-11 February, 2016 – yearly technical training with basin level organisation and water utilities
- Chao Phraya Basin – December 2016 – targeted trainings with key stakeholders
 - HAIL, and MWA and PWA
- Volta Basin – 27-31 March, 2017 – yearly technical training
 - 2 days – Local level (ONEA, GWCL)
 - 3 days – Basin level (VBA, VRA, WRC, Agence de l'Eau, GWCL)

Furthermore, activities have been undertaken to raise awareness on the importance of incorporating information on climate hazards for better informed decision making in planning processes

- Learning and knowledge exchange workshop, Accra, Ghana (12 February, 2016)
 - Information on planning approaches from sub-basins and utilities
 - Focus on decision making and use of data
- IWA World Water Congress, Brisbane, Australia (9-13 October, 2016) – a workshop was held on the benefits of a decision support system for basin and local level stakeholders to be more drought resilient in their water management practices.

The project is ensuring an online presence through the [project website](#), blogs, [newsletter](#), [webinars](#) as well as offline through various communication material (e.g. information sheets, presentations, posters, etc.) disseminated at [events and meetings](#).

- European River Symposium 2016 | 2-3 March, 2016 | Vienna, Austria
 - Keynote presentation on building partnerships for water and sustainable development
- GEF Biennial International Waters Conference (IWC) 8 | 9-13 March, 2016 | Negombo, Sri Lanka
 - A poster was produced addressing the project support to the SDGs
 - Participated in the Portfolio Solutions Exchange event to promote the FDMT project as an innovative approach
 - Session held addressing the link between data and policy
- IWA Global Water Safety Conference | 25-28 April, 2016 | Palawan, Philippines
 - Workshop: [Planning for Climate Resilience](#)
 - Side event: [Flood and drought management tools from catchment to tap](#)
- Africa Water Week | 20 July, 2016 | Dar es Salaam, Tanzania
- 1st Asian Science and Technology Conference for Disaster Risk Reduction: Science-Policy dialogue for Implementation of the Sendai Framework | 23-24 August, 2016 | Bangkok, Thailand
- From data and information to planning: Part 1 | 5-6 September, 2016 | Yangon, Myanmar
- 6th Workshop on Water and Climate Change Adaptation in Transboundary Basins | 13-14 September, 2016 | Geneva, Switzerland
- IDMP Advisory and Management Committees meetings | 14-15 September, 2016 | Geneva, Switzerland
- Mekong Delta workshop | 4-6 October, 2016 | Hanoi, Vietnam
- IWA World Water Congress | October 9-13, 2016 | Brisbane, Australia
 - Workshop – Drought Resilient Water Management
 - HAIL contribution
- Lake Victoria Scientific Conference | October 26-27, 2016 | Tanzania
- Permanent Expert Group for Hydrological and Meteorological Issues in the Sava River Basin | 29 November, 2016
- From data and information to planning: Part 2 | 6-9 December, 2016 | Bangkok, Thailand

In 2017, the next steps will be to:

- Organise technical trainings for the Lake Victoria Basin (June 2017) and Chao Phraya (September 2017). The training will be more tailored to the key stakeholders.

- Tailor communication and dissemination for different user types
- Develop new and update existing communications products
 - Blogs
 - Newsletters
 - Information sheets
 - Video series
 - Infographics
 - Posters
- Work with key stakeholders in promoting awareness of challenges around managing flood and droughts and how the project outputs can be used (e.g. presentations)
- Finalise and disseminate media pack/kit containing press release, op-ed/blog article, information sheets, infographics, key messages, narrative for key stakeholders, social media, etc.
- Upgrade project website to new IW LEARN platform
- Work with Folk Labs to develop an infographic series
- Develop IW Experience Notes (print and video)
- Participate at international and regional events to continue to promote the project and the outputs
- Develop a series highlighting source to sea in The Source (including FDMT basins) magazine
- Support the development of blogs from full range of stakeholders
- Update communications strategy

Discussion

Beyond the current activities to promote the project, there is more that can be done to reach a wider audience. For example, aside from hosting the website, the project can explore how to further take advantage of IW LEARN to promote and communicate project outputs across agencies; for example, webinars. Furthermore, stakeholders advocating on behalf of the project is effective in reaching their constituents and demonstrating a sense of ownership. LVBC, for example, have promoted the project at their regional events such as the Council of Ministers. HAI have presented and promoted the project at events they have attended. In the Volta Basin, a WSP Network meeting was arranged with utilities beyond the pilot basins. The project outputs can be launched at these events with considerations on how this can be used to influence policy makers on the adoption of the project outputs.

