International Water Management Institute

Irrigation Infrastructure Quality Management System Toolkit for Sub-Saharan Africa Using Ethiopia, Kenya and Uganda as a Case Study

Volume II – Parameter Checklist

Annex II-1: Forms and Templates for Pre-construction Phases

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Annex II-1: Forms and Templates for Pre-construction Phases

International Water Management Institute (IWMI)

Cover photo: Claudia Sadoff, former Director General of IWMI, visiting a flower farm in Rift Valley, Ethiopia.
(*Photo*: Amare Haileslassie/IWMI)

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1. Introduction

1.1 Background

This Quality Management System (QMS) template, designated as Annex II-1 for pre-construction phases (Phase I and Phase II) of irrigation schemes is a crucial document that guides the project Quality Control Plan to ensure pre-construction deliverables meet the desired quality objectives and requirements set forth in various checklists, methodologies, procedures, guidelines, technical specifications and quality standards presented in Volume II and in the reference materials listed. The two QMS volumes, including this annex, are uploaded to a web page for which a link is provided in Volume I Section 1.5.

The QMS template is to be established by QMS Irrigation Standards, Quality Assurance and Licensing Divisions/ Directorates (QMS-ISQALD; refer to Volume II, Section 6) and should be offered to the public sector and private consulting firms as part of the Terms of Reference (TOR) and Request for Proposals (RFP) during the bidding process. Based on the template framework, consulting firms are expected to develop an inclusive Quality Control Plan specific to the intended project and submit it to the ISQALD with the Technical Proposal. The Quality Control Plan is officially endorsed and regarded as the Consultant's plan, not the QMS-ISQALD plan. Thus, consultants should scale this template to fit the size and complexity of each Program Planning and Design Phase (Phase I) and Detailed Study and Design Phase (Phase II) services of the respective small-scale irrigation project (SSIP). Additionally, consultants are required to modify this template to match their organization and project team arrangements and meet QMS-ISQALD quality objectives and requirements.

QMS-ISQALD and consulting firms use this QMS template to prepare a comprehensive Quality Control Plan and are expected to use it in conjunction with several reference documents that provide detailed guidance on pre-construction development processes and quality standards. These reference documents include Volume II and its associated annexes (Annex II-1, Annex II-2 and Annex II-3); ToRs and RFPs, national SSIP study and design guidelines of the respective Sub-Saharan African (SSA) countries (if available), and recognized manuals and design standards from international organizations such as the United States Bureau of Reclamation (USBR), the United States Army Corps of Engineers (USACE), the American Society for Testing and Materials (ASTM), Japan International Cooperation Agency (JICA) and the Food and Agriculture Organization of United the Nations (FAO). The Consultant's Quality Control Plan should be reviewed, evaluated and approved by the QMS-ISQALD, which is to be housed in the ministries of SSA countries hosting the development of irrigation schemes as instructed in the project's ToR and scope of services.

1.2 Purpose and Objectives of the QMS Template

The QMS template is a valuable tool that provides inclusive forms, templates and guiding procedures for the preparation of project Quality Control Plans for ISQALD and public and private consulting firms involved in services of the pre-construction phases of irrigation schemes. Its main objective is to assist these entities in preparing a comprehensive Quality Control Plan specific to the intended irrigation scheme and program. It offers a structured approach and guidance for preparing the Quality Control Plan by incorporating various sources of information as outlined in Section 1.1.

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2. Definition and Context of Quality Control Plan

2.1 Definition of Quality Control Plan

A Quality Control Plan is a documented set of procedures and guidelines that outline the measures and activities to be undertaken to ensure that a product or service meets specified quality requirements. It is a systematic approach to quality management that focuses on preventing defects, identifying and resolving issues and continuously improving processes.

2.2 Objectives

The primary objective of a Quality Control Plan in a pre-construction phase is to ensure that all deliverables meet the specified quality standards and requirements. A Quality Control Plan is a critical component of any project and plays a vital role in ensuring that the final deliverables meet the desired quality standards. In the context of irrigation schemes study and design services, a Quality Control Plan is essential in ensuring that the program planning and design and irrigation schemes study and design deliverables are carried out with precision and adherence to established checklists, procedures, specifications and standards. It helps minimize program planning, scheme study and design errors, reduce rework and ensure that the deliverables meet the required quality standards.

2.3 Purpose

The purpose of the Quality Control Plan is to set out guiding procedures for implementing agents and consultants to ensure the implementation of effective QMS activities in the pre-construction phases of irrigation schemes. Consequently, this will improve the safety and quality of the deliverables while at the same time ensuring smooth and safe transfer of irrigation schemes from the pre-construction phases to the project implementation and construction phase.

2.4 Indicative Context

The Quality Control Plan serves as a roadmap for ensuring the effective implementation of QMS activities, which are essential for improving the safety and quality of the deliverables and ensuring a smooth and safe transfer of the project from the pre-construction phases to the project implementation and construction phase. To achieve these objectives, the Quality Control Plan should be developed in accordance with the following guiding procedures:

- **Define the scope of the project**: The Quality Control Plan should clearly define the scope of the irrigation scheme being developed, as well as the location and the stakeholders involved.
- **Establish quality objectives**. The Quality Control Plan should establish clear and measurable quality objectives for the project, including the quality standards that must be met and the timelines for achieving these standards.
- **Identify quality risks**. The Quality Control Plan should identify potential quality risks associated with the pre-construction services of the scheme.
- **Develop quality control procedures**. To ensure the quality of pre-construction services, it is essential to establish a comprehensive Quality Control Plan that outlines the procedures and processes to be followed. The Quality Control Plan should be developed in consultation with stakeholders, including the project team, clients, and regulatory authorities. The program should be tailored to the project's specific needs and regularly reviewed and updated for the implementation period of the Quality Control Plan.

