

■ TERMS OF REFERENCE ■

***Water Resources Management Sustainability Index Tool (WRM SIT) Initiative
Field Application Testing Short-Term Consultancy***

1.0 Introduction

The Florida International University Global Water for Sustainability Program (FIU GLOWS) is seeking interested parties for a short-term assignment to carry out country-level field testing / application of the new Water Resources Management Sustainability Index Tool (WRM SIT) in two GLOWS program countries. One of these programs is the Integrated Natural Resources in Watersheds of Georgia (INRMW). The present ToRs correspond to the application of the WRM SIT to the INRMW in Georgia. Implementation in the country is expected to occur over an estimated 3-6 weeks during July-August 2014, with variable levels of efforts of various Team members over that period. These Terms of Reference (ToR) correspond specifically to the roles and activities of the local technical Teams (one for each country). (Background on the roles of supporting team members drawn from FIU-GLOWS headquarters staff and an international consultant is also provided for context). The ToR serves as the basis for initial technical and cost proposals from interested organizations corresponding to efforts of the local Team only in each country. Separate technical and cost proposals should be submitted for each target country.

2.0 Project Background

To support a greater attention to sustainability for water sector programming, considerable recent attention has been directed to developing metrics or benchmarks that adequately reflect whether program actions are having the desired results, and track core “sustainability factors” associated with on-the-ground change. The increasing emphasis within development organizations on accountability and impact has contributed to this shift in how and what is measured. Focusing on metrics related to sustainability is seen as an important first step in reforming the way investments are ultimately made in the water sector.

The USAID-funded Global Water for Sustainability (GLOWS) Program is undertaking an initiative to develop and apply better metrics to gauge the sustainability of water resources management programs.¹ The effort will help GLOWS and USAID better assess the likelihood that current water program investments will endure, and guide future investments and project design for the GLOWS program donor agency. The initiative will also provide a systematic approach to gathering evidence over time that can contribute to broader sector learning about what constitutes ‘sustainability’ in the water sector more generally.

The Initiative has developed a prototype of a new monitoring system for application by implementing organizations and donors to track core elements contributing to ‘sustainability’ of water resources and their management – the WRM Sustainability Index Tool (WRM SIT). Tool development has drawn on sector-wide historical experience in water resources M&E, emerging international efforts to measure sustainability in the environment/natural resources, WRM, and WASH sectors, and the extensive

¹ This accompanies a companion effort tracking water supply, sanitation, and hygiene (WASH) sustainability.

knowledge and experience of the GLOWS consortium partners. This project will test application of the draft Tool for the first time in selected countries. Based on this experience, the Tool will be refined and finalized for broad public dissemination.

3.0 Project Objectives

The specific objectives of this activity are:

Objective 1: To customize and contextualize the WRM Sustainability Index Tool content and field methodology (including all supporting materials) for application in each selected country;

Objective 2: To carry out test application of the draft WRM Sustainability Index Tool and field methodology in each selected country;

Objective 3: To make recommendations for refining and modifying the WRM Sustainability Index Tool and field methodology based on the experience applying it in each selected country.

4.0 Project Methodology Overview

Application of the WRM SIT consists of collecting information on 21 standardized indicators in five factor categories (Governance, Financial, Technical, Environmental, Socioeconomic), each with 4 sub-indicators. Different indicators are targeted at the national, basin, and local levels. The full set of draft indicators/sub-indicators is presented in Annex 2, with further information available in the document: *Water Resources Management Sustainability Index Tool (WRM SIT): Draft Indicator Framework and Methodology Guidelines (May 2014)*.²

The WRM SIT will utilize several qualitative data collection methodologies common in applied social science research. Best practices will be applied to avoid bias and increase validity of results. Three techniques will be used as the primary methods:

- Secondary Documentation Review
- Key Informant Interviews
- Group Interviews

Two additional techniques will be applied in a limited fashion primarily for triangulation of responses collected with the other methods:

- Structured Observation
- Informal Surveys

All of these approaches are summarized in Annex 1.

5.0 Project Activities

Following are the specific tasks associated with each of the major objectives outlined above:

Objective 1: Local Customization/Contextualization of WRM SIT

Activity 1.1: Contextualize and Customize Tool Indicators/Sub-indicators and Field Application Interview / Data Collection Packets

The WRM SIT has purposely been constructed using the most 'generic' sector vocabulary and definitions

² This document and other detailed background information will be provided at the time of contracting.

in wide use throughout the world. When applying the Tool in a specific country, it is recognized that content may not be entirely clear in some settings, or could benefit from other modifications that retain the intent of each indicator, but express the sub-indicators or interview questions in a way that is more easily understood and applied in the local context. Upon receiving guidance of the international experts,³ the in-country Team will review the WRM SIT list of indicators/sub-indicators to ensure they are understandable and relevant for the local country context, making adjustments as necessary. In-country consultants will also recommend modifications in wording of specific questions to be asked in either one-on-one key informant interviews or group interview settings, and in the instructions provided to field data collectors (in data collection packets).⁴ Edits will also be made as necessary to capture needed information from sector literature about that country, or application of any other field methodology approach. This review and modification work should begin as soon as possible by local experts, prior to initial deployment of the Tool.

