Annex 4.11

Proceedings of the Agricultural Water Management Database Validation Workshop

Federal Democratic Republic of Ethiopia

Ministry of Water Resources

Food and Agricultural Organization of the United Nations

Project: Strengthening national water monitoring capacities, with emphasis on agricultural water management (GCP/GLO/207/ITA)

Agricultural Water Management (AWM) Database Validation Workshop Endorsement and the Way Forward

Venue:	Ministry of Water Resources (MoWR)
Date:	15-16 June 2010
Participants:	Relevant Federal and Regional Organizations
Objective of the workshop:	To endorse of the AWM Database System and discuss the Way Forward

1. Opening the Workshop

Moderator: Ato Solomon Cherie, Team Leader for Pressurized Irrigation System, Irrigation and Drainage Directorate, MoWR

Welcome speech was made by Ato Teshome Atnafie, National Project Coordinator, and Director of Irrigation and Drainage Directorate MoWR. He said the following in his welcome speech:

> The project was completed in 30 November 2009 with important outputs such as methodology for agricultural water use monitoring; performance assessment and agricultural water management database as well as capacity building in all these.
>
> FAO as concerned stakeholder, tried to find additional budget to refine the outputs particular the database and the project was extended until end of June 2010.
>
> Within this extension period, the project organized four training session- two Amhara and Oromia regions and two for federal ministries (MoWR ad MoARD) and this validation workshop is the last one of the project.
>
> Now the project came to an end laying down a remarkable foundation for monitoring agricultural water management

The workshop was opened by Ato Getu Zegeye, Chief Economist and Advisor to the Minister, MoWR. In his opening speech, Ato Getu indicated the following:

> The MoWR has seriously considered water sector information as part of its integrated water resources development strategy.
>
> Accordingly, different projects dealing with water sector information of which this FAO supported project is the most important as agriculture takes the lion's share of water resources have been ongoing for the last two and half years.
>
> This agricultural water management project supported by FAO has been implemented with full participation of the government at federal, regional and local levels as well as private sectors. He indicated that has been closely involved in the project and participated in all the workshops and he opened or closed training workshops.

2. Workshop Presentations and Discussions

Two presentations were made by:

- Yibeltal Tiruneh on the methodology, project outputs, contents of the database, detail calculations and stakeholder participation
- Yohannes Tesfaye on Functional descriptions of the database and demonstration of its operation

Discussions were made in between the presentations and the participants have unanimously endorsed the web-based database with great appreciation.

The participants were then grouped into two to discuss on the way forward with the following topics as a guideline:

Group 1: Scaling up the methodology (methodology and strategy)
Group 2: Institutional responsibility and collaboration

After group presentations, the participants have made thorough discussion and put forward recommendations. The main ones are summarized as the way forward under section 3 below while full recommendations/suggestions of the groups are provided in Section Annex 1 as presented by the respective groups. Annexes 2and 3 provide the lists of participants of the Validation and database training workshops respectively.

3. The Way Forward

The database is prepared with functions giving the required outputs. To effectively use this important database, the participants of this validation workshop have suggested the following:

Considering the shared responsibility of irrigation development between MoWR and MoARD and their regional levels, there should be close working relationship and coordination at all levels.

The MoWR in collaboration with MoWRD and with the assistance of FAO should disseminate the methodology and database to the public through mass media.

The MoWR with the above major stakeholders need to organize several training sessions to create awareness on the importance of accurate data on decision and discouraging reporting wrong data that mislead decision-makers

The database should be managed by the MoWR but the regions should be given not only the rights to enter and edit data but also the right to export raw data

While the Web-Master which is the Documentation Center of the MoWR is responsible for the overall web administration, the Irrigation and Drainage Directorate of the ministry is responsible for the technical data and authorizing registered users.

Monitoring agricultural water management should not be a one time activity but should be an integral part of the extension service so that the database can be updated as new information is made available. However, as the database should be completely updated every five years.

The MoWR in collaboration with MoARD and with the assistance of FAO need to prepare guideline for estimation of agricultural water withdrawal from cropping pattern and climate data considering agro-ecological zones.

