The United Republic of Tanzania
Agricultural Sector Lead Ministries
(ASLMs)

PROJECT FOR
CAPACITY DEVELOPMENT FOR
THE ASDP MONITORING AND
EVALUATION SYSTEM
PHASE II

Completion Report

June 2015

**Japan International Cooperation Agency
(JICA)**

**INTERNATIONAL DEVELOPMENT CENTER OF JAPAN
(IDCJ)**

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ANNEX

Location Map of Project Area
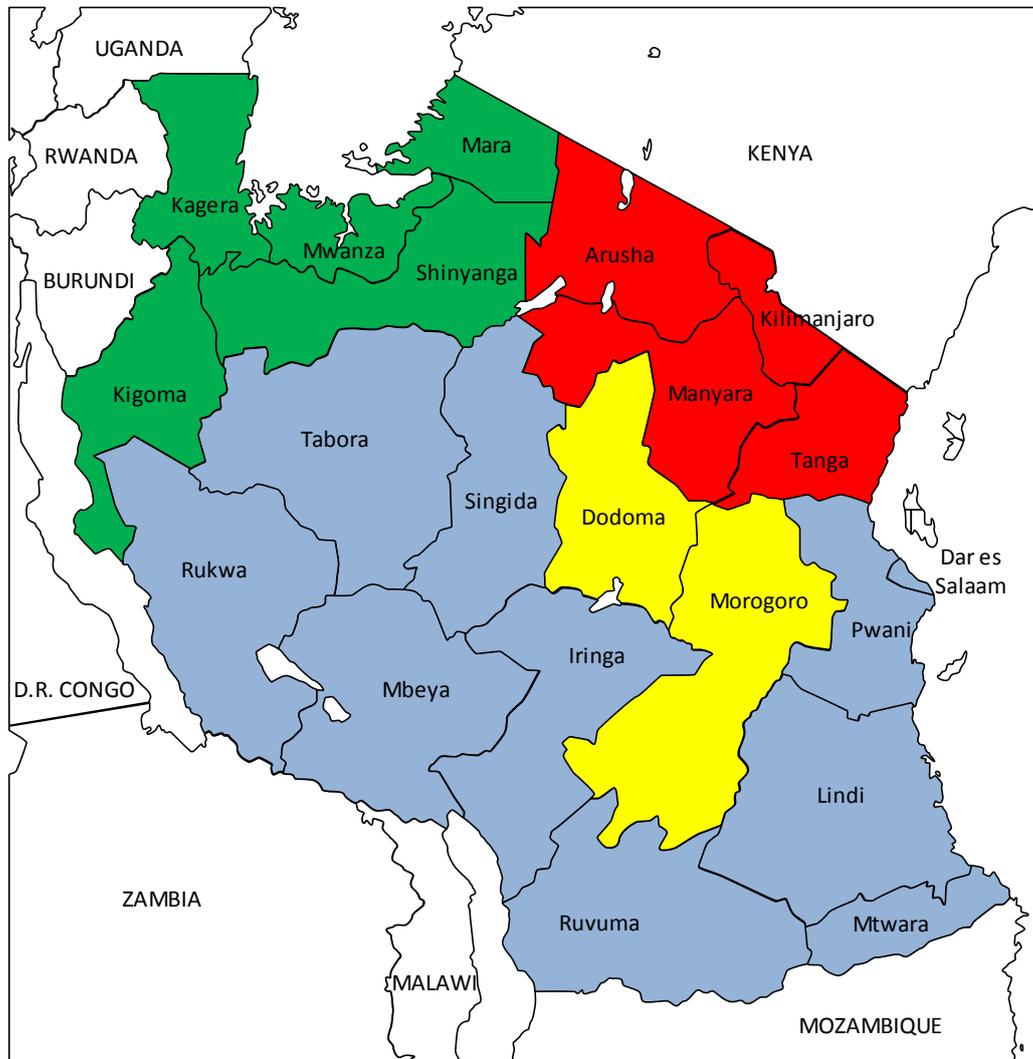
Map of Tanzania

Note: Categorized color area is as follows.

🟨	Area of Phase 1 (pilot area for ARDS improvement)
🟩	1st Year's Target Area for ARDS roll-out (including LGMD2)
🟦	2nd Year's Target Area for ARDS roll-out (including LGMD2)
🟥	3rd Year's Target Area for ARDS roll-out (including LGMD2i)

In the 4th Year, the Project targeted whole country of Tanzania and rolled-out ARDS Web Portal.
The number of Regions and LGAs have increased to 25 Regions and 168 LGAs as of November 2012
due to the division of administrative boundaries, and these numbers remain the same as of June 2015.

Photos of Project Activities

TOT conducted for M&W TWG members (1st year)

TOT conducted for RS officers and LGA officers
Left (2nd year: Mtwara Region)   Right (3rd year: Arusha Region and Manyara Region)

Training for VAEOs and WAEOs
Left (2nd year: Mpanda DC)   Right (3rd year: Arusha DC)

LGMD2i Training (3rd year: Tanga Region and Kilimanjaro Region)
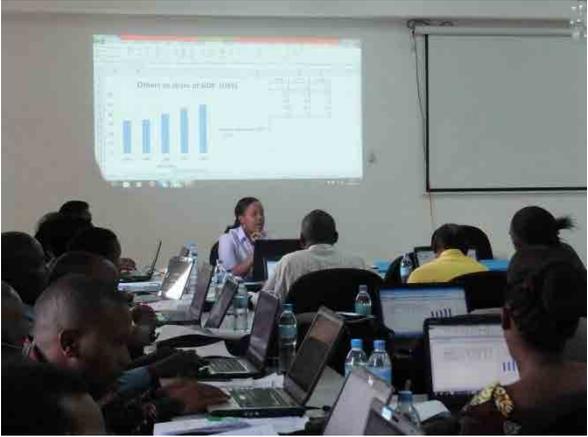
Training on Data Use and Analysis for RS officers (3rd year)

ARDS-LGMD2/ Web Portal Training for M&E TWG members (4th year)

ACRONYM

AASS	Annual Agricultural Sample Survey
ACBG	Agricultural Capacity Building Grant
ACT	Agricultural Council of Tanzania
AEBG	Agricultural Extension Block Grant
AGRA	Alliance for a Green Revolution in Africa
ARDS	Agricultural Routine Data System
ASDP	Agricultural Sector Development Programme
ASDS	Agricultural Sector Development Strategy
ASLMs	Agricultural Sector Lead Ministries (MAFC, MLFD, MIT and PMO-RALG)
ASR	Agriculture Sector Review
ASSP	Agricultural Statistics Strategic Plan
A-WG	Agricultural Working Group (Development Partners)
BFSC	Basket Fund Steering Committee
BRN	Big Results Now
CAADP	Comprehensive African Agricultural Development Programme
CC	City Council
DADG	District Agricultural Development Grant
DADP	District Agricultural Development Plan
DAICO	District Agriculture, Irrigation and Cooperative Officer
DALDO	District Agricultural and Livestock Development Officer
DC	District Council
DC	District Commissioner
DED	District Executive Director
DFID	United Kingdom Department for International Development
DLDO	District Livestock Development Officer
DLFO	District Livestock and Fishery Office
DPP	Department of Policy and Planning
DP	Development Partner
FAO	Food and Agriculture Organization
FY	Fiscal Year
GoT	Government of Tanzania
ICT	Information and Communication Technology
IT	Information Technology
IDCJ	International Development Centre of Japan
JICA	Japan International Cooperation Agency
JIR	Joint Implementation Review
JSR	Joint Sector Review
LGA	Local Government Authority
LGMD	Local Government Monitoring Database
LITI	Livestock Training Institute
MAFC	Ministry of Agriculture, Food Security and Cooperatives
MAFF	Ministry of Agriculture, Forestry and Fishery, Japanese Government
MATI	Ministry's Agricultural Training Institute
M&E	Monitoring and Evaluation
MC	Municipal Council
MIT	Ministry of Industry and Trade

MKUKUTA	Mkakati wa Kukuza Uchumi na Kupunguza Umasukini Tanzania (National Strategy for Growth and Reduction of Poverty)
MLFD	Ministry of Livestock and Fisheries Development
NBS	National Bureau of Statistics
NPS	National Panel Survey
NSCA	National Sample Census of Agriculture
NSGRP	National Strategy for Growth and Reduction of Poverty
PDM	Project Design Matrix
PMO-RALG	Prime Minister's Office - Regional Administration and Local Government
PS	Permanent Secretary
RAA	Regional Agriculture Advisor
ReSAKSS	Regional Strategic Analysis Knowledge Support System
RLA	Regional Livestock Advisor
RC	Regional Commissioner
RS	Regional Secretariat
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
TAFSIP	Tanzania Agriculture and Food Security Investment Plan
TC	Town Council
TF	Taskforce
TOR	Terms of Reference
TOT	Training of Trainers
TSMP	Tanzania Statistical Master Plan
TWG	Thematic Working Group
UCC	University Computing Centre
UDSM	Department of Computer Science and Engineering College of Information and Communication Technologies, University of Dar es Salaam
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VAEO	Village Agricultural Extension Officer(s)
WAEO	Ward Agricultural Extension Officer(s)
WB	World Bank

1. Project Outline

In Tanzania, national development and poverty reduction have been guided by the three Poverty Reduction Strategy documents since 2000[1]. For contribution from the agricultural sector, the Agricultural Sector Development Strategy (ASDS) was formulated in 2001. The Agricultural Sector Development Programme (ASDP) started in July 2006 to implement the strategy. The ASDP has adopted a sector wide approach with a basket fund supported by the Government of Tanzania (GoT) and Development Partners (DPs). The four Agricultural Sector Lead Ministries (ASLMs) participate in the ASDP[2]. 75 percent of the ASDP Basket Fund is allocated to 133[3] Local Government Authorities (LGAs) in the country and are used to implement District Agricultural Development Plans (DADPs) in each LGA. The remaining 20 percent is used by ASLMs and 5 percent is for cross-cutting issues such as the environment and gender.

In order to track the progress of the ASDP and evaluate its effects, a monitoring and evaluation (M&E) system is essential. However, the M&E system was not in place when the ASDP started. To develop an M&E framework for the ASDP, the M&E Thematic Working Group (TWG) was established in December 2006 with the officers of ASLMs specializing in M&E, statistics and information management systems and DPs which support the ASDP. The TWG developed the ASDP M&E Framework, which was approved by the Committee of ASLMs Directors in August 2007. Since then the task of the M&E TWG has shifted to the operationalization of the M&E Framework. The M&E TWG was one of the ten TWGs of the ASDP and has been chaired by the Director of Policy and Planning (DPP), MLFD.

The M&E of the ASDP can be broadly divided into two aspects: i) physical and financial progress pertaining to the use of the basket fund by LGAs and ASLMs, and ii) the technical performance of the agricultural sector. As for the former, PMO-RALG consolidates physical and financial progress of the DADP in each LGA every quarter, and the report is submitted to the ASDP Basket Fund Steering Committee (BFSC). Reports summarizing the activities conducted by the ASLMs are also prepared and submitted to the Committee. A mechanism is being developed to capture project level output information and to transfer them to ASLMs. The DADP Planning and Implementation TWG works on this task in collaboration with the M&E TWG.

As for the technical performance of the agricultural sector, in the past, the National Sample Census of Agriculture (NSCA) and the Agricultural Routine Data Systems (ARDS) were the primary sources of information. Last fiscal year (2013/14), GoT formulated Agricultural Statistics Strategic Plan (ASSP) in order to improve statistics and data management system in the integrated manner. According to ASSP, it was planned to introduce Annual Agricultural Sample Survey (AASS) as one of primary data sources in addition to NSCA from 2015/16 fiscal year. Current outline of the information sources and the flow is shown in the

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1 They are the Poverty Reduction Strategy (2000), the National Strategy for Growth and Reduction of Poverty (NSGRP or MKUKUTA) (2005) and the subsequent NSGRP II or MKUKUTA II (2010).
2 They are the Ministry of Agriculture Food Security and Cooperatives (MAFC), the Ministry of Livestock Fisheries Development (MLFD), the Ministry of Industry and Trade (MIT), and the Prime Minister's Office – Regional Administration and Local Government (PMO-RALG).
3 The number of LGAs has increased to 168 as of November 2012 due to the division of administrative boundaries, and its number remains the same as of June 2015.

Figure 1.1 below.
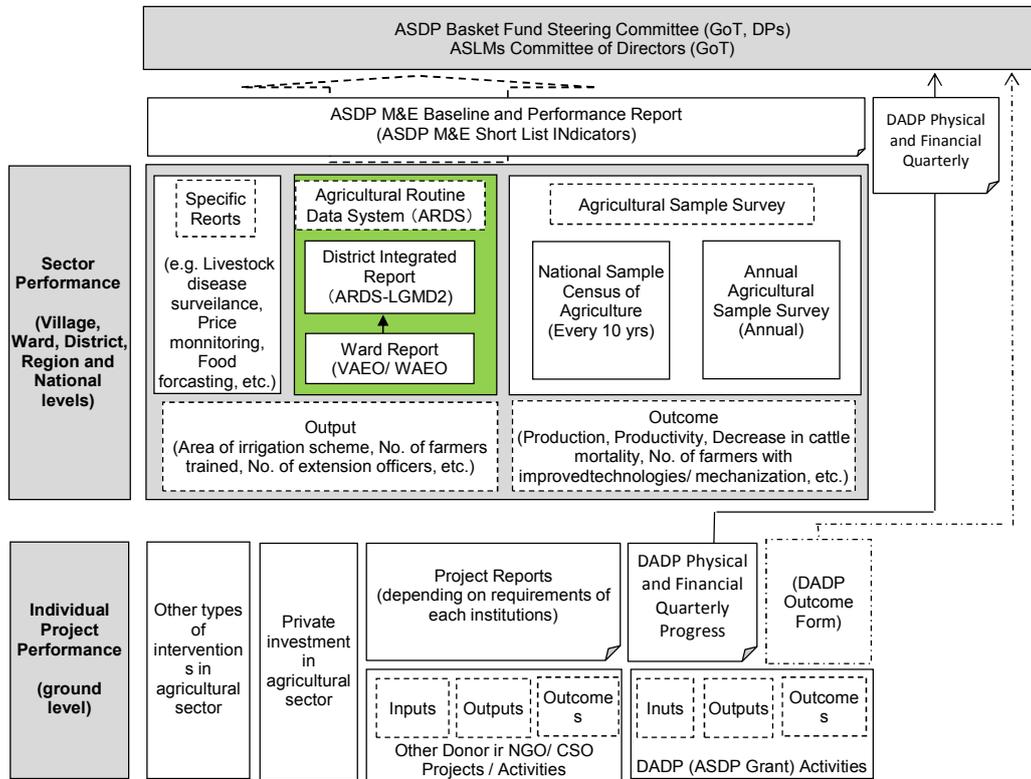
Figure 1.1: Data Collection and reporting from LGAs to ASLMs in the ASDP[4]

On the other hand, ARDS, which is administrative data collection system and this Project had supported, is supposed to deliver agricultural sector information from grass roots (village level) to LGAs, and there to ASLMs through regions every quarter. However it had not been functioning properly. For example, ASLMs have not been able to receive reports on agricultural performance regularly from LGAs through regions, and standard reporting forms and flows have not been clearly defined yet. The concept of ARDS is shown in Figure 1.2.
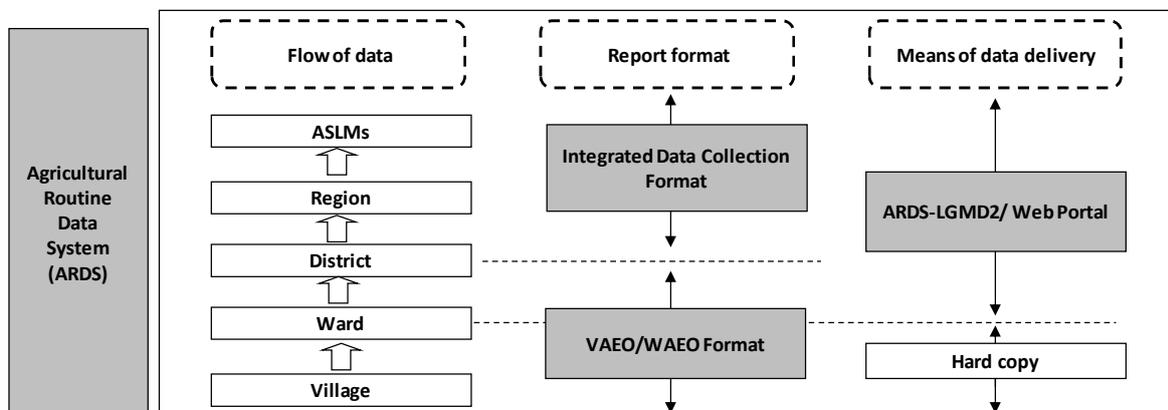
Figure 1.2: Conceptual Diagram of ARDS

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4 The reports prepared by the ASLMs on the ASDP are not shown in this figure.

Given those shortcomings, Project for Capacity Development for the ASDP M&E System was implemented in the pilot LGAs in Morogoro and Dodoma regions since March 2008. Its purpose was the improvement of ARDS and human resource development, which covers mainly ARDS related part (the Integrated Data Collection Format, the VAEO/WAEO Format, and data assembly and transmission application (originally produced LGMD2 [but eventually upgraded to ARDS-LGMD2/ Web portal]) in the Figure 1.2. The enhancement of ARDS in the pilot LGAs was highly evaluated by other DPs. In response to the positive outcomes of the project, the second phase of the support has launched since August 2011 as the Project for Capacity Development for the ASDP M&E System Phase 2 (hereinafter called the Project) after the signing of the Record of Discussions on 8th June 2011 among the concerned parties, JICA, MAFC and PMO-RALG, with an aim of rolling out of ARDS over the entire country. The overall goal, purpose, output, duration, counterpart, and beneficiaries of the project according to its logical framework are shown in Table 1.1.

This report is the Completion Report which covers whole Project's period, from 1st year to 4th year. The role of the Project's members is to offer technical support for M&E TWG to roll out ARDS in whole country, and operationalizing it. The members have worked together with GoT officers as one of the members of M&E TWG and its task force teams. Thus, the activities written in this report are basically the activities of M&E TWG which were supported by the Project.

Table 1.1: Logical Framework of the Project

	Narrative Summary	Objectively Verifiable Indicators
Overall goal	ASDP Monitoring and Evaluation (M&E) is improved through interactive operation of relevant activities such as National Sample Census of Agriculture, National Panel Survey and the ARDS.	1) The agricultural surveys and data collections including ARDS are improved through the coordination among them. 2) The meetings on ASDP M&E coordination are continuously conducted.*
Purpose	ASDP M&E is conducted on the basis of national agricultural data collected through improvement of the ARDS.	1) Utilization of data collected through the ARDS by ASDP JIR etc. 2) Number of DADPs which utilize data analysis through the ARDS
Output	1) ARDS is rolled out nationwide and operational. 2) Backstopping activities for ARDS by M&E TWG are strengthened. 3) Coordination of ASDP M&E to implement ARDS is enhanced.	1-1) Number of the trained trainers 1-2) Number of visits to the Web-Portal* 1-3) Number of events of data download* 1-4) Number of timely submission of ARDS among all the districts 1-5) Level of understanding by WAEO/VAEO on data collection method 2-1) Number of the trained officials on data analysis and reporting 2-2) Evaluation of the users on LGMD2, common reporting formats and training guides 3-1) Number of presentations on ARDS 3-2) Number of meetings on the coordination of ARDS related issues
Period	August 2011 – June 2015	
Counterpart	· ASLMs (Ministry of Agriculture, Food Security and Cooperatives, Ministry of Livestock Fisheries Development, Ministry of Industry and Trade, and Prime Minister's Office - Regional Administration and Local Government) · Members of the ASDP M&E Thematic Working Group	
Beneficiaries	· Members of the ASDP M&E Thematic Working Group · Regional officials · LGA officials · VAEO/WAEOs	

*The underlined Means of Verification are added as the result of the final evaluation conducted in February 2015.

2. Activities

2.1. Workflow

The four years operation of the Project has been conducted from August 2011 to June 2015. The workflow of the Project is shown below.
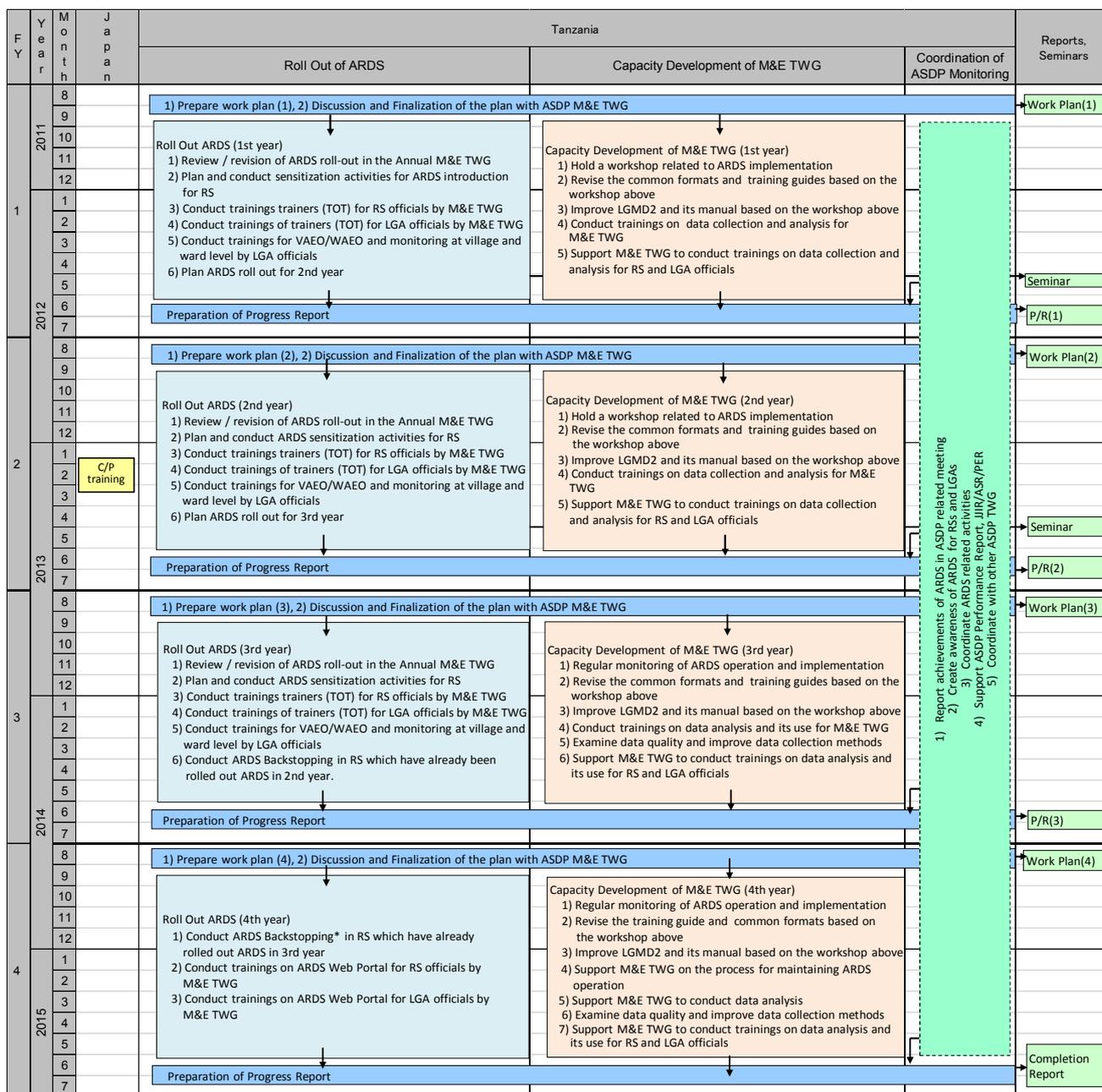
*Regarding one of activities in 4th year, "Conduct ARDS Backstopping in regions which have already been rolled out ARDS in 3rd year", based on the suggestion of M&E TWG, the Project conducted the following surveys instead of the technical backstopping in order to monitor and promote ARDS operation: (a) Telephone call survey for all 168 LGAs, (b) Field survey for 21 LGAs in 3 Northren Regions, Morogoro Region and Dodoma Region in order to monitor and promote ARDS operation.

Figure2.1: Workflow

2.2. Original Plans and Actual Activities

2.2.1. Original Plans and Actual Activities

Table 2.2.1 summarizes the original plans and actual activities carried out in the Project from the 1st year to the 4th year. The Project has conducted most of activities according to the original plans. The activities in the Table 2.2.1 are based on PDM and in order of Table of Contents of this Completion Report.

Table 2.2.1: Original Plans and Actual Activities (From the 1st year to the 4th year)

Original Plan	Actual Activity
[1-1]Prepare annual work plan for the ARDS rolling out	[From 1st year to 4th year] ・Prepared as planned in each year.
[2] Roll Out of ARDS (Output 1)	
[2-1] Review and update of the ARDS rolling out plan in the annual activity plan and support process of M&E TWG to revise it.	[From 1st year to 4th year] ・Prepared as planned in each year.
[2-2] Conduct sensitization activities for introduction of the ARDS for RS officers and LGA officers	[1st year]・Conducted the sensitization activities in 10 regions which are planned to be rolled out ARDS. [4th year]・Conducted the Sensitization Conference on ARDS in all 25 regions.
[2-3] Training of Trainers for RS officers	[1st year]・Conducted to ASLMs and in 9 regions including 5 Lake Zone Regions and 4 Southern Highland Regions. [2nd year]・Conducted in 12 regions which are located in Southern Highland, Central, Southeastern, and Coastal Regions as planned. [3rd year]・Conducted to Northern 4 Regions as planned.
[2-4] Training of Trainers for LGA officers	[1st year]・Conducted in 5 Lake Zone Regions as planned. [2nd year]・Conducted in 12 regions which are located in Southern Highland, Central, Southeastern, and Coastal Regions as planned. [3rd year]・Conducted to Northern 4 Regions as planned.
[2-5] Training on the ARDS implementation for VAEO/WAEO conducted by LGA officers	[1st year]・Conducted in 5 Lake Zone Regions as planned. [2nd year]・Conducted in 12 regions which are located in Southern Highland, Central, Southeastern, and Coastal Regions as planned. [3rd year]・Conducted to Northern 4 Regions as planned.
[3] Capacity Development of M&E TWG (Output 2)	
[3-1] Reviewing implementation process of the ARDS and sharing findings ARDS	[1st year]・Conducted Backstopping in 2 Pilot Regions. [2nd year]・Conducted Backstopping in Lake Zone and Southern Highland Regions. [3rd year]・Conducted the backstopping for 6 regions (2 Central, 2 Southeastern, and 2 Coastal) which have been rolled out ARDS in 2nd year.
[3-2] Support the M&E TWG to monitor regularly the ARDS operation status so that ARDS will firmly establish its steady operation	[3rd year]・Supported the M&E TWG to set up and operationalize its regular monitoring system. [4th year]・Regarding the plan of "Conduct ARDS Backstopping in regions which have already rolled out ARDS in 3rd year", based on the suggestion of M&E TWG, the following surveys were conducted instead of the technical backstopping in order to monitor and promote the ARDS operation: (a) Telephone call survey for all 168 LGAs and (b) Field survey for 21 LGAs in 3 North Regions, Morogoro Region and Dodoma Region. ・Supported M&E TWG to institutionalize ARDS regular monitoring and its operation.

