

TECHNICAL REVIEW REPORT
ON
TERMS OF REFERENCE FOR DETAILED ENGINEERING DESIGNS
DAK LAK SUBPROJECT

Draft version

Names of review experts:

1. Rob Rendell
2. Alan K. Clark
3. Hai Ngo Dang

Individual report:

Consolidated report:

Name of the expert drafting the consolidated report: Hai Ngo Dang

Hanoi, 20 September 2019

Table of Contents

1. INTRODUCTION	1
2. METHODOLOGY.....	1
2.1 Review objective.....	1
2.2 Methods	1
3. FINDINGS AND RECOMMENDATION	2
3.1 General Observation.....	2
3.2 The TOR structure and content, and Overview on the WEIDAP Project.....	2
3.3 Design options proposed for the detailed engineering design	2
3.4 Objectives and scope of consulting service	3
3.5 Products and schedule of submission.....	3
3.6 Requirements on the capacity of the design consultancy.....	4
3.7 English usage.....	4
3.8 Editing.....	4
4. CONCLUSIONS AND RECOMMENDATION.....	5
4.1 Conclusions	5
4.2 Recommendations.....	5

1. INTRODUCTION

This document is the review report on the latest version (Version 3) of the Terms of Reference (TOR) for Detailed Engineering Designs of Dak Lak Subproject under WEIDAP Project.

In May 2019, CPMU/CPO submitted the draft TOR (Version 1) for detailed engineering designs of Dak Lak subproject to ADB.

The revised TOR (Version 2) for detailed engineering designs was finalized by Dak Lak SPPMU based on the comments and recommendations from the experts of ADB and AWP on the draft TOR, and submitted to ADB on 23 July 2019.

On 10 August 2019, ADB sent CPMU/CPO the final consolidated comments (from Alan Clark, Rob Rendell, Ryutaro Takaku, and Hai Ngo Dang) on the revised TOR (Version 2).

On 11 September 2019, CPMU submitted the latest version (Version 3) of the TOR to ADB.

This review report focuses on checking reflections of the final consolidated comments in the latest TOR.

2. METHODOLOGY

2.1 Review objective

The objective of the review report is to present findings and recommendations on the latest TOR to assist Dak Lak SPPMU in finalizing the final TOR within the wider context of WEIDAP Project.

2.2 Methods

The viewers prepared their own/ individual review reports. These review reports focus closely upon checking reflections of the final consolidated comments and the Guidelines for Detailed Engineering Design, as well as the feasibility study for Dak Lak Subproject in the latest TOR (Version 3). The draft of review report was prepared by consolidating the individual review reports.

The final review report has been finalized after the reviewers revised the draft report.

3. FINDINGS AND RECOMMENDATION

3.1 General Observation

Basically, the latest TOR has not referred to the Guidelines for Detailed Engineering Design, the Design Principles for Subprojects, and the Comments on draft TOR for Detailed Engineering Designs (Dak Lak province). The TOR does not appear to have understood the Guidelines for Detailed Engineering Design and the Comments on draft TOR for detailed engineering designs (Dak Lak province) that were circulated to SPPMUs/PPMUs involved in the WEIDAP Project. There are still too many recommendations/ principles not to be reflected in the TOR.

There needs to be mention of the design guidelines, the milestone discussions, workshops for designers and also the design study tour in Australia, etc.

There is still some confusion in the TOR for DED. These all stem from the fact that at the feasibility study the designs prepared by national consultants adopted pumping from reservoirs into header tanks, which is not our preferred option. However, this approach with header tanks has strongly influenced the TOR for DED.

3.2 The TOR structure and content, and Overview on the WEIDAP Project

The TOR structure has been modified with some small changes for reflecting more similarly to the outlined structure in the ADB “User Guide for Preparing Terms of Reference”.

The objectives in Section 1.2 have been updated and replaced with the Project Outputs as in the Report and Recommendation of the President at <https://www.adb.org/projects/documents/vie-49404-002-rrp>. However, in Output 1 “(footnote 18: Parallel technical support from the Government of Australia will complement output 1 activities. Assistance will be in the form of bilateral cooperation as well as through the Australian Water Partnership)” was copied without index 18 in the footer.

Recommendation: It is necessary to delete the phrase “footnote 18:”.

3.3 Design options proposed for the detailed engineering design

Overall, there is still some confusion stemming from the fact that at the feasibility study the designs prepared by national consultants adopted pumping from reservoirs into header tanks.

Although the Comments on draft TOR for detailed engineering designs (Dak Lak province) provided with useful suggestions on the SCADA system, item c. SCADA system in Section 2.4.1.1 still remains unchanged.