Some procedures that should be included are:

- **Establish a Project Coordination Unit (PCU) under the Irrigation Standards, Quality Assurance and Licensing Division/Directorate (ISQALD)**. Review deliverables and check the quality of the deliverables against set requirements, checklists, standards and specifications; launch a validation workshop and evaluate deliverables;

and certify and approve the deliverables with the respective authority, division or directorate such as the ISQALD (as presented in Volume I, Section 6).

- **Establish quality metrics**. The Quality Control Plan should establish clear and measurable quality metrics such as checklists, standards and specifications used to monitor and evaluate the effectiveness of the pre-construction deliverables (refer to Appendix E; Volume II Section 3, Annex I and Annex II; and other reference documents, including national SSIP guidelines).
- **Assign quality responsibilities**. The Quality Control Plan should clearly define the responsibilities of each stakeholder involved in implementing the Quality Control Plan, including the ISQALD and the PCU (regarded as the Client), the Consultant, target beneficiaries, grassroots stakeholders and subject matter specialists.
- **Establish communication protocols**. The Quality Control Plan should establish clear communication protocols for PCU, stakeholders and validation workshop participants to report, review and validate results and concerns, and for the Consultant to respond and incorporate these issues, comments, suggestions and modifications in a timely manner.

By following these guiding procedures, implementing agents and consultants can develop a comprehensive and effective Quality Control Plan that will ensure the irrigation scheme's successful implementation and improve deliverable safety and quality.

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3. Templates for Quality Control Plan

3.1 Template 1. Project-specific Information

Project Name ____

Lot No. __________________

RFP No. __________________

Country _____________________

Region _____________________

Zone _____________________

Woreda/District _____________________

Kebele/Local Administration _____________________

Quality Control Plan

Prepared for

Consultant ____

Prepared by

Client/Public Agent Name ________________________

Address _________________________________

Date MM/DD/YYYY

Consultant Name: ____

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3.2 Template 2. Definition of Terms

Consultant Name: ____

Project Name: ____

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Definition of Terms

Quality [refer to Volume I and put the summarized version of the definition specific to the project here]

Quality Assurance (QA) [refer to Volume I and put the summarized version of the definition specific to the project here]

Quality Control (QC) [refer to Volume I and put the summarized version of the definition specific to the project here]

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3.3 Template 3. Templates for Pre-construction Phase Services

3.3.1 Template 3-0-1. Deliverables for Phase I - Program Planning and Design Phase (PP-DP)

Note. Populate this table with the deliverables from the negotiated scope of services defined for PP-DP. In the Review column, indicate if the deliverable is Interim, Draft or Final. In the Remarks column, indicate:

i. Delivery is completed, in compliance with the standards and requirements, and accepted with comments delivered to be incorporated for further improvement and for submission of final report ***(Accepted, Comment Delivered for Further Improvement and Final Report Submission [ACD-f-FI & FRS]).***
ii. Partially in compliance (if partially noncompliant, payment shall be held until second round acceptance is achieved) with the standards, ToR and Client project requirements but still accepted with major comments delivered for major improvement ***(Incomplete and still accepted with major comments delivered for major improvement and submitted for another round of comments and acceptance)***.
iii. Delivery is totally below minimum standard and noncompliant with the requirements; hence, completely rejected ***(Rejected)***.

Deliverable 0 (D-0). Program Planning and Design Phase Report (Refer to Volume II, Section 3)				
Review	**Delivered Reports/Documents**	**Remarks**		
		(i) Accepted, Comment Delivered for Further Improvement and Final Report Submission (ACD-f-FI & FRS)	(ii) Incomplete and still accepted with major comments delivered for major improvement and submitted for another round of comments and acceptance	(iii) Rejected
	Component I-0-1. Program appraisal and design work			
	Component I-0-2. Program planning, scoping and definition of work and requirements			
	Component I-0-3. Establishment of program implementation and operation manuals			
	Delivery-0 (D-0)			

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3.4 Template 3.2 Template for Phase II Detailed Study and Design Phase (DS-DP)

3.4.1 Template 3.2.1 Templates for Stage II-1 - Project Scoping, Planning and Inception Stage (PS-PIS)

Note. Populate this table with the deliverables from the negotiated scope of services. In the Review column, indicate if the deliverable is Interim, Draft or Final. In the Remarks column, indicate:

i. Delivery is completed, in compliance with the standards and requirements, and accepted with comments delivered to be incorporated for further improvement and for submission of final report ***(Accepted, Comment Delivered for Further Improvement and Final Report Submission [ACD-f-FI & FRS])***.
ii. Partially in compliance (payment shall be held until second round acceptance is achieved) with the standards, ToR and Client project requirements but still accepted with major comments delivered for major improvement ***(Incomplete and still accepted with major comments delivered for major improvement and submitted for another round of comments and acceptance)***.
iii. Delivery is totally below minimum standard and noncompliant with the requirements; hence, completely rejected ***(Rejected)***.

Delivery 1 (D-1). Stage II-1. Project Scoping, Planning and Inception Stage (PS-PIS) Report (Refer to Volume II, Section 4.1 and Annex II, Section 3.1)				
Review	**Delivered Reports/Documents**	**Remarks**		
		(i) Accepted, Comment Delivered for Further Improvement and Final Report Submission (ACD-f-FI & FRS)	(ii) Incomplete and still accepted with major comments delivered for major improvement and submitted for another round of comments and acceptance	(iii) Rejected
	Component II-1-1. Project identification and definition of variants			
	Component II-1-2. Project scoping and planning			
	Component II-1-3. Setting project alternatives and conducting initial screening			
	Preparation of inception report (Delivery-1)			

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3.4.2 Template 3.2.2 Template for Stage II-2 - Feasibility Study and Preliminary Design Stage (FS-PDS)

Note. Populate this table with the deliverables from the negotiated scope of services. In the Review column, indicate if the deliverable is Interim, Draft or Final. In the Remarks column, indicate:

i. Delivery is completed, in compliance with the standards and requirements, and accepted with comments delivered to be incorporated for further improvement and for submission of final report ***(Accepted, Comment Delivered for Further Improvement and Final Report Submission [ACD-f-FI & FRS])***.
ii. Partially in compliance (payment shall be held until second round acceptance is achieved) with the standards, ToR and Client project requirements but still accepted with major comments delivered for major improvement ***(Incomplete and still accepted with major comments delivered for major improvement and submitted for another round of comments and acceptance)***.
iii. Delivery is totally below minimum standard and noncompliant with the requirements; hence, completely rejected ***(Rejected)***.