Original Plan	Actual Activity
[3-3] After the national roll out of ARDS in whole country, support M&E TWG to monitor the operation status and to compile the achievements and challenges.	[4th year]・In terms of supporting the institutionalization of ARDS operation, supported M&E TWG to formulate and implement 1) the structure for monitoring the data submission status of all LGAs, 2) the structure for compiling inquiries and bug reports, and 3) the structure for updating ARDS Web Portal.
[3-4] Conduct trainings for M&E TWG on data collection methodology, data analysis, reporting and feedback mechanism	[From 1st year to 2nd year]・Conducted TOT for being trainers on MS Excel and LGMD2. [3rd year]・Conducted TOT for being trainers on LGMD2i. [4th year]・Conducted TOT for being trainers on ARDS-LGMD2.
[3-5] Improvement of Training Guides for LGAs Officers, VAEO/WAEO Format and Integrated Data Collection Format	[1st year]・Improved Training Guides for VAEO/WAEO based on comments collected through trainings. [2nd year]・Improved Training Guides and Formats based on recommendations by ARDS Review. [3rd year]・Improved the documents on the basis of comments collected through the regular monitoring, training and backstopping. [4th year]・Improved the documents based on the monitoring of ARDS operation status and the result of survey for promoting ARDS operation. ・Prepared the half reduced version of VAEO/WAEO Format (reduced the number of pages, but no change in the content).
[3-6] Improvement of ARDS Data Aggregation and Analysis Application (LGMD2) and Manuals	[1st year]・Improved to stabilize the synchronization of data. ・Conducted the revasion of the system so that LGAs can directly enter ward-level data and the data can be collected automatically from ward-level. [2nd year]・Improved to stabilize the synchronization of data. ・Completed the revasion of the system so that LGAs can directly enter ward-level data and the data can be collected automatically from ward-level. [3rd year]・The revised LGMD2, enabling LGAs to enter ward data directly to the system, has been distributed to all LGAs together with relevant training. ・Conducted further upgrading of LGMD2 where the database has been re-structured and the interface been improved. ・Started developing a web application to improve accessibility to ARDS data. [4th year]・Integrated all functions of LGMD2 into ARDS-LGMD2/Web Portal. It became able to conduct functions such as data entry, data transmission, data analysis and monitoring data collection all in Web Portal. Completed to disseminate ARDS-LGMD2/Web Portal and started it operating.
[3-7] Support M&E TWG to conduct data analysis	[3rd year]・Due to the delay in completing the national roll-out, data collection is still insufficient. Meantime, training was conducted for data analysis based on existing data. [4th year]・Although the national roll-out has been completed, sufficient data collection has not been achieved. Meantime, on one hand, supported to make the data submission rate higher, on the other hand, conducted trainings on ARDS-LGMD2 / Web Portal which strengthened the data use functions.
[3-8] Parallel to the above, examine data quality and support to improve data collection method	[3rd year]・Conducted a survey on ARDS operation status, and confirmed the data collection method of VAEO/WAEO and the quality of data. Shared the result with M&E TWG. [4th year]・Added the function of excluding extreme values at the time of data entry, and M&E TWG discussed about the limiting conditions.

Original Plan	Actual Activity
[3-9] Based on the above, support trainings on data collection methodology, data analysis and reporting for Regional and LGAs. If necessary, facilitate training on application of data analysis results to DADP preparation	[1st year]・Conducted Trainings on Excel and LGMD2 in 2 Pilot Regions and 5 Lake Zone Regions. [2nd year]・Conducted Excel and LGMD2i training in 12 regions of Big 6, Central, Southeastern, and, Coastal areas. [3rd year]・With expectation of data accumulation, conducted training on data analysis to Regional officers. ・Application of analysis results to DADP preparation has not done yet due to irregular process of DADP. [4th year]・With expectation of data accumulation, conducted trainings on data use and data analysis in ARDS-LGMD2/Web Portal training for Regional officers and LGA officers. ・Application of analysis results to DADP preparation has not done yet due to irregular process of DADP.
[3-10] Review ASDP M&E Framework	[From 1st year to 4th year]・No revision
[4] Coordination of ASDP Monitoring (Output 3)	
[4-1] Support the M&E TWG to report the achievements of the ARDS activities in the ASDP related meetings	[From 1st year to 2nd year]・Participated in AWG meetings, ASDP Basket Fund Steering Committee Meetings, etc. [From 3rd year to 4th year]・The achievements of the ARDS activities were reported at the ASDP BFSC and other meetings.
[4-2] Create awareness on the activities of the ARDS for administrative officials in Regions and LGAs	[1st year]・Letter was issued to LGAs in 5 Lake Zone regions through PMO-RALG. ・Introduced ARDS in RC/DCs[5] Meeting in June 2012. [2nd year]・Introduced ARDS in the workshop organised by PMO-RALG in which Regional officers (ASDP Coordinators) participated in May 2013. ・Additionally to trainings, prepared and distributed newsletter and pamphlet. [4th year]・Conducted sensitization activities and trainings for 3 times in LGA level (1 time for DC: September 2014, 2 times for DALDO/DAICO: October 2014 and March 2015) and 1 time in RS level (1 time for ASDP Coordinators: April 2015) ・Prepared and distributed the newsletter.
[4-3] Coordination with ASS, NPS, etc., and share and coordinate the ARDS related activities/information with ASLMs and the Development Partners	[From 1st year to 2nd year]・Held regular consultation meetings among Agricultural DPs and GoT for agricultural statistics improvement. [From 3rd year to 4th year]・Participated in consultation meetings among Agricultural DPs and GoT for agricultural statistics improvement DPs.
[4-4] Given the ARDS national roll-out has been completed, support comparative assessment and necessary coordination among data of various agricultural data collection system	[From 3rd year to 4th year]・Supported necessary coordination between data of ARDS and other system especially in the context of the Agricultural Statistics Strategic Plan.
[4-5] Support M&E TWG to implement their tasks such as preparation of ASDP performance report, ASDP JIR, ASR and PER	[1st year]・Prepared ASDP Performance Report in 2010/11 and 2011/2012, and participated in the 6th and 7th JIR. [3rd year]・Support the preparation of ASDP Performance Report. ・As this year was transition of ASDP from phase 1 to 2, supported the preparation of ASDP2. [4th year]・Support M&E TWG to provide comments on the programme document on ASDP2

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5 RC/DC: Commissioner is the post nominated by the President, and placed in the same level as government organizations of RS and LGA. The commissioner has strong political background and has large effect on local governance.

2.2.2. Major Activities and Particular Conditions Surrounding the Project Implementation

(1) Major activities of the Project year

According to the logical framework, activities of the Project consist of the following three components.

1) ARDS national roll-out and operationalization [Activity 1]

2) Strengthening backstopping activities for ARDS by M&E TWG [Activity 2]

3) Enhancement of ASDP M&E coordination to implement ARDS [Activity 3]

[Activity 1] included, in relation to the national roll-out of ARDS, the training of trainers (TOT) for Regions and LGAs, and training to village and ward agricultural extension officers (VAEOs and WAEOs). As explained in the next section, these activities completed as planned, although there was six months delay in the implementation.

[Activity 2] involved many undertakings for empowering the ARDS operation and management such as assessing the operation status, sharing experience and workings of the operation, training of M&E TWG, Region and LGA officers on data collection, analysis and report preparation, revision of ARDS-related documents like ARDS Training Guide, VAEO/WAEO Formats, upgrading of the ARDS-LGMD2 itself, etc. In addition, from the third year of the Project, the activity also included support for establishing organizational arrangement for steady ARDS operation. All of the works and undertakings have been achieved as initially planned, except for the organizational arrangement of which the basis has been laid out but further efforts by the M&E TWG are needed for steady operation of ARDS.

[Activity 3] covered such works as sharing and reporting of ARDS status, advertisement and dissemination of ARDS to Regional and LGA management, supports to the activities on the improvement of overall agricultural statistics, and facilitation to the ASDP Performance Report preparation. In particular, the role and responsibilities of ARDS had been made clear by the exercise of the ARDS Review and finalization of the Agricultural Statistics Strategic Plan.

Outline of ARDS data flow and data collection, assembly and transmission

The overall concept of ARDS is already described in Section 1 "Project Outline". Here, more details of the data flow, its operation (data collection, assembly and transmission) and concerned offices/ officers are illustrated.

As shown in Figure 2.2.1, data is first collected by village agricultural extension officers (VAEOs) (if VAEOs are not available, ward agricultural extension officers (WAEOs) will do the same). Collection is carried out monthly, quarterly and annually with the use of the standardized VAEO/WAEO Formats. The collection methods are instructed by the VAEO/WAEO Training Guide to ensure data quality. Instructed methods are , for example, for production data, i) to prepare a list of farmers in advance, ii) to select 10 farmers at random from the list, iii) how to interview, iv) how to compute production (output), etc. VAEOs submit their data to WAEO who will consolidate all village data into ward data, then submit to LGA. This

stage is conducted all by paper. Once data come to LGA level, officers there (M&E or Statistics officers) will enter data into ARDS-LGMD2/ Web portal (an application that the Project upgraded from LGMD2). Once entered in ARDS-LGMD2/ Web portal which is data assembly, analysis and transmission tool and one of the foundation blocks of ARDS, data is viewable by Region and National levels, and can be used for reporting and analysis. The Project had worked on this whole system along the data flow to introduce it and to strengthen it by providing training to VAEOs/ WAEOs, upgrading the system (LGMD2 to ARDS-LGMD2/ Web portal) and setting up institutional arrangement for operation management.
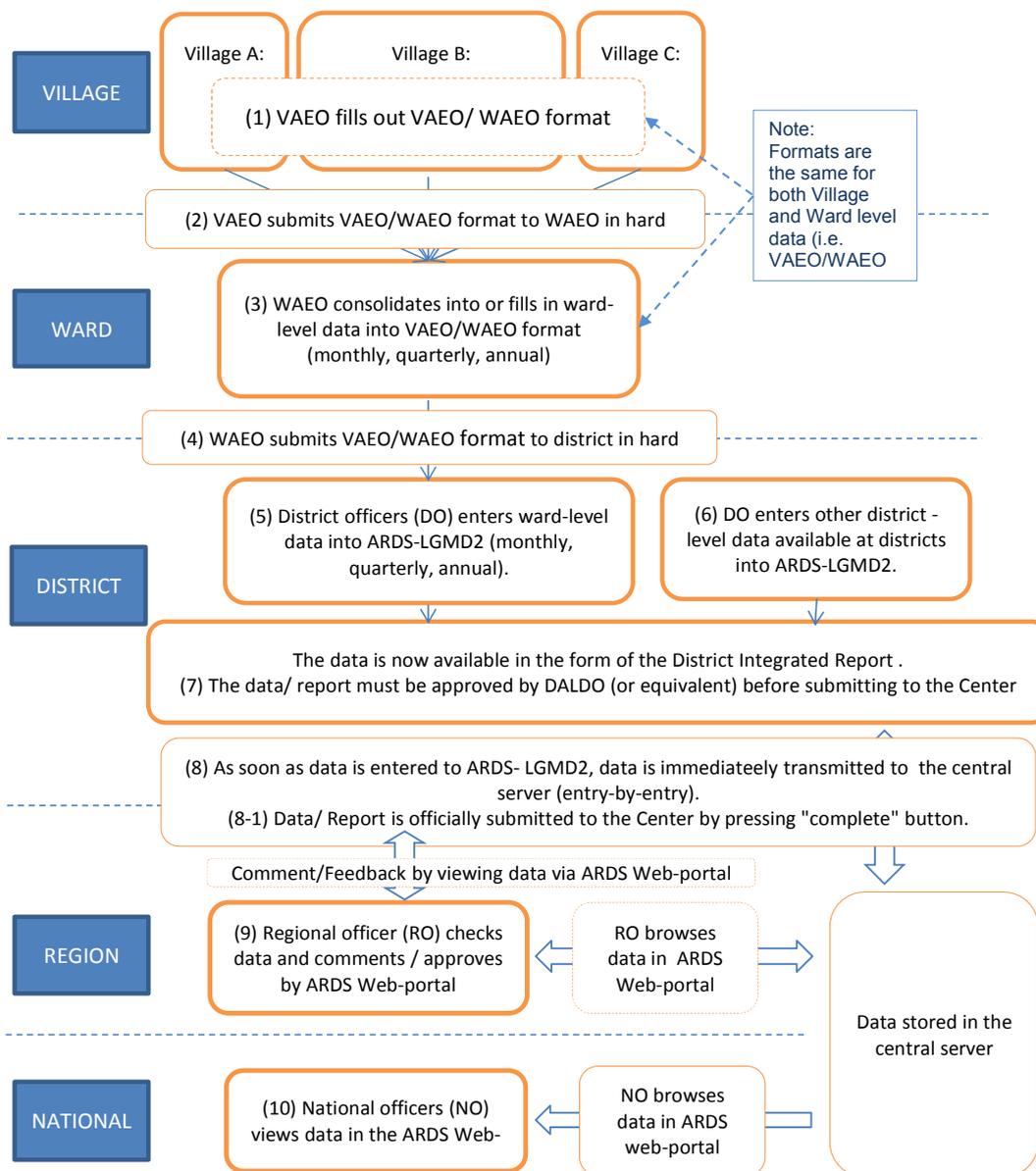
Source: ARDS operation guide

Figure 2.2.1: ARDS Data Flow and Outline of Data Collection, Assembly and Transmission

(2) Sequence of major activities of the Project (Timeline)

Figure 2.2.2 shows major activities of the Project along a timeline. In summary, the activities are roughly divided into two groups: The national roll-out of ARDS (in the first half of the Project period) and its improvements and establishment of institutional arrangements for the operation. In addition, the sequence of upgrading of LGMD2 (eventually named as aRDS-LGMD2/ Web portal) is also shown in Section 2) below, because this application (software) has been, to some extent, a backbone of this new ARDS and occupies an important part of the Project.

1) Timeline of major activities of the Project

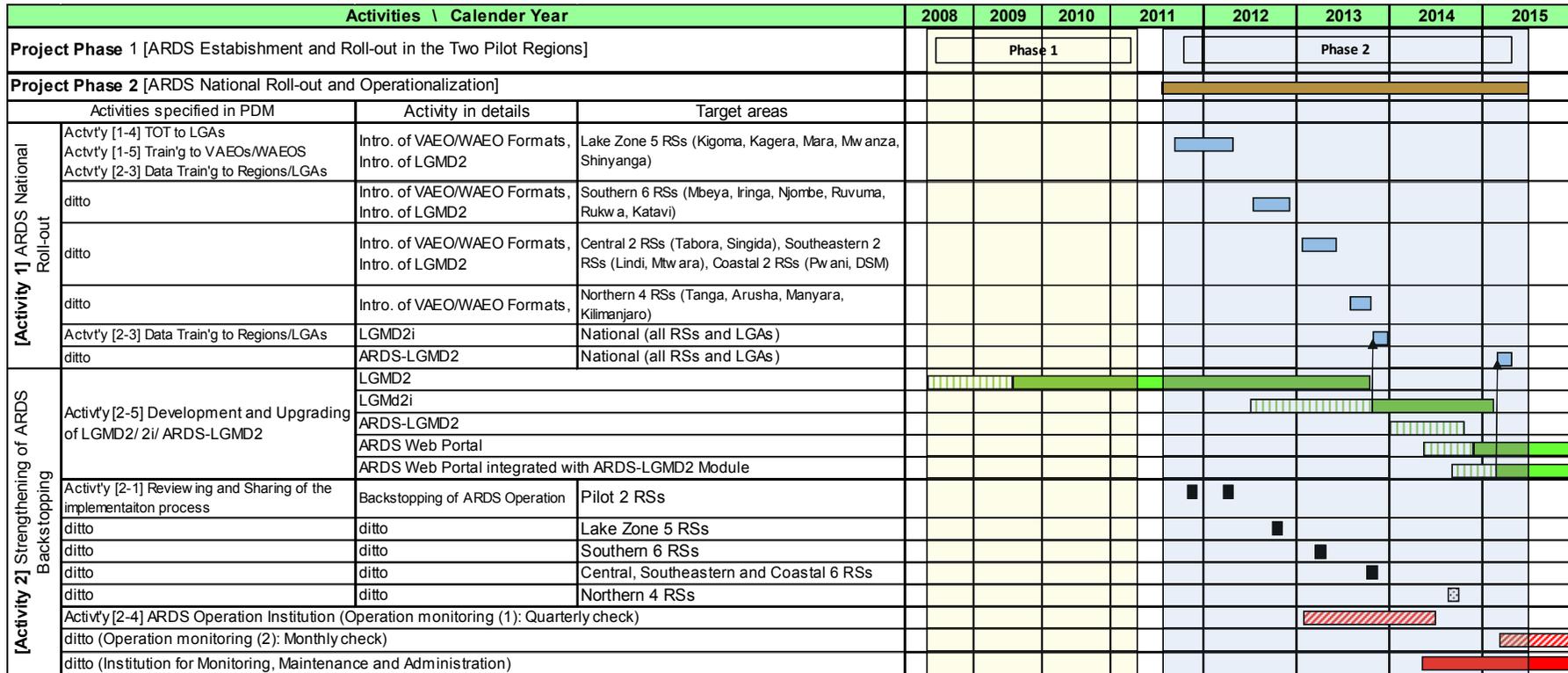| Activities \ Calender Year			2008	2009	2010	2011	2012	2013	2014	2015
Project Phase 1 [ARDS Estabishment and Roll-out in the Two Pilot Regions]				Phase 1			Phase 2			
Project Phase 2 [ARDS National Roll-out and Operationalization]										
Activities specified in PDM	Activity in details	Target areas								
[Activity 1] ARDS National Roll-out	Actvt'y [1-4] TOT to LGAs / Actvt'y [1-5] Train'g to VAEOs/WAEOS / Actvt'y [2-3] Data Train'g to Regions/LGAs	Intro. of VAEO/WAEO Formats, Intro. of LGMD2	Lake Zone 5 RSs (Kigoma, Kagera, Mara, Mwanza, Shinyanga)							
	ditto	Intro. of VAEO/WAEO Formats, Intro. of LGMD2	Southern 6 RSs (Mbeya, Iringa, Njombe, Ruvuma, Rukwa, Katavi)							
	ditto	Intro. of VAEO/WAEO Formats, Intro. of LGMD2	Central 2 RSs (Tabora, Singida), Southeastern 2 RSs (Lindi, Mtwara), Coastal 2 RSs (Pwani, DSM)							
	ditto	Intro. of VAEO/WAEO Formats,	Northern 4 RSs (Tanga, Arusha, Manyara, Kilimanjaro)							
	Actvt'y [2-3] Data Train'g to Regions/LGAs	LGMD2i	National (all RSs and LGAs)							
	ditto	ARDS-LGMD2	National (all RSs and LGAs)							
[Activity 2] Strengthening of ARDS Backstopping	Activt'y [2-5] Development and Upgrading of LGMD2/ 2i/ ARDS-LGMD2	LGMD2								
		LGMd2i								
		ARDS-LGMD2								
		ARDS Web Portal								
		ARDS Web Portal integrated with ARDS-LGMD2 Module								
	Activt'y [2-1] Reviewing and Sharing of the implementaiton process	Backstopping of ARDS Operation	Pilot 2 RSs							
	ditto	ditto	Lake Zone 5 RSs							
	ditto	ditto	Southern 6 RSs							
	ditto	ditto	Central, Southeastern and Coastal 6 RSs							
	ditto	ditto	Northern 4 RSs							
	Activt'y [2-4] ARDS Operation Institution (Operation monitoring (1): Quarterly check)									
	ditto (Operation monitoring (2): Monthly check)									
	ditto (Institution for Monitoring, Maintenance and Administration)									

Figure 2.2.2: Major activities of the Project along a timeline

2) Process of upgrading of LGMD2 (Data assembly and analysis tool)

LGMD2 was developed in the Phase 1 of the Project. This is an application (software) for data assembly and analysis at LGA level, also a tool of data transfer from LGAs to the center via the Region and data dissemination to users. This Phase 2 Project began the national roll-out with LGMD2.   However as the roll-out proceeded, several challenges were observed, demanding fairly significant upgrading of the application. The upgrading went through several stages with different names of the application at each stage. The timeline of the upgrading is summarized below.

	2008	2009	2010	2011	2012	2013	2014	2015	
LGMD2									
LGMD2i									
ARDS–LGMD2									
ARDS–Web Portal									
Web Portal integrated with ARDS–LGMD2 Module									

※　Shaded part is development phase, solid line is operation phase
※※　The duration of the Project is from August 2011 to June 2015.

Figure 2.2.3: Sequence of Application Development

Moreover the table below summarizes the characteristics and reasons for upgrading (challenges and contents of improvement) of each application produced. At the end of the Project, the application called ARDS-LGMD2/ Web portal has been introduced to all LGAs of the country and currently under use. The system is now all web-based, i.e. data entry and data viewing are possible through internet, achieving better operation and easier data processing.

Table 2.2.2: Summary of ARDS Applications

Name of Application (Developer)	Design & Operation	Issues	Remarks
LGMD2 (UCC[6])	・ Collect data at LGA level. ・ Village/ward data filled in manually by the VAEO/WAEOs and sent as hardcopies to LGAs. ・ LGA officers need to enter data into LGMD2 after summarize village/ ward level data using MS Excel ・ Output reports are only integrated reports (quarter and annual)	・ LGA officers need to enter twice both MS Excel and LGMD2, it is time consuming. ・ MS Excel usage was cumbersome, difficult to use, and error prone. ・ Synchronization of data did not perform as promised.	Currently not supported
LGMD2i (UCC)	・ LGMD2i ("i" stands for improved) was developed to alleviate the issues with using MS Excel.	・ LGMD2i cannot read data from LGMD2. ・ Synchronization via Internet is still not functioning effectively in	Currently not supported (until Mar. 2015)

6　UCC: University of Dar es Salaam Computing Center

Name of Application (Developer)	Design & Operation	Issues	Remarks
	• Village/ward data is still filled out manually by the VAEO/WAEOs and hardcopies sent to the LGAs. • The LGAs enter this village/ward level data directly into LGMD2i. The application automatically summarizes the data to LGA level and the Integrated Reports. • Data is being synchronized both via the Internet and via "zipped files". • Outputs reports are summarized LGA/ Region reports (Monthly, Quarterly and Annual) in addition to integrated reports.	areas with poor Internet connections. • Error messages from the application are uninformative. • Aggregation of data is overly simplistic. • No error-checking support from the application. • Geographical/administrative units (wards, LGAs, regions) and lookup tables cannot be updated by the M&E TWG. Updates to the tables would require hiring application developers to update the database.	
ARDS-LGMD2 (UCC)	• The successor to LGMD2i. Renamed so that it is better aligned with ARDS and the ASDP M&E. • Major revisions include better aggregation and estimation of missing ward data, more informative messages from synchronization, improved synchronization, ability to update and add new geographical locations / administrative units, ability to update lookup tables for various data, such as animal diseases, etc.	• Poor integration with LGMD2i data. • Many bugs. • Synchronization, was improved, is still not robust enough. It is still unclear to the user why synchronization may fail and at which point. In some conditions, only some of the data may fail to synchronize.	Testing has been done; however, reluctant to distribute to users due to the poor condition of the application.
ARDS Web Portal (UDSM)	• This web portal was designed as a front-end for national and regional level users to view and do analysis on the ARDS data from the ARDS-LGMD2 database • Automatically connects to the ARDS-LGMD2 database on a routine basis and transfers the necessary data.	• Issues mentioned in the ARDS Web Portal with ARDS-LGMD2 Integration below.	The ARDS Web Portal was published at the end of 2014, but due to amendment of ARDS Web portal design which the portal accommodate the ARDS-LGMD2 as part of the Web portal module, publish of the Web portal was postponed.
ARDS Web Portal with ARDS-LGMD2 Integration (UDSM[7])	• Original intention to continue the development and improvement of the ARDS-LGMD2 developed by UCC. • Recommendation by UDSM to use the existing platform that the ARDS Web Portal is built on to upgrade the ARDS-LGMD2. • The web portal can be used by LGA officers to enter the ARDS	• The ARDS Web Portal is first version release of the software, and as such still has some bugs which need to be fixed. However, the foundation of the software is good and provides better future potential than the previous LGMD2i application. • The data entry needs further improvement; in particular the auto-growing tables and makes data entry a bit confusing to	UCC were invited to the tender, but they decided not to submit a bid and UDSM won the tender. Unnecessary to distribute installer to LGAs when update/ improve application. The ARDS Web Portal has published March 2015, currently registered users are 799 as of 24th May 2015.

7 UDSM: Department of Computer Science and Engineering College of Information and Communication Technologies, University of Dar es Salaam

Name of Application (Developer)	Design & Operation	Issues	Remarks
	village/ward/LGA-level data. ・ LGA officers can enter data in Offline mode, and Web portal transmit entered data when internet connection is available. ・ The reporting and analysis functions of the web portal were expanded to accommodate LGA officers reporting and analysis requirements. ・ Available to view access logs, number of downloads ・ Improvement of updating name of administrative units ・ Improvement of updating lookup tables ・ M&E TWG can update administrative unit, look up tables and various functions by themselves	users. ・ The estimation of missing ward data and aggregation to the LGA level has some bugs. ・ Interface for the data analysis is a bit confusing to users ・ MAFC might need to have the necessary infrastructure to adequately host the ARDS Web Portal in the future (network bandwidth, AC for server room and more reliable power). This is expected to improve, but not certain when. ・ Find budget for yearly maintenance cost to developer ・ Currently communication between users and M&E TWG is e-mail or telephone only, better to have interactive communication board module in the Web portal to share all information among users easily.	

(3) Particular external conditions which affected Project implementation

In the following, major external conditions having adverse effects on the Project are described. The Project took possible measures to mitigate or circumvent the challenges.

1) Rapid increase of village and ward extension officers

Government of Tanzania started around 2011/12 expanding the deployment of field extension officers. Because of this, Project's first year roll-out of ARDS in Lake Zone (Regions of Kigoma, Kagera, Mara, Mwanza and Shinyanga) found out that there were more extension officers to be trained than originally expected during the planning stage. Therefore the TWG decided to implement one additional cycle of training for the area to train those newly employed extension officers. Because of this, the overall schedule of ARDS national roll-out was extended by six months. It was then re-planned that all roll-out activities would complete by the end of the first half of the 3rd year instead of completing within two years. In the subsequent training, the Project made sure that all extension officers were included in the training by inquiring targeted LGAs about the total number of officers in the area.

2) Delay of budget disbursement and reduction of the budget in actual disbursement (every year)

Throughout the duration of the Project, every year, the budget was delayed and reduced in actual amount in disbursement, affecting seriously the Project implementation. The delay and reduction of disbursement is a usual annual event, the former typically prolonged until late November or December (a fiscal year starts in July). However, because the Project duration fell in the transition period of ASDP, from phase 1 to 2, the delay and reduction of budget were further exacerbated. For

example the disbursement of 2012/13 (2nd year of the Project) budget was made only in February. LGAs need resources for both ARDS roll-out (participating in the training) and actual operation of ARDS. The resources mostly rely on the budget provided by the center to LGAs in the form of DADP funds (especially those budget items of AEBG and Basic ACBG). However, in the last two years of ASDP 1 (2011/12 and 2012/13, which correspond to the 1st and 2nd year of the Project), these budgets were significantly reduced due to the decline of the ASDP funds AEBG and ACBG were subsequently cancelled by the central government. The delay was caused by both the audit process of LGAs and the accumulation of carry-over funds at LGAs.

Anticipating the formal closure of ASDP 1 in June 2013, the government and the DPs began formulation of ASDP2 program document. However, the process staggered with factors such as financial shortage, incompetent consultancy, etc. Encountering the difficulty, the government requested DPs for bridge funds. However again the fund authorization took long and irregular process, resulting in delay and reduction of budget in the 3rd and 4th years.

The adverse effects of budget delay and reduction were the same both at national and local levels. In the ARDS national roll-out, the travel and operation costs of the M&E TWG members were supposed to be borne by the government. But because of the late disbursement (in November or December), the Project was forced to support the costs to avoid any delay in the implementation.

On the other hand, the delay and reduction of budget had serious consequences at District level. This is because they rely the ARDS operation almost entirely on the DADP funds (AEBG and ACBG). The shortage in the budget made the District unable to photocopy and distribute the VAEO/WAEO formats to extension officers and to remind/ demand the officers to submit the data on respective time. Many LGAs under such an adverse condition made efforts to secure some level of budget resorting to last year remaining funds or those from local sources. Still such resources are not sufficient nor stable for long term operation. Observing the dire situation, the Project facilitated LGAs by printing and supplying blank formats covering several months of a year with Project's budget.   In the 4th year, the Project produced the formats with the same contents but the number of pages half-reduced so that the costs for photocopying the formats to be reduced by half.

3) Implementation of Big Results Now (BRN)

The Government launched in 2012/13 a new development initiative named Big Results Now (BRN). This is a broad program encompassing six sectors including agriculture[8]. This program is characteristic in placing concentrated investment in very specific targets and produce visible achievements in a short period of time. During 2013/14 (3rd year of the Project), it was still preparatory stage. But it entered in full operation in 2014/15 (4th year). MAFC has diverted fairly large portion of manpower and financial resources into this program. Concerning the M&E TWG, one member was transferred to the BRN

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[8] The six sectors are: Power, Transport, Natural resource, agriculture, water resources and education. Present phase of BRN aims at attaining substantial improvements in particular subsectors of these sectors within three years of 2012/13, 2013/14 and 2014/15.

office and all M&E members of MAFC were frequently mobilized for a month or so to carry out the baseline survey and M&E of the Initiative.