Suggestions: The ToR should clearly state the required functions of the SCADA system, covering: pump operations, pressure pressures, flows, remote/ local water metering reading system, etc. Also:

- (i) The transmission of data/ coded signals from sensors – loggers/ remote terminal units (RTUs) to central control offices and vice versa should use the Internet and the 4G/ 5G universal mobile telecommunication system or the latest mobile technology;
- (ii) Real time SCADA and applications of IOT technology shall be considered;
- (iii) The Websocket protocol/ technology should be applied for real time SCADA systems;
- (iv) SQL Server and ArcGIS databases would be very useful for control and management as well as maintenance of pressure pipe systems, etc.

Recommendation: The TOR, specifically Section 2.4 needs to be reflected the markup corrections focused on the engineering aspects as in the file: DAK LAK DED TOR WEIDAP _ EN - AKCnHai Markup.

3.4 Objectives and scope of consulting service

The scope of tasks has not fully listed main tasks. It would be necessary to considered that selected design consultants will be expected to attend a study tour in Australia to visit similar schemes in the Riverland district of South Australia.

Regarding the provision in Section 3.2.7.1 for the required hydrology and irrigation calculations, all the Section has remained unchanged with no explanations. As a matter of fact, it is not appropriate or within the design consultants ability to review some of these calculations.

3.5 Products and schedule of submission

The schedule for submission in Table 21 has not updated and referred to the Guidelines for Detailed Engineering Design. Please note that milestones 3 and 4 in the Guidelines are written as follows:

MS 3: DARDs/SPPMUs/PPMUs submission of detailed engineering design dossiers (draft detailed design drawings, reports and calculations) for review and comments by MARD (CPO/CPMU) with the help of ADB and AWP.

MS 4: Submission of final detailed engineering design dossiers including full reports, specialized reports, maps, detailed design drawings, calculations, quantities and cost estimates; technical instructions for constructions, operational procedures, etc., revised taking into any comments made in MS 3.

3.6 Requirements on the capacity of the design consultancy

Several essential requirements on the capacity of the design consultancy/ firms listed in Section 7 of the Comments on draft TOR for detailed engineering designs (Dak Lak province) have not been reflected in the latest TOR.

Kindly consider again:

- Any consultants must demonstrate experience in "urban pressurised water supply systems". The priority will be given to consulting firms having experience in designing pressurised irrigation supply systems for HVCs/ agriculture.
- Any consultants must use "EPANET" or WaterGEMS unless otherwise approved.
- Any prospective consultants must attend a 'briefing workshop" before submitting tender.

3.7 English usage

Serious mistakes in English usage and vocabulary on the TOR cover have been corrected.

The phrase: "the irrigation system" on the TOR cover was replaced with the irrigation systems, but it has not been replaced in headers.

Although many English mistakes have been corrected, there are still many others remaining unchanged.

Recommendation: Remaining mistakes in English usage and vocabulary should be corrected/ replaced.

3.8 Editing

Many mistakes in formatting, section/ item numbering and naming, line spacing, spelling mistakes, repeated paragraphs, etc. have not been adjusted. There are even more mistakes created in the latest TOR.

4. CONCLUSIONS AND RECOMMENDATION

4.1 Conclusions

The Terms of Reference for Detailed Engineering Designs of Dak Lak Subproject may be approved by ADB only if the reviewers' main recommendations would be reflected in it.

4.2 Recommendations

The following main recommendations can be made from the findings and specific recommendations highlighted in Section 3.

4.2.1 Overall, the essential design principles and recommendations/suggestions in the Guidelines for Detailed Engineering Design, the Design Principles for Subprojects, and the Comments on draft TOR for Detailed Engineering Designs (Dak Lak province) need to be reflected in the TOR.

4.2.2 The phrase "footnote 18:" in the paragraph: Output 1: Irrigation management services strengthened needs to be deleted.

4.2.3 The TOR should clearly state the required functions of the SCADA system and update the SCADA generations.

4.2.4 The TOR, specifically Section 2.4 needs to be reflected the markup corrections focused on the engineering aspects as in the file: DAK LAK DED TOR WEIDAP _ EN - AKCnHai Markup.

4.2.5 In the scope of consulting tasks, it would be necessary to refer to milestones 3 and 4 in the Guidelines for Detailed Engineering Design, and to consider adding "selected design consultants will be expected to attend a study tour in Australia to visit similar schemes in the Riverland district of South Australia".

4.2.5 Section 3.2.7.1 for the required hydrology and irrigation calculations needs to be explained or excluded from the TOR.

4.2.6 The schedule for submission needs to be updated by referring to milestones 3 and 4 in the Guidelines for Detailed Engineering Design.

4.2.7 Several essential requirements on the capacity of the design consultancy/ firms listed in Section 7 of the Comments on draft TOR for detailed engineering designs (Dak Lak province) have to be reflected in the TOR.

4.2.8 Remaining mistakes in the English usage and vocabulary, as well as in the editing should be corrected/ modified.