Objective 2: Test Application of Draft WRM SIT

Activity 2.1 Carry Out Preparatory Work for WRM SIT Field Data Collection

To make the best use of available international and local consultant time, maximize efficiency of field data collection efforts, and lower overall tool application costs, a set of preparatory activities will be carried out by the in-country Team members as soon as they are on board.⁵ These include the following major activities (with expected participating personnel are indicated in parentheses):

- *Participate in Orientation/Training about WRM SIT and Methodology (full Team)*: Guidance and orientation from FIU GLOWS headquarters will be provided for the local Team in relation to the data collection process. At this preliminary stage, the complete WRM SIT implementation manual and guidance materials will be provided to the local Team members for their review and study. This will be followed by one or more ‘virtual’ meetings (e.g., Skype or video conference) during which the international experts will walk through the Tool and the implementation materials in detail with local Team members,⁶ and answer any questions on their part. All local Team members will be expected to participate in these orientation(s) as needed.
- *Conduct Stratified Community Sampling (Senior Manager, Senior Technical Expert, Research Assistants)*: While use of a full-blown, statistically valid household survey is not anticipated, to the extent possible there will be application of some stratified sampling at the community level for certain aspects of data collection, e.g., to target geographic areas/communities for field visits, or select Group Interview participants. Full instructions on what is required will be provided to the local Team prior to the start of work (and is not expected to significantly affect the projected LOE or expertise of the required Team).

³ Guidance and orientation will be provided for the local Team at several stages and in a variety of ways. This includes initial orientation (see Section 5.0, Objective 2, Activity 2.1), as well as ongoing virtual support during preparatory and early data collection work. There will also be a short in-country visit of the two international experts to work directly with and provide support and oversight to the local Team for all aspects of data collection.

⁴ Since the WRM SIT does not employ standardized household or individual surveys with enumerators, the issue of ‘pre-testing’ questionnaires may not be practical. Unlike statistically random population surveys, key informant interviews or group interviews have unique participants and can’t be ‘tested’ and then repeated. If utilized, pre-testing will occur for the Informal Survey technique or for some Group Interviews where sampling occurs. Additional modification may occur during implementation, e.g., following the first ‘round’ of interviews/group discussions held, the field collection Team will share feedback on how well the questions asked were understood, and recommend further adjustments to the wording or manner of framing the questions before continuing.

⁵ It is recognized that the full Team will not necessarily be on board at the same time, but as soon as the Senior Manager and at least one local Senior Technical Expert or Research Assistant is on board, some activities can be initiated.

⁶ These orientation meetings may be held only once.

- *Collect and Organize Sector Literature (Research Assistants, Senior Technical Experts):* As soon as Research Assistants are on board, initial information collection on the country's water sector can begin. Documentation that can answer WRM SIT sub-indicator questions will be targeted, and an initial bibliography created. Major techniques at this stage will include internet searches, communication with major government agencies or NGOs for their public documents, and accessing documentation already accumulated and available through the local GLOWS project office or in the archives of Senior Technical Experts.⁷
- *Select Key Informants and Group Interview Participants (Senior Manager, Senior Technical Experts, Research Assistants):* A list of potential Key Informants will be generated based on the expert knowledge of local Team members, names gleaned from the preliminary literature search, and recommendations of the local GLOWS office. These individuals will be selected at the national and basin/local level, keeping in mind the areas of expertise necessary to respond to Tool indicator/sub-indicator questions. The Team will also generate a list of participants for each Group Interview, once the number, type, and location is finalized based on recommendations in the Tool Methodology and any stratified sampling completed.
- *Develop Detailed Field Work Plan/Schedule (Senior Manager):* A comprehensive work plan and schedule of activities will be developed to efficiently coordinate data collection for all the identified geographic areas, institutions, and individuals targeted.⁸ Additional preparatory work at the field level may also be required at this time (e.g., obtaining official permission to conduct surveys in communities, visiting certain areas to liaise with local community leaders to facilitate the smooth execution of the data collection, etc.).
- *Make Appointments / Schedule Meetings (Administrative Assistant):* Once the overall Work Plan / Schedule is produced and approved by FIU GLOWS, scheduling specific interviews and meetings should be initiated as soon as possible.
- *Make Logistical Arrangements for Field Data Collection (Administrative Assistant):* Similar to scheduling above, aspects of the data collection will require internal country travel, organization of meeting spaces, and other logistical preparations that should also be done as soon as each element of the work plan is finalized.

Activity 2.2 Conduct WRM SIT Field Data Collection

The bulk of data collection will occur in field work over a 3-4 week time frame and involve the various data collection techniques outlined above (i.e., Secondary Documentation Review, Key Informant Interviews, Group Interviews, Structured Observation, and Informal Surveys). As mentioned earlier, more information on each of these techniques is presented in Annex 1. An indicative outline of what techniques will be necessary to respond to each indicator/sub-indicator question (either as a primary source of information or for triangulation/validation purposes) is presented in Annex 2. Estimated LOE for each data collection technique is presented in Table 1.

⁷ Additional documents (especially 'grey literature') will be gathered during the course of Key Informant and Group Interviews later on in the data collection process, but a significant proportion of published or publicly available information can be collected as soon as possible.

⁸ Sequencing and triangulation of information will be taken into consideration in planning the field data collection. For example, information gathered through Secondary Documentation review will be carried out first, covering as many indicators as possible. This will ensure that data gathered using other techniques is informed by this initial review, and the number and wording of questions, selection of key informants/focus group participants, etc. can be contextualized and made more efficient accordingly. Similarly, data collection on indicators at the National level will also be conducted prior to going to the Subnational/Basin and Local levels, also to ensure that the broader context is understood before embarking on more targeted, locally specific data collection, and to eliminate unnecessary duplication of efforts.