4) Split of DALDO office to DAICO and DLFO offices at LGAs[9]

Since 2012/13, the government started to instruct LGAs to divide their DALDO office into DAICO and DLFO offices. Following this division, all field extension officers (VAEOs and WAEOs) are divided accordingly. This movement however brought disturbance to the ARDS operation because the data formats are for both crop and livestock subsectors in a single set. There is no separate forms for either crop or livestock. Together with the M&E TWG, the Project conveyed message to all Regions and LGAs that both DAICO and DLFO offices should work hand in hand for the ARDS operation. If necessary, extension officers of either should collect data of the other subsector, or work jointly to capture all necessary data.

2.3. Activities 1: ARDS is rolled out nationwide and operational

2.3.1. To prepare annual work plan for ARDS roll-out

(1) Original plan

ARDS national roll-out is one of the major tasks of the Project, necessitating its effective and efficient implementation. Hence, the Project discussed with the M&E TWG and prepared its roll-out plan every year in which the activity should be conducted without much loss in time and manpower. The original plan of the roll-out is shown below.

Table 2.3.1: Plan of ARDS National Roll-out and Major Activities

Roll-out area	Roll-out timing	Major activities
Lake Zone 5 Regions [10] (Kigoma, Kagera, Mara, Mwanza, Shinyanga)	[1st Year] Oct. 2011-Jan. 2012	TOT to M&E TWG (After 2nd year, conducted by refresher workshop or rehearsal)
		TOT by M&E TWG to Regions and LGAs
		Training by LGAs to VAEOs/WAEOs (Training on VAEO/WAEO Format)
		Training to M&E TWG on data collection, analysis and reporting (LGMD2/LGMD2i/ARDS-LGMD2)
		Training by M&E TWG to Regions and LGAs on data analysis and reporting (LGMD2/LGMD2i/ARDS-LGMD2)

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[9] DALDO: District Agricultural and Livestock Development Office, DAICO: District Agricultural, Irrigation and Cooperative Office, DLFO: District Livestock and Fishery Office The first is for all agricultural sector including crop and livestock, but the second and the third are division of the first to the crop sub-sector and livestock sub-sector.

[10] The five (5) regions of the Lake Zone became seven (7) regions after the revision of administrative boundaries enacted in 2012, including the two new regions: Geita (composed by parts of Mara and Shinyanga Regions) and Simiyu (split from Shinyanga Region).

Roll-out area	Roll-out timing	Major activities
Southern 6 Regions [11] (Mbeya, Iringa, Njombe, Ruvuma, Rukwa, Katavi)	[1st Year] Jan. 2012-Apr. 2012	Ditto
Southeastern 2 Regions (Lindi and Mtwara), Northern 3 Regions (Arusha, Manyara and Kilimanjaro)	[2nd Year] Oct. 2012-Dec. 2012	Ditto
Coastal 3 Regions (Tanga, Pwani and DSM), Central 2 Regions (Tabora and Singida)	[2nd Year] Jan. 2013-Apr. 2013	Ditto

(2) Revision of the plan

Although the Project started with the above plan, the Project was quickly informed by the TWG in the second half of the first year that following should be considered in the roll-out.

- Due to the delay of the budget disbursement, the roll-out activities were also delayed.

- It was observed that there were unexpectedly large number of new recruits of extension officers in the pilot and Lake Zone Regions.   Therefore additional training should be conducted.

Given the situation, the Project discussed with the TWG about the schedule of ARDS roll-out from April 2012 on ward, encompassing the 2nd and 3rd year of the Project. As a result, it was agreed that the first year continued the training in the Lake Zone covering the new extension officers in the area. The roll-out to other areas would subsequently be postponed by six months. The change was agreed in May 2012 TWG meeting.   The revised roll-out plan is shown below. The shaded are revised parts.

Table 2.3.2: Revised Plan of ARDS National Roll-out and Major Activities

Roll-out area	Roll-out timing	Major activities
Lake Zone 5 Regions (Kigoma, Kagera, Mara, Mwanza, Shinyanga)	[1st Year] Nov. 2011 – Apr. 2012	TOT to M&E TWG (After 2nd year, conducted by refresher workshop or rehearsal)
		TOT by M&E TWG to Regions and LGAs
		Training by LGAs to VAEOs/WAEOs (Training on VAEO/WAEO Format)
		Training to M&E TWG on data collection, analysis and reporting (LGMD2/LGMD2i/ARDS-LGMD2)
		Training by M&E TWG to Regions and LGAs on data analysis and reporting (LGMD2/LGMD2i/ ARDS-LGMD2)
Southern 6 Regions (Mbeya, Iringa, Njombe, Ruvuma, Rukwa, Katavi)	[2nd Year] Sep. 2012 - Dec. 2012	Ditto
Central 2 Regions (Tabora and Singida), Southeastern 2 Regions (Lindi and Mtwara), Coastal 2 Regions (Pwani and DSM)	[2nd Year] Feb. 2013 – Apr. 2013	Ditto
Northern 4 Regions (Tanga, Arusha, Manyara and Kilimanjaro)	[3rd Year] Sep. 2013 - Dec. 2013	Ditto

[11] The Southern six (6) regions are originally only four (4): Mbeya, Iringa, Rukwa and Ruvuma. However due to the administrative revision mentioned above, two (2) more regions were added which are Njombe Region (generated by splitting Iringa Region into two regions) and Katavi Region (same as Njombe as produced by separating from Rukwa Region).

The roll-out to the Northern four (4) Regions which was planned in the first half of the 3rd year was further adjusted in actual implementation. The training on VAEO/WAEO Format was conducted as planned in September – October period in 2013, the data analysis and reporting training was postponed until January – March, 2014 because of delay in the procurement of computers which were necessary for the training.

The ARDS roll-out was carried out according to the revised plan described above. While details of the roll-out activities are explained individually in Section 2.3.3 and after, the summary of the activities is provided below in the Table together with targeted officers and their expected learning.

Table 2.3.3: ARDS-related Training, and understanding and learning of participants

Name of training	TOT for M&E TWG	TOT for RS/LGAs	Training for VAEO/WAEOs	TOT on MS Excel & LGMD2/2i for M&E TWG	Training on MS Excel & LGMD2/2i for RS/LGAs	Technical backstopping	Training on ARDS-LGMD2/ Web Portal
Implementation period of the training	Sep. 2011	Nov. 2011 – Sep. 2013	Oct. 2011 – Sep. 2013	Feb., Apr. 2012 Dec. 2013 Jan. 2014	Feb., Apr. 2012 May, Dec. 2013 Feb. 2014	6 months after introducing LGMD2/2i	Mar. 2015
Purpose of the training	M&E TWG become conversant with ARDS operation	To make RS/LGA officers conversant in ARDS formats	VAEO/WAEOs become conversant with VAEO/WAEO Format	M&E TWG become competent trainers of MS Excel and LGMD2/2i training	RS/LGA officers become conversant with using MS Excel and LGMD2/2i	Scrutinize ARDS operation status of each LGA	To make RS/LGA officers conversant in ARDS-LGMD2/ Web Portal
Degree of understanding and acquiring skills learned in the training							
M&E TWG members	18 members participated and learned about ARDS formats and operation of MS Excel and LGMD2.	Members who attended TOT act as trainers. They were able to answer appropriately to the questions raised from participants with the increasing their experience from 1st year to 3rd year.	Participated as supervisors. They were able to answer appropriately to the questions raised from participants with the increasing their experience from 1st year to 3rd year.	6-14members participated. Members repeated exercise along the manuals until they acquired skills so that they could provide the same quality training across training centers.	Members who attended TOT act as trainers. In 1st year, only 2-3 members were competent trainers. From 2nd year, almost all members acquired sufficient skills and became confident to be trainers.	6 members participated per event. They were able to provide appropriate technical support to LGAs with each event.	In TOT, members learned overall functions of ARDS-LGMD2/ Web Portal. Then members who attended TOT act as trainers and trained RS/LGAs officers especially on data entry part.
RS officers	Participated regional ASDP coordinators form 9 regions where were target area of ARDS roll-out in 1st year	In total 37 officers participated.	RS officers who attended TOT act as trainers.	-	As a total of 90 officers participated.	In total 42 officers participated (except for northern 4 regions).	In total 50 officers participated.
LGA officers	-	In total 523 officers participated.	Officers who attended TOT act as trainers and facilitated VAEO/WAEOs understanding by giving practical example.	-	As a total of 546 officers participated.	In total 336 officers participated and acquired skills of MS Excel and LGMD2/2i as well as shared common challenges of ARDS operation and its countermeasures.	In total 384 officers participated and learned mainly data entry part of ARDS-LGMD2/ Web Portal.
VAEO/WAEOs	-	-	In total 7,755 officers participated. Experiences were shared from existing officers to newly employed officers.	-	-	-	-

2.3.2. To conduct sensitization activities for introduction of ARDS for staff in Regions and LGAs.

In June 2012, the M&E TWG organized a sensitization workshop for the 10 regions of Rukwa, Mbeya, Iringa, Ruvuma, Lindi, Mtwara, Pwani, DSM, Tabora, and Singida so that the ARDS roll-out of 2012/13 fiscal year to the 10 regions can be smoothly implemented. The workshop purported that:

- Regional and LGA officers become aware of the improved ARDS;

- Regional and LGA officers become ready for effective introduction of the ARDS; and

- Regional and LGA officers become ready to implement and supervise ARDS.

Invitation was also made to the Northern 4 Regions' (Arusha, Kilimanjaro, Manyara, and Tanga) regional officers if they were interested in the workshop despite that their roll-out will be in 2013/14, a whole one year later. Responding to the invitation, they all participated in the workshop with keen interest.

Furthermore, for the purpose of strengthening ARDS operation in LGA level, the M&E TWG carried out another sensitization workshop for all regional ASDP coordinators, DAICOs and DLFOs in 9th March 2015. This workshop aimed at 1) overview of the ARDS, 2) responsibilities and roles of RS/LGAs on ARDS operation, 3) sharing good practices on ARDS operation, and 4) introduction of ARDS web-portal and data utilization. The M&E TWG emphasized that adequate budget for ARDS operation should be secured by each LGA and requested cooperation.

2.3.3. To conduct TOT for ASLMs and Regional staff by M&E TWG

Before starting the ARDS roll-out nationwide, the Training of Trainers (TOT) for the M&E TWG members and regional officers was conducted from September 19 to 24, 2012. This training is summarized in the Table 2.3.4.

Through this training, all participants reached common understanding on the contents of the VAEO/WAEO Format and how to fill in the form. In the session of Excel data consolidation and LGMD2 operation, all participants were able to acquire the necessary skill for training to LGAs. In addition, the ARDS roll-out plan of FY 2011/12 was presented to the participants at the last day of the training.

However, the participants expressed an opinion on MS Excel that contents of training were too advanced for Excel beginners and basic Excel exercise should be included in the training course of the ARDS roll-out. Responding to this comment, the M&E TWG prepared a textbook for Excel beginners based on the results of a quick survey to LGAs on the familiarity of Excel operation.

Table 2.3.4: Outline of TOT for the M&E TWG and Regional Officers

Purpose	The M&E TWG members and Regional officers become conversant with the operation of the ARDS
Venue	Dodoma
Participants	M&E TWG members ASLMs: Agricultural statistician and IT specialist Region: ASDP coordinators from Mwanza, Mara, Kagera, Shinyanga, Kigoma, Iringa, Ruvuma, Mbeya, and Rukwa regions

Facilitator	M&E TWG members Pilot LGAs: M&E officer of Morogoro DC and agricultural statistician of Kondoa DC JICA Project Team		
Training program	Date	Agenda	Training text
	Sep.19, 2011	Introduction of the ASDP M&E and the ARDS improvement Presentation of VAEO/WAEO Format (Monthly and Quarterly)	・ ASDP M&E Framework ・ ASDP M&E Guideline ・ ASDP Performance Report 2009/10 ・ The VAEO/WAEO Format ・ Training guide for VAEO/WAEOs ・ Integrated Data Collection Format
	Sep. 20, 2011	Presentation of VAEO/WAEO Format (Annual) Presentation of the Integrated Data Collection Format (Quarterly and Annual)	
	Sep. 21, 2011	Sharing good practices of the pilot districts Data entry to Excel (Monthly format) Data consolidation exercise (Monthly format) Installation of LGMD2 software	・ Training guide for LGA officers ・ LGMD2 Operating Manual
	Sep. 22, 2011	Exercise of Pivot table function Three months data aggregation Data entry to Excel (Annual format)	
	Sep. 23, 2011	Data consolidation exercise (Annual format) Introduction of LGMD2 development Explanation of LGMD2 functions Data entry to LGMD2	
	Sep. 24, 2011	Questions and answers Recap of 5-day training Way forward	

From the 2nd year, because TWG members were well accustomed to the ARDS and confident themselves, the training was replaced by a rehearsal exercise before every training event. Training to regional officers was on the other hand conducted for the subjects of VAEO/WAEO Formats and MS Excel/LGMD2 operation together with training for LGA officers.

2.3.4. To conduct TOT for District officials by M&E TWG, ASLMs and Regional staff

Among ARDS roll-out activities, TOT for LGA officers aims that LGA officers become a trainer and be able to train VAEOs and WAEOs on how to fill in the common reporting formats (both VAEO/WAEO Format and Integrated Data Collection Format (IDCF)). The outline of the TOT is summarized in the tables below.

Table 2.3.5: Outline of TOT to LGA Officials

Objective	To make LGA officials conversant in the common reporting formats.
Participants	Regional officers (Agricultural advisor, Livestock advisor) LGA officers in the DALDO office (DALDO*, Agricultural Statistician, M&E officer, Planning officer)
Trainers	M&E TWG members
Venue	Regional office
Duration and Target area	7-8 Nov. 2011: Lake Zone Regions (Mwanza, Shinyanga, Kagera) 12-13 Dec. 2011: Lake Zone Regions (Mara, Kigoma) 10-11 Sep. 2012: Southern highland Regions (Iringa, Njombe, Ruvuma, Mbeya, Rukwa, Katavi) 4-5 Feb. 2013: Central and Southeast Regions (Tabora, Singida, Lindi, Mtwara) 25-26 Feb. 2013:Coastal Regions (Pwani, DSM) 16-17 Sep. 2013: Northern Regions (Tanga, Kilimanjaro, Arusha, Manyara)

**Note: In some of LGAs, a structural reform in dividing DAICO and DLFO from DALDO has introduced. In this case, LGA was allowed to send in total 5 officers to participate in TOT, including DAICO and DLFO instead of DALDO.

For the preparation of TOT, several groups which were composed of the M&E TWG members were formed in order to conduct trainings in parallel at the same time.   Team leaders of each group communicated with regional ASDP coordinators for logistics arrangement of the training and gave the instruction to LGAs so that they could move to the training for VAEOs and WAEOs immediately after TOT.

The TWG members conducted TOT as main trainers.   Regional officers who participated in both refresher training and sensitization workshop provided in the 1st year of the Project supported the TWG members during the training.   In Day 1, trainers explained outline of ARDS and common reporting formats to participants. Then, participants (both regional and LGA officers) practiced to fill data into VAEO/WAEO Format.   In Day 2, participants all discussed and confirmed every table in the formats by presentation on the result of the exercise done in Day 1.   The table 2.3.6 gives a training programme.

Table 2.3.6: Subjects of the TOT for LGA Officials

Day	Subject	Trainer	Training Materials
Day 1	Briefing on the ASDP and the ARDS	Regional officers M&E TWG members	M&E Framework, M&E Guidelines The ARDS Power Point
	Explanation on the Integrated Data Collection Format		Integrated Data Collection Format
Day 2	Explanation on the VAEO/WAEO Format		VAEO/WAEO Format, Training Guide for VAEO/WAEOs

In TOT, ARDS was favorably accepted by participants as a tool for data collection in the agricultural sector.

On the other hand, participants expressed concerns about finding a source of budget for printing blank formats to distribute VAEOs and WAEOs, fuel for LGA officers to follow up VAEOs and WAEOs, and other expenses arising from ARDS operation.   It is a serious issue for LGAs to secure enough budgets for ARDS operation because AEBG was cancelled since 2011/12 fiscal year.   Regarding this issue, the M&E TWG has made a courtesy call to LGA leaders (i.e. DED and DC) to create awareness of importance of ARDS, enhance understanding of ARDS and establish ownership of ARDS in LGA level.   .

In addition, since the 2nd year of the Project, it became clear that a structural reform in dividing DALDO office into crop section (DAICO) and livestock section (DLFO) has been progressing in many LGAs.   In response to this, many LGAs put an effort to allocate both crop and livestock extension officers in ward level. The TWG members explained to participants of the training that even at LGA level; i) DAICO and DLFO should work together as agricultural sector officers, ii) livestock ward extension officer should submit data to crop ward extension officer at ward level, iii) crop ward extension officer submit ward report to LGA by integrating both crop and livestock data into one report, and iv) agricultural statistics officer should be in charge receiving the ward report.

2.3.5. To conduct trainings on the ARDS implementation for VAEOs and WAEOs by LGA officials under supervision of M&E TWG and Regional staff

Immediately after the TOT to LGA officers, training for VAEOs and WAEOs was carried out in each LGA. In the training, the district officers who attended at TOT acted as trainers and gave the instructions about how

to collect data by utilizing the VAEO/WAEO Format.   M&E TWG members and regional officers supported LGA officers during the training.   Outline of the training is presented in Table 2.3.7.

Table 2.3.7: Outline of Training for VAEOs and WAEOs

Purpose	VAEOs and WAEOs become conversant with VAEO/WAEO Format
Participant	All agricultural extension officers in each LGA
Trainer	LGA officers who were trained at TOT
Supervisor	M&E TWG members, Regional officers
Venue	At each LGA
Period and Target Area	9-19 November 2011: Lake zone regions (Mwanza, Shinyanga, Kagera) 14-20 December 2011: Lake zone regions (Mara, Kigoma) 23 April-8 May 2012: Lake zone regions and Modorogo and Dodoma regions 12-29 September 2012: Southern highland regions (Iringa, Njombe, Ruvuma, Mbeya, Rukwa, Katavi) 6-19 February 2013: Central and Southeast regions (Tabora, Singida, Lindi, Mtwara) 27 February-15 March 2014: Coastal regions (Pwani, DSM) 18 September-4 October 2014: Northern regions (Tanga, Kilimanjaro, Arusha, Manyara)

In Day 1, the trainers gave overall explanation on the format and then divided participants into several groups for practical exercise on filling data into the Format.   In Day 2, each group made a presentation and then all participants gained common understanding how to fill data into each table of the Formats through discussion.   In Q&A session, the trainers were able to answer appropriately and facilitated the participants understandings by giving practical examples of agricultural/livestock situation in the respective LGA.   In the 2nd year, effectiveness of group discussion was observed in sharing experiences from existing VAEO/WAEOs to newly employed VAEO/WAEOs.   At the last day of the training, enough copies of blank format for 3 months implementation were distributed to each LGA.   Training programme is summarized below.

Table 2.3.8: Training Programme for VAEO/WAEOs

Day	Subjects	Facilitator	Training materials
1	Brief introduction of the ASDP M&E and the ARDS improvement	M&E TWG member	
	Explanation of VAEO/WAEO Format	LGA officers	VAEO/WAEO Format
2	Exercise in filling format and Q&A		Training guide for VAEO/WAEOs
	Explanation of role of stakeholders on ARDS implementation and way forward	M&E TWG member	

Participants raised comments at the last day of the training that ARDS would make them easier to collect and submit agricultural data.   In addition, good practices in the aspect of steady ARDS operation were shared among participants.

- In Mtwara Region, due to budget surplus by tax revenue from the sale of cashew nut, RS instructed all LGAs to procure motorbikes for all VAEOs and WAEOs and consequently extension system in LGA level is well established.

- Kibaha DC and Mafia DC in Pwani Region have held a meeting gathering all VAEOs and WAEOs once

a month.   Arusha CC held the meeting for all extension officers once a month on Thursday of the last week and LGA officers checked the agricultural diary and provided instruction/advice to extension officers.   Holding the meeting creates a good opportunity to discuss about challenges of operating ARDS among all VAEOs and WAEOs so that LGA can improve the ARDS implementation.

● In Arusha Region, agricultural diary was distributed to all extension officers by the initiative of the regional office.   Extension officers in Arusha Region keep records of daily extension activity in the diary as well as the basic statistics of village/ward such as population, number of household, area cultivated, and number of tractors etc.   The agricultural diary would be utilized as a data source for VAEO/WAEO Format.

In FY 2011/12, the GoT employed more than 4,000 agricultural extension officers in nationwide.   The newly appointed extension officers in the pilot and Lake Zone Regions where the ARDS had been introduced were more than 1,000[12].   However, LGAs faced difficulty to secure budget for conducting training on the ARDS for newly employed VAEO/WAEOs because disbursement of DADP fund had delayed or fund was reduced in that fiscal year.   Therefore, the M&E TWG decided that additional training on the VAEO/WAEO Format for newly employed extension officers be carried out in order to contribute to the secure operationalization of the ARDS in the seven regions in the 1st year.   After the 2nd year, M&E TWG encouraged newly employed extension officers to participate in the training as well as instructed that LGAs should take responsibility of training new officers after the training provided.

It is expected that the government keeps employing new extension officers. However, it is less likely that the financial conditions of LGAs will improve.   Therefore the M&E TWG requested in March 2012 Division of Training of respective Ministries to add a training curriculum on the ARDS to MATI/LITI, which are institutions for the training of extension officers.

2.4. Activities 2: Backstopping activities for ARDS by M&E TWG are strengthened

2.4.1. To set up institutional arrangements for ARDS operation

Supports to set up institutional arrangements for ARDS operation were rendered in view of the progress of the ARDS national roll-out. By the end of the second quarter of the 2nd year (2012 December), about half of the regions of the country[13] were given training of the roll-out. Thus, since January 2013, the Project began monitoring the ARDS operation which is a preliminary action for the operation set-up. The Project prepared a standardized form for reporting the operation status of LGAs and distributed it to LGAs which completed the roll-out training. Although the form was sent to 72 LGAs at that time, only 25 responded due to insufficient follow-up of the TWG members.

In the 3rd year (2013/14), anticipating the completion of the roll-out by the end of the first half of the year, the Project spared more time and effort on the operation monitoring and setting up of the institutional arrangement. Following are major activities conducted in relation to this subject.

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12 This is almost the same number of or more than existing officers at each LGA.
13 At this time, 11 (5 of the Lake zone and 6 of the Southern zone) out of 21 regions were covered by the roll-out. 21 was the total number of the all regions at that time.

(1) Preparation of ARDS Operation Guide

In order to make the ARDS operation steady, the ARDS Operation Guide was prepared as a formal guidelines for ARDS operation and monitoring. (Attachment 3.2) The contents of the Guide are as follows.

Table 2.4.1: Major contents of the ARDS Operation Guide

Outline of ARDS: Purpose of ARDS, Structure, Necessary organizational arrangement (responsible officers, etc.), Data flow, Types of data to be collected
ARDS Operation [Work items] (according to administrative level): Budgeting, Distribution of VAEO/WAEO formats, Data collection, Submission by VAEOs/WAEOs, Quality check, Feedback to VAEOs/ WAEOs, Data entry to the system [LGMD2/LGMD2i/ARDS-LGMD2], Report preparation, Data transmission, Data approval, Data analysis and utilization, Data administration, Dissemination and promotion of ARDS, ARDS Maintenance
ARDS Operation [Work cycle]: Monthly report, Quarterly report, Annual report
ARDS Operation [Duties and responsibilities of respective administrative level]: LGA level: Village, Ward and District levels Regional level: Regional office Central level: PMO-RALG, ASLMs, M&E TWG
ARDS Operation [Inquiry, Question, and Communication]: Communication among LGAs, Region, and the Central level (M&E TWG) Inquiry on the Technical issues[LGMD2/LGMD2i/ARDS-LGMD2]

The Operation Guide was first distributed during the LGMD2i training in December 2013 through February 2014. The revised version was later again distributed in March 2015 during the ARDS-LGMD2 training. Moreover, Swahili version of the Guide is planned to upload to ARDS Web Portal in June 2015.

(2) Formalization of ARDS

A letter was issued by PMO-RALG to all regions and LGAs in September 2014 that formally authorized ARDS as a data collection system of agricultural sector. (Attachment 3.3)   The letter described challenges encountered by the previous system, justified the introduction of ARDS for addressing the shortcomings, and directed all LGAs to use ARDS as a formal system.

(3) ARDS monitoring and administering arrangements at the central level

In order to administer ARDS properly, there must be a clear and effective institutional arrangement at the center. The Project started discussing with TWG from the 3rd year and continued it throughout the Project period. Through the discussion, the TWG agreed on the following fields to be covered by the TWG as administrative tasks.   It was also considered that the administrative tasks are assumed by the joint work of M&E, Statistics and IT personnel of ministries.

● ARDS operation monitoring (To monitor, encourage and direct LGAs and Regions on the ARDS operation)

● ARDS maintenance and revisions (Revisions of VAEO/WAEO Format and ARDS-LGMD2/ Web

portal, Central Server, etc.)

● ARDS data utilization promotion (Data utilization at National and Local levels, data quality improvement, etc.)

● ARDS dissemination and promotion (coordination with PMO-RALG, ARDS introduction, dissemination and enhancement, etc.)

At the beginning, the TWG considered it effective to assign TWG members to particular regions and assume that the members voluntarily conduct monitoring. However, after some trials, it turned out that this arrangement did not work sufficiently. Hence in the 4th year, the Project and the TWG examined more direct mechanism of monitoring and administration. As a result, it has been agreed that the arrangement first focuses on the two tasks immediately necessary: ARDS operation monitoring and Maintenance and revisions. Then, a few members of the TWG were chosen to be responsible exclusively for particular tasks (Monitoring task and IT task). Moreover specific work items and work cycle of the tasks were also agreed. The items and cycle are as shown below.

Table 2.4.2: Tasks and responsibilities for administration, monitoring and maintenance of ARDS

Tasks		Frequency	2 Core Officers (Monitoring)	M&E TWG (Communication with LGA/RS)	IT [2-3 IT officers] (Technical Administrator of ARDS-LGMD2)
Category	Task Note: *"through TWG members" means Region-assigned TWG members join the communication with LGA/RS.*				
Monitoring	Monitoring of Data/ Report Submission *(through TWG members)*	3 times/ month	✓	✓	
	Direct to LGAs on Data/ Report Submission *(through TWG members)*	3 times/ month		✓	
Trouble shooting	Receiving questions/ inquiries from LGAs/ RSs *(through TWG members)*	anytime		✓	
	Finding solutions for questions/ inquiries from LGAs/ RSs	anytime			✓
	Answering to questions/ inquiries from LGAs/ RSs	anytime (mini. one week after question/ inquiry)	✓	✓	
	Recording and compiling questions/ inquiries from LGAs/ RSs (Preparing Trouble shooting)	anytime	✓		✓
Data	Review/ Revision of Lookup table	per 6 month		✓	✓
	Revision of data (definition)	per 6 month		✓	
Documents	Revision of VAEO/WAEO Formats	Quarterly		✓	
	Revision of VAEO/WAEO Training Guide	Annual		✓	
	Revision of District Training Guide	Annual		✓	
	Revision of ARDS Operation Guide	Annual		✓	✓
	Revision of ARDS-LGMD2 User Manual	Annual/ when the system is revised			✓
	Revision of ARDS-LGMD2 Technical Manual	Annual/ when the system is revised			✓
	Upload of the Documents to Web-portal	Quarterly			✓

Category	Tasks		2 Core Officers (Monitoring)	M&E TWG (Communication with LGA/RS)	IT [2-3 IT officers] (Technical Administrator of ARDS-LGMD2)
	Task Note: *"through TWG members" means Region-assigned TWG members join the communication with LGA/RS.*	Frequency			
ARDS Web-portal	Updating Dashboard	Monthly	✓		✓
	Updating News/ Articles	Monthly	✓		✓
	User ID Management (Cleaning, Revision, Update, New assignment)	Monthly			✓
	Administrative Unit Management (Cleaning, Revision, Update)	Monthly			✓

Also for the monitoring of the ARDS operation, the line of communication was agreed as follows after discussing several alternatives.
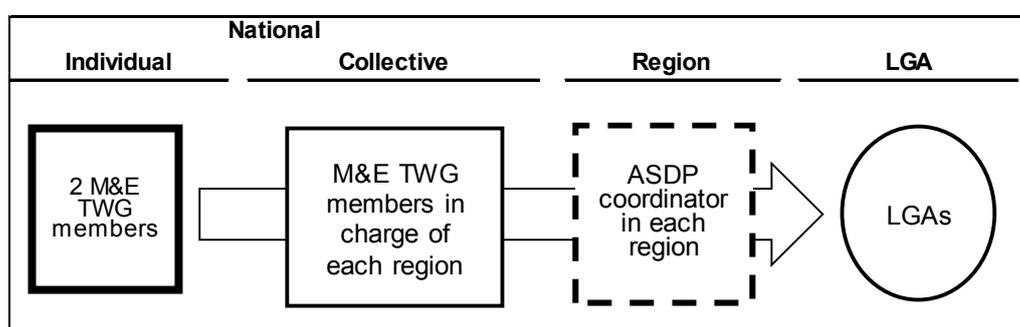

Figure 2.4.1: Line of communication for ARDS monitoring

Advantages of this arrangement are while all members are involved and joint responsibility of the TWG is secured, the two selected members can back up the individual members to ensure they communicate with regions and LGAs. Another advantage is the fact that the communication to regions and LGAs is done along the administrative line of the government.