Flow measuring facilities should be installed at least on the main canals just downstream of the intake of all irrigation schemes so as to enable estimation of the amount of water abstracted

Capacity building at all levels should be given the top priority in irrigation development and monitoring agricultural water management.

The possibility of updating the database offline need to be assessed and implemented

To implement the above recommendations, there should be strong commitment from decision makers.

4. Workshop Closing Remarks

Ato Teshome Atnafie, summarized the discussions and made important remarks as the way forward

The achievements of this unprecedented pilot project of small budget within such short duration are comparable to multimillion project of longer duration. The project has laid down a solid foundation for monitoring irrigated area and agricultural water use.

The government takes this database as a great opportunity and builds on it not only to cover the country at one time but also monitor regularly.

The Irrigation Development and Drainage Directorate in cooperation with other Directorates of the MoWR and other federal and regional stakeholders will take the responsibility of disseminating the methodology and other outputs of this pilot project and devise a strategy to scale it up.

The problems associated with the database such as lack of coordination among the relevant federal and regional stakeholders as well as private sector, and offline updating of the data are the major concerns the relevant organizations should discuss on.

Ato Zegeye made the following remarks in his closing speech;

This agricultural water management project has made significant contributions the monitoring of water sector to unlike other multimillion projects led by international consultants

The participatory approach of project implementation observed/exercised in this project and the different capacity building activities carried out are much appreciated and need to be adapted in all projects in the future.

The ministry will make every effort in scaling up this pilot project and will integrate it with other water sector information databases that are being or will be developed.

The problem of coordination within the MoWR and outside is a challenge that has been ongoing should be tackled strategically.

Annex 1: Group Recommendations

Group 1 Recommendations

Data quality should be improved by implementing the following:

- Close relation between federal- regional- zonal and woreda levels
- Giving responsibility and exercising accountability for data collection
- Using quality measurement equipment
- Using clear-cut methodology
- Need capacity building on data collection, terms and words used in the formats
- Identifying reliability data source
- There should be trust hold (consider trustworthiness as the major element of data collection)
- Every stakeholder should have commitment for data accuracy considering the fact that inaccurate data leads to inappropriate decisions and policies.
- Data manipulation and processing should be carried out carefully
- Automation effect should be considered
- Verification should be exercised before reporting or data entry
- Assessment of type of data needed
- Classification of data users - raw data users and report users
- Establishment data quality controlling system
- Clear cut institutional responsibilities on stallholders from various institutions for data collection, analysis, entry and editing
- Time frame and working time standard should be determined
- Data quality verification and controlling system be made at central level

The strategy to be adopted should include the following

- Strategy on institution- need to have appropriate what type of institutional structure, source of finance, skilled manpower and identification of GIS-based data types
- Policy for monitoring agricultural water management
- Preparation of standard guidelines
- Various controlling system should be adopted as a strategy
- Agricultural water management – similar strategy should be browse, incorporation
- Scale up finance
- Irrigation system design should be think about water loss
- Integration between MoARD and MoWR with clear-cut institutional responsibilities
- Developing irrigation policy guideline stating responsibilities of all irrigation scales
- Working on lower level up to farmers and lower level irrigation scheme
- Transparency
- System and institutional integration
- New intuitional setup
- To put clear institutional responsibilities to one institution
- Representative at small scale on developmental agents
- Sustainable irrigation use and structure
- Setting time frame
- Standardizing methodology
- Integration of water and land policies to avoid gaps or clashes
- Irrigation institutional set up strategy
- MoWR to seriously consider capacity building for Awash Basin Authority in collaboration with collaboration MoARD and other relevant institutions