Table 1
Estimated WRM SIT by Data Collection Method

Data Collection Method	# Expected	Estimated LOE (person days) ⁹
Secondary Documentation Review	N/A	5
Key Informant Interviews	30	8
Group Interviews	8-10	8
Structured Observation	8-10	2
Informal Surveys	5	5
TOTAL		28

Activity 2.3 Process and Analyze WRM SIT Field Data

Once field data is collected according to methodology protocols, the local Team will need to code all responses and input information into standardized spreadsheets included as part of the Tool methodology. Detailed guidance will be provided in the final WRM SIT Manual about how to code answers for each indicator and sub-indicator question, and generate ‘scores’ at the indicator, factor, and total index level. As a general rule, each sub-indicator is assigned a score from 1-100, indicating the degree to which the described standard has been achieved. (Most sub-indicator questions are binary (yes/no), making scoring fairly straightforward).¹⁰ The scores of all sub-indicators are averaged to produce the score for the indicator as a whole (also on a 1-100 scale).

Following coding, to establish the overall score for each Factor Category as a separate, stand-alone rating, a simple average of the indicator scores in that category is used (and will be automatically calculated in the standardized spreadsheets). To calculate the final WRM Sustainability Index Tool score as a whole, an average of all indicators in the framework is calculated. Expressed in formulaic terms:

$$\begin{aligned}
 &\textbf{Indicator Score (WRM-GOV-N1 example) =} \\
 &\frac{(\text{Sub-Indicator (a) score} + \text{Sub-Indicator (b) score} + \text{Sub-Indicator (c) score} + \text{Sub-Indicator (d) score})}{4 \text{ (total number of sub-indicators in the WRM-GOV-N1 indicator)}} \\
 &\textbf{Factor Category Score (FIN example) =} \\
 &\frac{(\text{FIN Indicator 1 score} + \text{FIN Indicator 2 score} + \text{FIN Indicator 3 score} + \text{FIN Indicator 4 score})}{4 \text{ (total number of indicators in the FIN Factor Category)}} \\
 &\textbf{WRM SIT Sustainability Score (Overall) =} \\
 &\frac{\sum_{n=1}^{21} \text{Scores of } n}{21} \quad (\text{where } n = \text{Indicator number})
 \end{aligned}$$

As mentioned above, triangulation of responses will be especially important in the WRM SIT methodology to ensure greater validity of the qualitative data collection approaches. Triangulation will occur across data collection techniques and spatial levels of analysis. Rules for scoring when the responses differ will be specified for each sub-indicator question (e.g., averaging the responses, deferring to one data collection method vs. another, or one level of response vs. another).

⁹ Estimated LOE includes both data collection and processing.

¹⁰ Some sub-indicators include more than one question and/or options for intermediate scoring along an ordinal scale, all of which will be explained in the final guidance.

Activity 2.4 Produce Country Report and Briefing Materials

The Country Team Senior Project Manager will work with the local Team members to produce a report summarizing the results of the WRM SIT effort, including a description of the implementation process, the data collected/sources for each indicator/sub-indicator, and overall results of the analysis, as well as other observations and conclusions on the findings. Briefing materials reflecting the findings of the Tool will be presented to local stakeholders for validation and response. A revised draft report taking into account stakeholder input will be submitted to the international consultant and the FIU GLOWS supervisor for final review/approval.

Objective 3: Refinement/Modification of WRM SIT

Activity 3.1 Submit Lessons Learned/Recommendations Report for WRM SIT Revision and Implementation

Based on the field work experience and results, the Local Team will submit a report documenting their practical experience in applying the Tool, and including specific recommendations for refinement of the WRM Sustainability Index Tool itself, as well as the methodology for its application in a next phase of testing/implementation.

Activity 3.2 Review and Validate Overall WRM SIT Lessons Learned/Recommendations Report

An overall summary and recommendations report on the entire WRM SIT effort will be produced by the International Consultant, including the experience of field application of the Tool in the two test countries. The Country Team Senior Project Manager (and possibly) Senior Technical Experts in each country will review and comment on the draft report so that their input can be taken into account for a revised final report for public distribution.

6.0 Personnel

As mentioned above, carrying out the above activities requires a Team comprised of several international and local/national experts. FIU-GLOWS has engaged headquarters staff and an international consultant that will be responsible for the following activities as it relates to actions to be undertaken by the Local Team, namely:

- Provide introduction to and training on the WRM SIT for the in-country Team (virtual and in-person)
- Work with local Senior Project Manager and Technical Experts to contextualize all Tool elements to local conditions
- Work with local Team to revise and finalize implementation support materials
- Guide Senior Project Manager in training on qualitative data collection methods
- Guide Senior Project Manager in oversight and quality control process during Tool application
- Review drafts of data analysis, summary report, and briefing materials to ensure accuracy and completeness

Table 2 summarizes the projected personnel needs of the effort of the Local Team, including the position title, major responsibilities, and skills needed, and approximate Level of Effort for each.¹¹

¹¹ Note that the number, type, and LOE estimated for personnel are illustrative only, and should be confirmed, verified, and/or modified as needed by the local interested organizations.