Furthermore, it was decided that the duties of ARDS related work would be explicitly added to the job description of the TWG members (for the time being, MAFC took this initiative). The new job description will be effective from 2015/16 fiscal year.

(4) Reminding, direction and feedback to LGAs and Regions on ARDS operation

For steady operation of ARDS, regular and frequent monitoring of data submission status and subsequent directions and feedback to LGAs and regions are very important. Especially finding out reasons for non-submission and taking measures to mitigate the reasons are necessary. Although efforts had been made since the 2nd year of the Project, the task became practical only after the application (software) of ARDS was upgraded from LGMD2 to the web-based system. As described above, the monitoring of the data submission status was made possible on monthly basis and the selected members are now making sure that other TWG members take required actions in reminding and directing the LGAs and regions.

Following is the agreed procedure and actions to be taken as monitoring activities. This has been in practice since May 2015.

Table 2.4.3: Outline of ARDS monitoring activities

Item	Content
Monitoring cycle	Every month, on the following day, the monitoring core members direct TWG members (regionally assigned) through email to inform assigned regions to communicate instructions. ・ Every month 3rd (if it falls on weekend, either before or after the weekend): To remind all LGAs of receiving data from VAEOs/WAEOs and starting data entry. ・ Every month 22nd: The first monitoring date. To inform all LGAs about their respective report submission status, and request to complete data entry as soon as possible. ・ Every month 30th: The second monitoring date. Ditto with further remind of the improvement of submission.
Details of the instructions of each communication day	[3rd of the month] ① To remind that 7th is the deadline of data submission from VAEOs/WAEOs (i.e. LGAs are supposed to receive all data by this day from VAEOs/WAEOs) ② To remind that LGAs should immediately start entering data to ARDS-LGMD2/ Web portal. ③ To remind that 20th is the deadline of data submission. [22th of the month: the first monitoring date] ① To send the data/report submission status as of 21st or 22nd of LGAs to regions and LGAs ② To request TWG members and Regional officers to push LGAs of poor performance. [30th of the month: the second monitoring date] ① To send the data/ report submission status as of 20th or 30th of LGAs to regions and LGAs. ② To request TWG members and Regional officers to push LGAs of poor performance ③ This second submission status is also sent to all LGAs in the next reminding day, i.e. the 3rd of the next month.
Mid-term monitoring action	To those LGAs of poor performance despite the monitoring activities, following actions will be taken. ・ This action will first be taken in July 2015. ・ The condition designating a LGA to be poor performer is "the submission rate is less than 30%". ・ To single out LGAs of poor performance together with name of the region and TWG members who is responsible for, and give warning about their performance.

Results of report submission status since the monitoring activities began in May are shown below in Table 2.4.4. It should be noted that the "report submission rate" might be higher due to the reason given in the note of the table. For contrasting, report submission rate of the 2nd and 3rd year are also shown in Table 2.4.5. These rates were obtained by a standardized report form, but relied on LGAs' self-reporting. Therefore the submission rate is calculated against the set of LGAs which submitted the status. The comparison of report/data submission between the recent state and those in the 2nd and 3rd year should be made between the "submission rate at the 1st monitoring" (Table 2.4.4) and the "rate of LGAs which transmitted the data" (Table 2.4.5).

Table 2.4.4: ARDS operation status after ARDS Web-portal has been introduced

| | Ward Monthly Report Submission[*1] | | |
	National average submission rate[*1]		
	March 2015	April	May
Submission rate before the submission deadline (15th day of the next month)[*3]	9.1 %	14.1 %	27.9 %
Submission rate at the first monitoring date	20.6 %[*2]	22.4 %	36.3 %
Submission rate at the second monitoring date	23.1	27.7 %	40.0 %

Source: ARDS Web Portal (as of 30th June 2015)

Note *1: "Report Submission" means the data submitted by extension officers are entered in ARDS-LGMD2 and the "Complete" button is pressed. There are still some LGAs who omits the "Complete" button and has not registered the submission status (thus reported by the system as the submission rate is "0"). It is therefore possible that the actual submission rate is higher than reported here.

*2: The Submission status of the March Report at the first monitoring date is not equivalent as April report, because the first monitoring date for March is April 22nd, and has passed already when this monitoring began. The rate in the table is one obtained in late April.

*3: "Submission deadline" is the date stipulated as a rule in the ARDS Operation Guide.

Table 2.4.5: ARDS Operation Status (2nd and 3rd Year, by self-report of LGAs)

ARDS Operation	2012/13		2013/14	
	4th Q	1st Q	2nd Q	3rd Q
No. of LGAs where ARDS has been rolled out	136	136	136	167
No. of LGAs which reported the operation status	93	118	102	73
No. of LGAs which transmitted data to the Central Server. (no deadline was set)	35	17	13	12
% of LGAs which transmitted data to the Server. (against the reported LGAs)	37%	14%	12%	16%

Comparing the two tables above, the current submission rates seem improving, although still low. This improvement is partially brought about by monitoring by the TWG, while the adoption of ARDS-LGMD2/ Web portal is also positively affecting the operation of LGAs.

(5) Explanation and regular reporting to the management of ASLMs

Understanding and keen interests of the higher level of ASLMs are indispensable for establishing the institutional arrangements of ARDS operation. Activities in this respect were launched by the presentation to PS (Permanent Secretary)[14] of MAFC in December 2013 (the 3rd year of the Project). After that, the TWG made a presentation to directors of MAFC in January 2014, and to the management of PMO-RALG in June 2014. Similar opportunity was provided to directors and higher management of MLFD in October 2014.

2.4.2. To conduct seminars for reviewing implementation process and sharing findings among Regions and LGAs

(1) Conduct backstopping workshop

The ARDS roll out plan clearly shows that technical backstopping should be conducted after six months of its introduction in order to encourage steady operation of ARDS. The backstopping aims at (i) scrutinizing ARDS operation status of each LGA and (ii) improving their understanding about operation of ARDS.

From 1st year to 3rd year, the M&E TWG conducted the backstopping workshop to 21 regions where the ARDS was rolled-out. Table below summarizes the outline of the workshop.

Table 2.4.6: Outline of backstopping workshop

Objective	- Scrutinize ARDS operation status of each LGA and provide technical support - Improve understanding about ARDS operation
Participants	Regional officers (RAA and RLA) LGA officers (Agricultural statistician and M&E officer)
Facilitator	M&E TWG members
Period and Area	18th – 24th December 2011: Morogoro and Dodoma regions 21st – 26th May: Morogoro and Dodoma regions 31st October – 2nd November 2012: Lake zone regions 10th – 12th April 2013: Southern highland regions 11th -13th November 2013: Central, Southeast and Coastal regions

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[14] Permanent Secretary: Top officer of a ministry for operation. He/she is just under the Minister, taking full responsibility of the entire operation of the ministry.

	Topics	Training materials
Day 1	Presentation of current ARDS operation status, Updating ARDS operation status, Group discussion on ARDS challenges	Monitoring form for ARDS operation status
Day 2	Refresher training on Excel techniques and LGMD2 operation	Training guide for LGAs LGMD2 operation manual
Day 3	Refresher training on Excel techniques and LGMD2 operation, Q&A, Way forward for steady operation of ARDS	

In Day1, facilitator presented the status of ARDS operation in each LGA by the stages of the ARDS implementation; distribution of blank format, submission of filled-in format, data entry to Excel, data consolidation by Excel, data entry to LGMD2, synchronization to LGMD2 central server. The presentation was prepared by using a standardized monitoring form which was distributed to all LGAs and compiled by the secretariat of the TWG before the workshop. After presentation, participants discussed through group discussion about challenges encountered and measures to be taken for smooth operation of ARDS.

In Day 2 and Day 3, the technical support on data consolidation by using Excel and LGMD2 operation were provided to LGA officers. Participants tried to acquire Excel techniques through the exercise on data consolidation by formula, data consolidation by pivot table function, and three months data aggregation. As for data synchronization with the central server of LGMD2, it was instructed that LGAs where internet connection is not stable should export zip file and send it through email to the M&E TWG, in response to the challenges raised from participants in Day1 that synchronization often fails in LGAs.

On the other hand, in the 4th year, it was planned that backstopping workshop to the northern regions be undertaken. However, in the TWG meeting held in September 2014, it was decided that the backstopping should be postponed due to the fact that roll-out of ARDS-LGMD2 which is upgrade version of LGMD2i would be planned. As a result, the backstopping to the northern Regions was combined with ARDS-LGMD2 roll-out training conducted in March 2015.

(2) Regular monitoring of the ARDS operation

In the 2nd year of the Project, the M&E TWG started monitoring to LGAs where the ARDS was introduced in order to encourage LGAs to duly implement ARDS after its introduction. From January 2013 to March 2014, the TWG members distributed a standardized monitoring form to LGAs every quarter for collecting the status of ARDS operation by the stages; distribution of blank format, submission of filled-in format from wards, data entry to MS Excel, data consolidation by MS Excel, data entry to LGMD2, synchronization to LGMD2 central server. However, not many LGAs submitted the status report due to insufficient follow up by the TWG members.

In response to the unsatisfactory result of regular monitoring, the TWG monitored data submission status at central server as LGAs began to operate LGMD2i in April 2014. Moreover, since April 2015, the newly introduced ARDS-LGMD2/ Web portal made possible for TWG to monitor the submission status at the center monthly. Subsequently, since May, 2015, the TWG started checking the submission status by Web Portal every month. Then they reported the status to Regions and requested them to press LGAs to submit

monthly data properly.　Specific actions taken in May are as follows.

Table 2.4.7: Monitoring activities since May 2015

Date of Monitoring	Persons in charge	Monitoring Activities
5th May, 2015	Monitoring core members	Shared the submission status report on the following reports as of 5th May among M&E TWG members ・ Ward Monthly Report on January, February and March ・ Ward Quarterly Report in 3rd quarter ・ District Quarterly Report in 3rd quarter
5th May~	M&E TWG members	Referring the submission status reports shard by monitoring core members, reminded LGAs through Regions the following points. ・ 7th May is the deadline for WAEO to submit filled-in VAEO/WAEO Format to LGAs. ・ From 8th May, LGAs officers should start the data entry of Ward Monthly Report in ARDS-LGMD2/Web Portal. ・ 20th May is the deadline for LGAs to conduct data entry of April Ward Monthly Report. In addition, M&E TWG members reminded directly to LGAs which had low submission status for March Ward Monthly Report.
25th May	Monitoring core members	After the deadline of the data entry of April Ward Monthly Report (20th May), shared the submission status report on the following reports as of 25th May among M&E TWG members. Ward Monthly Report on March and April
25th May~	M&E TWG members	Referring to the submission status reports shared by monitoring core members, reminded LGAs through Regions to submit April Ward Monthly Report.
3rd June	Monitoring core members	Instructed M&E TWG members to remind LGAs to submit May Ward Monthly Report.

To examine the result of the above monitoring activities, Table below summarizes the latest submission status of Ward Monthly Reports from March to May 2015 after introducing ARDS Web Portal.

Table 2.4.8: ARDS operation status after ARDS Web-portal has been introduced
(duplication of Table 2.4.4)

	Ward Monthly Report Submission[*1] National average submission rate[*1]		
	March 2015	April	May
Submission rate before the submission deadline (15th day of the next month)[*3]	9.1 %	14.1 %	27.9 %
Submission rate at the first monitoring date	20.6 %[*2]	22.4 %	36.3 %
Submission rate at the second monitoring date	23.1	27.7 %	40.0 %

Source: ARDS Web Portal (as of 30th June 2015)

From Table 2.4.5, it can be observed that the submission status of Ward Monthly Reports of March, April and May are gradually increasing. The following figure and table show the transition of the submission status of Ward Monthly Reports more in detail. Figure 2.4.2 indicates the transition of March Ward Monthly Report's submission status of each region in May, and Table 2.4.9 summarizes the change of submission status of

April and May Ward Monthly Reports in national average.
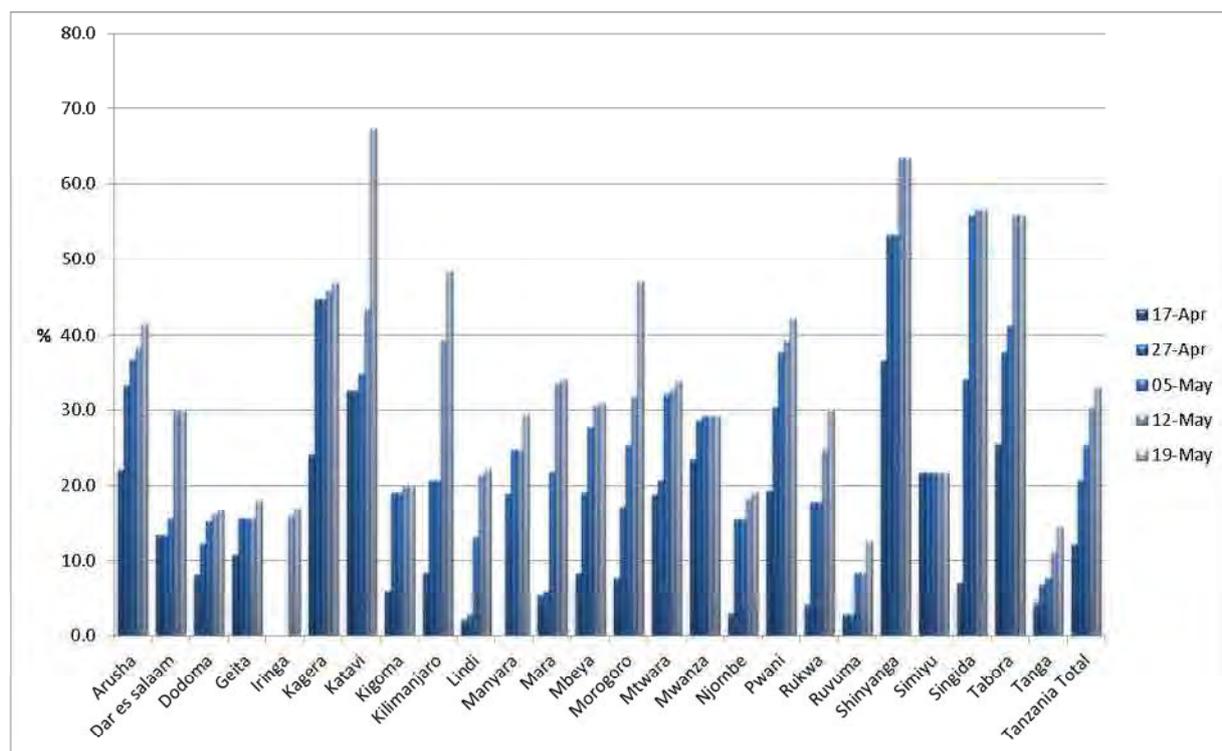
Source: ARDS Web Portal (as of 19th May 2015)

Figure 2.4.2: Changes of submission status of Ward Monthly Form (March 2015)

In Figure 2.4.2, there is an increasing tendency of the submission status before and after the first monitoring activity conducted by M&E TWG (5th May). The status of March monthly data submission in Katavi, Kilimanjaro, Morogoro and Tabora regions dramatically increases after 5th May and it can be said that pressing LGAs is effective to raise submission status, although only 9 regions are over 40% submission rate.

Table 2.4.9: Submission status of March, April and May Ward Monthly Report

Date of Monitoring	March Ward Monthly Report		April Ward Monthly Report			May Ward Monthly Report	
	Overall submission rate	No. of Ward report submitted	No. of LGAs which achieved more that 70% of submission rate	Overall submission rate	No. of Ward report submitted	Overall submission rate	No. of Ward report submitted
May 22	34.4%	1,234 Ward	20 LGAs	22.4%	803 Ward	-	-
May 29	36.8%	1,322 Ward	33 LGAs	27.5%	989 Ward	-	-
June 5	38.9%	1,396 Ward	43 LGAs	34.4%	1,235 Ward	-	-
June 12	41.5%	1,491 Ward	51 LGAs	41.5%	1,491 Ward	-	-
June 19	41.8%	1,518 Ward	51 LGAs	43.1%	1,566 Ward	35.1 %	1,274 Ward
June 26	42.8 %	1,555 Ward	52 LGAs	43.8 %	1,591 Ward	39.3 %	1,428 Ward

Source: ARDS Web Portal (as of 26th June 2015)
Note: Similar to Table 2.4.8, the "submission" in this table refers to the pressing "completion" button. As there are a few LGAs which still miss this step, the rate might actually be higher.

In Table 2.4.9, the increasing tendency of the submission status can be observed before and after the second monitoring activity (25th May). Compared to the national average submission status in 2nd Year and 3rd Year of the Project, which were 10% level (self-reported by LGAs), in June 2015, the submission status of March Ward Monthly Report reached about 42% and the one of April Ward Monthly Report increased about 43%. Moreover, it is noteworthy that 51 LGAs out of 168 have higher than 70% submission rates of April Ward Monthly Report.

In order to make the submission rate even better, the TWG has planned to honor LGAs where perform 80% submission rate by reporting in the article page of Web Portal since May 2015.

Table 2.4.10: List of good performance LGAs

	Ward Monthly Report		
	March 2015	April 2015	May 2015
List of LGAs where submit on time 100%	Mpanda TC, Masasi TC, Nzega TC	Mpanda TC, Tarime DC, Kilombero, Masasi TC	Missenyi DC, Mpanda TC Nsimbo DC, Babati TC Tarime TC, Kilombero DC Songea MC, Itilima DC Iramba DC, Sikonge DC
List of LGAs where submit on time 90%	Bukoba DC, Ushetu DC	IrambaDC, Sumbawanga DC	Misungwi DC, Kyerwa DC Njombe DC, Mbinga DC
List of LGAs where submit on time 80%	Itilima DC, Kwimba DC	Misungwi DC, Karatu DC, Ushetu DC, Chemba DC, Bariadi TC	Morogoro MC, Mbeya DC Chato DC, Bukoba DC Kyela DC, Meatu DC Ikungi DC, Bariadi TC Bumbuli DC, Sumbawanga DC

Source: ARDS Web Portal (as of 22 June 2015)

On the other hand, it is the fact that there are still some LGAs which have low submission status. M&E TWG members and the Project conducted interviews and questionnaire to LGAs to figure out, on one hand, the factors which have prevented LGAs to submit the data, and on the other hand, the factors which have promoted LGAs to submit it. The followings are some preventing factors raised by LGAs.

● Unstable speed of the internet connection in LGA office (The payment for internet sometimes delayed / Due to slow speed of the internet connection, it took long time to log-in ARDS-LGMD2/Web Portal and to entry data in it).

● It was difficult to go to the place which had better internet connection (Transportations were limited / Budget on fuel for motorbike was not enough),

● Due to unstable budget of LGA, the print-out and distribution of VAEO/WAEO Format could not be on-time.

● WAEO did not submit filled-in VAEO/WAEO Format to LGA on-time (WAEO was assigned to other task (such as tasks related to the national election) / Newly employed WAEO did not understand well how to fill in the Format / There was no secured budget for fuel of motorbikes to monitor WAEO).

- LGA officers were assigned other tasks by DAICO and DLFO in the end and the beginning of month when they should work on data entry.

- There are wards which WAEO is not allocated.

- There are wards which Agriculture and Livestock are not conducted.

- The latest situation of wards is not reflected to ARDS-LGMD2/Web Portal.

- The lookup tables (options for answer) are not enough in some tables (such as livestock disease, pesticides, etc.).

The followings are promoting factors raised by LGAs which have high submission status.

- Based on the well understanding of LGA office towards ARDS activity, there were allocated budget necessary for activities (VAEO/WAEO Format was printed-out and distributed on-time / Necessary stationaries were purchased by LGA office / Necessary fuel fee for monitoring WAEO were given by LGA office)

- Because of the necessary support from LGA office, LGA officers could conduct frequent reminding and monitoring on WAEOs through telephone calls and sms, and WAEO submitted filled-in VAEO/WAEO Format on-time.

- There were well understanding and support from DAICO and DLFO (Financial support / DAICO and DLFO made consideration on task allocation for LGA officers in charge of ARDS to make them able to concentrate on ARDS operation / DAICO and DLFO explained directly to VAEO/WAEO the importance of ARDS in the seminar).

In comparison between 1) preventing factors and 2) promoting factors of on-time data submission, although there are some factors which are difficult to deal with (such as internet speed and allocation of WAEOs), it seems that the well understanding of LGA office on ARDS activity is making most differences. Therefore, it is important to continue the monitoring activities, and at the same time, to make more effort on raising awareness activities in each LGA office which the Project has conducted through the sensitization activities and productions of newsletter and pamphlet. Concerning the revision of lookup tables and the reflection of the latest situation of Wards in ARDS-LGMD2/Web Portal, it is necessary to formulate and conduct the updating cycle (proposal of revision / discussion / decision / revision works) of Web Portal.

(3)　Questionnaire of ARDS operation

At the Mid-term Review carried out in October 2013, it was suggested that the project team should prepare questionnaire and conduct a survey in order to measure output indicators of this Project, such as "level of understanding by WAEO/VAEO on data collection method" and "Evaluation of the users on LGMD2, common reporting formats and training guides." Therefore, the Project in cooperation with the M&E TWG carried out the survey in 21 regions where ARDS was rolled out, except for Northern region, from November 2013 to February 2014. Total number of replies to the questionnaire was 152. The results below are of

status before LGMD2i which skips Excel consolidation.

In addition, the project team undertook a similar survey on the actual status of the ARDS operation in Northern, Coast, Morogoro and Dodoma regions in November and December 2014.   The Project together with the TWG members visited 21 LGAs as a sample and interviewed them.   Good practices of the ARDS operation observed in the survey were compiled and presented to participants of the training on ARDS-LGMD2 which was carried out in March 2015.   Good practices are as follows:

- Strong commitment by LGAs.

- Assign full-time ARDS operator within LGA.

- Increase the number of ARDS operators within LGA.

- Secure budget for ARDS operation.

- To set up "Data Consolidation Team" at Ward level.

- To organize regular meetings with VAEOs/WAEOs.

Another survey was made in March 2015 and covered 136 LGAs in 21 regions except for Northern Region. This survey examined the status of ARDS operation after introducing LGMD2i as well as the utilization of data collected through the ARDS.   Furthermore in May 2015, additional survey on the utilization of ARDS data was carried out (Annex 3.4 includes both questionnaires used from November 2013 to March 2015 and used in June 2015, and overall summaries of the results).

The results of these surveys related to the PDM output indicators were reported in Chapter 3.   Tables below are the results on the status of ARDS operation and utilization of ARDS data.

Table 2.4.11: Results of Questionnaire Survey (1) Work load

1. Work load on ARDS	% of LGAs answered "work load too much"		% of LGAs answered "work load NOT too much"	
	Feb. 2014 Out of 152 LGAs	Mar. 2015 Out of 136 LGAs	Feb. 2014 Out of 152 LGAs	Mar. 2015 Out of 136 LGAs
LGAs those have more than 40 wards	0.7%	1.5%	0%	0.7%
LGAs those have more than 30 wards	11.8%	2.2%	2.0%	10.3%
LGAs those have more than 20 wards	24.3%	15.4%	10.5%	25.0%
LGAs those have more than 10 wards	19.7%	11%	14.5%	26.5%
LGAs those have less than 10 wards	3.3%	0%	0.7%	4.4%

Table 2.4.11 shows the perception of LGA officers on the workload of the ARDS operation (too much work or not too much). Note that the two time points of the survey, February 2014 and March 2015 correspond to the two operation situations; the first being with LGMD2 and the second with LGMD2i (March 2015 is the time of the roll-out of ARDS-LGMD2/ Web portal, which is a more advanced application, hence it was not in use yet). As observed in the table, there is tendency that answer of "too much" is declining from February 2014 to March 2015, implying that the use of LGMD2i contributes positively affecting the reduction of work load.   This was expected because LGMD2i internalized, hence

skipped the step of data aggregation previously done by MS Excel by LGA officers outside of the application.

Table 2.4.12: Results of Questionnaire Survey (2) Work hours

2. Days and Hours spent for ARDS	Average hours/ day		Average days/ month	
	Feb. 2014 Out of 152 LGAs	Mar. 2015 Out of 136 LGAs	Feb. 2014 Out of 152 LGAs	Mar. 2015 Out of 136 LGAs
(1) Data quality check	3.81	3.98	5.98	6.23
(2) Data entry to MS Excel	7.03	—	8.46	—
(3) Data consolidation by MS Excel	5.70	—	6.55	—
(4) Data entry to LGMD2	4.31	—	4.40	—
(5) Data entry to LGMD2i	—	6.23	—	8.76

Table 2.4.12 above shows the work hours needed for ARDS data entry and processing. Again comparison is between LGMD2 (February 2014) and LGMD2i (March 2015). Obviously the work hours under LGMD2 (the total of (1), (2), (3) and (4)) is much higher than under LGMD2i (the total of (1) and (5)), showing a tendency of significant decline of working hours. It is implicated that the work load was lightened after introducing LGMD2i due to circumvent of data consolidation by MS Excel.

Another findings of the questionnaire survey made in March 2015 is the status of ARDS data utilization in LGAs, which are summarized in tables below. In the following tables, the "Yes" answer was given even one time use of data in relevant field occurred in the fiscal year in question. Therefore the results show characteristics of data use in general, not necessarily of ARDS data.

Table 2.4.13: ARDS data utilization at LGA level

Report to DED	Report to the Council	DADP preparation	DIDF preparation	District budget preparation
83.8%	71.3%	76.5%	59.6%	74.1%

Table 2.4.14: ARDS data utilization for inquiries from national/ regional levels

NBS	MAFC (food security dept.)	Irrigation (zonal office)	NGO	Investors
60.3%	71.3%	58.8%	76.5%	66.2%

According to the tables above, LGAs seem to use the data actively as more that 70% of LGAs responded with affirmation of data use in the 4 fields out of the five (Table 2.4.13). LGAs are also using data to answer inquiries from the National level and other general data requests (Table 2.4.14).

Regarding data use at the National level, the status is still limited because the data submission by LGAs is not sufficiently extensive. Still, following are expected to be good use of ARDS data at the National level.

● To use ARDS data for the MAFC's annual report "Agricultural Basic Data"

● To use the data for ASDP2 monitoring (e.g. JSR: Joint Sector Review)

● To use the data to prepare a quarterly agricultural sector status report

- To use the data for the work of technical departments of MAFC and MLFD (e.g. Crop Development, Mechanization, and Veterinary Services, etc.)

2.4.3. To conduct trainings for M&E TWG on data collection methodology, data analysis, reporting and feedback mechanism

(1) TOT on data analysis by using LGMD2

<u>1st Year – 2nd Year: MS Excel/LGMD2 Training</u>

The M&E TWG members play a facilitator role for MS Excel and LGMD2 training to Regional and LGA officials. The Project provided TOT to the TWG members twice, February and April 2012, for the purpose of strengthening their capacity of MS Excel technique and LGMD2 operation. Prior to TOT, manuals for facilitators and data sets were prepared as supplemental training materials which support the TWG members to be able to provide the same quality training across local training locations. In the 2nd year, refresher training was provided within TWG members for preparation every time before the MS Excel and LGMD2 training. Outline of the training is summarized in Table 2.4.15.