Delivery 2 (D-2). Stage II-2. Feasibility Studies and Preliminary Design Reports				
Review	**Delivered Reports/Documents**	**Remarks**		
		(i) Accepted, Comment Delivered for Further Improvement and Final Report Submission (ACD-f-FI & FRS)	(ii) Incomplete and still accepted with major comments delivered for major improvement and submitted for another round of comments and acceptance	(iii) Rejected
	Main Report			
	Volume 1. Surveying, GIS and Remote Sensing and Mapping Report			
	Volume 2. Climate and Engineering Hydrology Studies Report			
	Volume 3. Geotechnical Investigations and Engineering Geology Studies Report			
	Volume 4. Headwork Engineering Design Report			
	Volume 5. Irrigation Design Report			
	Volume 5-A. Irrigation and Drainage System Design Report			
	Volume 5-B. Irrigation and Drainage Infrastructure Detailed Design Report			
	Volume 6. Agriculture and Irrigation Agronomy Feasibility Studies Report			
	Volume 7. Soil Investigation and Land Suitability Studies Report			

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	Volume 7-A. Agricultural Soil Survey and Investigation Feasibility Study Report			
	Volume 7-B. Crop-Land Suitability Evaluation Feasibility Studies Report			
	Volume 8. Watershed Engineering and Land Husbandry Feasibility Studies Report			
	Volume 9. Social and Environmental Impact Assessment Feasibility Studies Report			
	Volume 10. Socioeconomic Investigations and Preliminary Economic/Financial Analysis for All Alternatives Studies Report			
	Volume 10-A. Socioeconomic Investigations Feasibility Study Report			
	Volume 10-B. Possible Alternatives Preliminary Economic/Financial Analysis Study Report			
	Volume 11. Drawing Album for Preliminary Design Work			
	Delivery-2 (D-2)			

3.4.3 Template 3.2.3 Template for Stage II-3 - Detailed Design and Tender Document Preparation Stage (DD-TDS)

Note. Populate this table with the deliverables from the negotiated scope of services. In the Review column, indicate if the deliverable is Interim, Draft or Final. In the Remarks column, indicate:

i. Delivery is completed, in compliance with the standards and requirements, and accepted with comments delivered to be incorporated for further improvement and for submission of final report ***(Accepted, Comment Delivered for Further Improvement and Final Report Submission (ACD-f-FI & FRS)***.
ii. Partially in compliance (payment shall be held until second round acceptance is achieved) with the standards, ToR and Client project requirements but still accepted with major comments delivered for major improvement ***(Incomplete and still accepted with major comments delivered for major improvement and submitted for another round of comments and acceptance)***.
iii. Delivery is totally below minimum standard and noncompliant with the requirements; hence, completely rejected ***(Rejected)***.

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Note. Populate this table with the deliverables from the negotiated scope of services.

Delivery (D-3). Stage II-3. Detailed Design and Tender Document Preparation Reports				
Review	**Delivered Reports/Documents**	**Remarks**		
		Implementing Agent	**CD-FR**	**Rejected**
	Executive Summary			
	Main Report			
	Volume 1. Surveying, GIS and Remote Sensing and Mapping Report			
	Volume 2. Climate and Engineering Hydrology Studies Report			
	Volume 3. Geotechnical Investigations and Engineering Geology Studies Report			
	Volume 4. Headwork Engineering Design Report			
	Volume 5. Irrigation Design Report			
	Volume 5-A. Irrigation and Drainage System Design Report			
	Volume 5-B. Irrigation and Drainage Infrastructure Detailed Design Report			
	Volume 6. Agriculture and Irrigation Agronomy Feasibility Studies Report			
	Volume 7. Soil Investigation and Land Suitability Studies Report			
	Volume 7-A. Agricultural Soil Survey and Investigation Feasibility Study Report			
	Volume 7-B. Crop-Land Suitability Evaluation Feasibility Studies Report			
	Volume 8. Watershed Engineering and Land Husbandry Feasibility Studies Report			
	Volume 9. Social and Environmental Impact Assessment Feasibility Studies Report			
	Volume 10. Socioeconomic Investigations and Preliminary Economic/ Financial Analysis for All Alternatives Studies Report			
	Volume 10-A. Socioeconomic Investigations Feasibility Study Report			
	Volume 10-B. Possible Alternatives Preliminary Economic/Financial Analysis Study Report			
	Volume 11. Book of Drawings for Detaiedl Design Work			
	Volume 12. Operation and Maintenance Manual Report			
	Volume 13. Tender Documents Report			
	Volume 13-A. Bill of Quantities			
	Volume 13-B. Technical Specifications			
	Volume 13-C. Tender Document Preparation Report			
	Delivery-3 (D-3)			

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4. Project Goals and Objectives

Refer to the scope of services outlined in the ToR/RFP.

4.1 Project Objectives

Summarize and present pertinent information from the ToR/RFP.

4.2 Scope of Services

Summarize and present pertinent information from the ToR/RFP.