Table 2
WRM SIT Implementation Team Personnel Requirements

#	Position	Illustrative Roles	Days	Skills Required
1	Country Team Senior Project Manager	<ul style="list-style-type: none"> - Conduct training of Team members on qualitative data collection methods as necessary - Supervise local Team members, and oversee the data collection, processing, and interpretation process, as well as production of final deliverables according to agreed-upon timeline - Organize and oversee data entry and ensure data security following approved guidelines, oversee data quality control, and be responsible for the quality, completeness, and accuracy of the data produced - Take the lead on local contextualization of Tool and guidance materials (with International Expert and Senior Experts) - Facilitate (and potentially conduct) selected Key Informant interviews with high level individuals (as needed) - Produce draft and final summary reports of local results / interpretation (in English and local language if necessary) - Support national outbriefings of initial findings of the WRM SIT (to FIU GLOWS and national stakeholders) - Serve as principal interface with FIU GLOW headquarters on the activity, including weekly progress reports on all activities, and management of operational budget 	Up to 30	<ul style="list-style-type: none"> - Significant expertise in social science applied research techniques (including quantitative and qualitative methods), and experience in field data collection in the target country - Local water sector knowledge - Experience in training and mentoring staff - Experience in financial management and working to fixed budgets - Excellent teamwork, communication, facilitation and reporting skills - Experience supervising and managing field operations and evaluations within specified timeframes - Experience with monitoring and evaluation frameworks and sustainability assessments, preferably in the environment/natural resource management sector - Reliable, organized, good communicator - Proficiency with Microsoft Word Excel 2010 or later - Proficiency in local language and English (written/spoken)
1	Country Senior Technical Experts / Interviewers	<ul style="list-style-type: none"> - Assist in identification of key information/data sources for secondary documentation review - Take the lead in identifying key informants for interviews - Take the lead in identifying participants for group interviews - Conduct key informant interviews and facilitate group interviews - Record and report all data gathered in the format(s) required - Review drafts of data analysis, summary report, and briefing materials to ensure accuracy and completeness 	Up to 20	<ul style="list-style-type: none"> - Significant local water sector expertise - Experience with social science applied research techniques and experience in field data collection in the target country - Solid interviewing and facilitation skills for one-on-one and group interviews - Proficiency in local language and English (written/spoken)
2	Country Research Assistants	<ul style="list-style-type: none"> - Collect and organize secondary documentation - Conduct desk review of secondary documentation to answer as many sub-indicator questions as possible (with citations) - Assist in preparation of local questionnaires and interview guides - Take and transcribe notes during key informant and/or group interviews - Carry out informal surveys (as necessary) 	2 X 20 = 40	<ul style="list-style-type: none"> - Local water sector knowledge - Proficiency in local language and English (written/spoken) - Excellent note-taking ability - Data entry/QC/database management expertise (at least one) - Survey administration/enumerator experience (preferred)
1	Administrative Assistant	<ul style="list-style-type: none"> - Schedule key informant and group interviews - Make travel and other local logistical arrangements - Assist with final document preparation 	15	<ul style="list-style-type: none"> - Administrative, travel organization, and scheduling experience - Proficiency in local language and English (written/spoken)

7.0 Project Duration and Time Schedule

The duration of the project will be approximately 10 weeks during April-June 2014. The table below presents an estimated time schedule with activities and deliverables associated with each activity.

WRM Sustainability Index Tool – Field Application Testing Schedule

Activity	Deliverables					
	1	2	3	4	5	6
Activity 1.1: Contextualization / Customization of Tool and Supporting Materials						Revised WRM SIT Tool and Methodology documents
Activity 2.1: Preparatory Work for Field Data Application						Comprehensive Field Work Plan and Activity Schedule Preliminary list of secondary literature sources List of Key Informants, Group Interview participants
Activity 2.2: Field Data Collection						Completed Country Data Input Sheets (including source citations)
Activity 2.3: Field Data Processing / Analysis						Completed Country Data Analysis
Activity 2.4: Final Country Report Production						Final Country Report
Activity 3.1: Lessons Learned / Recommendations for WRM SIT Revision						Recommendations report on Tool trial field application
Activity 3.2: Review/Validation of Overall WRM SIT Lessons Learned/ Recommendations Report						Technical input to overall WRM SIT report

8.0 Project Management

The Country Team Senior Project Manager will report to the FIU GLOWS Director and/or a designated senior staff supervisor for the overall GLOWS Sustainability Task (TBD) regarding all aspects of this assignment. Deliverables and other work products will be submitted in draft form to FIU GLOWS supervisor(s) for review and final approval.

The Senior Manager will submit a brief weekly report to FIU GLOWS headquarters providing a bulleted summary on progress on all Activities associated with this assignment. Conference calls will be held between the Consultant and FIU GLOWS management on at least a bi-weekly basis to discuss progress.

9.0 Expressions of Interest

Expressions of interest and an estimated budget for undertaking this assignment must be made in writing by email to the GLOWS Director (mcdonoso@fiu.edu) no later than June 23 and include the following information:

- Confirmation of availability to undertake the work during the specified time period (July-August 2014)
- Mobilization plan for executing all Activities described for this assignment
- An estimated breakdown of costs detailing:
 - daily rates per named personnel member
 - per diem expenses if not included in those rates
 - proposed travel and accommodation costs
 - any other direct costs deemed necessary to complete the assignment
- Adequate representation of the organization's legal status, technical and financial management competency, professionalism, and suitability to undertake the work, as well as three named references
- Declaration that the organization or proposed individual personnel have no conflict of interest in undertaking the assignment

Annex 1 Field Data Collection Methodology

Following are the major methods that will be employed in the test application of the WRM SIT

A1.1 Secondary Documentation Review

A considerable proportion of the information required for the WRM SIT will be available in publicly available and/or internal documentation from the country and specific geographic area of interest. Possible sources of information include not only publications, but also websites, databases, budgetary and financial records, assessment and planning documents, legal codes, program M&E data or reports, research information, meeting minutes, etc. Some documentation will be easily accessible through web searches. Other information will require contact with responsible agencies or authors to acquire (e.g., government agencies, universities, etc.). Additional documents may be available through international sources (e.g., donors, global institutes, or foreign researchers, etc.). Review should be done by individuals who can read both the local language and English to ensure the widest variety of information is considered. The quality and trustworthiness of the source of the documentation will be considered in the review and utilization of the information received.