Table 2.4.15: Outline of TOT for MS Excel and LGMD2 Training

Purpose	M&E TWG members prepare materials and become competent trainers of MS Excel and LGMD2 training
Participants	6-14 members of the M&E TWG
Trainer	JICA Project Team
Venue	JICA Project office or Kilimo I conference room
Training program	[MS Excel] ・ Basic Excel operation (includes the four basic operations of arithmetic) ・ Preparation of data analysis; data cleaning ・ Quarterly data consolidation and aggregation by using formula and pivot table function ・ Annual data consolidation and aggregation by using formula and pivot table function [LGMD2] ・ Refreshing basic operations of LGMD2 ・ Quarterly data consolidation and aggregations and data entry into LGMD2 ・ Annual data consolidation and aggregations and data entry into LGMD2 ・ Data synchronization and approval

In TOT, the TWG members understood training contents as well as their role as facilitators and acquired necessary skills for training Regions and LGAs. Thus, all members gained common understanding, facilitating them by providing the same quality of training.

<u>3rd Year: LGMD2i Training</u>

TOT for the M&E TWG members who were supposed to be trainers of LGMD2i training was conducted twice. In the first TOT conducted in December 2013, an engineer from UCC[15] who was in charge of the development of LGMD2i was invited as a trainer. Following the second TOT carried out in January 2014, one of the M&E TWG members who were already conversant with the operation of LGMD2i became a

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[15] UCC: University Computer Center, A private software developer who developed LGMD2.

trainer.

Table 2.4.16: Outline of TOT for the M&E TWG on LGMD2i

Purpose	M&E TWG members become competent trainers of LGMD2i installation & training
Participants	10-14 M&E TWG members
Trainer	LGMD2i developer from UCC JICA Project Team
Venue	Kilimo I conference room
Date	2nd December 2013 and 27th January 2014
Training program	・ Installation of LGMD2i into laptop computers of M&E TWG members ・ Confirmation of basic operation of LGMD2i (almost the same as LGMD2) ・ Relation between data entry form and output (reports). ・ Importance of cross-checking to avoid typing mistakes. ・ Confirmation of necessity of approval by DALDO before LGAs sending data to the central server. ・ Data export to Zip file and submission through E-mail in case of malfunction of internet access in remote areas and other similar circumstances.

4th Year: ARDS-LGMD2/ Web Portal Training

Upon completion of ARDS-LGMD2 which had been developed since December 2014, the M&E TWG planned to carry out training for Region and LGA users in nationwide.   Before that, TOT was provided to the TWG members who were going to be trainers.   Development team of ARDS-LGMD2 from UDSM was the trainer of TOT.   The TWG members learnt about major features and functions of ARDS-LGMD2/ Web Portal, and repeated practice especially on data entry part which LGA officers would mainly use.   It was favorably noted that every functions of ARDS-LGMD2/ Web portal became much simpler than the precious version (LGMD2i) and easy to use.

Table 2.4.17: Outline of TOT for the M&E TWG on ARDS-LGMD2/ Web Portal

Purpose	M&E TWG members become competent trainers of ARDS-LGMD2
Participants	15 M&E TWG members
Trainer	ARDS-LGMD2 developer from UDSM
Venue	Kilimo I conference room
Date	23-25 February 2015
Training program	・ Data entry ・ Output (standard report, submission status) ・ Data analysis (pivot table, data visualizer, map) ・ Contents management (dashboard, news, articles) ・ Role of administrator of web portal

Soon after TOT, the TWG members set User ID and password for all users of region and LGA levels as a preparation of the training.

(2)   Training for Data Use and Analysis (for the M&E TWG and Regional Officers)

The Project has carried out the training for specifically facilitating the data use and analysis, which was conducted independently and separately from the practices of using and analyzing data in the

LGMD2/2i/ARDS-LGMD2 trainings. The training was basically designed to enable participants to extract useful information from the data. It focused on what analytical technique could be applied, and how analytical work be carried out. The training was done as a kind of hands-on style as well.

Meanwhile, the composition of training have had two step approach: first taking a training of trainers (TOT) for the M&E TWG members in order to upgrade and brush up their analysis skills. It was also expected that some of trainees be nominated/assigned as teachers/lecturers for the planned training course to Regional officers. Then, training at the second stage targeted to the Regional officers.

Training of trainers (TOT) for the M&E TWG

TOT has been scheduled twice for the convenience of participants, and carried out on the following days:

[1st training] 25th April: Number of participants; total 7 persons (MAFC 5, MLFD 1, MIT 1)

[2nd training] 30th April: Number of participants; 9 persons (MAFC 2, MLFD 7)

Training for Regional Officers

The training for Regional officers was held in May, following TOT in the previous month. The M&E TWG members who were chosen to be facilitators of the training had a rehearsal just before the training, and made necessary modifications. The outline and the programme of the training is shown in the Table 2.4.18.

Table 2.4.18: Outline and Programme of Training for Regional Officers on Data Use and Analysis

Purpose	Regional officers become conversant with using and analyzing data with Excel
Date	May 22 – May 23, 2014 (2 days)
Venue	Morogoro
Participants	2 officers from each region (either ASDP coordinator, RAA, RLA or who engages actual operation of ARDS/LGMD2i)
Facilitator	M&E TWG members

Day	Subject	Training Materials
Day 1	Briefing: Objectives and schedule of the training	
	MS Excel Basic for beginners	Introduction to beginners who wish to learn how to use data with MS Excel
	Let's use and analyze Data! Basic technique	Textbook for the Training of Data Use and Analysis
	Report Writing Assignment with Data Analysis	
	Checking up the situation of LGMD2i current operation	Reference for the report writing assignment
Day 2	Review for yesterday's training	
	Tips for Graphical Presentation	Introduction to the graphical presentation
	Let's use and analyze Data! Advanced technique	Textbook for the Training of Data Use and Analysis
	Practice: Assignment for data analysis	
	Q&A	

The topics of analytical skills to be trained are summarized below:

- Rank,

- Composition,

- "Per Unit" Value

- Relative change (%)

- Imputation for missing value

- Measuring change over time interval

- Miscellaneous: a manner of handling data with MS Excel, Graphical Presentation

Throughout the training, the "comparison" in analysis was taken up as a common theme, and its importance was emphasized. Moreover, from the practical point of view, this training has been composed in contents combining several basic techniques, *i.e.* "measuring rank", "breaking down into the composition", "seeing as per unit", "checking relative change", and a more advanced technique such as "Imputation for missing value" and "Measuring change over time interval". These could make comparison easy and give clear solution in analysis.

In Day 1 "MS Excel Basic for beginners" provided the basic skills necessary for data use. The second session, "Let's use and analyze Data! (Basic technique)", introduced the variety of analysis: ranking, composition, per unit value, relative change, and annual rate of increase. Regional officers and facilitators examined the results and discussed what could be read from the data.

In Day 2, the varieties of graphical presentation such as bar chart, line graph, pie chart, and pictogram as well as how to use them according to purpose were introduced. In the session of "Let's use and analyze Data! (Advanced technique)", the method of imputation for missing data was explained.

2.4.4. To conduct trainings on data collection methodology, data analysis and reporting for Regions and LGAs

(1) Training on Data Analysis and Report Writing through LGMD2

This training is essential for both Regional and LGA officers to become conversant with using data which are collected through common reporting format. In accordance with the progress of LGMD2 upgrading, the contents of training have been changed.

1st Year to 2nd Year: MS Excel/ LGMD2 Training

In this training, Regional and LGA officers learned about (i) entering ward data into MS Excel and aggregating them into LGA level, (ii) entering LGA data into LGMD2 and submitting to ASLMs through internet, and (iii) analyzing data and preparing reports.

In the 1st year, trainings on MS Excel and LGMD2 were individually conducted in order to enhance the Excel techniques on data entry, consolidation and analysis as well as to facilitate the ARDS

operationalization in each region and LGA. Furthermore, the trainings were provided to not only in Lake Zone Regions but also in the pilot regions.

In the 2nd year, regional officers were supposed to provide technical support to LGA officers; therefore, M&E TWG firstly carried out TOT for Regional officers. Following TOT for Regional officers, the training for LGA officers was immediately carried out.

Table 2.4.19: Outline of Training for Regional and LGA Officers

Participants	Region: RAA, RLA, IT Specialist LGA: Agricultural statistician, M&E officer
Trainer	M&E TWG Members
Target region and period	[1st Year] Morogoro and Dodoma Regions: 20 Feb.-2 Mar. 2012 and 16-20 Apr. 2012 Lake Zone Regions: 20 Feb.-2 Mar. 2012 and 16-20 Apr. 2012 [2nd Year] Southern Highland Regions: 26 Nov.-1 Dec.2012 and 3-11 Dec. 2012 Central. Coast, Southeast Regions: 16-22 May 2013 and 24 May-1 Jun. 2013

The M&E TWG members took the lead in conducting the training. Based on the trainers manual which prepared in TOT, trainers carried out the training by putting emphasis on exercise, taking step-by-step approach starting from basic MS Excel operation, data entry, data consolidation up to data analysis and using a lot of practical exercises so that participants could fully master MS Excel skills. As for LGMD2, trainers provided practical explanations on how to trouble shoot by using examples of .actual cases.

Table 2.4.20: Training Programme for Regional and LGA Officers

Date	Agenda	Trainer	Training text
Day 1	Basic MS Excel operation (incl. the four basic operations of arithmetic) Data entry into MS Excel		MS Excel warm-up
Day 2	Data consolidation (Monthly, Quarterly, Annual) by using formula		Training guide for LGAs
Day 3	Three months data aggregation by using pivot table function Data consolidation (Monthly) by using pivot table function		
Day 4	Data consolidation (Quarterly, Annual) by using pivot table function Three months data aggregation by using pivot table function	M&E TWG members	
Day 5	LGMD2 installation		LGMD2 operation manual
Day 6	Data consolidation and data entry to LGMD2		
Day 7	LGMD2 functions (export data, back up, restore)		
Day 8	Data analysis (graph and chart) Way forward		

3rd Year: LGMD2i Training

In this training, regional and LGA officers learned about (i) entering ward data into LGMD2i, which is an improved version of LGMD2, and aggregating them into LGA level, (ii) entering LGA data into LGMD2i and submitting to regions and ASLMs through internet, and (iii) analyzing data and preparing reports.

The training on LGMD2i was conducted for 21 Regions to which ARDS roll-out had already been done by the 2nd Year of the Project. In March 2014, The TOT on LGMD2i for the Regional officers of the northern 4 Regions (Kilimanjaro, Tanga, Arusha, Manyara) was conducted. Following the TOT, the training on LGMD2i for the LGA officers of 31 LGAs of the 4 regions was held. The training programme is shown in Table 2.4.21.

Table 2.4.21: Programme of Training for 21 Regions in LGMD2i

Day	Subject
Day 1	Objectives and schedule of the training
	Role of LGMD2i
	Installation of LGMD2i
	Overall function of LGMD2i (how to log in, create forms etc.)
	Data entry to LGMD2i (Annual target, Monthly report)
Day 2	Data entry to LGMD2i (Quarterly report, Annual report)
	Synchronization with main server
	Manual forwarding of data
	Exporting data from LGMD2i to Excel, PDF
	Submission status
	Back up procedures, Rebuild, Restore
	Figure Analysis
	Revised VAEO/WAEO format
	Q&A
	Way forward

In the training for 21 regions, LGMD2i was installed on every computer of regional and LGA officers on Day 1. Though the installation of LGMD2i was relatively stable compared to that of LGMD2, there occurred some errors during installation and/or operation in some computers with insufficient security countermeasures. In addition, there were some computers required to be reformatted for successful installation. On the other hand, in the training for the Northern 4 Regions, at the beginning of training, equipment (laptop computer, printer, and stabilizer) for 4 regions and 31 LGAs of 4 regions was distributed respectively. The training was conducted using the distributed laptops on which LGMD2i had been already installed.

Following installation of LGMD2i, the difference between LGMD2i and LGMD2 was explained by the facilitators. One of the biggest features of LGMD2i is that, once ward data are entered on the system, aggregated data of LGA level are automatically produced. In LGMD2 system, LGA officer had to consolidate the data collected from wards on excel sheets, then calculate LGA level data by using excel function such as pivot table before entering the LGA level data into the system. Those processes are no longer required in LGMD2i, thus this improvement was appreciated by many LGA officers who attended the training.

Through the full programs of training, participants entered actual ward data of each LGA into every form of annual target/monthly/quarterly/annual on LGMD2i and confirmed that the ward data were automatically

calculated as aggregated LGA level data. They also learned about figure analysis, how to back up the database, and synchronization. However, synchronization was unsuccessful because of unstable network connection. Based on the errors occurred in the training, the M&E TWG developed users' guide on possible errors, "Problems and Solution".

4th Year: ARDS-LGMD2/ Web Portal Training

In this training, Regional and LGA officers would learn about (i) entering ward data into ARDS-LGMD2, which is an improved version of LGMD2i, and aggregating them into LGA level, (ii) entering LGA data into ARDS-LGMD2 and submitting to regions and ASLMs through internet, and (iii) analyzing data and preparing reports. All Regional and LGA officers who are in charge of ARDS operation in respective region and LGA attended the training. Outline of the training summarizes in Table 2.4.13.

<p align="center">Table 2.4.22: Outline of ARDS-LGMD2/ Web Portal Training</p>

Participants	Regional officers (RAA, RLA) : 25 regions x 2	
	LGA officers (either Agricultural statistician or M&E officer from both Crop section and Livestock section) : 167 LGAs x 2	
Trainer	M&E TWG members	
Period	9-24 March 2015	
Major Training Topics	Day 1	Objectives of the training
		Roles and responsibilities of RS and LGA's on ARDS Operation
		Good practices and experience on ARDS
		Introduction to ARDS Web Portal and main features
	Day 2	Data entry exercise (Annual target, Monthly, Quarterly and Annual forms)
	Day 3	Data editing and deletion
		Data Import and export
		Outputs (Standard reports, Custom reports, Submission status)
	Day 4	Data approval by region
		Data analysis (Graph and chart formulation, pivot table)
		Way forward

ARDS-LGMD2 is a web-based application and allows users to access it through any web browsers without installation of LGMD2/2i application. Thus, all participants liked it and commented much easier to use than the previous version. In addition, internet environment of each training venue was good.

During the training, the TWG members who were working on trainers reported to the development team of UDSM whenever the bugs of ARDS-LGMD2 were found and they were fixed as soon as reported. All participants well understood a meaningful effect of upgrading to the web-based application as bug fixing was reflected in the application in real time.

It was agreed that all LGAs should start entering data on the 3rd quarter of FY 2014/15 into ARDS-LGMD2.

2.4.5. To improve Training guides for LGAs officials, VAEO/WAEO Format & Integrated Data Collection Format based on the ARDS implementation process

(1) Improvement of the VAEO/WAEO Format

VAEO/WAEO Format has been revised throughout the project period. The revision was made from three points of view;

● Responding to comments received during the VAEO/WAEO trainings

● Responding to suggestions from the ARDS review final report submitted in March 2013

● Trimming of the budget for print by reducing number of pages of the format

For the first point, the M&E TWG formed a taskforce for VAEO/WAEO Format improvement and the taskforce compiled a list of comments received and actions to be taken every after the training. Also the taskforce made minor revisions such as miss-spelling.

For the second point, VAEO/WAEO Format was revised in August 2013 based on the suggestion. The revision was made in the following way; the list of crops over 3 and half pages of table 2 "target and implementation of area cultivated and crop production" in monthly format was shortened and only 10 key crops regarding to the food security aspect remained in the table. The list of crops was attached to the formats as an annex. Also, blank rows were added in the table so that LGA could select crops other than the above mentioned 10 crops grown in the respective LGA and customize the table. Furthermore, in order to ensure the uniformity of the monthly format within LGA, it was clearly instructed in the training guide for VAEO/WAEO that LGA should prepare crop list in monthly format before distributing it to extension officers. After this revision, total pages of monthly format were reduced from 8 to 5 pages which made it possible for LGAs to reduce printing cost. The revised format (original version) is shown in Annex 3.5-1.

For the third point, the revision aimed at further reducing number of pages of the format was attempted in February 2015 by adjusting page layout and using smaller font size without any changes of contents in the format. After this revision, total pages of monthly format, quarterly format, and annual format were successfully reduced from 5 to 2 pages, from 4 to 2 pages, and from 11 to 5 pages respectively. The M&E TWG agreed to distribute it to LGAs although way of filling the format is not user friendly. The revised format (page reduction version) is shown in Annex 3.5-2.

Before official distribution of the page reduction version format, it was circulated to LGA officers who were participated in ARDS-LGMD2 training in order to listen to the opinion from LGA level users. Many participants liked the revised format because it contributes reduction of printing cost, however, some participants showed a concern that smaller columns in the revised format would affect the low quality of data collection. On the other hand, some LGAs raised an opinion that they have enough budgets for printing blank formats and no need to reduce pages of the format, hence, they liked to use the original version of the format as they have done so far. Based on these opinions, the Secretariat of the TWG circulated soft copies of both original version and page reduction version of VAEO/WAEO Format to all LGAs and instructed them that they should select, print and distribute either version of the format to extension officers depending

on the budget secured. The circulation was done through e-mail by using the contact list of ARDS web portal users who were registered in the web portal.

(2) Private partnership for printing VAEO/WAEO Format

In FY 2011/12 (1st year) and 2012/13 (2nd year), ACBG and a part of AEBG have not been disbursed to LGAs because of reducing ASDP basket fund. In addition, ASDP1 finished in June 2013 and FY 2013/14 was regarded as a transition period to ASDP2, however, the DADP fund was substantially reduced due to the fact that the bridging fund from DPs was insufficient. Because LGAs highly depend on DADP fund for ARDS operation, reduction of budget makes LGAs difficult to print and distribute blank format to extension officers. Therefore, countermeasures are necessary for smooth ARDS operation in LGAs.

In the 2nd year (2012/13), the M&E TWG and the project team considered about possibility that ASLMs would develop a booklet of blank format which is required for one year (i.e. 12 monthly formats, 4 quarterly formats and one annual format) and distribute to all LGAs as an ARDS tool. However, there was also constraint for ASLMs to secure enough budget for that.

In the 3rd year (2013/14), the project team asked for a quotation of producing booklet at a private printing company and confirmed that the cost of booklet is cheaper than printing format. As for securing budget, the project team proposed to utilize private sponsorship for production of booklet and it was agreed at TWG meeting held on 3rd September 2013. In specific terms, the M&E TWG looks for sponsorship among domestic companies which deal with agricultural materials and implements and raise funds from advertising fees. In order to examine the idea concretely, the project team received a sample booklet which can duplicate by using carbon paper, so that the extension officers can keep copies in their hands after submission of filled-in format to LGA. Also, several pages for putting advertisement were added in the sample booklet.

Furthermore, in order to collect information on potential sponsors, the M&E TWG in collaboration with the project team has started to discuss with the officer in charge of private sector development desk in MAFC since October 2013 and decided that 7 businesses; agricultural machinery, fertilizer, seed, agro-chemical, food processing and print, would be prospective sponsorships. The M&E TWG requested ACT (Agricultural Council of Tanzania) for cooperation and held a meeting with major companies under ACT in order to explain about the idea of printing and delivery of booklets in June 2014. The companies which attended the meeting requested for more detail procedures to the TWG so that they could start to consider the possibility of contribution. Then the project team prepared a concept note which clearly indicated the expected number of sponsors, amount of contributions, and number of beneficiaries (i.e. extension officers and farmers). Finally, however, the TWG couldn't have the understanding and cooperation of private companies and gave up utilizing private sponsorship.

In the 4th year (2014/15), the secretariat of TWG reconsidered utilizing ASLMs budget for developing the booklet of blank format because it would be more appropriate in view of the sustainability. Also if the TWG order to governmental printing agency; Ukulima wa Kisasa for printing the booklet, the cost would be cheaper than the private printing company.

On the other hand, since securing ASLMs budget takes a certain time, it was agreed that the project team shared the cost of developing blank format for six months from October 2014 to March 2015 and the ASLMs should produce the booklet of blank format for one year from April 2015 to March 2016. MAFC discussed with TSMP (Tanzania Statistics Master Plan) to divert the money from the budget for TSMP, however, in February 2015 it was reported that the budget was not secured.

As a result of various trials mentioned above, the M&E TWG concluded that encouraging LGAs own efforts to print blank format would be the most appropriate approach with due regard to the sustainability of ARDS operation. Then, the TWG invited DAICOs and DLFOs to a sensitization workshop in March 2015 for creating awareness of the ARDS and data utilization as well as request of securing sufficient budget to ARDS operation.

As mentioned in the section 2.4.5 (1), the TWG developed the page reduction version of VAEO/WAEO Format for contributing to reduce the cost of print formats. In March 2015, it was distributed to all LGAs together with the original version of the format which were utilized so far and an instruction which clearly said LGAs should print and distribute either version of the format depending on their budget.

In May 2015, the project team studied on the status of blank format distribution through telephone and found that all LGAs had distributed it to extension officers.

2.4.6. To improve LGMD2 and its manual based on the ARDS implementation process

(1) Background of Development of Data Collection, Transmit System and Analysis Application

As illustrated in Section 2.2.2 (1), ARDS data collection starts at field level by VAEOs and WAEOs. The latter, after consolidating the Village data into Ward data, submits to LGAs. LGA in return enter data into the ARDS computer application, and transmit it to the center via region. The computer application (software), LGMD2, which allows LGAs to enter, assemble, transmit, report, and analyze ARDS data was developed in the Phase 1 of the Project. Although the LGMD2 was developed to effectively serve ARDS, it had been upgraded almost continuously because of challenges encountered during the national roll-out and actual operation. This process of upgrading is already described in Section 2.2.2 (2) above. However, with some risks of repetitions, more details of the process are reported below as background of the development of the final system, ARDS-LGMD2/ Web portal. The LGMD2 had two major issues observed during the national roll-out: (1) data transmission was problematic due to poor condition of internet in Tanzania and the entire transmission process had to be restarted from the beginning whenever the synchronization between a computer and the main-server is disrupted, resulting in the data transmission never completing; (2) the ARDS at the lowest level collected data at the village-/ward-level with the VAEO/WAEO Format, however, the LGMD2 only collected data at the LGA-level, which required LGA officers to summarize the data using MS Excel, which the majority of the LGA officers found difficult to do and time consuming. In order to tackle these problems, immediately at the start of Phase 2, the Project set to work on improving the LGMD2 with the permission of the TWG. The revised version, LGMD2i ("i" stands for "improved") which internalized the function of data integration by Excel in the application itself, was nationally rolled out from

the second half of the 3rd year.

Despite the deployment of LGMD2i, challenges still continued in such aspects as unstable data transmission due to limited internet connection and frequent changes of basic information like region/ LGA names or animal disease names. In order to address these challenges, the Project decided further improvement of the application which resulted in ARDS-LGMD2. In parallel, it was also agreed to develop an ARDS specific web portal for data presentation.

These development work continued until the 4th year of this Project and ARDS-LGMD2/ Web portal was finally developed which integrates all functions of data entry, data transmission, data analysis, monitoring data collection and data presentation. This upgraded ARDS application was introduced to all LGAs and Regions in March 2015. The ARDS Web Portal has now become a single window to access ARDS data for all users. This application has improved the data transmission function greatly and eliminated all troubles caused by program installation to users' individual computers.

Figure 2.4.3 shows the sequence of development activities of the application and Table 2.4.23 shows summary of characteristics of each developed application and their challenges. The figure and table are duplicates of Figure 2.2.3 and Table 2.2.2, respectively.

	2008	2009	2010	2011	2012	2013	2014	2015
LGMD2								
LGMD2i								
ARDS–LGMD2								
ARDS–Web Portal								
Web Portal integrated with ARDS–LGMD2 Module								
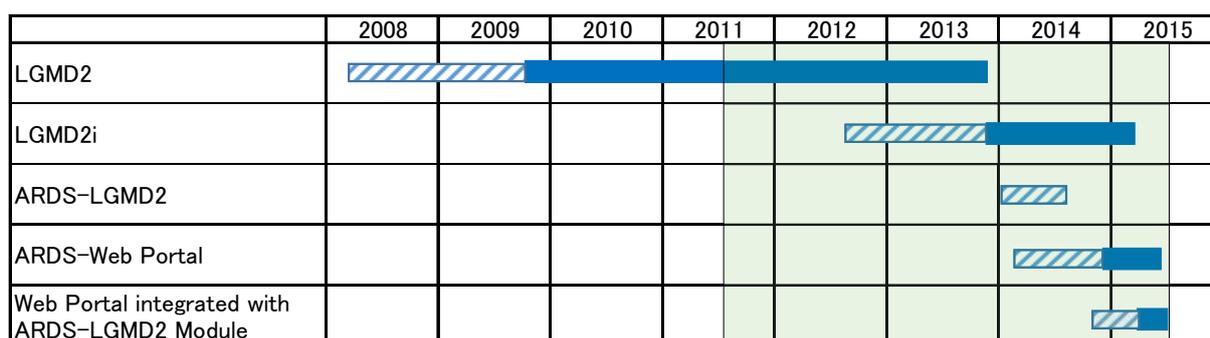
※ Shaded part is development phase, solid line is operation phase.
※※ Period of the Project is from August 2011 through June 2015.

Figure 2.4.3 Sequence of Application Development (duplicate of Figure 2.2.3)

Table 2.4.23: Summary of ARDS Applications (duplicate of Table 2.2.2)

Name of Application (Developer)	Design & Operation	Issues	Remarks
LGMD2 (UCC[16])	・ Collect data at LGA level. ・ Village/ward data filled in manually by the VAEO/WAEOs and sent as hardcopies to LGAs. ・ LGA officers need to enter data into LGMD2 after summarize village/ ward level data using MS Excel	・ LGA officers need to enter twice both MS Excel and LGMD2, it is time consuming. ・ MS Excel usage was cumbersome, difficult to use, and error prone. ・ Synchronization of data did not perform as promised.	Currently not supported

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16 UCC: University of Dar es Salaam Computing Center

Name of Application (Developer)	Design & Operation	Issues	Remarks
	· Output reports are only integrated reports (quarter and annual)		
LGMD2i (UCC)	· LGMD2i ("i" stands for improved) was developed to alleviate the issues with using Excel. · Village/ward data is still filled out manually by the VAEO/WAEOs and hardcopies sent to the LGAs. · The LGAs enter this village/ward level data directly into LGMD2i. The application automatically summarizes the data to LGA level and the Integrated Reports. · Data is being synchronized both via the Internet and via "zipped files". · Outputs reports are summarized LGA/ Region reports (Monthly, Quarterly and Annual) in addition to integrated reports.	· LGMD2i cannot read data from LGMD2. · Synchronization via Internet is still not functioning effectively in areas with poor Internet connections. · Error messages from the application are uninformative. · Aggregation of data is overly simplistic. · No error-checking support from the application. · Geographical/administrative units (wards, LGAs, regions) and lookup tables cannot be updated by the M&E TWG. Updates to the tables would require hiring application developers to update the database.	Currently not supported (until Mar. 2015)
ARDS-LGMD2 (UCC)	· The successor to LGMD2i. Renamed so that it is better aligned with ARDS and the ASDP M&E. · Major revisions include better aggregation and estimation of missing ward data, more informative messages from synchronization, improved synchronization, ability to update and add new geographical locations / administrative units, ability to update lookup tables for various data, such as animal diseases, etc.	· Poor integration with LGMD2i data. · Many bugs. · Synchronization, was improved, is still not robust enough. It is still unclear to the user why synchronization may fail and at which point. In some conditions, only some of the data may fail to synchronize.	Testing has been done; however, reluctant to distribute to users due to the poor condition of the application.
ARDS Web Portal (UDSM)	· This web portal was designed as a front-end for national and regional level users to view and do analysis on the ARDS data from the ARDS-LGMD2 database · Automatically connects to the ARDS-LGMD2 database on a routine basis and transfers the necessary data.	· Issues mentioned in the ARDS Web Portal with ARDS-LGMD2 Integration below.	The ARDS Web Portal was published at the end of 2014, but due to amendment of ARDS Web portal design which the portal accommodate the ARDS-LGMD2 as part of the Web portal module, publish of the Web portal was postponed.
ARDS Web Portal with ARDS-LGMD2	· Original intention to continue the development and improvement of the ARDS-LGMD2 developed by UCC.	· The ARDS Web Portal is first version release of the software, and as such still has some bugs which need to be fixed. However, the foundation of the	UCC were invited to the tender, but they decided not to submit a bid and UDSM won the tender. Unnecessary to distribute

Name of Application (Developer)	Design & Operation	Issues	Remarks
Integration (UDSM[17])	· Recommendation by UDSM to use the existing platform that the ARDS Web Portal is built on to upgrade the ARDS-LGMD2. · The web portal can be used by the LGA officers to enter the ARDS village/ward/LGA-level data. · LGA officers can enter data in Offline mode, and Web portal transmit entered data when internet connection is available. · The reporting and analysis functions of the web portal were expanded to accommodate LGA officers reporting and analysis requirements. · Available to view access logs, number of downloads · Improvement of updating name of administrative units · Improvement of updating lookup tables · M&E TWG can update administrative unit, look up tables and various functions by themselves	software is good and provides better future potential than the previous LGMD2i application. · The data entry needs further improvement; in particular the auto-growing tables and makes data entry a bit confusing to users. · The estimation of missing ward data and aggregation to the LGA level has some bugs. · Interface for the data analysis is a bit confusing to users · MAFC might need to have the necessary infrastructure to adequately host the ARDS Web Portal in the future (network bandwidth, AC for server room and more reliable power). This is expected to improve, but not certain when. · Find budget for yearly maintenance cost to developer · Currently communication between users and M&E TWG is e-mail or telephone only, better to have interactive communication board module in the Web portal to share all information among users easily.	installer to LGAs when update/ improve application. The ARDS Web Portal has published March 2015, currently registered users are 799 as of 24th May 2015.