4.3 Study and Design Requirements

Summary, specifications and requirements from the ToR/RFP

4.4 Project Schedule

Present milestones

Present deliverables

Refer to the ToR/RFP and the Technical Proposal

4.5 Deliverables

Segregated by phase, stage, component and subcomponent; refer to Volume II, ToR/RFP and the Technical Proposal

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5. Responsibilities

5.1 General

The Irrigation Standards, Quality Assurance and Licensing Division/Directorate (ISQALD) (Volume II, Section 6) from the Client/Public Agent side is the responsible body for performing the work in accordance with the requirements of the contract. At a minimum, the ISQALD will follow the Quality Control Plan that has been prepared for the project. The ISQALD is advised to establish a review team coordinated by a Project Coordination Unit (PCU). The subject matter specialists (SMSs) for different components can be established using a pool system from other sister divisions, directorates, departments, freelancers and universities. The ISQALD will review all deliverables in general and by the PCU in particular, for compliance with the ToR/RFP requirements, project objectives, intended deliverables, standards and specifications presented in Volume I, international guidelines and standards (USBR, USACE, ASTM, FAO, JICA) and available national guidelines within the SSA countries. The review process commences following the submission of the deliverables by the private and public agent consulting firms and it should be completed before the Review Workshop is launched.

Each PCU team member is responsible for implementing the Quality Control Plan, quality assurance activities and overall project quality. The ISQALD quality control team will consist of at least the list of experts as indicated in Volume II Section 6, which includes:

- PCU Coordinator
- Project Quality Management Specialist
- Subject Matter Specialists
- A panel of senior experts (if the need arises, for example, a dam safety panel from external sources)

The specific responsibilities and duties of these individuals are outlined below.

5.2 PCU Coordinator (PCU-C)

The PCU-C is responsible for implementing the Quality Control Plan. Specifically, the PCU-C will perform the following:

- Coordinate and lead the quality control process.
- Assign a Project Quality Management Specialist (PQMS) and qualified professionals and subject matter specialists to perform project tasks and activities.
- Ensure all SMSs and PQMS involved in quality control and assurance plans and activities have a clear understanding of the scope and objectives of the project and a thorough understanding of the QMS plan.
- Ensure all SMSs and PQMS involved in the Quality Control Plan activities know the project schedule.
- Ensure all SMSs and PQMS working on the Quality Control Plan have a clear understanding of the project, deliverables, requirements and provisions for work for all the respective stages of the project development phase.
- Document the quality control process.
- Certify that quality control procedures have been followed.

Additionally, the PCU-C, in collaboration with the Project Quality Manager and thematic group leaders, will:

- Ensure consultants and sub-consultants follow this Quality Control Plan or a similar plan.
- Schedule document reviews and ensure all comments from these reviews are resolved prior to submitting the deliverables to the PCU.
- Evaluate the final products and ensure the deliverables meet the project's objectives.
- Ensure the plans and reports are reviewed for consistency between disciplines and that there is communication among the quality control staff.
- Resolve any disagreements between the document preparer and the originator of the comments (i.e., document reviewer).

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5.3 Project Quality Management Specialist (PQMS)

The PQMS is mainly responsible for coordinating the quality control activities required to achieve the requirements. The PQMS will liaise with subject matter specialists and the PCU-C throughout the performance of the Quality Control Plan processes and procedures to ensure that the plan is implemented and followed. This will include working directly with the SMSs and document reviewers (e.g., the panel of senior experts from external sources) to facilitate document control workflow, assist with document formatting and ensure quality documentation.

5.4 Subject Matter Specialists (SMSs)

Project review work for implementing a Quality Control Plan requires the involvement of various subject matter specialists (SMSs). The role of SMSs is to perform review work for the respective project components with regard to their field of expertise. The PQMS coordinates the SMSs. They work for the respective project component to ensure project requirements and standards presented in the ToR are met, as well as the nationally developed SSIP study and design guidelines, standard global guidelines and manuals. SMSs are also responsible for reviewing and checking consistencies and proper information flow among the project components. Grouping SMSs into thematic groups would make checking consistencies easier and facilitate a smooth information flow among the project components. Report formatting and other pertinent editorial work are also part of their responsibilities.

The thematic grouping of project components refers to the arrangement of project components of similar nature in one thematic group to ensure the prevalence of feedback of information and data among the various project components. For instance, the watershed and land husbandry investigations and outputs from the watershed engineering studies are pertinent inputs for the hydrologic model simulation work of the engineering hydrology component. Thus, components having such natural closeness can be arranged in one thematic group, and the SMSs can work more closely. These thematic groups have one group leader, and these thematic team leaders are responsible for performing the Quality Control Plan for the respective project components within the thematic group under consideration. A list of SMSs who work on the project and are responsible for reviewing and checking various technical studies is given in Appendix A.

5.5 Panel of Senior Experts (PSEs)

The PSEs can include document reviewers and a dam safety panel of experts (in the case of micro-dam headworks). They are independent individuals qualified in their specific areas of expertise and are not directly associated with project development. PSEs will review draft and final documents submitted by the Consultant to the ISQALD of the respective SSA countries to ensure accuracy, completeness, good documentation practices, clear and concise readability and compliance with project requirements, and dam safety requirements and specifications in the case of micro-dam headwork structures. This will include providing timely reviews and comments on how to prevent and correct errors in the documents prior to their finalization.

PSEs must be familiar with project review procedures published in the Client PD and FS-DD manual. A list of PSEs and their responsible review areas is provided in Appendix B.

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6. Quality Control Activities

6.1 General

The ISQALD/PCU of the Client/Public Agent will perform quality control reviews on all technical documents and other deliverables such as letters, reports, plan sets and calculations. This section outlines the key activities, while the actual procedures are described in Volume II of the QMS Toolkit.

6.2 Kickoff Meeting

At the commencement of the QMS activities, the PCU-C will conduct a kickoff meeting with the PCU members. At this meeting, the PCU-C will explain the quality control process, discuss the project's quality objectives and team member roles and distribute a copy of the project component reports, the scope of services and ToRs, and the project schedule. The PCU-C will also present checklists presented in Volume II, all available national and global SSIP study and design guidelines, standards and manuals. The PCU-C will prepare and distribute meeting notes to all attendees.