Collection of secondary documentation should begin as early in the process as possible. A full desk review of the information gathered will be critical to finalize interview forms/questionnaires and field packets for other data collection methods (including key informant interviews and group interviews), and will make the interview process much more efficient.

A1.2 Key Informant Interviews

Interviews with approximately 15-35 pre-identified key informants at all levels (N, S, and L) will be an important primary source of data for many questions, especially those that do not have any published documentation associated with them. Where primary information is collected through another method, key informants also serve as an important means of triangulating responses. Interviews will be semi-structured, allowing both direct responses to the yes/no sub-indicator questions, but also permitting more open-ended responses that will be useful for deeper understanding and interpretation of results.

Many of the key informants will hold a leadership role in the public or private sectors, including government officials in key ministries/agencies, presidents of industry associations, community leaders, NGO network officials, university professors, etc., but representatives of the widest breadth of relevant stakeholders will be sought out to avoid bias. The final manual guidance and supporting materials will provide suggestions for types of informants for each sub-indicator question. During the local contextualization, this generic list will be cross-referenced with the secondary documentation review and with local expert recommendations to come up with the final list of desired informants. The earlier this can be done in the process the better, so that interviews can be efficiently scheduled within a concentrated time frame for all field data collection.

A1.3 Group Interviews¹²

For several sub-indicator questions, Group Interviews will be either a primary or secondary (triangulation) method. Although non-statistical, this approach permits efficient, low-cost gathering of information for a limited set of questions from a wide range of important stakeholder groups for water resources sustainability. Groups of 6-12 relatively homogeneous and knowledgeable participants will be

¹² Note that while both are small group techniques, the group interview approach has been selected over focus groups, since the primary direction of the interaction is between the interviewer and the participants. This differs from focus groups, where the primary interaction is among participants, which is less useful for the evaluation purposes of the WRM SIT.

selected in two major categories:

- **Water Users/Consumers (large and small):** e.g., domestic (with a particular focus on women), agriculture (including rainfed/irrigated crops, livestock, and aquaculture), fisheries, industry/business, and energy sectors
- **Water Managers:** e.g., government, community leaders, stakeholder management committees, NGOs/CBOs, water service providers, protected area managers, donors, etc.

The interviewer will focus on a limited set of questions and will be supported by an interview guide to keep the discussion on track and ensure consistent data collection. Ideally, the Group Interview participants would be brought together from throughout the target subnational/basin area to get the most representative view for a type of water user or manager. In order to increase validity of responses, if possible at least two focus groups with similar types of participants will be carried out for the same set of questions.¹³ When practical, a stratified sampling protocol may be employed to select a subset of communities or relevant user or manager types.

A1.4 Structured Direct Observation

In a few cases, there may be opportunities to triangulate sub-indicator responses gathered with other methods through direct, non-participant observation techniques. Observation will focus on realities that can be objectively viewed in the environment, e.g., evidence of pollution discharge into water courses, soil erosion or devegetation of the landscape, or the operational state of water storage or distribution infrastructure. (More complicated observations of people will be avoided, so there are no requirements for informed consent or other methodological challenges to face.) A structured list of things to observe during the course of traveling through the target basins will be developed for the research Team. To reduce bias, this information will be used in a supporting role only, e.g., to validate (or contradict) what was written or reported about conditions in the interviewing and documentation review. Care will also be taken not to overgeneralize based on a few isolated observations.

¹³ Recognizing, of course, that some groups are 'unique' by their nature and can only be interviewed once, e.g., catchment management committees.

Annex 2. WRM SIT Data Sources Summary

REFERENCE	INDICATORS AND SUB-INDICATORS	DATA COLLECTION METHOD(S) X = primary method (T) = triangulation				
		Documentation Review	Key Informant Interviews	Group Interviews	Structured Observation (potential)	Informal Surveys (potential)
WRM-GOV-N1	National policies, plans, and legislation/regulations for sustainable water resources management are in place, updated regularly, and applied to all water use sectors					
	a) Does national policy and planning for sustainable water resources management adequately reflect the principles of Integrated Water Resources Management (IWRM)?	X				
	b) Do national laws and regulations exist to support sustainable water resources quality and quantity management for all water use sectors?	X				
	c) Do sector-specific and general national development plans align with national sustainable water resources management plans?	X	(T)			
	d) Are national sustainable water resources management laws and regulations accessible, widely disseminated, and enforced?	X		(T)	(T)	(T)
WRM-GOV-S1	Subnational/basin level plans for sustainable water resources management are in place, updated regularly, and applied to all water use sectors					
	a) Does a subnational/basin level water resources management plan exist that is in compliance with national water resources management policies and plans, and reflects IWRM principles?	X				
	b) Was the subnational/basin level water resources management plan developed with active participation of all stakeholders (including government, private sector, civil society, indigenous groups, women, youth, etc.)?	X	(T)	(T)		(T)
	c) Is the subnational/basin level management plan updated based on revised water use and hydrologic data including climate change projections (with the frequency stipulated by national/local guidelines)?	X	(T)			
	d) Is the subnational/basin level management plan publicly available? IF YES => Are steps taken to educate water management personnel and water users about it?	X	X	(T)		(T)
WRM-GOV-N2	Public water resource management institutions are adequately functioning at the national level					
	a) Are national water management institutional roles and responsibilities clear and formalized with regard to sustainable water resources management?	X	(T)			
	b) Are other national ministry/institutional roles and responsibilities clear and formalized with regard to sustainable management of water within their sectors?	X	(T)			
	c) Are effective coordination and alignment mechanisms in place to ensure coherent, consistent and transparent application of national water resources management policies, laws, and regulations across all ministries and national governing bodies, and with lower levels of government and management?	X	(T)			
	d) Is the capacity (qualification and skills) of national water resource management managers in all ministries and	X	(T)			