(2) Development of ARDS Web Portal

In the following, the development of ARDS-LGMD2/ Web portal which is the final application of the Project is reported.

<u>Overview</u>

In March 2015, ARDS Web Portal was published in Tanzania except Zanzibar and all LGAs are using it to enter data online and to produce report and analyze data[18].

ARDS Web Portal is primarily intended to provide functions where ARDS data from the ARDS-LGMD2 database can be viewed, analyzed, and downloaded for further processing. Users can easily access and download the data without the need to install an application, such as the LGMD2i.

Currently, the functions of the ARDS-LGMD2 which includes data entry module have been integrated into the ARDS Web Portal to make more useful and convenient for users based on discussion in the M&E

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17 UDSM: Department of Computer Science and Engineering College of Information and Communication Technologies, University of Dar es Salaam

18 Official operation starts from March 2015, but M&E TWG announced to enter ARDS data from January 2015 if data has not submit yet, and requested to District to produce and submit the third quarter integrated report using ARDS Web portal

TWG.[19]

The ARDS Web Portal is a web-based application accessible through the Internet by using web browser software. Users access all functions provided by the portal, such as data entry or data analysis, through user friendly and intuitive interactive controls of the graphical user interface.

The ARDS Web Portal architecture and functions are implemented as separate modules. Due to the modular design of web portal, it can be extended with additional modules. These modules can live side by side with the core modules of ARDS Web Portal. This is a powerful feature as it makes it possible to extend the portal with extra functionality when needed.

Major (including expected) functions of ARDS Web Portal are as shown below. Some of them are already installed in the application, while others are desired to be loaded in the future.

- Data entry (done)

- Data submission status check (done)

- Feedback from regions to LGAs regarding submitted data (done)

- Production of reports (done)

- Data analysis including the ability to produce charts and graphs (done)

- Dashboard/News (done)

- Content Management System (CMS) for the home page and other maintenance tools. (done)

- System usage statistics (page visit, report download and data download) (done)

- Input validation (Installed, but the upper and lower bound need to be specified.)

- Missing data estimation (installed, but trigger level of submission rate needs to be specified.)

- Auto-reply to LGAs' report submission (to be loaded in the future)

- Message board among users as well as users and administrator (to be loaded in the future)

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19 There were many case reported that PC installed LGMD2i broken or stolen from LGA. In this case, it was necessary to install LGMD2i again into available PC. When start to operate ARDS data collection activity using ARDS Web portal, those re-installation is no longer necessary.

Figure 2.4.4: Screenshots of ARDS Web Portal （Data entry screen）
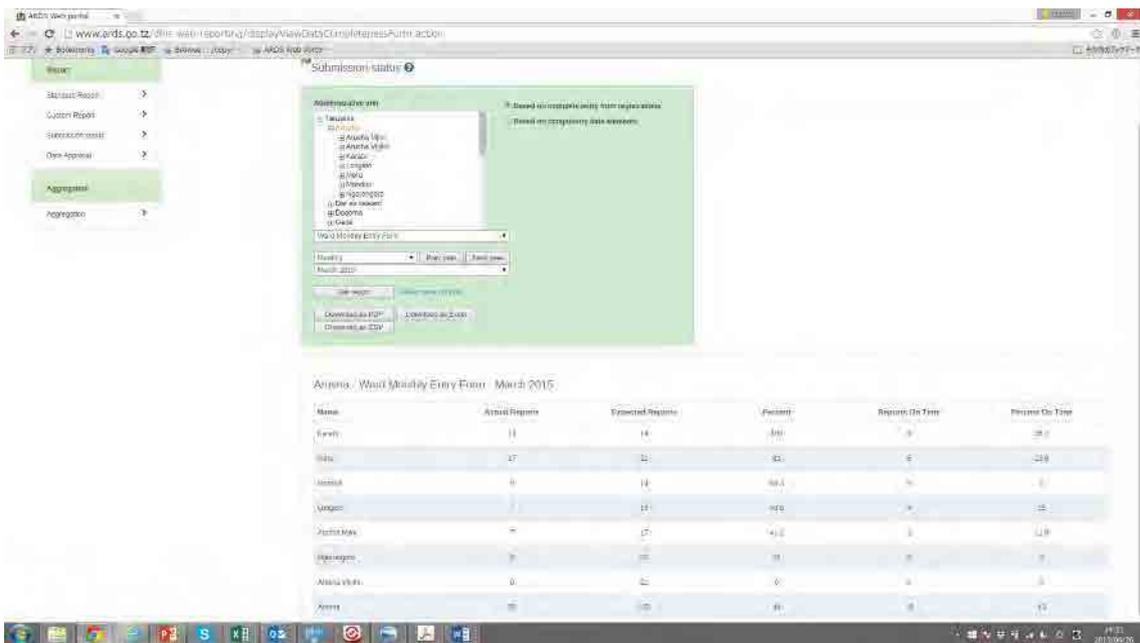
Figure 2.4.5: Screenshots of ARDS Web Portal (Data submission report screen)
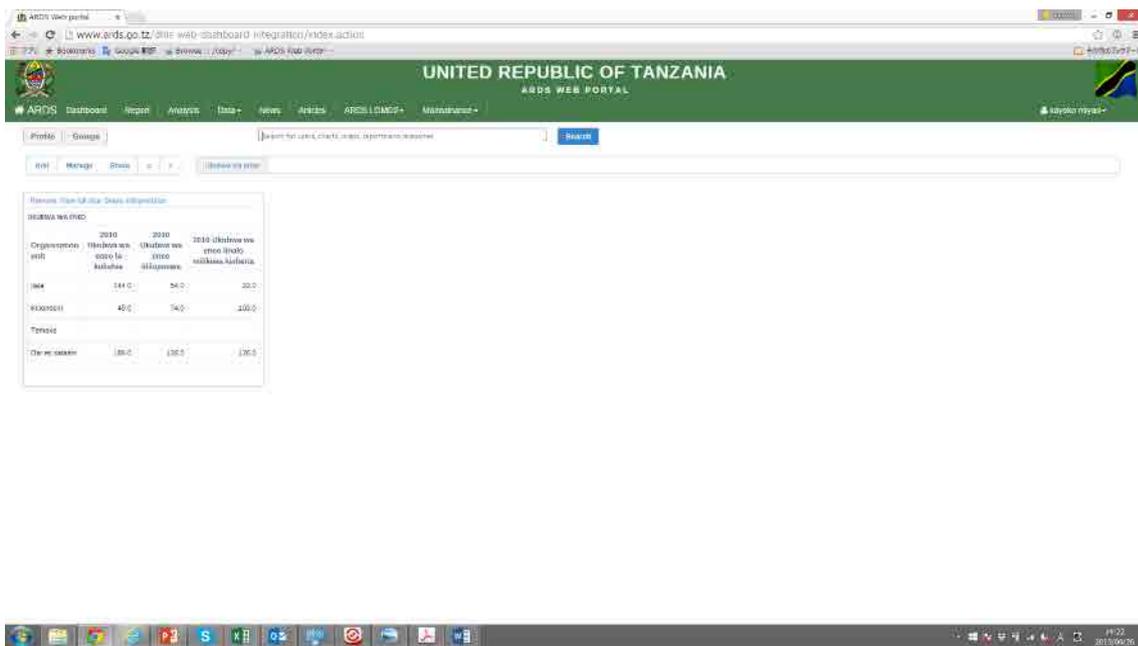
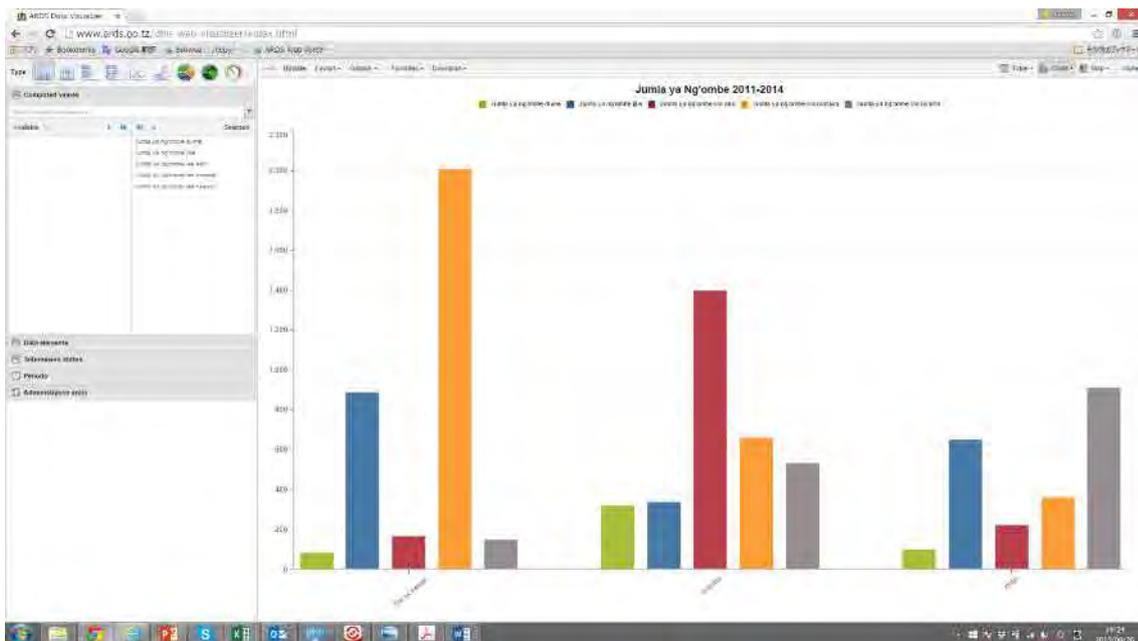Figure 2.4.6: Screenshots of ARDS Web Portal (Dashboard)

Figure 2.4.7: Screenshots of ARDS Web Portal (Data visualizer)

Data Flow

The overall flow of ARDS data is already illustrated in Section 2.2.2 (2). Namely data is first collected by VAEOs and WAEOs with the use of the VAEO/WAEO formats. The collected data is submitted after aggregated at ward level (by WAEOs). The officers at LGA, as soon as receiving data from WAEOs, enter data into ARDS-LGMD2/ Web portal. The latter has all necessary functions for ARDS operation including data entry, assembly, analysis, reporting and transmission. In the following, explanation is made with focus

on data flow after the LGA level.

Major data flows in the ARDS Web Portal are summarized in Figure 2.4.5. ARDS data is transmitted and accumulated in the central server, and those accumulated data is accessed by each module in the web portal for further utilization such as view, analysis and calculation.

1) LGA enter data and submit (transmit) to central server

2) Region assessed submitted data by LGA,

3) Region comment back to LGA via central server, if necessary

4) LGA receive comment from Region to synchronize

5) LGA re-submit data after correcting data according to comment from Region

6) Region approve submitted data

7) Users utilize accumulated ARDS data by access to the ARDS Web portal
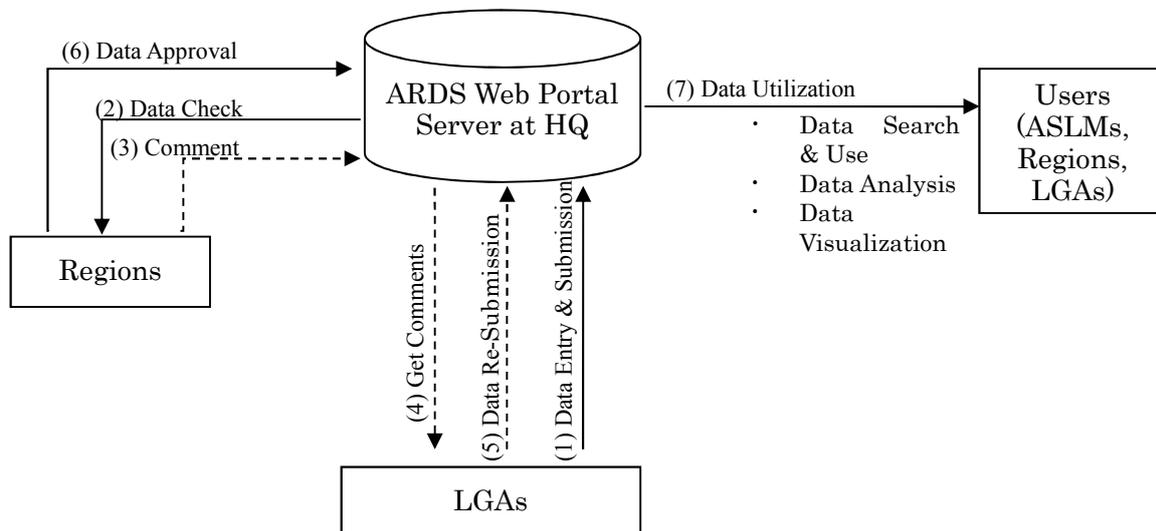
Figure 2.4.8: Diagram of Data Flow in ARDS-LGMD2 Integrated with the ARDS Portal

<u>User Levels</u>

Five levels of user groups are prepared in the web portal according to necessary functions, such as "Data Approval" for regional users, "Data Entry" for LGA users, and super user (administrator) for the central IT staff for operating the web portal[20]. In the M&E TWG, accessible functions by Web portal is discussed and based on the results of the discussion, Web portal administrator control accessible functions. Following are the user levels in the web portal;

● LGA level

● Region level

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20 ARDS Web portal administrator is IT staff assigned from M&E TWG and administrator can access all functions in the Web portal

- National level

- Super user level (administrator)

- Others

<u>Utilization of ARDS Web Portal</u>

In March 2015, the ARDS Web Portal was officially published to all LGAs, Regions and ASLMs and the total number of users is currently 799[21]. Figure 2.4.6 shows submission rate change from July 2014 to April 2015[22].

The submission rate rose dramatically since January 2015. This is because of 1) M&E TWG strengthen the monitoring system of data submission and 2) TWG announced to all users to begin entering data into the web portal starting from January 2015 surveyed data.
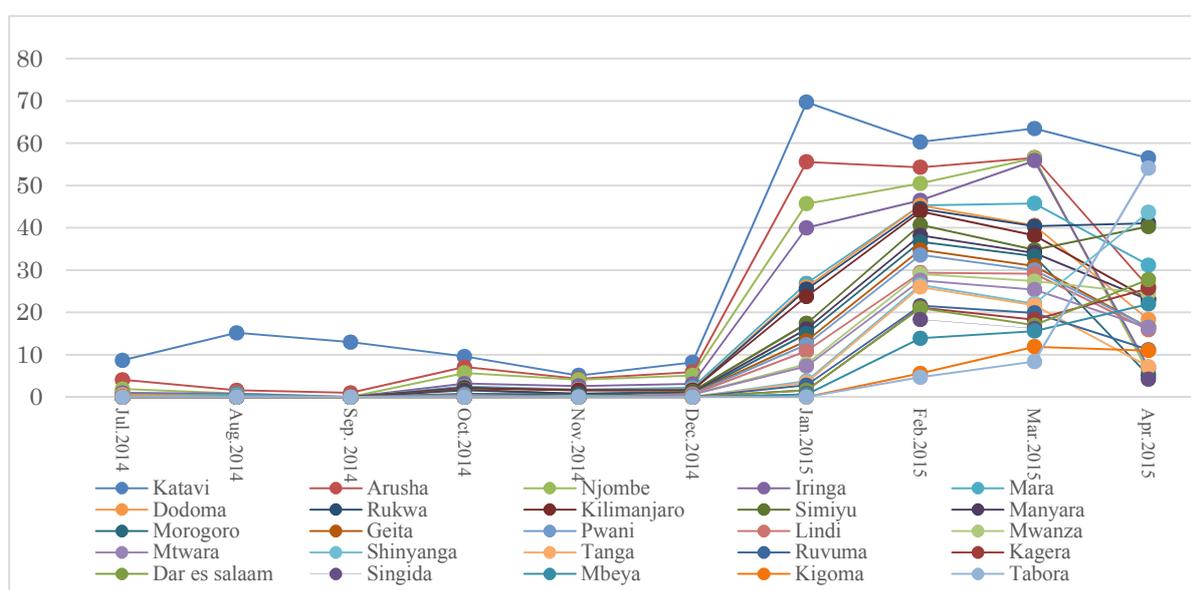
Figure 2.4.9: Ward Monthly Report Submission Rate by Region: Jul 2014 to Apr. 2015 (%)

2.4.7. To support to hold M&E TWG meetings

In total, M&E TWG meeting was held for 40 times from 1st year to 4th year of the Project. The Project assisted the TWG Secretariat in arranging the meeting, setting agenda and preparing the minutes.

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21 As of 24 May 2015

22 April 2015 data submission rate is decreased, this might be due to collection of the submission rate on 24th May immediately after deadline (every month on 20th is deadline). Currently, there is a tendency that many of Districts to submit data past the deadline, and this is one of issues of the ARDS operation.

Table 2.4.24: List of the M&E TWG Meetings

<1st year: 11 times>

FY	Date	Main Discussion
2011/12	19th Aug. 2011	Starting implementation of the second phase of project, Status of ASDP Performance Report 2010/11
	30th Aug. 2011	The ARDS roll-out plan for 2011/12, Status of ASDP Performance Report 2010/11
	13th Sep. 2011	TOT for ASLMs and Regional officers, TOR of the 6th JIR, Status of ASDP Performance Report 2010/11
	11th Oct. 2011	Feedback of the TOT for ASLMs/RS officers, Preparation for the ARDS roll-out in Lake Zone Regions, Progress of LGMD2 improvement, Status of ASDP Performance Report 2010/11
	19th Oct. 2011	Preparation for the ARDS roll-out in Lake Zone Regions, Preparation for backstopping in Morogoro and Dodoma, Progress of LGMD2 improvement, Status of ASDP Performance Report 2010/11
	18th Oct. 2011	Preparation for the roll-out in the Lake Zone, Preparation for backstopping, Feedback of the technical workshop for improving Agricultural statistics, Brief of 6th JIR
	25th Nov. 2011	Share experiences of the roll-out in 3 regions in Lake Zone, Preparation of the roll-out in 2 regions, Preparation for backstopping in the pilot regions, Letter to inform LGAs of the ARDS roll-out, Training on the ARDS at MATI/LITI
	27th Jan. 2012	Share experiences of the roll-out in 2 regions in Lake Zone, Share experiences of backstopping in the pilot regions, Technical training of regional IT specialist on LGMD2, Preparation for MS Excel and LGMD2 training
	9th Mar. 2012	Report on MS Excel training, Preparation for LGMD2 training, TOR of FY 2012/13, Data collection of short-listed indicators, Review of the ARDS roll-out progress
	17th May 2012	Issued cropped up during LGMD2 and New VAEO/WAEO training, Progress of the ASDP Performance Report 2011/12, Review of the ARDS roll-out plan, the ARDS sensitization for 10 regions, Preparation of 7th JIR M&E report
	7th Jun. 2012	Progress of the ASDP Performance Report 2011/12, Feedback of ARDS backstopping in the pilot region, and ARDS sensitization for 10 regions.

<2nd Year: 10 times>

FY	Date	Main Discussion
2012/13	24th Aug. 2012	Preparation of the ARDS Training in Southern Highland Regions in September, Improvement of LGMD2, Progress of the ASDP Performance Report 2011/12
	9th Oct. 2012	Report of the ARDS training in Southern Highland Regions, Improvement of LGMD2, Preparation of the Backstopping workshop in Lake Zone Regions, Follow-up of the implementation status of ARDS, Progress of the ASDP Performance Report 2011/12, Share of the revised Work Plan in the year 2012/13, ARDS Review, Selection of the participants of the counterpart training in Japan
	17th Oct. 2012	Preparation of the Backstopping workshop in Lake Zone Regions, Finalization of the 2012/13 Work Plan, Preparation of a draft of Newsletter
	13th Nov. 2012	Report of the Backstopping workshop in Lake Zone Regions, Preparation of the Excel & LGMD2 training in Southern Highland Regions, Progress of the ASDP Performance Report 2011/12ASDP, AOB (1)training of the agricultural statistics development held in the United States 2) Newsletter 3) Discussion on improvement of LGMD with JICA/PMO-RALG)
	18th Dec. 2012	Report of the Excel & LGMD2 training in Southern Highland Regions, Improvement of LGMD, Network for LGMD2, Follow-up the regions that have been already rolled out ARDS, Preparation of ARDS rolling out in the next year, ARDS Operation Guide

FY	Date		Main Discussion
	18th Jan. 2013		Preparation of ARDS training in Tabora, Singida, Lindi, Mtwara, Pwani and Dar es Salaam regions, Measures to be taken for the ARDS Review recommendations, Follow-up of the operation situations of ARDS, Preparation of the ARDS Operation Guide, Progress of the improvement of LGMD2, Network for LGMD2, Progress of the ASDP Performance Report 2011/12ASDP, Newsletter, Trends in agricultural statistics development in Tanzania
	26th Feb. 2013		Budget for M&E TWG activities in the year 2012/13, Brief report of the ARDS training in Mtwara, Lindi, Tabora and Singida regions, Progress of the improvement of LGMD2
	19th Mar. 2013		Report of ARDS training in Mtwara, Lindi, Tabora, Singida, Pwani and Dar es Salaam regions, Preparation of the Backstopping workshop in Southern Highland Regions, Follow-up of the operation situations of ARDS, Progress of the improvement of LGMD2, Outlook of M&ETWG expenditure of the year2012/13, Preparation of Newsletter and ARDS leaflet, Presentation of the Counterpart Training in Japan
	18th Apr. 2013		Report of the Backstopping workshop in Southern Highland Regions, Examination of ARDS Review recommendations, Progress of the improvement of LGMD2, Preparation of the Excel & LGMD2 training, Progress of the ASDP Performance Report 2011/12, Preparation of the implementation of 8th JIR
	29th Apr. 2013		Preparation of the implementation of 8th JIR

<3rd year: 7 times>

FY	Date		Main Discussion
2013/14	3rd Sep. 2013		2013/14 Work Plan of M&E TWG, ARDS roll-out in the Northern 4 regions, Training on LGMD2i, ARDS review, Progress of the ASDP Performance Report 2012/13, ARDS monitoring, Printing of VAEO/WAEO format
	25th Oct. 2013		2013/14 Work Plan of M&E TWG, ARDS operation status, ARDS roll-out in the Northern 4 regions, Improvement of LGMD2i, Backstopping workshop in the 6 Regions (Central, Southern and Coastal Regions)
	28th Nov. 2013		Preparation for the LGMD2i (+Excel) training, Reports on ARDS Backstopping in the 6 Regions (Central, Southern, and Coastal Regions), LGMD2i next improvement, LGMD2i Server, LGMD2i access from MAFC, Presentation to MAFC PS and Directors, PMO-RALG
	22nd Jan. 2014		Reports on ARDS Backstopping in the 6 Regions (Central, Southern, and Coastal), Report on the LGMD2i (+Excel) training to 6 Regions (Morogoro, Pwani, DSM, Tabora, Singida, Dodoma), Preparation of the LGMD2i (+ MS Excel) training to 13 Regions (Mbeya, Katavi, Rukwa, Iringa, Njombe, Ruvuma, Mwanza, Geita, Simiyu, Kagera, Kigoma, Mara, Shinyanga, Lindi, Mtwara), LGMD2i improvement, ARDS operation, ARDS operation sensitization, Preparation of ASDP Performance Report 2012/13
	11th Apr. 2014		Reports on LGMD2i Training in the Northern 4 regions (Arusha, Kilimanjaro, Manyara, and Tanga), ARDS institutionalization & formalization, LGMD2i improvement, Preparation of ASDP Performance Report 2012/13, Training of Data Use and Analysis
	2nd May 2014		ARDS operation status, ARDS formalization (presentation at MLFD & PMO-RALG), ARDS Authorization letter from PMO-RALG, ARDS Institutionalization, Training of Data Use and Analysis, Printing of VAEO/WAEO Format, LGMD2i improvement (look up tables)
	12th Jun. 2014		Report on Training of LGAs and Regions on ARDS Data Analysis and Utilization, ARDS Operation Status of the 3rd Quarter, Formalization of ARDS and LGMD2i to ASLMs Management (MIT, MLFD, PMO-RALG) and Zanzibar, Institutionalization of ARDS Operation, LGMD2i Improvement so far, Preparation of Newsletter, Annual Work Plan for FY 2014/15, Progress of ASDP Performance Report 2012/13, Private Sponsorship of VAEO/WAEO Format Printing, Comments for JICA Project Progress Report, Demonstration of ARDS Web Portal by UDSM

<4th year: 12 times>

Year	Date	Main Discussion
2014/15	11th Sep. 2014	Identify and examine how to deal with ARDS operation challenges, Print VAEO/WAEO Format, Feedback from UDSM presentation on web portal development
	21st Oct. 2014	Print VAEO/WAEO format with a private sponsorship, Improve ARDS-LGMD2 Preparation for the backstopping training in Northern regions
	15th Dec. 2014	Print VAEO/WAEO Format, Report from the field visit to Northern regions, Prepare ASDP M&E TWG annual work plan for 2014/15, Report on the monitoring of ARDS operation, Improve ARDS-LGMD2, Develop ARDS Web portal
	23rd Jan. 2015	Presentation of the Web portal by UDSM, Establish ARDS Support Team, Identify challenges for ARDS operation, Monitor ARDS operation, Print VAEO/WAEO Format
	17th Feb. 2015	Brief explanation of proceedings of formulating ASDP2 by ASDP2 consultants, Prepare the roll out of ARDS-LGMD2/ Web Portal, Establish the monitoring structure on ARDS operation status, JICA final evaluation, AOB (Share the proceeding of preparing Contact List, Share the information of lectures on VAEO/WAEO Format in training institutions in MAFC and MLFD, Request to TSMP for budgeting for printing VAEO/WAEO Format), Introduction of ARDS to Min. of Agriculture in Zanzibar
	25th Feb. 2015	Prepare the roll out of ARDS Web Portal
	5th and 6th Mar. 2015	Finalize the programme and presentations of Sensitization Conference and ARDS-LGMD2/ARDS Web Portal Training
	2nd Apr. 2015	Reports from facilitator groups of Sensitization Conference and ARDS-LGMD2/ARDS Web Portal Training, Share the proceeding of modifying bugs on ARDS-LGMD2/ARDS Web Portal by UDSM
	28th Apr. 2015	Establish the operational structure on ARDS Web Portal in central, Transfer of data from old server (LGMD2i) to new server (ARDS-LGMD2), Brain storming of activities which must be done until the end of the Project in terms of sustainability, Translation of ARDS Operation Guide in Swahili, Prepare the newsletter, Dissemination of ARDS to Min. of Agriculture in Zanzibar, Provide User ID for login ARDS Web Portal, Distribute procured laptop computers
	15th May 2015	Establish the management structure of ARDS-LGMD2/ARDS Web Portal (modification of bugs)
	18th Jun. 2015	Report on monitoring the submission status, Report on bug fixing of ARDS-LGMD2, Proposal for updating ARDS Web Portal, Refresher course of ARDS Web Portal for TWG members, Setting up a task team for management, Preparation of newsletter, Swahili translation of ARDS Operation Guide

2.5. Activities 3: Coordination of ASDP M&E to implement ARDS is enhanced

2.5.1. To report the achievement of the ARDS activities in the ASDP related meeting such as Committee of ASLMs Directors and Expanded ASDP Steering Committee

The Project frequently attended various meetings of ASDP or other related gatherings throughout the Project period where relevant information was eagerly collected and the progress of the ARDS roll-out and the deployment were shared. Major meetings and gatherings are summarized below.