6.3 Use of Checklists

The PCU should be using Volume II of the QMS Toolkit, which presents QMS parameter checklists segregated by project development phases, stages, components and subcomponents along with checklists and requirements presented in the ToRs/RFPs, national and internationally recognized guidelines, manuals and standards such as USBR, USACE, ASTM, FAO and JICA, Technical Proposals submitted by the Consultant in response to the ToR/RFP and other relevant publications tailored to the scope of the project. These checklists can be used to review draft and final deliverables. The summarized form of these deliverables at all phases, stages, components and subcomponents are presented in Section 3.3, Templates 3.1 and 3.2 (Templates 3.2.1 through Template 3.2.3).

The PCU should use these checklists in combination with the checklists presented in Volume II, national guidelines, standards, manuals, guidelines and specifications presented by internationally recognized organizations such as USBR, USACE, ASTM, FAO and JICA, while checking the contents of the deliverables to ensure they are complete and meet the Client's requirements. The reviewers will record comments from their reviews on these checklists and the documents reviewed. The PCU-C will save the checklists and marked documents in the project file.

6.4 Reviewing Project Requirements

The initial quality control review is the responsibility of each individual professional who prepares deliverables, and it is designed to be performed by the Consultant PQMS. The second quality control review is the responsibility of the quality control reviewers from the PCU side, who confirm that the deliverables represent the PPD and FS-DD scope and that the final PPD and FS-DD level investigation, study, design findings and conclusions meet the project requirements, standards and technical specifications. Items to review include, but are not limited, to quality and clarity of the report, technical adequacy, appropriate level of analysis, completeness and accuracy of the information presented and regulatory sufficiency. During the review, the document reviewers will also check documents and reports for spelling, grammar and format to ensure compliance with quality control (QC) standards and PCU procedures. The Quality Process Log will document the quality control review (Appendix C). The reviewers will perform the reviews based on the QC procedures outlined in this chapter.

6.5 Coordination Reviews

Coordination reviews are only required for multidisciplinary scope items such as SSIP development work or coordination with other projects. The PCU-C, PQMS, SMSs and PSEs will use the Quality Process Log (Appendix C) to document the coordination of review work. These reviews will check compatibility of all project elements and the inclusion of project requirements and conditions.

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6.6 Concept Plans Field Review

The PCU-C and key QMS team members will participate in a field review to ensure that the concept plans address field conditions as the scope requires. This review will be documented in the Quality Process Log (Appendix C).

6.7 Quality of Sub-consultants' Work

A schedule of submittals and requirements for deliverables for each sub-consultant will be included in the project schedule. Sub-consultants must comply with this Quality Control Plan or a similar plan. The PCU-C will regularly contact each sub-consultant to monitor their progress.

6.8 Quality Assurance Review

PQMS will perform a Quality Assurance Review to verify that the deliverables meet the PPD and FS-DD procedures and project scope. The respective QMS team members will address any comments from the Quality Assurance Review.

7. Reviewing Documents

7.1 Quality Control Procedure

Modify the quality control procedure as needed based on the project requirement and Client/Public Agent organization.

The PCU (Client/Public Agent) should:

1. Together with the Funding Agent, design and prepare the program appraisal report, project profile, define program/project objectives and scope of services, establish the ToR/RFP and prepare the program operation manual, launch the start-up workshop and perform quality control and quality assurance activities for the project planning and design work.
2. Formalize the RFP specific to the respective projects and perform Consultant procurement activities.
3. Receive RFP responses, evaluate proposals, perform consulting firm selections and contract negotiations and awards.
4. During negotiation, agree with the Consultant on project schedules, deliverables and the quality control plans.
5. Hand over sites to the consulting firm and ensure the commencement of the PD and FS-DD activities of the respective project or lot.
6. Receive deliverables for inception, feasibility studies, preliminary design, detailed design and tender document preparation stages according to the project schedule.
7. Develop a quality control/assurance plan and assign the PCU-C, PQMS, SMSs and PSEs and launch the kickoff meeting for commencing quality control/assurance activities of the respective stages of the project studies and design work.
8. Affix the quality control tracking stamp (see Figure 1) to the cover sheet of each document to be reviewed.
9. Initial and date the documents ready for review and submit them to the quality control review team along with appropriate supporting documentation, reference materials (SSIPstudy and design guidelines, FAO and USBR guidelines and manuals, ToRs, scope of services, and project objectives and requirements) and a list of assumptions (when applicable) that will aid the quality control reviewers to complete their review of the document without asking the Originator/Consultant any questions.

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Figure 1. Quality control tracking stamp.

Modify this stamp as needed based on the project requirements and PCU/Public Agent organization.

Quality Control Review		
Quality Control Events/Activities	**Initials**	**Date**
PCU (Public Agent/Client) | Ready for quality control (QC STAMP)		
Quality Control Document Reviewer | Review document		
PCU (Public Agent/Client) | Launch review workshop		
PCU (Public Agent/Client) | Organize comments and deliver to Consultant		
Consultant/Originator | Address comments		
Quality Control Document Reviewer | Verify changes		
Quality Assurance Reviewer | Assure quality		
Quality Manager | Verify quality control is complete		
PCU-C | Sign quality control certificate		

The subject matter specialists (SMSs), Document Reviewers and PSEs should perform the following:

1. Note correct items with yellow.
2. Show corrections requiring changes or attention in red.
3. Initial and date the document reviewed.
4. Return document reviewed to the PCU-C and the PQMS.

The PQMS should then:

1. Review all items marked in red and make appropriate corrections.
2. Resolve disputed items with the Quality Control Document Reviewing Team and with the project requirements, if necessary.
3. Initial and date the document and provide the Document Reviewer with the revised document and the original comments' disposition.