Action point(s)

- Discuss with IW:LEARN steps forward to further promoting project and outputs within the IW:LEARN network including through their newsletter, website and webinars. *PMU to announce new initiatives in the upcoming newsletters.*
- Continue to identify events (particularly regional events) to promote the project and outputs, raise awareness (and improve capacity), improve buy-in and influence policy makers. *PMU to contact stakeholders on relevant upcoming events.*
- Share guidelines to encourage the use of social media (e.g. twitter) with partners and stakeholders. Share media kit for use among partners to promote project. *PMU to share information with project stakeholders.*
- Work with partners and stakeholders to develop blogs (improve stakeholder engagement). *PMU to contact project stakeholders.*
- Support (where needed) key stakeholders in development of content for newsletter. *PMU (IWA) to support project stakeholders.*

Gender and vulnerable populations

The following section will briefly highlight the key achievements under component 1 on gender and vulnerable populations during the last reporting period. For more information, please view the [presentation](#).

Project status

The approach taken has been to understand how stakeholders are including gender and vulnerable populations in their planning for flood and droughts. A survey was developed as a simple assessment on whether gender and vulnerable populations are incorporated into planning. The findings from the survey and literature review are used in a final report for each pilot basin, with some general recommendations.

In 2017, the next steps will be to finalise and disseminate the reports for each basin

Discussion

Looking back at the efforts put into incorporating a gender dimension into the project, it has been a very lengthy process. Based on input from the PSC, the survey was developed. The survey can be useful for basin organisations or utilities to do a rapid assessment of the integration of gender and vulnerable populations in their current activities. The reports are developed to pull this information together; this is where the literature has been important. The agreement was to finalise the reports with the information available.

Taking gender into account is not easy. From the experience of UNEP, it could be interesting to take into account gender at the stage of risk assessment; looking at different hazards for gender and vulnerable groups. Furthermore, under component 2 and 3, aspects on gender and vulnerable groups can be included in the strategic recommendations.

Action point(s)

- Explore integration of data sources on gender and vulnerable populations and how this can be used in risk assessment for different hazards. *PMU to report as the drought and flood assessment applications are released.*
- Finalise draft gender and vulnerable population reports for pilot basins (with a focus on literature review). *PMU (IWA) to share final draft.*

5. Day 3 – PSC business meeting

7 April 2017 | Volta Hotel, Akosombo

Agenda available in Annex 1 with links to presentations.



PSC meeting

Project budget and workplan

The following section will provide an overview of the project budget, expenditure of 2016, and the budget and workplan for 2017. For more information, please view the [presentation](#).

Project status

The project budget overview (by component and by calendar year, and by UNEP budget components) and expenditure for this year shows that the project is on track with the annual spending in terms of how the different components have been resourced compared to the spending. In 2017, cost for development of the technical applications and costs for training have been the key expenditure areas. The balance by end of 2017 is expected to be zero.

Discussion

Costs are provided for each activity and under the financial reporting requirements of UNEP, a breakdown is done, which can provide an indication of costs for trainings, for travel, etc. This way the project has a clear overview of available funds for remaining activities.

The delivery rate of the project is very healthy, over 80%, and for 2016 it was 84%. Activities are going well; based on budget and expenditure, however there are other indicators taken into consideration.

Expenditure for 2016: Approved by PSC

Budget for 2017: Approved by PSC

Mid-term review/evaluation

The following section will give an overview of the mid-term review/evaluation (MTR). For more information, please view the [presentation](#).

Overview

The mid-term review/evaluation (MTR) assesses progress (about half way through a project implementation). It is an opportunity to appraise the achievements in the project and to provide recommendations to steer the project in the second half of the project implementation (ensuring sustainable outcomes from the project).

The MTR will therefore:

- Compare current achievements to intended outcomes (commitments) – progress
- Look at how to redirect efforts in the most effective way for success and sustainability

The process is confidential and involves a reviewer speaking to the PSC members and the project partners and also carrying out a desk review.