Table 2.5.1 List of ASDP- related meetings which the Project attended

Meeting	Date	Major agenda
【1st Year】August 2011 ～ June 2012		
AWG [23] M&E Special Meeting	4th Sep.	Challenge of ASDP and Sample Survey. Feedback of the ARDS questionnaire format.
AWG Meeting	19th Jan. 24th Jan.	Coordination for Agricultural Sector. Indicator of PAF. Funding for ASDP. ASR/PER Report , etc.
ASDP JIR[24] Meeting	27th Nov. 25th May	Report on ASDP JIR results.
ASCG[25] Meeting	8th Feb. 19th Apr.	Report of ASR/PER 2010/11. Review of ASDS. Budget Priority for 2012/13. Coordination among stake holders on ASDP2. 7th Agriculture Sector JIR.
Special Workshop for ASDP Basket Fund Committee[26]	20th Apr.	Purpose for Basket Fund on ASDP2. Support Activities.
[2nd Year] August 2012 – June 2013		
Workshop on Management Information System by PMO-RALG	29th Aug.	Preparation of Guideline to improve of implementation status of database at LGA level.
Meetings on ASDP2 Coordination	24th Oct. 18th Jan.	Met with consultants and provided information from the Project. Presentation on ASDP2 Coordination and Functions that the Government of Tanzania assumes.
Meeting on LGMD with PMO-RALG & MAFC	8th Nov.	Share information on the trends in agricultural sector.
ASDP Basket Fund Steering Committee Meeting	25th Feb. 8th Mar.	Presentation of the Progress Report of the second quarter of the year of 2012/13. Report on the carry-over fund from the fiscal year of 2010/11& 2011/12. Update on the situations of budget disbursement of ASDP in the fiscal year 2012/13. Discussion on the coordination of ASDP2. Presentation on the draft of ASDS Review. Examination of the Concept Note of ASDP2 Basket Fund management.
Meeting on ReSAKSS[27]	27th Mar. 26th Apr.	Discuss on the future policy of SAKSS.
ASCG Meeting	30th Apr	Discussion on the implementation of the 8th JIR.
[3rd Year] August 2013 – June 2014		

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[23] AWG (Agricultural Working Group): Group of DPs which supports Agricultural Sector.

[24] JIR (Joint Implementation Review): Joint review on the proceedings of ASDP conducted by GoT and DPs.

25 ASCG (Agricultural Sector Consultative Group): Policy consultation group which privates and NGOs participate in additional to GoT and DPs.

26 BFSC (Basket Fund Steering Committee): Joint committee consisting of GoT and DPs which manage ASDP Basket Fund.

27 ReSAKSS: Regional Strategic Analysis and Knowledge Support System, This is the system to assume the monitoring aspects of CAADP, covering all African countries participating in CAADP.

Meeting	Date	Major agenda
ASCG Meeting	27th Sep. 17th Jan.	Mechanism for Effective Agriculture Sector Coordination. Agricultural sector priority for the FY 2014/15. Draft ASDP2 programme document.
ASDP BFSC Meeting	24th Oct. 10th Jan. 15th May	Presentation of the Progress Report of the fourth quarter of the year of 2012/13. Report on the carry-over fund from the fiscal year of 2011/12 & 2012/13. Presentation of the Progress Report of the second & third quarter of the year of 2013/14. Report on the carry-over fund from the fiscal year of 2011/12 & 2012/13. Presentation on Interim Financial Report. Presentation on ASDP Implementation Completion Report.
World Bank Preparation Mission for Support to ASDP2	28th Oct.	Technical assessment of the proposed second Agricultural Sector Development Project (ASDP2).
Meetings on ReSAKSS (JSR)	31st Mar. 16th -17th May	Outline of JSR (Joint Sector Review). Selection of indicators: based on 20 indicators defined for CAADP, to be selected in the context of Tanzanian current situation. JSR to be launched after the formulation of ASDP2. Joint Sector Review Framework in ASDP2. Discussion on JSR Assessment Report.

2.5.2. To create awareness on the activities of ARDS for administrative officials in Regions and LGAs

Activities of this field are roughly categorized in the following: 1) Explanation/directive activities in meetings where Regional and LGA officials attend, 2) Dissemination/ promotion of ARDS by newsletter and pamphlet.

(1) Explanation/ directive activities in meetings where Regional and LGA officials attend

The first attempt was made in the 1st year of the Project, March 2012. MAFC organized a workshop inviting high level officers from all LGAs[28]. A member of the M&E TWG attended the workshop and planned to explain the ARDS operation to the participants. However because major guests of the workshop arrive late the time allocated to the ARDS explanation was canceled. Another attempt was made in June in the same year, where all regional and district commissioners were invited[29]. This time ARDS was successfully introduced and promoted on its recognition.

In the 2nd year, presentation was made in a workshop organized by PMO-RALG where all regional ASDP coordinators were invited in May 2013. There not only introduction of ARDS but also request of properly operationalization were made to all participants.

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28 This workshop was organized by MAFC, and attended by the Minister, Permanent Secretary, District Executive Directors, and District Agricultural and Livestock Development Officers of all LGAs.
29 Regional and District Commissioners: They are appointed by the President, entrusted for general overseeing of the area. Their duties are parallel to the ordinal executive branch of the government, characterized more by political motivation. They are influential in various aspects of the local public decision making and execution.

In the 3rd year, due to the focus of the Project on the promotion at national level (Presentation to the management of ASLMs), promotion to regions and LGAs was not done.

In the 4th year, the promotion was actively conducted. For the LGA level, three occasions were arranged: 1 time for DED (September 2014), 2 times for DAICO/DLFO (October 2014 and March 2015) and 1 time for regional ASDP Coordinator (April 2015).

(6) Newsletter

It was recognized that some measures should be taken to disseminate widely the mechanism and effects of ARDS so as to enhance ARDS's proper operation and data utilization, as its national roll-out was expanding. The M&E TWG together with the Project team began preparing a newsletter in the second year (October 2012). Major activities in this respect are as follows:

Table 2.5.2: Summary of newsletter preparation and distribution

Basic principles	To present by both English and Ki-Swahili
	To report major activities of the M&E TWG for a half-year period
	To make use of emails and MAFC's website for distribution
[2nd Year]	
Content	· Introduction
	· Performance of M&E TWG in 2011/12 (Revision of M&E framework, Preparation for ASDP performance report 2010/11, Launching ARDS national roll-out etc.)
	· Success stories of ARDS
	· Way forward
Distribution	· Finalized in February 2013.
	· Published 4,000 sets in April and distributed to ASLMs, Regions, LGAs, DPs, etc.
	· Posted on MAFC Website.
[3rd Year]	
Content	· Introduction
	· Outline of ARDS
	· TWG's major activities in 2013/14 (Completion of national roll-out, Preparation of the Operation Guide, Improvement of LGMD2 to 2i, Training of data utilization)
	· Institutionalization of ARDS operation
	· Way forward (Development of web application, Private sponsorship for format printing)
Distribution	· Finalized in June 2014.
	· Published 4,500 sets in June and distributed to Regions and LGAs.
	· Distributed at Nane nane festival (national agricultural festival) on 8th August.
	· Posted on MAFC Website.
[4th Year]	
Content	· Introduction
	· ARDS Web Portal / ARDS-LGMD2 (the upgraded version of LGMD2i)
	· Major events in 2014/15
	· Way Forward
Distribution	· Finalized in June 2015
	· Published 3,500 sets in June and distributed to Regions and LGAs.
	· Posted on MAFC Website and ARDS Web Portal.

(7)　Pamphlet

In addition to the newsletter, the Project prepared pamphlets with aims of raising awareness of decision makers of LGAs regarding the importance and effectiveness of ARDS.　Major contents of the pamphlet are as follows.

Table 2.5.3: Contents of ARDS pamphlet

Major contents	- Outline of ARDS - Types of data collected by ARDS - Benefits of ARDS - Necessary budget for ARDS operation - Contacts of M&E TWG members

The pamphlet was prepared and finalized in the third year, and despite repeated request by the Project for issuance of the pamphlet, the TWG suspended it with the reason that such should be conducted only after the formal letter on ARDS operation would be issued by PMO-RALG. It is planed the pamphlet is uploaded on the ARDS web-portal.

2.5.3. To share and coordinate the ARDS related activities/information (e.g. coordination with National Sample Census of Agriculture and National Panel Survey, budgeting for nationwide rolling-out of ARDS) with ASLMs and the Development Partners

The Project together with the M&E TWG assisted the GoT in improving agricultural statistics in Tanzania throughout the Project period. They are broadly divided in the following four areas.

● Sensitization of the need for improvement in agricultural statistics,

● Support for the ARDS review,

● Suggestions for the annual agricultural sample survey, and

● Support for the development of Agricultural Statistics Strategic Plan (ASSP).

Each of the above is explained below.

(1)　Sensitization of the need for improvement in agricultural statistics

In the initial stage of ASDP, the need to develop a mechanism in which agricultural data, especially outcome data such as production, are routinely collected was not fully recognized by the ASDP stakeholders. While ARDS improvement has been supported by this Project, it is not an adequate tool to measure the outcome of ASDP. A more rigorous sample survey such as an annual sample survey was necessary.

In this context, the Project, in collaboration with JICA Tanzania Office, explained the current status of agricultural data collection system in Tanzania and a need for the sample surveys to GoT officials as well as DPs in various conferences or workshops. In particular, the Project explained that ARDS and the National Sample Census of Agriculture which was implemented every 5 year were not sufficient, and an annual

sample survey would be needed. As a result, gradually it became a common understanding among the relevant officials of GoT and DPs that an annual sample survey would need to be implemented if the outcome of the ASDP is to be measured properly. Also in this process, the Project under JICA office supports encouraged and made the Population Census of August 2012 to include five agriculture-related questions in the questionnaire.

(2) Support for the ARDS review

In the course of the above-mentioned analysis of agricultural data collection system in Tanzania, some DP members suggested the need to clarify the role of ARDS. As a result, an ARDS review was undertaken from October to December in 2012 by one international consultant and two local consultants. The Project , in collaboration with the JICA Tanzania Office, assisted the review by, for example, preparing the TOR, explaining what has been carried out in the Project, and sharing the views on how to improve agricultural data collection system in Tanzania. The Review team not only had meetings with various stakeholders in Dar es Salaam but also visited some LGAs to observe ARDS operation at local level. After the review, the team concluded that ARDS has an important role in providing quantitative information on, in particular, agricultural infrastructure / equipment and administrative issues. In addition, they stated that the ARDS is especially important at local (LGA) level. Thus, the review team recommended that the Project as well as the M&E TWG should continue to work on the improvement of the ARDS.

On the other hand, the review team gave some suggestions for ARDS data quality improvement. They included simplification of format and fostering linkages with other institutions that produce agricultural data. On institutional aspects, they also suggested that, among others, PMO-RALG should issue a letter instructing LGAs to formally use ARDS and to allocate adequate funds to LGAs for ARDS operation. After the review, the Project and the M&E TWG formed task forces to realize these recommendations and some of them were actually implemented.

(3) Suggestions for the annual agricultural sample survey

Devising an effective and viable annual sample survey has been one of the most important challenges in agricultural data collection in Tanzania, and the Project contributed to it by exploring the possibility of the Dot Sampling Method. The method begins with placing dots with an equal interval over a map on Google Earth. Then surveyors physically visit the location the dots fell upon and observe crops or any other conditions of the spot. Area measuring is not necessary. After observing all spots and finding out the total number of a particular crop, the cultivating area of the crop is estimated by multiplying the ratio of the number of dots falling upon the crop against the total number of dots distributed over the entire area to the total area that the survey is concerned. The Project not only explained this method to the relevant GoT officials but also presented it at an expertise workshop held by FAO in Rome.

(4) Support for the development of Agricultural Statistics Strategic Plan (ASSP)

The preparation of the strategic plan which defines the foundation of agricultural statistics in Tanzania took several years. The Project assisted the whole process by, for example, sharing information with the

consultants in charge of developing the plan, participating in the related workshops and providing comments. The plan was finalized in 2014, and a pilot for the annual sample survey started in the same year with a support of USAID. It is expected that the annual sample survey will be fully implemented in year 2015/16.

In addition to these contributions, the Project worked in the following areas pertaining to the improvement in agricultural statistics in Tanzania.

- Comments to the population census 2012/13: The Project gave some comments to the questionnaire of the population census so that the census would be more useful from agricultural statistics point of view.

- Cooperation with FAO in livestock statistics: FAO and the Project met several times to discuss the way to improve livestock statistics in Tanzania since FAO had a plan to help improve livestock statistics in Tanzania. It was agreed that FAO would conduct a survey to update the estimation of livestock technical conversion factors, which was later successfully undertaken.

- Support to ReSAKSS: a joint sector review for ReSAKSS (Regional Strategic Analysis and Knowledge Support System) which is a monitoring of CAADP was undertaken in 2014. The Project participated in the preparation meetings and suggested how it can be effectively conducted in line with the M&E framework in the agricultural sector in Tanzania.

2.5.4. To support implementation process, in relation to ARDS, of preparation of ASDP Performance Report, implementation of JIR/Agricultural Sector Review and PER

ASDP Performance Report is the report which compiles the result of latest data analysis regarding 25 shortlisted indicators to assess the proceeding of ASDP. The M&E TWG prepares the report as the input for JIR which is held in every second quarter. ASDP Performance Report in 2010/11 was shared with relevant DPs through JICA Tanzania Office on 30th November 2012, and ASDP Performance Report in 2011/12 was completed in February 2014 (Annex 3.14).

2.6. Support to the Mid-term Review and the 6-month-before-completion Monitoring

In this Project, two monitoring/review activities: the Mid-term Review and the 6-month-before-completion Monitoring, were conducted with following timing. The Project supported the implementation. The latter was a replacement of the originally planned Terminal Evaluation. The replacement was made in response to the JICA's alteration of the evaluation policy. Below is the summary of the two monitoring activities.

- Mid-term review: October 14 – 25, 2013
- 6-month-before-completion Monitoring: February 9 – 20, 2015

Table 2.6.1: Outline of Mid-term review (October 2013) and actions taken

Item	Contents	Actions taken (at the end of the Project)
Conclusion	National roll-out is in steady progress. It is expected to complete by December 2013. Capacity development of the Project is valuable for agricultural sector in general. In the remaining period of the Project, efforts will be made to address the technical and operational challenges of ARDS and its data use.	National roll-out completed in March 2014. From the 2014 (latter half of the 3rd year), the Project began strengthening the ARDS operation institutional arrangement.
Recommendations	Monitoring of ARDS operation: Operation status of ARDS at LGA level should be recorded in the standardized form, and reported to the M&E TWG. The TWG monitors the status and make necessary backstopping.	The final ARDS application: ARDS-LGMD2/ Web portal can monthly report the Ward report submission status at LGA level. TWG members (monitoring team) timely observe the status and remind and report to LGAs via Region.
	IT Management: Early introduction of LGMD2i. Strengthening server maintenance. Increase of IT staff and training for them (National, Regional and LGA)	Out-sourced server services to a private company until the IT environment of MAFC is improved. Cost for the out-sourcing is borne by MAFC. MAFC is corresponding with E-gov. agency on the improvement of IT environment. Training was done to the national IT staff.
	Promotion of data utilization: Once ARDS national roll-out would complete, focus of the Project should be placed on data utilization. Clear suggestions should be made on the following. LGA level: Data use on status report of agricultural sector, application to DADP. National level: Data use on status report of agricultural sector, application to policy making and planning in cooperation with other data systems. Regular reporting of data to the management of Ministries.	According to the surveys conducted by the Project, data utilization at LGA level is in progress. Data use for status reporting and DADP preparation was observed. Data utilization at National level has not started due to insufficient data submission by LGAs to the Center. Sharing specific examples of data utilization is also necessary in the future.
	Securing budget and cost reduction: Indicative costs for ARDS operation should be included in the ARDS Operation Guide. Encourage LGAs to secure necessary budget for ARDS. Efforts should be made to reduce the VAEO/WAEO formats preparation.	Indicative costs have already been included in the Operation Guide. A set of page-reduced VAEO/WAEO formats was prepared and distributed to all LGAs.
	Authorization and promotion of ARDS: ARDS should be authorized soon after its national roll-out. Its promotion should be continued.	An authorization letter was issued by PMO-RALG in September 2014. Promotion activities had been continued whenever opportunities were available.
	Progress monitoring based on clear indicators: A questionnaire should be prepared for measuring the output indicators. A few indicators should be improved to be more specific and have clear definition.	A questionnaire was prepared, and a survey was conducted based on that. Indicators were improved.

Table 2.6.2: Outline of the 6-month-before-end monitoring (February 2015) and actions taken

Item	Contents	Actions taken (at the end of the Project)
Conclusion (Status of achievement of Project purpose and outputs)	Project purpose: As of the monitoring, it is not achieved yet. However effects are emerging towards the final status. The national roll-out is complete. Yet, data submission is still low. It is necessary to strengthen the follow-up of the TWG. Data utilization is beginning at LGA level, but not yet at National level.	Due to the introduction of ARDS-LGMD2/ Web portal (March 2015), monitoring and follow-up function of ARDS has been strengthened. The submission rate is rising up to 40% (May report, as of June 2015). Data utilization at LGA level is expanding. On the other hand, more supports are needed at National level.
	Output 1: While the national roll-out has been complete, steady operation is yet to realized. Despite delays, activities are implemented and producing some effects leading to final status. There are challenges especially in the operation aspect of ARDS (improvement of data submission).	As described above, the introduction of ARDS-LGMD2/ Web portal improved the submission rate. Further supports are necessary for steady operation.
	Output 2: As of now (March 2015) it is not achieved. Despite delays, activities are implemented and producing some effects leading to final status. There are challenges including improvement of data quality by proper data collection, data check functions and strengthening institutional arrangement.	As to data quality improvement, further follow-up is necessary to make sure that data collected properly in the field. Data checking at LGA level is actually performed at several LGAs, and such are shared with other LGAs as good practice. In addition, ARDS-LGMD2/ Web portal has a function that detect and exclude extreme values.
	Output 3: Activities were implemented smoothly, and the output is almost achieved. Authorization letter was issued by PMO-RALG in September 2014. Also ASSP clearly stated ARDS as one of major data systems. Promotion had been continued to ASLMs management, DED, DAICO, DLFO, etc. across the country.	As described in the left.
Important issues	Monitoring of ARDS operation (National level): Further strengthening is needed for the ARDS operation and division of tasks within the M&E TWG. It is expected that the introduction of ARDS-LGMD2/ Web portal will bring better monitoring function. Good practices need to be collected and shared with LGAs.	The introduction of ARDS-LGMD2/ Web portal has enabled monitoring the data submission on monthly basis. The M&E TWG formed a monitoring team which continues monitoring of data submission. Good practices were collected and shared in the ARDS-LGMD2/ Web portal training in March 2015.
	ARDS-LGMD2 operation and maintenance (IT component): Most of software problems are expected to be solved by the adoption of ARDS-LGMD2/ Web portal. IT staff who received training should share their experience with MLFD and MIT. Maintenance of ARDS-LGMD2/ Web portal. Server management.	The introduction of ARDS-LGMD2/ Web eased many of the software problems. The sharing of the IT staff who went to the training was conducted for IT Unit of MAFC. As for the maintenance of ARDS-LGMD2/ Web portal, recommendation was made to MAFC to enter into a contract with UDSM (the developer of ARDS-LGMD2/ Web portal) As to the server management, recommendation was also made to keep the contract with a private server service provider until IT environment of MAFC is sufficiently improved.
	Cost reduction of ARDS operation and securing budget: Challenges are insufficiency of budget for VAEO/WAEO formats and poor report submission by VAEOs and WAEOs. Efforts should be made to reduce the number of format pages and sensitization of LGA management.	Format pages were reduced to half without changing the contents. At the March training of ARDS-LGMD2/ Web portal, all DAICOs and DFLOs were invited for sensitization.

Item	Contents	Actions taken (at the end of the Project)
	Data utilization: A training of data utilization was conducted. Expansion is expected for data utilization once ARDS-LGMD2/ Web portal will be introduced. It was noted that LGAs were beginning using ARDS data. In the future, examples of good data use should be presented for encouragement.	It has been noted that data utilization is expanding after the introduction of ARDS-LGMD2/ Web portal. Data use at National level is still not sufficient. Sensitization to technical departments is important.
	Mainstreaming of ARDS: Sensitization to management of ASLMs, Regions and LGAs should be implemented when ARDS-LGMD2/ Web portal will be rolled out.	In the roll-out training of ARDS-LGMD2/ Web portal in March, all DAICOs and DFLOs of the country, and all Regional ASDP Coordinators were invited for sensitizing ARDS.
	Split of DALDO to DAICO and DFLO: At LGA, DALDO (office) was split to DAICO (Crop, Irrigation, and Cooperatives) and DLFO (Livestock and Fisheries), demanding close coordination and cooperation between them.	In the roll-out training of ARDS-LGMD2/ Web portal in March, DAICOs and DFLOs were instructed to work jointly. Similar instruction is included in the ARDS Operation Guide.
	Policy background for ARDS: The roles and functions of ARDS should be included in the ASDP2 program document.	ARDS data were included in the Result Framework of ASDP2 program document. The document also specifies the roles and functions of ARDS in the sections of M&E.

2.7. Counterparts Training in Japan

The Project implemented the counterpart training for 2 weeks in February 2013, in Japan, so that counterpart can learn present situations on agricultural statistics in Japan in collaboration with the project activities in Tanzania. The outline of the training is as follows:

Table 2.7.1: Counterparts training in Japan conducted by the Project

FY	Date	Participants	Training Objective
2012/13	From Feb. 2nd to 17th, 2013	6 members from M&E TWG (3 from MAFC, 2 from MLFD, 1 from MIT)	To understand systems and current situations of data collection in agricultural sector in Japan at the both of national and LGA levels and to utilize this understanding in developing system of agricultural statistics in Tanzania.

Table 2.7.2: Schedule of counterparts training in Japan

Date		Time	Main Contents
4th Feb. 2013	Mon	AM	Briefing
		PM	Orientation
			Visit to JICA Headquarter Office
5th Feb.	Tue	AM	Outline of Agriculture in Japan
		PM	Making Agricultural Policy with Use of Statistics
6th Feb.	Wed	AM	Japanese Data Collection System & Inter-agency Coordination
		PM	Statistics on Agriculture, Forestry and Fisheries in Japan

Date		Time	Main Contents
7th Feb.	Thu.	AM	Data Collection System in Japanese Agricultural Sector①(Census of Agriculture and Forestry, Agriculture Management Statistics Survey)
		PM	Data Collection System in Japanese Agricultural Sector②(System of paddy rice production survey, Planning/design and administrative use of statistical surveys related to food distribution, Package of technical cooperation on agricultural production survey)
8th Feb.	Fri	AM	Visit to Ota Market
		PM	Visit to Oita prefecture antenna shop
9th Feb.	Sat		Report writing
10th Feb	Sun		Move from Tokyo to Oita
11th Feb.	Mon		Report writing
12th Feb.	Tue	AM	Outline of Oita Prefecture Government/ Outline of Statistics Coordination Division/ Outline of Agricultural Census
		PM	Outline of Agriculture/ Livestock Farming in Oita Prefecture
13th Feb.	Wed	AM	Field Visit to Farmer in Oita
		PM	Kyushu Regional Agricultural Administration Office, Oita Area Center
14th Feb.	Thu		Field Visit to JA & Farmers
15th Feb.	Fri	AM	Move from Oita to Kitakyuushu
		PM	Presentation of reports, Evaluation meeting and Closing Ceremony

Table 2.7.3 shows JICA training (Agricultural Statistic, IT) in Japan which the Project's counterparts participated.

<center>Table 2.7.3: JICA Training in Japan</center>

FY	Date	Participants	Training Objective
2011/12	From Aug. to Oct.	John Maige (Head of M&E Unit, MAFC)	Planning and Designing of Agricultural Statistics for Agricultural Policy Making /JICA Tsukuba
	From Jan. to Apr.	Faraja Komba (IT Unit, MAFC) Pricilla Joseph (DPP (IT), MLFD)	ICT for Agricultural Information Use/ JICA Hokkaido
2012/13	From Aug. to Oct.	Oswald Ruboha (Section Manager of DPP. (Statistics and M&E), MAFC)	Planning and Designing of Agricultural Statistics for Agricultural Policy Making /JICA Tsukuba
	From Jan. to Apr.	Phillip Shayo (IT Unit, MAFC) Raphael Sendaro (DPP (IT), MLFD)	ICT for Agricultural Information Use/ JICA Hokkaido
2013/14	From Aug. to Oct.	Abel Mhehe (DPP (Statistics), MLFD)	Planning and Designing of Agricultural Statistics for Agricultural Policy Making/ JICA Tsukuba

2.8. Inputs

2.8.1. Assignment of the Project Team

Table 2.8.1 shows experts who have participated in the Project as members from 1st year to 4th year.

Table 2.8.1: Assignments of the Members (man-month)

Name	Position	Work in Japan (MM)	Work in Tanzania (MM)				Total (MM)
			2011/12	2012/13	2013/14	2014/15	
Fuminori Arai	Chief Adviser / Institutional Development	0.27	3.07	5.50	5.67	5.00	19.51
Michio Watanabe	Deputy Chief Adviser / Monitoring and Evaluation 1 / Agricultural Statistics	0.07	4.00	3.00	3.00	3.00	13.07
Kyoko Akasaka	Monitoring and Evaluation 2 / Training Planning1*¹	0.00	2.50	7.17	5.80	5.00	20.47
Issei Jinguji	Training Planning 2 / Agricultural Statistics 2*²	0.00	7.23	2.50	—	—	9.73
Nobuyuki Yasui	Training Planning 2 / Agricultural Statistics 2	0.00	—	—	3.00	2.17	5.17
Koji Ishikawa	Training Planning	0.00	2.27	—	—	—	2.27
Chisato Tanaka	Administrative Data Management	0.00	6.43	—	—	—	6.43
Kayoko Miyao	Administrative Data Management 1	0.00	—	4.00	3.00	3.00	10.00
Hakan Yuksel	Administrative Data Management 2	0.00	—	1.50	2.67	3.00	7.17
Ryosuke Sakumasu	Coordinator / M&E Assistant1	0.00	3.13	—	—	—	3.13
Eriko Shiokawa	Coordinator / M&E Assistant*³	0.50	1.33	6.33	—	—	8.16
Hanako Tsutsumi	Coordinator / M&E Assistant	0.00	—	—	5.33	—	5.33
Mana Jingushi	Coordinator / M&E Assistant	0.00	—	—	—	5.33	5.33
Total		0.84	29.96	30.00	28.47	26.50	115.77

*¹2011/12 (1ˢᵗ year): Monitoring and Evacuation 2

*²2011/12 (1ˢᵗ year): Agricultural Statistics 2

*³2011/12 (1ˢᵗ year): Coordinator / M&E Assistant 2

2.8.2. List of Equipment Provided

Table 2.8.2 shows equipment procured by the Project from 1ˢᵗ year to 4ᵗʰ year. The equipment was given to all 25 regions which have been rolled out ARDS and M&E TWG members who operate and maintain ARDS.