The respective Document Reviewing Team should then:

1. Ensure all comments have been addressed. The Quality Control Document Reviewer marks correct items with a green check and incorrect items with a green circle and a remark.
2. Initial and date the document reviewed and return the document to the Consultant for incorporation.
3. Coordinate with the Consultant to ensure all comments are resolved.

The Project Quality Management Specialist should then:

1. Verify that the quality control has been appropriately performed and that deliverables meet the PD and FS-DD manual procedures, ToRs, TPs and project scope and requirements.
2. Sign the Quality Control Certificate (Appendix F) and submit the document to the Consultant.

The Consultant's project manager should then:

1. Resolve any disagreements in comments between the Originator and the Quality Control Reviewer.
2. Verify that the quality control has been appropriately completed.
3. Sign the Quality Control Certificate (Appendix F) and attach the signed certificate with the submittal.

Consultant Name: ____

Project Name: ____

Lot No.:_____ / RFP No.: _____ Woreda/District: ___________________________

7.2 Quality Process Log

The Quality Process Log in Appendix C should be used to track production and review activities for each deliverable.

7.3 Quality Control Documentation

The quality control and assurance activities will be documented in the appropriate quality control file established for this project. The quality control file will be stored at the Consultant's office identified in Section 1 of this plan and made available to the Client's project manager (Project Coordination Unit) upon request. Items to be stored include:

- Pertinent correspondence
- Checklists
- Conceptual plans
- Calculations
- Reports and technical memos
- Documents reviewed (including corrections made and follow-up actions) and submittals
- Quality control certifications

8. Appendixes

Appendix A - List of Subject Matter Specialists

Appendix B - Panel of Senior Experts

Appendix C - Quality Process Log

Appendix D - Project Schedule

Appendix E - Checklist

Appendix F - Quality Control Certification

Appendix G - Scope of Services

Appendix H - Summarized Version of the Technical Proposal

Consultant Name: ____

Project Name: ____

Lot No.: _____ / RFP No.:_____ Woreda/District: ___________________________

8.1 Appendix A

List of Subject Matter Specialists

Consultant Name: ____

Project Name: ____

Lot No.:_____ / RFP No.: _____ Woreda/District: ___________________________

Review	Document	Quality Control Reviewer/Subject Matter Specialist

Consultant Name: ____

Project Name: ____

Lot No.: _____ / RFP No.:_____ Woreda/District: ___________________________

8.2 Appendix B
Panel of Senior Experts

Consultant Name: ____

Project Name: ____

Lot No.:_____ / RFP No.: _____ Woreda/District: ___________________________

Review	Document	Responsible Professional

Consultant Name: ____

Project Name: ____

Lot No.: _____ / RFP No.:_____ Woreda/District: ___________________________

8.3 Appendix C
Quality Process Log

Consultant Name: ____

Project Name: ____

Lot No.:_____ / RFP No.: _____ Woreda/District: ___________________________

Review	Document	QC Review		QA Review	
		Initial	Date	Initial	Date

Consultant Name: ____

Project Name: ____

Lot No.: _____ / RFP No.:_____ Woreda/District: ___________________________

8.4 Appendix D
Project Schedule

Consultant Name: ____

Project Name: ____

Lot No.:_____ / RFP No.: _____ Woreda/District: ___________________________

8.5 Appendix E Checklists

Consultant Name: ____

Project Name: ____

Lot No.: _____ / RFP No.:_____ Woreda/District: ___________________________

This section of the QMS toolkit, designated as Appendix E, is an integral part of the Quality Management Plan (QMP) and has been specifically prepared for [Project Name]. The QMP outlined in this checklist is a crucial document that guides the implementation of QMS services for the deliverables in the pre-construction development processes of the aforementioned project. It is designed to ensure compliance with a comprehensive set of checklists for various pre-construction phases, stages, components, and subcomponents. Please use the tick mark (√) as necessary in the appropriate box below.

☐ (i) Phase I. Program Planning and Design Phase deliverables requirements

OR

☐ (ii) Phase II. Irrigation scheme detailed study and design deliverables requirements

The pre-construction development process requirements are outlined in various reference documents. These documents include:

Phase I. Program Planning and Design Phase deliverables requirements

- Volume II (Section 3) and national guidelines, manuals, guidelines, standards and ToRs/RFPs of the United States Bureau of Reclamation (USBR), the United States Army Corps of Engineers (USACE), the American Standards Test Method (ASTM), the Food and Agriculture Organization of the United Nations (FAO) and the Japan International Coordination Agency (JICA), and other documents provide detailed information on the specific requirements for Phase I. Program Planning and Design Phase (PP-DP) activities of irrigated agriculture development programs include checklists, to-do lists, methods, specifications and standards that must be followed during the Program Planning and Design Phase of the irrigated agriculture development process.

OR

Phase II. Detailed Study and Design Phase (DS-DP) deliverables requirements

- Volume II (Section 4) and national guidelines, USBR, USACE, ASTM, FAO and JICA manuals, guidelines, standards and ToRs/RFPs, and Annex II provide detailed information on the specific requirements for Phase II (Detailed Study and Design Phase) activities of irrigation schemes. They include checklists, to-do lists, methods, specifications and standards that must be followed during the Program Planning and Design Phase of the irrigated agriculture development process.