The reviewer will look at:

- Project design and relevance – theory of change
- Project organisation and delivery – current status and potential for success
- Recommendation – ownership and sustainability

Tentative timeline

Milestone	Timeframe 2017
Desk Study/Inception Phase	01-15 April
Inception Report	15 April
MTR mission (Interviews and PSC meeting in Accra and Akosombo)	01-07 April
Skype interviews	17-21 April
Note on preliminary findings and recommendations	05 May
Draft zero of report to Task Manager for comments	31 May
Draft 1 to Task Manager	15 June
Draft Report shared with project team	23 June
Draft Report shared with Evaluation Reference Group	07 July
Draft Report shared with stakeholders	15 July
Final Report	15 August

Discussion

A virtual meeting will be organised with the PSC after the final report is completed to get official approval.

The theory of change takes into account some elements of the results framework (logframe); e.g. outputs and outcomes, and the assumptions (drivers that are put in place). However, the MTR is looking beyond the project, what is needed (actions, conditions) to move from what the project has put in place to the long-term impact (increase resilience, improved water security, reduced risk to populations).

Action point(s)

- Share preliminary findings and recommendations with PSC. *Reviewer to share preliminary findings.*

Scaling up, replication and application of project results

The following section addresses the opportunities beyond the project timeframe to ensure continuity in the application of project outputs. For more information, please view the [presentation](#).

Discussion

How can the project be up-scaled geographically and how can the functionality of the technical applications be improved? In Thailand, the tools are technically usable. The Prime Minister has requested that water resource management be scaled down to the provincial level. This is a good opportunity to introduce the technical applications to the provincial authorities. HAI will assist the provincial authorities with the hardware and software in provincial water centres. Local data may be more important; however global data can still be relevant. For the upcoming technical trainings in Thailand, it will be useful to select staff from the provincial offices. Furthermore, the Ayeyarwady Basin in Myanmar has expressed interest in the project outputs as they do not have much global data.

For the Lake Victoria Basin, it is more interesting to look at small transboundary basins to test the tools at that level. Furthermore, presenting at the Council of Ministers is an opportunity to get buy in from policy makers to ensure sustainability. As the tools are completed, it will be easier to sell this to the politicians.

The Nyando River Basin in Kenya would be a good opportunity to test the tools in the basin; however this would require resources from LVBC. In the Nile Basin, there could be experimentation with the tools looking at global data sets. Furthermore, there may be opportunities for the project outputs to complement the system of NBI.

To recommend the use of the tools at another organisation, a demonstration of how the outputs have been applied is needed, however, the tools need to be completed in order to do this. There is a lot of potential for further development and application of the tools (and also not restricted to transboundary basins – this can be downscaled, however staying within the logic of global data). There are three activities for wider application that the project is exploring over the coming year.

1. Lighten the need for training by making the tools as easy to use and understand and provide some training with CAP-NET, tutorials, webinars, etc.
2. Carry out promotion, awareness material that is technical and that is not technical (for funding agencies, decision makers)
3. Develop a business model for continuation as part of a concept. The model would consider maintenance and broadening the client base

There is good argument for a next phase with the GEF; however, there is no certainty. Nevertheless, for a next phase, organisations that have gone through the trainings could be co-executing agencies to address issues around resources. Also, exploring the integration of the tools into existing and upcoming transboundary basin can help address the continuity of the project and its outputs.

Action point(s)

- UNEP to initiate dialogue with GEF to explore integration of technical applications in the TDA/SAP process. This could be through the upcoming projects in Volta and Amazonas or other upcoming TDA or SAP projects. *UNEP to report on options for integration into*

upcoming projects.