REFERENCE	INDICATORS AND SUB-INDICATORS	DATA COLLECTION METHOD(S) X = primary method (T) = triangulation				
		Documentation Review	Key Informant Interviews	Group Interviews	Structured Observation (potential)	Informal Surveys (potential)
	national governing bodies sufficient to oversee and implement national water policies and plans, and enforce national laws and regulations?					
WRM-GOV-S2	Public water resource management institutions are adequately functioning at the subnational/basin level					
	a) Are subnational/basin ministry representative and local government institutional roles and responsibilities clear and formalized with regard to sustainable water resources management?	X	(T)			
	b) Are there effective coordination and alignment mechanisms to ensure coherent and consistent application of water resources management laws, regulations, and plans across all subnational/basin governing institutions, and between across national, subnational/-basin, and local institutions?	X	(T)			
	c) Is the capacity (qualification and skills) of subnational/basin governing institutions (including ministry representatives and local government staff) sufficient to oversee and implement local/basin water plans, and enforce water resources management laws and regulations?	X	(T)			
	d) Is routine support provided to build the capacity of public subnational/basin and local water resources management institutions to develop and revise local/basin water plans, and enforce laws and regulations?	X	(T)			
WRM-GOV-S3	Representative stakeholder committee is in place for sustainable water resources planning and management at the subnational/sub-basin scale					
	a) Is there a subnational/basin level stakeholder committee constituted in line with national or local norms and standards that conducts participatory water resources management planning and action? IF YES=> Does the committee include representation from all water use sectors, public and private actors, different socioeconomic groups, and ensure participation of women and marginalized populations?	(T)	X	(T)	(T)	(T)
	b) Are the management roles, responsibilities, and authorities of the stakeholder water committee clearly defined, documented, and publicly accessible?	X	(T)	(T)	(T)	
	c) Do water resources management committee members actively participate in committee meetings and decision-making processes?	X	(T)	(T)		
	d) Does the water resources management committee adequately carry out its technical, administrative, and financial duties, including transparent reporting?	X	(T)	(T)		(T)
WRM-GOV-S4	Regular water resources information collection and management is in place at the subnational/basin scale and applied to decision-making					
	a) Is water resources monitoring data collected that includes regularly updated information about biophysical conditions, including hydrometeorological patterns and water quality? IF YES => Is this information regularly shared with the public?	X	(T)		(T)	(T)

REFERENCE	INDICATORS AND SUB-INDICATORS	DATA COLLECTION METHOD(S) X = primary method (T) = triangulation				
		Documentation Review	Key Informant Interviews	Group Interviews	Structured Observation (potential)	Informal Surveys (potential)
	b) Is water resources monitoring data collected that includes regularly updated information about human use of water, including withdrawals, consumption, uses, discharges, and treatment? IF YES => Is this information regularly shared with the public?	X	(T)		(T)	(T)
	c) Is the water resources monitoring data collected at the subnational/basin level sent to a centralized national water resources data collection and information management system at least on an annual basis?	X	(T)			
	d) Is the national or subnational/basin scale water resources data and information consistently used to inform sustainable water resources planning, permitting, and regulation? IF YES => Does the information utilized in decision-making take into account projected climate change impacts on water resources?	(T)	X	(T)		
WRM-FIN-S1	Adequate public funding is available to support sustainable non-infrastructure water resources management at all scales					
	a) Is there a dedicated line item for non-infrastructure water resources management in national and subnational/local public budgets?	X	(T)			
	b) Does the amount of public funding allocated for non-infrastructure water resources management cover at least 50% (or a proportion in line with national or locally set standards) of required budgets outlined in the approved national and subnational/local water resources management plans?	X	(T)			
	c) Is there sufficient public funding and creation of permanent staff positions in national and local level water resources management institutions to fulfill all functions?	(T)	X			
	d) Is there sufficient public funding allocated for non-personnel costs in national and local water resources management institutions to fulfill all functions?	(T)	X			
WRM- FIN-N1	Sufficient public and/or private financing is available to support sustainable development, rehabilitation, and operations/maintenance of water resources management infrastructure					
	a) Do participatory water resources management plans include recommendations for water resources management infrastructure development or rehabilitation by the public or private sectors?	X				
	b) Is there a dedicated line item for water resources infrastructure development or rehabilitation in the national/local public budgets?	X				
	c) Does the enabling environment facilitate transparent, efficient, and equitable private sector investment in water-related infrastructure development or rehabilitation, including anti-corruption measures?	(T)	X	(T)		
	d) Is adequate management and financing in place for sustainable operations and maintenance of existing or planned water-related infrastructure by the public and private sectors?	(T)	X	(T)	(T)	
WRM- FIN-S2	Appropriate water user tariffs, fees, and fines are in place and enforced					
	a) Has a publicly authorized water tariff or permitting fee been established for all water use sectors (e.g., drinking water supply, irrigation, industry, etc.)? IF YES=> is there a minimum set-aside of water for basic domestic use that is	X	(T)			