The following documents are common references for the pre-construction phases:

- **ToR/RFP**. The Terms of Reference and the Request for Proposal documents outline the project objectives, scope and requirements. They serve as a guide for the study and design teams or consultants to understand the expectations and deliverables of irrigation schemes.
- **National small-scale irrigation project study and design guidelines**. These guidelines are specific to each country and provide comprehensive instructions for studying and designing small-scale irrigation schemes. In the case of Ethiopia, the Ministry of Agriculture (2018) Small-Scale Irrigation Guidelines in volumes 1 to 34, and Japan International Cooperation Agency and Oromia Irrigation Development Authority (2014) guidelines in volumes 1 to 10, are referenced. Similarly, Uganda has guidelines from the Ministry of Agriculture, Animal Industry, and Fisheries, and guidelines from the Ministry of Water, Sanitation, and Irrigation.
- **Recognized manuals and design standards from international organizations**. International organizations such as the USBR, USACE, ASTM, FAO and JICA provide manuals. These design standards are widely recognized in the field of irrigated agriculture development. USBR and USACE design standards cover various aspects of irrigation projects. FAO irrigation manuals consist of modules 1 to 14 that offer guidance on different aspects of irrigation planning, design and management.

Consultant Name: ____

Project Name: ____

Lot No.:_____ / RFP No.: _____ Woreda/District: ___________________________

Certification

[Consultant Name] (hereinafter referred to as 'the Consultant') is committed to implementing and following this Quality Control Plan, the QMS toolkit template and reference documents outlined above.

Public Agent/Consultant Project Office

[Add office mailing address, email and phone information. This is where the Quality Control Plan will be stored.]

Public Agent/Consultant Project Manager [Add name, email and phone information.]

Public Agent/Consultant Quality Manager [Add name, email and phone information.]

Consultant Name: ____

Project Name: ____

Lot No.: _____ / RFP No.:_____ Woreda/District: ___________________________

8.6 Appendix F
Quality Control Certification

Consultant Name: ____

Project Name: ____

Lot No.:_____ / RFP No.: _____ Woreda/District: ___________________________

CONSULTANT QUALITY CONTROL CERTIFICATION

Project Name ____

Lot No. ___________________ RFP No. __________________Woreda/District ________________________

Consultant ____

Document Type ☐ Pre-FS Stage ☐ FS-PD Stage ☐ DD-TDP Stage

Document Version ☐ Draft ☐ Final

PCU Coordinator ____

Check the box for each stand-alone technical report prepared for the program (Phase I). Fill in the date the review was completed, the name of the technical specialist responsible for reviewing the report and the date the QC was performed and if all comments were addressed or resolved, as appropriate.

Report	Date QC Review Completed	Reviewer (Print Name)	Verification Date
☐ Program Appraisal and Design Work	____________	____________	____________
☐ Planning Scoping and Definition of Work	____________	____________	____________
☐ Program Operation and Implementation Manuals	____________	____________	____________
☐ Terms of Reference	____________	____________	____________
☐ Program Document	____________	____________	____________

All technical studies and reports have been satisfactorily reviewed by assigned specialists in their areas of expertise. I have performed the required quality control reviews for this project and find that the deliverables for the respective project development phases, stages, components and subcomponents satisfactorily meet ToR/RFP, technical requirements and checklists presented in Volume II (Section 3 and Section 4), national guidelines of the SSA countries, internationally recognized standards, manuals, guidelines, procedures and technical specifications, and grassroots target beneficiaries, state, county, federal and national requirements, as applicable, and are consistent with the ISQALD procedures and scope of services for this project. Quality control documents for these submittals are available in our project file for your review upon request.

Project Quality Management Specialist

____________	____________	/ /
Print Name	Signature	Date

I have reviewed the quality control activities of project construction work and exit strategy documents and find that these reports and simulation work were prepared consistent with the Client's Terms of Reference and Project Requirements and are consistent with the guidelines and standards for SSIPs and global guidelines, manuals and standards of the Food and Agriculture Organization of the United Nations and the United States Bureau of Reclamation and other pertinent procedures.

PCU Coordinator

____________	____________	/ /
Print Name	Signature	Date

Consultant Name: ____

Project Name: ____

Lot No.: _____ / RFP No.:_____ Woreda/District: ___________________________

OR

Project Name ____

Lot No. ____________________ RFP No. ___________________Woreda/District _________________________

Consultant ____

Document Type ☐ Pre-FS Stage ☐ FS-PD Stage ☐ DD-TDP Stage

Document Version ☐ Draft ☐ Final

PCU Coordinator ____

<table>
<tr><td colspan="4">Check the box for each stand-alone technical report prepared for the program (Phase I). Fill in the date the review was completed, the name of the technical specialist responsible for the review, the date of verification the QC was performed and all comments addressed or resolved, as appropriate.</td></tr>
<tr><td>Report</td><td>Date QC Review Completed</td><td>Reviewer (Print Name)</td><td>Verification Date</td></tr>
<tr><td>☐ Inception Report</td><td>____________</td><td>____________</td><td>____________</td></tr>
<tr><td colspan="4">All technical studies and reports have been satisfactorily reviewed by assigned specialists in their areas of expertise. I have performed the required quality control reviews for this project and find that the deliverables for the respective project development phases, stages, components and subcomponents satisfactorily meet ToR/RFP, technical requirements and checklists presented in Volume II (Section 3 and Section 4), national guidelines of the SSA countries, internationally recognized standards, manuals, guidelines, procedures and technical specifications, and grassroots target beneficiaries, state, county, federal and national requirements, as applicable, and are consistent with the ISQALD procedures and scope of services for this project. Quality control documents for these submittals are available in our project file for your review upon request.</td></tr>
<tr><td>Project Quality Management Specialist</td><td>____________
Print Name</td><td>____________
Signature</td><td>/ /
____
Date</td></tr>
<tr><td colspan="4">I have reviewed these project component documents and find that these reports and simulation work were prepared consistent with the Client's ToR and project requirements and are consistent with the guidelines and standards for SSIPs and global guidelines, manuals and standards of FAO, USBR and other pertinent procedures.</td></tr>
<tr><td>PCU Coordinator</td><td>____________
Print Name</td><td>____________
Signature</td><td>/ /
____
Date</td></tr>
</table>

Consultant Name: ____

Project Name: ____

Lot No.:_____ / RFP No.: _____ Woreda/District: ____________________________

OR

Project Name ____

Lot No. __________________ RFP No. _________________Woreda/District _______________________

Consultant _______________________________________

Document Type ☐ Pre-FS Stage ☐ FS-PD Stage ☐ DD-TDP Stage

Document Version ☐ Draft ☐ Final

PCU Coordinator ____

Check the box for each stand-alone technical report prepared for the program (Phase I). Fill in the date the review was completed, the name of the technical specialist responsible for the review, the date of verification the QC was performed and all comments addressed or resolved, as appropriate.