- Develop approach for second phase including specific awareness material to promote current activities and future applications and the benefits. Second phase needs to consider the following:
 - Inclusion of all basin member states
 - Local level data application
 - Business model – maintenance, broaden client base*PMU and UNEP to discuss and develop concept and approach for second phase.*
- Identify potential partners for adaptation of the project outputs (e.g. basin organisations – ORASECOM, ZAMCOM – networks, etc.). *PMU and UNEP to discuss possible options.*

4th Project Steering Committee meeting

Location: Nairobi, Kenya

Host: UN Environment

Date: *tbd (Q1 2018)*

Action point(s)

- Work with UNEP to prepare final PSC (location: Nairobi, Date: *tbd*). *PMU and UNEP to prepare meeting.*



Annex 1 – Agenda

5 April 2017 – Day 1 – Field Trip organised by VBA and VRA

6 April 2017 – Day 2 – Volta Hotel, Akosombo

Chair: VBA

Time	Item	Responsible
09:00-09:15	Opening and Welcoming Address	VBA
09:15-09:30	Overview of agenda, meeting structure and rules of procedure	UNEP (Yegor)
09:30-10:00	Project background, goals and outcomes	UNEP (Peter)
10:00-10:15	Project management structure <ul style="list-style-type: none"> • Project management unit • Steering committee 	DHI/IWA
Key achievements during last reporting period Brief update of each component including what has been completed during the last reporting period, including action items related to each component and the annual workplan for 2017. The substantive discussion will be after these updates where the project outcomes supporting basin and local level planning and their application will be discussed.		
10:15-10:40	Component 1 - Development of Methodology and Tool <ul style="list-style-type: none"> • Technical development • Online tools • Action items 	DHI
10:40-11:00	Coffee Break	
11:00-11:20	Component 2 - Validation and testing at basin-wide level <ul style="list-style-type: none"> • Technical training and workshops • Action items 	DHI
11:20-11:40	Component 3 - Validation and testing at local level <ul style="list-style-type: none"> • Technical training and workshops • Action items 	DHI/IWA
11:40-12:15	Component 4 - Capacity building and dissemination <ul style="list-style-type: none"> • Communications products • Stakeholder engagement • Presentation and discussion of dissemination products (video, infographic, flyers etc.) • Action items 	IWA
12:15-13:30	Lunch	
13:30-15:30	Application of project outcomes in basin planning <ul style="list-style-type: none"> • Objectives for basin planning • Use cases for operational and strategic planning 	DHI
15:30-16:00	Coffee Break	
16:00-16:45	Application of project outcomes in utility planning <ul style="list-style-type: none"> • Objectives for water utility support • Use case for water utility support 	IWA
16:45-17:00	Gender and vulnerable populations <ul style="list-style-type: none"> • Survey • Reports 	IWA
17:00-17:30	Discussion and wrap up	VBA
18:00-20:00	Dinner	

7 April 2017 – Day 3 – Volta Hotel, Akosombo
Chair: VBA

Time	Item	Responsible
09:00-10:00	Project budget and workplan <ul style="list-style-type: none"> • Overview of the project budget • Changes to the project budget • Expenditure to date (Dec 2016) Discussion and approval of workplan and budget by SC	UNEP
10:00-10:30	Mid-term review – methodology and process	UNEP (Sherry)
10:30-10:45	Coffee Break	
10:45-11:45	Scaling up, replication and application of project results Discussion	UNEP
11:45-12:00	4 th Project Steering Committee meeting <ul style="list-style-type: none"> • Suggestion and agreement on the date and place of the 4th Project Steering Committee meeting (Nairobi?) 	VBA
12:00-13:00	Lunch	
	Additional mid-term review interviews	

Annex 2 – Participants

Name	Organisation	E-mail
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Annex 3 – PSC ToR

The Project Steering Committee (PSC) or Steering Committee (SC) for the UNEP/GEF Project entitled: “Flood and Drought Management Tools” (hereafter referred to as the project) is established under the Project Document as approved by the collaborating institutions and organisations during the project preparation phase as follows:

A specific responsibility of the SC will be to facilitate liaison with the GEF Implementing Agency (UNEP) regarding overall governance of the project. The Steering Committee shall:

- Be the decision making body for the project;
- Provide governance assistance, policy guidance and political support in order to facilitate and catalyse implementation of the project, and to ensure relevant project outcomes; and
- Annually review program progress and make managerial and financial recommendations as appropriate, including review, amendment and approval of annual reports, budgets and work plans.