Methodology should we use to estimate agricultural water use

- Use Penman Monith's method for available metrological data
- Use transfer method from one agro-ecology to another where meteorological data are lacking
- Use Blaney-Criddle method for semi-arid areas; we cal also use Pan evaporation method as appropriate and available as well as remote sensing as an option
- Estimate irrigation water requirement(IWR) at scheme level wherever data is available rather than other water abstraction estimation methods
- Using float method for estimating water abstraction
- Prepare irrigation standard designs and need establish institution to control the implementation of the standard designs
- Enforcing the large scale irrigation schemes to use flow measurement in their canals
- Research should focus on developing crop coefficient and irrigation crop water requirement calculation methods

Water harvesting, soil and water conservation and livestock data

- Data on these should be collected by woredas at watershed level
- Data can be collected by developmental agents but they have to be well trained.
- water conservation data collected at water shade level
- Water harvesting data should include irrigated area and crop type
- Data collection methodology should be improved integrating administrative and hydrological units
- Integration of CSA, MoARD and MoWR in data collection and related tasks is of paramount importance.
- Terminology like watershed and sub-basin should be clearly defined and reach common understanding at all levels.

Group 2 Recommendations

Regional Agricultural and Rural Development and Water Resources should take the responsibility of data collection with a great deal of integration

The Regional Water Bureau should take the coordination responsibility at all levels

Data collection from large scale commercial farms should be handled by the Ministry of Water Resources in collaboration with the two regional bureaus

Data entry should be done conditionally made at both zonal and regional levels but the regional bureaus should have a master password to control and edit the data entered at zones in the respective regions. The regions should have a particular body to enter, control, edit and update data if data entry is made at the regions.

Ministry of Water Resources should:

- Standardize the data collection format prepared by the project
- Create awareness among all stakeholders at all levels
- Build the capacity of regional bureaus
- Verify data entered in the database
- Find fund for scaling up and cover the country

Ministry of Agriculture and Rural Development:

- Standardize the collection format of its own part prepared by the project
- Create awareness on the database system for regions at all levels
- Carryout out capacity building activities for regional bureaus and beneficiaries

Regional Water Bureaus should:

- Collect, enter, update and edit the data including quality control
- Coordinate zonal and woreda water and agricultural and rural development offices
- Create awareness for zonal and woreda level concerned and responsible bodies
- Carryout capacity building activities for the zonal and woreda offices (provision of required facilities and training zones and woreda offices)

Regional Agricultural and Rural Development Bureaus should:

- Collect data of their concern and quality control
- Create awareness for zonal and woreda level concerned and responsible bodies
- Carryout capacity building activities for the zonal and woreda offices (provision of required facilities and training zones and woreda offices)

River Basin Authorities when established and strengthened should:

- Collect and give the Agricultural Water Resources Potential data to enrich the existing database
- Should control, allocate and administer water resources database system in collaboration with the regional bureaus

As far as the database system is accessed by all concerned regions, zones or woredas through network connection, data can be updated continuously at local level. However, a general guideline, the database should be updated at least once in five years.

The major concern is updating the database through internet which cannot be available at most woredas.

Annex 2: Participants of Agricultural Water Management Database VALIDATION WORKSHOP

Strengthening National Water Monitoring Capacity with Emphasis on Agricultural Water Management (GCP/INT/207-203/ITA)

Venue: Ministry of Water Resources
15-16 June, 2010

No	Name of Participant	Organization	E-mail	Phone No
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Annex 3: Training on Agricultural Water Management Database

1. Amhara Region

Location: Bahir Dar,
Venue: Meeting Hall of Bureau of Water Resources Development
Date: 6-7 May 2010
Participants: Water and Agriculture and Rural Development Bureaus

Name of Participant	Organization	Telephone
1. Sewenet Eshete	Bureau of Water Resources Development	
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5. Kibret Kassie	Bureau of Water Resources Development	
6. Birtukan Fikadie	Bureau of Water Resources Development	0918029449
7. Daniel Belayneh	Bureau of Water Resources Development	0918760602
8. Dagnachew Beyene	Bureau of Water Resources Development	
9. Yetsedaw Wubetie	Bureau of Water Resources Development	
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11. Senait Gela	Bureau of Agriculture and Rural Development	
12. Lakachew Emiru	Bureau of Agriculture and Rural Development	0918 705138