Report	Date QC Review Completed	Reviewer (Print Name)	Verification Date
☐ Main Report			
☐ Surveying and Mapping			
☐ Climate and EH			
☐ Geotechnical and EG			
☐ HWE			
☐ ID (Part-A and Part-B)			
☐ IA			
☐ Soil and LE (Part-A and Part-B)			
☐ Watersheds			
☐ SEIA			
☐ SE/EF Analysis (Part-A and Part-B)			
☐ O&M Manual			
☐ Tender Document			

All technical studies and reports have been satisfactorily reviewed by assigned specialists in their areas of expertise. I have performed the required quality control reviews for this project and find that the deliverables for the respective project development phases, stages, components and subcomponents satisfactorily meet ToR/RFP, technical requirements and checklists presented in Volume II (Section 3 and Section 4), national guidelines of the SSA countries, internationally recognized standards, manuals, guidelines, procedures and technical specifications, and grassroots target beneficiaries, state, county, federal and national requirements, as applicable, and are consistent with the ISQALD procedures and scope of services for this project. Quality control documents for these submittals are available in our project file for your review upon request.

Project Quality Management Specialist

Print Name	Signature	Date
____________	____________	/ /

I have reviewed these project component documents and find that these reports and simulation work were prepared consistent with the Client's ToR and project requirements and are consistent with the guidelines and standards for SSIPs and global guidelines, manuals and standards of FAO, USBR and other pertinent procedures.

PCU Coordinator

Print Name	Signature	Date
____________	____________	/ /

Consultant Name: ____

Project Name: ____

Lot No.: _____ / RFP No.:_____ Woreda/District: ___________________________

OR

Project Name ____

Lot No. ___________________ RFP No. __________________Woreda/District ___________________

Consultant ____

Document Type ☐ Pre-FS Stage ☐ FS-PD Stage ☐ DD-TDP Stage

Document Version ☐ Draft ☐ Final

PCU Coordinator ____

Check the box for each stand-alone technical report prepared for the program (Phase I). Fill in the date the review was completed, the name of the technical specialist responsible for the review, the date of verification the QC was performed and all comments addressed or resolved, as appropriate.

Report	Date QC Review Completed	Reviewer (Print Name)	Verification Date
☐ Executive Summary	____________	____________	____________
☐ Main Report	____________	____________	____________
☐ Surveying and Mapping	____________	____________	____________
☐ Climate and EH	____________	____________	____________
☐ Geotechnical and EG	____________	____________	____________
☐ HWE	____________	____________	____________
☐ ID (Part-A and Part-B)	____________	____________	____________
☐ IA	____________	____________	____________
☐ Soil and LE (Part-A and Part-B)	____________	____________	____________
☐ Watersheds	____________	____________	____________
☐ SEIA	____________	____________	____________
☐ SE/EF Analysis	____________	____________	____________
☐ O&M Manual	____________	____________	____________
☐ Tender Document	____________	____________	____________
☐ Drawing Album	____________	____________	____________

All technical studies and reports have been satisfactorily reviewed by assigned specialists in their areas of expertise. I have performed the required quality control reviews for this project and find that the deliverables for the respective project development phases, stages, components and subcomponents satisfactorily meet ToR/RFP, technical requirements and checklists presented in Volume II (Section 3 and Section 4), national guidelines of the SSA countries, internationally recognized standards, manuals, guidelines, procedures and technical specifications, and grassroots target beneficiaries, state, county, federal and national requirements, as applicable, and are consistent with the ISQALD procedures and scope of services for this project. Quality control documents for these submittals are available in our project file for your review upon request.

Project Quality Management Specialist (PQMS)

____________________	____________________	___/___/___
Print Name	Signature	Date

I have reviewed these project component documents and find that these reports and simulation work were prepared consistent with the Client's ToR and project requirements and are consistent with the guidelines and standards for SSIPs and global guidelines, manuals and standards of FAO, USBR and other pertinent procedures.

PCU Coordinator

____________________	____________________	___/___/___
Print Name	Signature	Date

Consultant Name: ____

Project Name: ____

Lot No.:_____ / RFP No.: _____ Woreda/District: ___________________________

8.7 Appendix G

G-1. Program and Project Objectives

G-2. Scope of Services

G-2. Terms of References

Consultant Name: ____

Project Name: ____

Lot No.: _____ / RFP No.:_____ Woreda/District: ___________________________

8.8 Appendix H

Summarized Version of the Technical Proposal

Consultant Name: ____

Project Name: ____

Lot No.:_____ / RFP No.: _____ Woreda/District: __________________________

International Water Management Institute

CGIAR

IWMI is a CGIAR Research Center

The International Water Management Institute (IWMI) is an international, research-for-development organization that works with governments, civil society and the private sector to solve water problems in developing countries and scale up solutions. Through partnership, IWMI combines research on the sustainable use of water and land resources, knowledge services and products with capacity strengthening, dialogue and policy analysis to support implementation of water management solutions for agriculture, ecosystems, climate change and inclusive economic growth. Headquartered in Colombo, Sri Lanka, IWMI is a CGIAR Research Center with offices in 15 countries and a global network of scientists operating in more than 55 countries.

International Water Management Institute (IWMI)
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127 Sunil Mawatha, Pelawatta
Battaramulla, Sri Lanka

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Email: iwmi@cgiar.org
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