1. Membership of the Committee

- 1.1. Full members of the SC shall consist of key representatives of the basin organisations participating in the project and external observers. Key representatives are defined as the basin organisation (i.e. VBA, LVBC and HAI). The external observers consist of UNEP-DHI and NBI;
- 1.2. In addition the Implementing Agency (UNEP), and the executing agencies (DHI and IWA) and the GEF Secretariat, shall designate individuals to serve as *ex officio* members of the committee;
- 1.3. The host organization of the steering committee will be invited to be the Chairperson with responsibility for chairing the formal meeting of the Committee and for acting as Chairperson of any ad hoc meetings convened during the subsequent inter-sessional period (which is until the next steering committee meeting). Such ad-hoc meetings can take place through teleconference as required and will be organized by the Project Management Unit (PMU);
- 1.4. SC chair will be active for one year and then handover to the new chair at the next SC; and
- 1.5. The SC may agree, by consensus, at the commencement of each meeting to co-opt additional experts as observers or advisors to any meeting or meetings of the Committee or part thereof, as the committee shall deem appropriate.

2. Secretariat of the Committee

- 2.1. The PMU established by IWA/DHI under authority of the project document shall act as Secretariat for the Committee; and
- 2.2. The PMU shall act as Secretary to the Committee and as rapporteur for formal meetings of the Committee.

3. Meetings of the Committee

- 3.1. The PMU acting in its capacity as Secretariat shall convene regular annual meetings of the Project Steering Committee; and
- 3.2. Ad hoc meetings may be convened:
 - When a majority of the Committee members make a request for such a meeting to the PMU; and
 - At the request of the PMU when circumstances demand.

4. Terms of Reference

The SC shall operate on the basis of consensus to:

- 4.1. Provide direction, and strategic guidance to the Project Management Unit (PMU) regarding project implementation and execution of agreed activities over the entire period of the project including the establishment of timelines and milestones for provision of agreed outputs;
- 4.2. Review and approve the annual work programme and budget for project execution ensuring that these remain focused on the project overall goal and objective;
- 4.3. Facilitate co-operation and co-ordination among the participating institutions, organisations and agencies particularly in transboundary environmental issues and cross component issues;

- 4.4. The role of each basin representative is to channel the outcomes and outputs of the project to relevant institutions within the basin for further endorsement and uptake. This is needed for buy in, adoption and usability after completion of the project;
- 4.5. Review and evaluate progress in project implementation and execution, and provide guidance to the PMU and core partners regarding areas for improvement, paying particular attention to:
 - Progress in implementation of the various project components;
 - The monitoring and evaluation plan of the project;
 - The quality of outputs produced;
 - The sustainability of the project outcomes; and
 - The replicability of actions recommended by the project; assist in soliciting wide support for the project;
- 4.6. Assist UNEP and the PMU in soliciting wide support for the project and raising such additional co-financing as may be required from time to time;
- 4.7. In order to enhance dissemination of project results and recommendations, the SC should review and monitor:
 - Stakeholder buy-in to the project during implementation (by review of the Monitoring and Evaluation survey reports);
 - Whether results reach intended targets; and
 - The risks of failure;
- 4.8. Provide feedback on Project Implementation Review (PIR) reports as needed and approve progress on the results framework presented at each SC meeting;
- 4.9. Consider and approve such recommendations as shall be presented to the Committee by the PMU and the all stakeholders regarding project execution;
- 4.10. Review and approve the outline of, and subsequently the final reports arising from the project, including conclusions and recommendations particularly focusing on quality of outputs, and the information dissemination strategy, including its utility by potential users; and
- 4.11. Agree at their first meeting:
 1. The membership, meeting arrangements and terms of reference of the committee as prepared in draft in this document; and
 2. The rules of procedure, and such standing orders and manner of conducting business as may be considered necessary by the committee.

5. Conduct of Committee Business

- 5.1. The Committee shall operate and take decisions on the basis of consensus, regarding any matter relating to project execution that has implications for key stakeholders; and
- 5.2. Where full consensus cannot be achieved in reaching agreement during a full meeting of the Committee, on any matter relating to project execution that has implications for core partners, the Secretariat shall, in consultation with the Committee, facilitate negotiations during the subsequent inter-sessional period with a view to seeking resolution, and will report the results of these negotiations to the Committee members.

6. Other Matters

- 6.1. Notwithstanding the membership and terms of reference contained in this document the Project Steering Committee shall have the power to amend, from time to time, the membership and terms of reference of the Committee; and
- 6.2. The role of each basin executive in the SC is to channel project outcomes and outputs to high levels of government to ensure endorsement across countries and institutions.