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	free or assigned a “social tariff”?					
	b) Are user tariffs/permitting fees determined based on the projected costs of sustainable management for different amounts and types of use? IF YES=> Is the full amount of revenue collected from water use permits and fines/penalties channeled to support water resources management activities (as opposed to the general Treasury)? IF YES=> Does the annual revenue collected from water use permits and fines/penalties cover at least 50% (or a proportion in line with national or locally set standards) of the annual expenditure for sustainable water resources management?	(T)	X			
	c) Do at least 80% (or a proportion in line with national or local standards) of water users pay the water use tariff or permitting fee?	X	(T)	(T)		
	d) Do national or local laws/regulations specify fines / financial penalties for violating water quantity or quantity standards or requirements? IF YES => Are these regularly enforced in all sectors?	X	(T)	(T)		
WRM- FIN-S3	Supplementary financing mechanisms support implementation of sustainable water resources management activities at all scales					
	a) Are any Payment for Ecosystem Services (PES or PWS) mechanisms in place to support sustainable water resources management? IF YES => Are these mechanisms self-supporting (or expected to be self-supporting over time)?	X	(T)			
	b) Are any mechanisms in place to leverage private sector investment or partnerships that support sustainable water resources management? IF YES => Are these mechanisms self-supporting (or expected to be self-supporting over time)?	(T)	X	(T)		
	c) Are any credit financing mechanisms in place to support sustainable water resources management (concessionary or commercial rate)? IF YES => Are these mechanisms self-supporting (or expected to be self-supporting over time)?	(T)	X	(T)		
	d) Is any grant financing available to supporting sustainable water resources management? IF YES => Are the activities funded self-supporting (or expected to be self-supporting over time)?	(T)	X	(T)		
WRM- FIN-S4	Official institutions responsible for subnational/basin scale water resources management plan implementation demonstrate effective financial management and accounting					
	a) Do the official institutions responsible for overseeing implementation of and/or administering financing for subnational/basin scale water resources management plans keep financial records (including Basin/Sub-basin authorities or agencies, subnational/regional government institutions, and/or stakeholder water resources management committees)?	X				
	b) Do the official institutions responsible for overseeing implementation of and/or administering financing for subnational/basin scale water resources management plans share financial records with the public on a regular basis?	X	(T)			(T)

REFERENCE	INDICATORS AND SUB-INDICATORS	DATA COLLECTION METHOD(S) X = primary method (T) = triangulation				
		Secondary Documentation Review	Key Informant Interviews	Group Interviews	Structured Observation (potential)	Informal Surveys (potential)
	c) Do the official institutions responsible for overseeing implementation of and/or administering financing for subnational/basin scale water resources management plans have their financial accounts audited?		X	(T)		
	d) Do the official institutions responsible for overseeing implementation of and/or administering financing for subnational/basin scale water resources management plan implementation demonstrate sufficient capacity to process and disburse funds to implementing organizations in a timely fashion?	X	(T)	(T)		
WRM-MGT-L1	Current and planned infrastructure supports sustainable water resources quantity and quality					
	a) Is the target basin/sub-basin considered 'economically water scarce'? (use IWMI formula)	X				
	b) Is existing or planned water storage, flood mitigation and water distribution infrastructure sufficient to mitigate the impacts of current climate variability and projected climate change on water resources quantity/availability for all sectors, including both built and 'green' infrastructure?	X	(T)	(T)		
	c) Is existing or planned wastewater collection and treatment infrastructure sufficient to mitigate expected pollution threats affecting water resources quality in all sectors, including both built and 'green' infrastructure?	X	(T)	(T)		
	d) Is existing or planned soil conservation / management infrastructure sufficient to mitigate soil erosion, land degradation, and non-point water quality threats in all sectors, including both built and 'green' infrastructure?	X	(T)	(T)		
WRM-MGT-L2	Technical assistance is provided on an ongoing basis to support implementation of sustainable water resources use and management in all sectors					
	a) Is routine support provided to public subnational/basin/local government level water resources management institutions to increase capacity for sustainable water resources technical management?	(T)	X	(T)		
	b) Is routine support provided to private sector productive sectors (including agriculture, industry, energy, commerce, etc.) to increase capacity for sustainable water resources technical management (including adoption of best practices and technologies)?	(T)	X	(T)		
	c) Is routine technical support provided to civil society institutions (including NGOs/CBOs, etc.) to increase capacity for sustainable water resources technical management (including adoption of best practices and technologies)?	(T)	X	(T)		
	d) Are public technical support agencies (including universities and research stations) sufficiently staffed and regularly trained to provide needed technical support and capacity building for sustainable water use and management to all use sectors on request?	(T)	X	(T)		
WRM-ENV-L1	Water quality is sustainably managed through prevention and mitigation					
	a) Have point-source and non-point source water quality risks been identified and quantified? IF YES => Has that information been widely disseminated to the public and decision-makers?	X	(T)	(T)		
	b) Do water quality management best practices and technology norms and standards exist for all water use sectors (domestic, agriculture, industry, energy, etc.)? IF YES => Has that information been widely disseminated to technical	X	(T)	(T)		