Comments provided

1. There should a tool for data entry offline and then uploading
2. Different pages have different links for the same page
3. Year selection box is not displayed on the first query page (it is displayed after clicking "Back button" on other pages)
4. One does not know which page one is reading (the selected menu should be highlighted or dimmed)
5. The list of the subject of the Profile disappears when one subject is selected
6. Include a tool for selecting region and river basin together (needs check box)
7. Exchange the places of Contact Info and Agricultural Water
8. Edit the unit on the AWW Page
9. Expand Sol and WC to Soil and water conservation
10. Include a definition for improve_rwa (may be below the list)
11. Include Tips for the query subjects (data entry pages)
12. Include a tool that displays 'NA' if there is not data
13. Align decimals and integers in the table pages by including decimal places
14. Delete counting numbers in the dropdown lists
15. Health problem: selecting "Other should activate a box for entering text data
16. When one finishes typing the name of irrigation scheme, all the information should be displaced if that scheme is already in the database
17. Include " Birr" for all the costs not only in dollar
18. Edit data validation rule for actually irrigated area (<=)
19. Elaborate 'No of member in the socioeconomics page'
20. Change user payment to Basis of payment for irrigation and include unit (ha)
21. Modify "Access to water" by Priority to access to water" and change "other" by disabled"
22. Elaborate WS and CA in the "Location page"
23. Include a validation rule for mandatory of location data
24. Altitude of the command area or water source? elaborate
25. Include the name of water source in the "irrigation data entry page"
26. Include dropdown list of zones under each region
27. Include a tool for data search for editing
28. Include a tool for deleting linked record in all the pages when a record in any of the pages is deleted
29. Use Flexy GIS/cadastral (web-based mapping software) which can be centralized- and use Dot **NET programme (.NET)**
30. MS based database is better for sustainability

31. Elaborate the following definitions:
    Equipped area
    full and partial control
    Traditional and modern
    Is traditional irrigation scheme equipped?
32. On the methodology page, link FAO References
33. Elaborate "reason" that follows equipped and actually irrigated areas (enable or show when there is difference and disable or hide when they are equal; at the same; "others" should be specified

2. Oromia Region

Location: Addis Ababa
Venue: Meeting Hall of Bureau of Water Resources Development
Date: 20 May 2010
Participants: Water and Agriculture and Rural Development Bureaus

Name of Participant	Organization	E-mail	Telephone
1. Fekadu Lemecha	OWRB		0911404392
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OWRB= Oromia Water Resources Bureau
OARDB= Oromia Agriculture and Rural Development Bureau

The comments centered on general issues related to lack of collaboration, reporting wrong data, lack of commitment at higher level, institutional instability.

3. Ministry of Agriculture and Rural Development

Location: Addis Ababa
Venue: Meeting Hall of Extension Directorate
Date: 17 May 2010
Participants: Extension, Natural Resources and Planning Directorates

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Comments
1. Include area salinized but still cultivated land
2. Query of total equipped and actually irrigated area by ownership-area query page

4. Ministry of Water Resources

Location: Addis Ababa
Venue: Small Meeting Hall of the Ministry
Date: 21 May 2010
Participants: MoWR and GIRWI Project

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Comments

1. Avoid trying to log in by including an advice not to make trials
2. Include dropdown menu under profile
3. The selection should start from BASIN- WMISET (Area, LS, CP, AWW, Profile, SWC)
4. Include FAQ under Comment
5. Maintain the left menu in all pages
6. Include a tool to return to the previous page in all pages
7. Include a tool to open different pages in different windows including Map in PDF
8. Include mailing environment-exchange server
9. Include a remark to indicate data incompleteness in Awash Basin
10. Combine some draw-down selections in both data entry and criteria
11. Remove years 2001-2004 from drop down list because no information before 2005
12. Permanent variables should not be repeatedly entered
13. Revise the options for Priority of Access to water: Gender, Crop type, crop status and, other
14. Include total number of schemes in query

Most of the comments are considered in finalizing the database as much as possible