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	practitioners and managers?					
	c) Are legal and regulatory incentives and sanctions in place to increase adoption of water quality management best practices and technologies (prevention and mitigation)?	X	(T)	(T)	(T)	
	d) Do public or private financial incentives and support exist to increase adoption of water quality management best practices and technologies (prevention and mitigation)?	X	(T)	(T)	(T)	
WRM-ENV-L2	Water quantity is sustainably managed through demand side measures					
	a) Has a water balance analysis been conducted in the sub-basin? IF YES=> Has that analysis taken into account climate change?	X	(T)			
	b) Is current and projected future human water demand in all sectors managed through education and extension about water conservation and efficient use measures?	(T)	X	(T)	(T)	
	c) Do legal and regulatory frameworks (including water permitting/allocation rules) incentivize water conservation and efficient use in all sectors?	X	(T)	(T)	(T)	
	d) Do public or private financial incentives or support exist (including tariff and fee schemes and subsidies) to encourage water conservation and efficient use in all sectors?	(T)	X	(T)	(T)	
WRM-ENV-S1	Water resource related environmental services are identified, valued, and protected					
	a) Is aquatic and water-dependent biodiversity sufficiently protected by existing legal and regulatory standards? IF YES => Are these standards regularly enforced?	X	(T)			
	b) Are minimum environmental flows protected through enforceable legal and management mechanisms (formal or informal)? IF YES => Are these standards regularly enforced?	X	(T)			
	c) Has the economic value of water-related ecosystem services been assessed, including the avoided costs of environmental externalities? IF YES=> Have the results of this analysis been disseminated widely, including to decision-makers?	X	(T)	(T)		(T)
	d) Are sufficient public and private financial and human resources invested in management of water-related biodiversity and ecosystem services?	(T)	X	(T)		
WRM-ENV-L3	Adverse environmental impacts of infrastructure and other development projects on water-related natural resources are assessed, prevented, and mitigated					
	a) Are infrastructure and other major development projects required by national law to conduct environmental impact assessment related to water resources sustainability? IF YES => Are these assessments actually carried out and of acceptable quality?	X	(T)	(T)		

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		Documentation Review	Key Informant Interviews	Group Interviews	Structured Observation (potential)	Informal Surveys (potential)
	b) Do national or subnational/local laws or regulations exist to require mitigation of the water-related environmental and social impacts of infrastructure or other major development projects?	X	(T)	(T)		
	c) Are the roles and responsibilities with regard to monitoring and enforcement of water-related environmental impact assessment, prevention, and mitigation clear?	X	(T)	(T)		
	d) Is prevention and mitigation of water-related environmental impacts of infrastructure and other development projects consistently carried out/enforced?	(T)	X	(T)	(T)	
WRM-SOC-N1	Allocation of and use rights for water-related resources are equitable					
	a) Do national/subnational/local norms, laws, and/or regulations exist that define equitable allocation/use rights of blue water resources for different water use sectors and social groups (including genders)? IF YES => Do these take into account customary/traditional law?	X	(T)	(T)		
	b) Do national/subnational/local norms, laws, and/or regulations exist that support equitable access to green water resources in the target basin (e.g., land and natural vegetation use rights)? IF YES => Do these take into account customary/traditional law?	X	(T)	(T)		
	c) Are national/subnational/local norms, laws, and/or regulations that define equitable allocation of water resources for different water users and social groups (including genders) consistently and transparently applied?	(T)	X	(T)		
	d) Does the existing water and/or associated land allocation system consider competing water demands and have accessible and transparent measures / mechanisms in place to address potential areas of conflict?	(T)	X	(T)		
WRM-SOC-L1	Water resource productivity is supported for basic livelihoods and equitable economic growth					
	a) Do national/basin/local development plans and budgets include new investment to increase sustainable and resilient (blue) water productivity of irrigated agriculture for small-scale producers? IF YES=> Does the projected investment benefit at least 25% of the total population working in these sectors?	X	(T)	(T)		
	b) Do approved national/basin/local water resources or other development plans and budgets include new investment to increase sustainable and resilient (green) water productivity of rainfed agriculture and livestock management? IF YES=> Does the projected investment benefit at least 25% of the total population working in these sectors?	X	(T)	(T)		
	c) Do approved national/basin/local water resources or other development plans and budgets include new investment to increase sustainable and resilient water productivity of natural ecosystems for artisanal and small-scale harvesters (including fish, fiber, fuel, edible products, etc.)? IF YES=> Does the projected investment benefit at least 25% of the total population working in these sectors?	X	(T)	(T)		
	d) Do approved national/basin/local water resources or other development plans and budgets include investment to increase sustainable and resilient water productivity of small and medium enterprises (SMEs)? IF YES=> Does the	X	(T)	(T)		

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		Documentation Review	Secondary Interviews	Key Informant Interviews	Group Interviews	Structured Observation (potential)	Informal Surveys (potential)
	projected investment benefit at least 25% of the total population working in these sectors?						
WRM-SOC-L2	Water resources management costs are equitably distributed and pro-poor						
	a) Are any of the direct costs of water resources/watershed management financed through national or local taxation? IF YES => Is the taxation system progressive?	(T)	X	(T)			
	b) Are any of the direct costs of water resources/watershed management financed through external grants? IF YES => Do these programs require <10% community cost share for capital investments/infrastructure?	X	(T)	(T)			
	c) Are water tariffs/user fees for all use sectors pro-poor (e.g., including targeted subsidies, income-linked rates)?	(T)	X	(T)			
	d) Is water resource scarcity, pollution, and ecosystem degradation evenly distributed across different societal groups and geographic areas?	(T)	X	(T)			
WRM-SOC-L3	Water resources are managed in compliance with standards and norms that protect human health and safety						
	a) Is a minimum reserve of free or subsidized water allocation for basic domestic use (or other priority status) guaranteed by national or local laws, regulations, standards, and norms?	X	(T)	(T)			
	b) Are drinking water supply sources protected from contamination (point and non-point source) by national or local laws, regulations, standards, and norms?	X	(T)	(T)			
	c) Are basin ecosystem services managed to mitigate the impacts of droughts, floods, and extreme events on human settlements and infrastructure?	(T)	X	(T)			
	d) Are existing water-related laws, regulations, standards, and norms to protect human health and safety implemented and enforced?	(T)	(T)	X			(T)