Table 2.8.2: List of Office Equipment Provided (Those procured by the Project)

No.	Item	Model	Quantity				Total
			2011/12	2012/13	2013/14	2014/15	
1	Laptop Computer	DELL INSPIRON N5040	9	-	-	-	75
		DELL INSPIRON 3521	-	-	30	4	
		DELL INSPIRON 3537	-	-	-	1	
		DELL INSPIRON 3542	-	-	-	3	
		HP ProBook 4530s	14	4	-	-	
		HP ProBook 4540s	-	6	4	-	

No.	Item	Model	Quantity				Total
			2011/12	2012/13	2013/14	2014/15	
2	Printer	HP Laser Jet P1606 DN	9	-	-	-	53
		Hp LaserJet P2055 DN	-	4	-	-	
		HP Laser Jet 400m401 DN	-	6	34	-	
3	Stabilizer	2000 VA	9	4	-	-	53
		1500 VA	-	6	34	-	
4	Projector	NEC NP-V260X	1	-	-	-	2
		EPSON EB-X12	1	-	-	-	
5	Photocopier	Kyocera Taskalfa 420i	1	-	-	-	1
6	Scanner	HP Scanjet	1	-	-	-	1
7	FAX	Brother MFC 7220	1	-	-	-	1

The Project has also supported the procurement, the delivery to MAFC, and the handover to LGAs of the equipment procured by JICA Tanzania Office such as motorbikes, printers, stabilizers, USB memories and internet modems. In addition, two vehicles (Mitsubishi Pajero GLS) were purchased and supplied to the GoT by the JICA Tanzania Office in January 2012.

Table 2.8.3: List of Office Equipment Procured by JICA Tanzania Office

No.	Item	Model	Quantity				Total
			2011/12	2012/13	2013/14	2014/15	
1	Laptop Computer	DELL INSPIRON N5110	59	-	-	-	59
		HP 650	-	35	-	-	35
		HP 250 GI	-	-	31	-	31
2	Printer	HP Laser Jet P2055 DN	59	-	-	-	59
		Hp Laser Jet 400m401 DN	-	35	31	-	66
3	Stabilizer	1500 VA	59	35	31	-	125
4	Internet Modem	HUAWEI	59	-	-	-	59
		HSDPA	-	35	-	-	35
		Airtel	-	-	31		31
5	USB Memory Stick	Transcend	59	35	31	-	125
6	Motorbike	YAMAHA YBR125	59	-	-	-	59
		HONDA XR125	59	56	86	-	201

3. Results of the Project

3.1. Progress Status of the Project According to the Indicators of PDM

The attainment status of respective PDM items are described below. Details of attainments of individual indicators of PDM are summarized in Table 3.1.5.

(1) Attainment status of the overall goal

Overall goal: "ASDP Monitoring and Evaluation (M&E) is improved through interactive operation of relevant activities such as National Sample Census of Agriculture, National Panel Survey and Agricultural Routine Data System (ARDS)"

The Agricultural Statistics Strategic Plan (ASSP) was finalized in 2014. The document stipulates overall direction and mutual harmonization of agricultural data/ statistics including ARDS is supposed to move forward. The roles and responsibilities of ARDS is clearly specified in the document, advancing the harmonized interaction between ARDS and other data/statistics systems. As to ASDP M&E, there are intensive works presently going on for the preparation of the ASDP2 program document. This document will specify the arrangements for the ASDP2 M&E, including ARDS.

(2) Attainment status of the project purpose

Project purpose: "ASDP M&E is conducted on the basis of national agricultural data collected through improvement of ARDS"

The attainment status of the ASDP M&E based on ARDS is yet to be known because the number of LGAs which submit data to the National level is not sufficient. On the other hand, M&E activities at local level is somewhat better. The results of a questionnaire survey conducted in March 2015 shows that ARDS data utilization is in progress in the field of preparation or implementation of DADP which is an important policy tool at LGA.

(3) Attainment status of the outputs

Output 1: "ARDS is rolled out nationwide and operational"

Although the national roll-out of ARDS completed in March 2014, the stable operation was not following thereafter due to technical issues of LGMD2/2i, the data aggregation and transfer application, and rapid decline of LGA budget for agricultural sector. The Project improved the application to be web-based system. This improved application, ARDS-LGMD2 was then introduced nationwide in March 2015. Also effort was made to countermeasure the budget constraints by reducing the number of pages of the VAEO/WAEO Format to half. The latter measure was intended to mitigate the bottleneck at the data collection stage. Moreover the letter issued by PMO-RALG in September 2014 formally directed all LGAs to adopt ARDS as an authorized data collection system of agricultural sector. In addition, the budget speech by the Minister of MAFC delivered in May 2015 clearly stated the adoption of ARDS in the sector. On the other hand, the Project placed lots of efforts in ensuring that all regions and LGAs become familiar

and responsible for ARDS by repeating training on ARDS operation. Based on these observations, it can be said that the national roll-out and operationalization of ARDS have completed with modest success, while there are many challenges remaining, including low submission status of data from LGAs.

Output 2: "Backstopping activities for ARDS by M&E TWG are strengthened."

All members of the M&E TWG were actively involved in the national roll-out, assuming the roles of trainers, guides or analysts. Through such involvement, they became fairly experts in many aspects of ARDS (method of data collection, contents of data collection formats, data entry, the application (LGMD2/2i/ ARDS-LGMD2), data analysis, and reporting, etc.). In view of these, we could conclude that the Output 2 has attained to some extent, although there are still remaining issues such as insufficient institution and capacity of steady monitoring and maintenance/ administration of ARDS.

Output 3: "Coordination of ASDP M&E to implement ARDS is enhanced."

Throughout the Project period, discussion about data and statistics of agricultural sector has advanced well, in which harmonization and consistency among data/ statistics systems including ARDS have been improved. Especially the ARDS review conducted in the second year of the Project set the roles and scope of ARDS in the overall agricultural data/ statistics field. The Project positively participated in relevant meetings and contributed to the advancement of the discussion. As to ASDP2, the program document is under preparation as of June 2015. The Project provided comments on the document through the M&E TWG.

(4) Present state and prospect of ARDS

If simply put, the purpose of the Project is, based on the results of the phase 1 of the Project, to complete its national roll-out, ensure its steady operation and facilitate smooth monitoring of ASDP (or implementation of any overall program of agricultural sector). To achieve this purpose, the ARDS operation is the basis for almost everything else. In this section, the ARDS operation is described on the state of past and present in terms of LGAs' operation, monitoring and administration arrangements and data utilization. Some parts of the description below are already stated in the report in previous sections.

On account of the observations described below, the Project concludes that although one cannot say ARDS is fully operationalized, it has achieved laying down foundation necessary for steady operation of ARDS, as LGAs shows gradual improvements in their operation and the TWG's monitoring and administrative works are also becoming regular.

1) ARDS monitoring and administration arrangements

While the national roll-out was on-going, recognizing the importance of operation status of ARDS, the Project together with the TWG began the operation monitoring in the 2nd year (January 2013). At first, an Excel-based form was prepared and distributed quarterly to all LGAs which received training on ARDS. The LGAs were supposed to report the status voluntarily to ASLMs (TWG members assigned to particular regions and LGAs). Another channel of monitoring also became available after

LGMD2i was introduced to the nation in the 3rd year (January 2014). The new channel was to monitor the data submission status in the central server. These methods were used towards the beginning of the 4th year. However, due to the nature of self-reporting and insufficient follow-up by the TWG members, they could not produce good results.

Upon these experiences, monitoring functions of the LGMD2i was further strengthened in the process of overall improvement of the application. The strengthened monitoring capability became available in the latest application ARDS-LGMD2/ Web portal which is web-based system. As a result, in the latter half of the 4th year (after March, 2015) direct monitoring by the central server had become possible without asking LGAs to report their status, improving the efficiency and effectiveness of the monitoring.

On the other hand, the supports to institutional arrangement for administration and monitoring began in the 3rd year when the completion of the roll-out coming into the sight. The TWG set forth a principle that while individual members are assigned to particular region or LGAs, the implementation of monitoring was to be rendered by the whole of the TWG, requiring that reporting, discussion and decisions are all done by the TWG meetings. However, as the monitoring becomes more regular and frequent communication with LGAs are necessary, the original arrangement of dispersed responsibility and large group (i.e. TWG) management began showing ineffectiveness. Moreover, such a dispersed operation induced some members to be inactive in their responsibility, causing disruptions in the monitoring operation.

As such, the Project continued through the 4th year suggesting certain arrangements for ARDS monitoring. At last by April, the TWG selected two members specifically for the monitoring and for backstopping other members to conduct monitoring of their assigned regions and LGAs. The selected two members regularly provide the other members with the data submission status of regions and request the members to contact and inform them proper ARDS operation including data submission. The monitoring activities under this arrangement started operating from May.

Table 3.1.1: Outline of ARDS monitoring activities (duplicate of Table 2.4.3)

Item	Content
Monitoring cycle	Every month, on the following day, the monitoring core members direct TWG members (regionally assigned) through email to inform assigned regions to communicate instructions. Every month 3rd (if it falls on weekend, either before or after the weekend): To remind all LGAs of receiving data from VAEOs/WAEOs and starting data entry. · Every month 22nd: To inform all LGAs about their respective report submission status, and request to complete data entry as soon as possible. · Every month 30th: Ditto with further remind of the improvement of submission.
Details of the instructions of each communication day	[3rd of the month] ① To remind that 7th is the deadline of data submission from VAEOs/WAEOs (i.e. LGAs are supposed to receive all data by this day from VAEOs/WAEOs) ② To remind that LGAs should immediately start entering data to ARDS-LGMD2/ Web portal. ③ To remind that 20th is the deadline of data submission.

Item	Content
	[22th of the month] ① To send the data/report submission status as of 21st or 22nd of LGAs to regions and LGAs ② To request TWG members and Regional officers to push LGAs of poor performance. [30th of the month] ① To send the data/ report submission status as of 20th or 30th of LGAs to regions and LGAs. ② To request TWG members and Regional officers to push LGAs of poor performance ③ This second submission status is also sent to all LGAs in the next reminding day, i.e. the 3rd of the next month.
Mid-term monitoring action	To those LGAs of poor performance despite the monitoring activities, following actions will be taken. ・ This action will first be taken in July 2015. ・ The condition designating a LGA to be poor performer is "the submission rate is less than 30%". ・ To single out LGAs of poor performance together with name of the region and TWG members who is responsible for, and give warning about their performance.

In addition, another group consisting of IT members of the TWG was also set up to compile all inquiries and questions from regions and LGAs. Because of these arrangements, regular communications and monitoring began functioning. Details of ARDS operation status are described in the next section.

Besides, the ARDS central server which receives and stores all data from LGAs is placed under an American private company's services (Linode Co. Ltd,). Such an arrangement is no stranger in these days as many companies offering virtual server services for all sorts of customers. One reason for choosing this service was the situation at the ARDS-LGMD2/ Web portal national roll-out in March 2015. Because the roll-out was done at once to all areas of the country inviting both Regional and LGA officers for training, it was expected that a great number (more than a few hundreds) of users would access to the server.   And given the bandwidth of MAFC ICT system which was then hosting the server, there was a serious concern that the users in the training could not properly access to the server.   Hence, swiftly an arrangement was sought out to out-sourcing the service with sufficient bandwidth and stable connection. Moreover because of the ICT environment of MAFC is still limited (not only bandwidth but power backup and limited capacity of air conditioning, etc.), it was envisaged that the private services was worth keeping until the MAFC environment would sufficiently be improved. The costs for such services are approximately USD 1,000 per year and considering the additional benefits of auto-backups of data and security measures for the data included in the service, the relying on such an arrangement is quite reasonable. While the Project recommended to secure at least one year contract with the private service provider, MAFC ICT Unit tentatively extended the contract for three months.

As to the data backup, as mentioned above, the private company takes backups automatically as part of the contract. However the Project encouraged MAFC ICT Unit to download the data regularly so

that itself maintains backup of the data stored at their own server.

 2)   ARDS operation status

ARDS operation status is already reported to some extent in Section 2.4.1 (4). Although there are some repetitions, the status is again explained here.

As shown in Table 3.1.2 below (duplicate of Table 2.4.5), ARDS operation was not sufficiently good during 2nd and 3rd year of the Project. Major obstacle was the technical bottlenecks of the data aggregation and analysis application, i.e. LGMD2/2i. Also the unstable accessibility of many LGAs to internet was another hindrance to the smooth ARDS operation. In addition, the monitoring activities were also not quite effective.

Table 3.1.2: ARDS Operation Status (2nd and 3rd Year, by self-report of LGAs)

(duplicate of Table 2.4.5)

ARDS Operation	2012/13		2013/14	
	4th Q	1st Q	2nd Q	3rd Q
No. of LGAs where ARDS has been rolled out	136	136	136	167
No. of LGAs which reported the operation status	93	118	102	73
No. of LGAs which transmitted data to the Central Server. (no deadline was set)	35	17	13	12
% of LGAs which transmitted data to the Server. (against the reported LGAs)	37%	14%	12%	16%

After introducing the web-based application, ARDS-LGMD2, the data submission can be monitored from the central server by directly producing the submission status report every month, and two TWG members were specifically assigned to the task, now the monitoring activities are conducted relatively smooth.   As shown in the two tables below (duplicates of Table 2.4.4 and Table 2.4.9 respectively), the submission status is improving although the level is still not good enough. (Compare the "% of LGAs which transmitted data to the Server" in Table 3.1.2 and the "Submission rate at the first monitoring date" in Table 3.1.3)   In addition, Table 3.1.4 shows gradual change of submission status since May 2015 of March and April Ward Report. As seen in the table, LGAs that achieve more than 70 % of submission rate count 43 which is more than a quarter of all LGAs (168 in total), indicating the present ARDS is workable. Also it is notable that reminding and requesting are effective in encouraging LGAs to work more.   Therefore it is expected that continuous engagement by the M&E TWG with LGAs and Regions with respect to specific actions will bring about much stable and thorough operation of ARDS.

Table 3.1.3: ARDS operation status after ARDS Web-portal has been introduced

(duplicate of Table 2.4.4)

	Ward Monthly Report Submission[1] National average submission rate[1]		
	March 2015	April	May
Submission rate before the submission deadline (15th day of the next month)[3]	9.1 %	14.1 %	27.9 %
Submission rate at the first monitoring date	20.6 %[2]	22.4 %	36.3 %
Submission rate at the second monitoring date	23.1	27.7 %	40.0 %

Source: ARDS Web Portal (as of 30th June 2015)

Table 3.1.4: Submission status of March and April (2015) Ward Monthly Report
(duplicate of Table 2.4.9)

| Date of Monitoring | March Ward Monthly Report | | April Ward Monthly Report | | | May Ward Monthly Report | |
	Overall submission rate	No. of Ward report submitted	No. of LGAs which achieved more that 70% of submission rate	Overall submission rate	No. of Ward report submitted	Overall submission rate	No. of Ward report submitted
May 22	34.4%	1,234 Ward	20 LGAs	22.4%	803 Ward	-	-
May 29	36.8%	1,322 Ward	33 LGAs	27.5%	989 Ward	-	-
June 5	38.9%	1,396 Ward	43 LGAs	34.4%	1,235 Ward	-	-
June 12	41.5%	1,491 Ward	51 LGAs	41.5%	1,491 Ward	-	-
June 19	41.8%	1,518 Ward	51 LGAs	43.1%	1,566 Ward	35.1 %	1,274 Ward
June 26	42.8 %	1,555 Ward	52 LGAs	43.8 %	1,591 Ward	39.3 %	1,428 Ward

Source: ARDS Web Portal (as of 26th June 2015)
Note: Similar to Table 2.4.8, the "submission" in this table refers to the pressing "completion" button. As there are a few LGAs which still miss this step, the rate might actually be higher.

On the other hand, current submission rate is in the 40+% range which is not satisfactory level. Possible obstacles that keep the rate low are as follows. These are ones observed in Section 2.4.2 (3) but re-arranged according to their similarity.

① Format distribution to VAEOs/ WAEOs (non-distribution or late distribution)
② Data submission by VAEOs/ WAEOs (non-submission or late submission)
③ Existence of villages or wards where no extension officers are deployed (difficulty to collect data)
④ Data entry at LGA level (non-entry or late entry)
⑤ Data transmission (non-connection or unstable connection)

Among the obstacle above, the format distribution seems improving. A survey conducted by telephone in April found that all LGAs managed to complete the distribution. We also introduced new formats of only half number of the page, which reduced the burden of photocopying of the formats. Still many LGAs struggle for budget sufficient for ARDS operation, continuous sensitization is necessary for management of LGAs.   More details of necessary costs are described in Section 3.4.2. Regarding data submission and lack of extension officers in certain villages and wards, difficulties are reported from some LGAs. The issue of data submission by VAEOs/WAEOs is essentially related to budget because extension officers are not pushed by LGA office because the latter does not have budget for fuel and per diem for visiting villages and wards. Here too, continuous advocacy is needed to LGAs management. As to the issue of areas where VAEOs/ WAEOs are absent, no quick answer will be available. However, the function of missing-data estimation of ARDS-LGMD2/ Web portal will be able to handle some part of the gap.   For example if data is not available in a few wards, the application can estimate the missing data based on the data from other wards.

The challenges of LGAs (data entry and transmission) can be addressed by strengthening the monitoring activities by the TWG including strong instruction to poor-performing LGAs, while

praising good performers and sharing their good practices with other LGAs as examples. Also it sometimes happen that because DS and/ or DME are good at computer skills, they are flooded by many tasks at particular time of a month, leaving little time for them to work on ARDS. In order to avoid such a skewed task distribution, DAICO/ DLFO should be guided to keep balanced task allocation among staff and to form a team for ARDS operation.

Finally concerning data transmission (or internet connection), we should note that such LGAs are not so many. As of the first week of June, only 8 LGAs submitted no data. This implies that the remaining 159 LGAs have at least some level of connectivity, although not sufficiently stable one. For those with unstable connectivity, specific instruction should be given, like using email or other data transmission methods.

3) Data quality: present and future

Because ARDS is a system of administrative data collection, one cannot expect the same level of data quality control as that of statistically designed data collection. The latter is a system that the all aspects including sample setting (master sample), sample size, collection methods and collectors (enumerators), are designed to realize targeted accuracy. However, the former, administrative data collection is an undertaking taking place along regular work of administration, i.e. public officers. Therefore, although ARDS has advantages in frequency (monthly), speed of results (next month) and data level (grassroots, Villages and Wards), the quality of data is in principle limited. Still, the Project took following measures to ensure best possible quality of data for ARDS.

- Data collection by VAEOs/ WAEOs (Specified by the VAEO/WAEO Training Guide)
    - To prepare a list of farmers in advance
    - To select randomly 10 farmers from the list
    - Production data of major crops (plotted area and yield) to be obtained by interview from the 10 farmers above.
    - To obtain other data from data source specified by the Guide
- Consideration at LAG level at data entry
    - Data check before entering to the ARDS-LGMD2/ Web portal
    - To get confirmation by DAICO/ DLFO before indicating the data completion
- Approval by Regional officers
    - Regional officers are tasked to approve the data submitted by LGAs

On the other hand, ARDS-LGMD2/ Web portal has following functions to screen the data quality, although they need to be activated by setting parameters.

- Data validation (excluding extreme values) (upper and lower limits of particular data must be specified.)
- Missing data estimation (trigger level of submission rate must be specified.)

These measures should be put in thorough operation in the future to ensure data quality of ARDS. Specifically actual data collection of VAEOs and WAEOs need to be examined, and they need to be encouraged to observe the instructed methods. Data check by LGA officers should also be strengthened. Further, the available functions of ARDS-LGMD2/ Web portal should be put in actual operation. Review of the biases of ARDS data should also be undertake to grasp the level of inaccuracy of the data.

4) ARDS data utilization

Regarding data utilization of ARDS, as reported in the Section 2.4.2 "To conduct seminars for reviewing implementation process and sharing findings, (4) Questionnaire of ARDS operation", at least LGAs seem to start using ARDS data. Tables blow (both are duplicate of Table 2.4.7 and 2.4.8) show that many LGAs utilize the data for reporting to the management, council meetings, DADP preparation and budget formulation. Also LGAs are using the data in answering to inquiries from outside including the National data inquiries, NGOs and even private investors.

Table 3.1.5: ARDS data utilization at LGA level (duplicate of Table 2.4.7)

Report to DED	Report to Councils	DADP preparation	DIDF preparation	Budget preparation
83.8%	71.3%	76.5%	59.6%	74.1%

Table 3.1.6: ARDS data utilization for inquiries from the National and Regional levels
(duplicate of Table 2.4.8)

NBS	MAFC (food security dept.)	Irrigation (zonal office)	NGO	Investors
60.3%	71.3%	58.8%	76.5%	66.2%

However, utilization at National level is not sufficiently materialized because data submission by LGAs has not been widely achieved. Still as the role of ARDS is clearly defined by ASSP, the use of ARDS data at National level will progress as data submission improves. Following are expected use of ARDS data.

● To use ARDS data for the MAFC's annual report "Agricultural Basic Data"

● To use the data for ASDP2 monitoring (e.g. JSR: Joint Sector Review)

● To use the data to prepare a quarterly agricultural sector status report

● To use the data for the work of technical departments of MAFC and MLFD (e.g. Crop Development, Mechanization, and Veterinary Services, etc.)

In order to accelerate the data use at national level, introduction of ARDS to all relevant departments and to conduct short training for officers in the departments who is actually responsible data handling. Moreover, they should be encouraged to produce a simple but regular reports to the management

based on the available data.

 5) Property right of ARDS-LGMD2/ Web portal

The computer application for data entry, assembly, analysis and transmission has been an important component of ARDS. In this Project, starting with LGMD2 developed in Phase 1 of this Project (which was contracted by the JICA Tanzania Office to a local developer), continued to improve and upgrade the application. At the end of the Project, the final product is the web-based all-in-one application: ARDS-LGMD2/ Web portal. The property right of the application (all rights including right of access right, of transfer, of rent right, of revision/restructuring, etc.) belongs to JICA as an output of the Technical Cooperation. Hand-over of the property right to GoT should be discussed and agreed in the future between the Counterpart (MAFC as representative of ASLMs) and JICA.

Table 3.1.7: Attainment status of Outputs, Project Purpose and Overall Goal of the Project

Output/ Purpose/ Overall goal	Indicator	Attainment Status
Overall Goal: ASDP Monitoring and Evaluation (M&E) is improved through interactive operation of relevant activities such as National Sample Census of Agriculture, National Panel Survey and Agricultural Routine Data System (ARDS).	1. The agricultural surveys and data collections including ARDS are improved through the coordination among them. 2. The meetings on ASDP M&E coordination are continuously conducted.	In 2014, Agricultural Statistics Strategic Plan (ASSP). As to ARDS, the ARDS Review was conducted and clarified the roles and responsibilities of ARDS. On the other hand, ASSP delineates the roles of each data collection tool in Tanzania, presenting overall perspective of agricultural statistics and data. Regarding ASDP2, the program document is still under preparation as of June 2015. It is expected that the document specify the modality and arrangements of M&E of ASDP2 including ARDS. Because the period of the Project fell in the transition of ASDP from phase 1 to 2, M&E discussion specifically for ASDP stagnated for a while. However, as described above, meetings on agricultural statistics and data were frequently held and coordination among relevant data system was actively discussed there. In parallel, there have been continuous discussions about the formulation of ASDP phase 2 where contents and mechanism of M&E of the program were repeatedly examined. Once ASDP2 will be put in operation, coordination of M&E will further be advanced.
Project Purpose: ASDP M&E is conducted on the basis of national agricultural data collected through improvement of ARDS.	Indicator 1: Utilization of data collected through ARDS by ASDP JIR etc.	Because the number of LGAs that submit ARDS reports is not sufficient mainly due to the technical problem of ARDS-LGMD2/ Web portal, the ARDS data is yet to be used at the central level.
	Indicator 2: Number of DADPs which utilize data analysis through ARDS	According to the questionnaire survey conducted in March 2015, the examples of ARDS data utilization at the LGA level are as follows It seems to indicate that utilization is in progress. ■ For DADP preparation: 76.5% ■ For validation of VADP: 67.6% ■ For examination of potential cops or areas for development: 84.6% ■ For understanding present situation of the sector: 80.1% ■ For examination of scope and scale of development activities: 73.5% ■ For estimation of future state of crop and livestock: 81.6%
Output 1: ARDS is rolled out nationwide and operational.	Indicator 1-1: Number of the trained trainers	The numbers of officers who participated in the training for ARDS roll-out are as follows {table below} The expected target numbers of training participants are 1) approx. 20 M&E TWG members, 2) approx. 50 regional officers (2 per Region) and 3) approx. 330 LGA officers (2 per LGA). In comparison with these, the necessary number of related officers have been trained for the ARDS operation.

Table within Output 1 Attainment Status:

Training	M&E TWG ①	Region ②	LGA ③	VAEOs/ WAEOs	No. of Trainers
V/W Formats	21	37	523	7,755	①+②+③ 581
LGMD2	21	57	210		①+② 78
LGMD2i	21	33	336		①+② 54
ARDS-LGMD2	15	50	384		①+② 65

Output/ Purpose/ Overall goal	Indicator	Attainment Status
	Indicator 1-2: Number of visits to the Web portal Indicator 1-3: Number of events of data download	Following are the statistics obtained by the functions of Web portal. (To be updated) [table below] Note1: "Number of visits to the Web portal" means the number of page visits only for data utilization purpose such as standard report, custom report, data analysis and dashboard pages. Note2: The statistics of data download has not been sufficiently large because it is recorded as they are used in data analysis (i.e. pivot table, etc.), and as of June 2015, not many data analysis actions have been taken so far. For supplement the information of data download, the number of report download is shown in the table
	Indicator 1-4: Number of timely submission of ARDS among all the districts	The data submission reports of the upgraded ARDS-LGMD2 show the status of submission as follows. [table below] Note: "Submission on time" means that LGA officer enter data 15th next month of the data month, and press the button of "complete" to indicate that data entry of the report is complete. Because some LGAs still omit the step of "complete" button, there is possibility that actual submission rate is higher than reported here. In addition, although not complying with the condition of the indicator, data below show the trend of submission rate after the submission deadline (these data are collected after the monitoring activities really started in May.) [table below] As observed in these tables, while the submission rate is still not satisfactory, there seems tendency of gradual improvement.

Indicator 1-2 / 1-3 table:

Period (Monthly)	No. of visits to the Web portal	No. of events of data download	No. of events of report download
April, 2015	558	0	130
May, 2015	679	79	148

Indicator 1-4 table:

Report	No. of submission on time (whole country)	Submission rate % (Whole country)
Monthly Ward Report, March 2015	326	9.1
Monthly Ward Report, April 2015	506	14.1
Monthly Ward Report, May 2015	1,013	27.9

Date of Monitoring	March Ward Monthly Report		April Ward Monthly Report		May Ward Monthly Report	
	Overall submission rate	No. of Ward report submitted	Overall submission rate	No. of Ward report submitted	Overall submission rate	No. of Ward report submitted
May 22	34.4%	1,234 Ward	22.4%	803 Ward	-	-
May 29	36.8%	1,322 Ward	27.5%	989 Ward	-	-
June 5	38.9%	1,396 Ward	34.4%	1,235 Ward	-	-
June 12	41.5%	1,491 Ward	41.5%	1,491 Ward	-	-
June 19	41.8%	1,518 Ward	43.1%	1,566 Ward	35.1%	1,274 Ward
June26	42.8%	1,555 Ward	43.8%	1,591 Ward	39.3%	1,428 Ward

Completion Report

Output/ Purpose/ Overall goal	Indicator	Attainment Status
	Indicator 1-5: Level of understanding by WAEO/VAEO on data collection method	According to questionnaire survey conducted in the past, the level of understanding is summarized below.
Output2: Backstopping activities for ARDS by M&E TWG are strengthened.	Indicator 2-1: Number of the trained officials on data analysis and reporting	The activities and results relevant to this indicator are as follows.
	Indicator 2-2: Evaluation of the users on LGMD2, common reporting formats and training guides	Similar to the Indicator 1-4, the results of the questionnaire survey are as follows.

Indicator 1-5 attainment:

Points important in data collection method	% LGA replied that VAEOs/ WAEOs "understand well" or "Understand".		
	Feb-Mar, 2014 (154 LGAs)	Nov-Dec 2014 (21 LGAs)	Mar 2015 (136 LGAs)
Preparation of the farmer list	63	76	84
Select randomly 10 farmers out of the list	54	57	71
Collect productivity and planted area as data (not production)	60	81	79

This data suggest that the understanding of VAEOs/ WAEOs on data collection method is gradually improving.

Indicator 2-1 attainment:

Target group	Data analysis by Excel	Training on data analysis and report writing	Data analysis by ARDS-LGMD2/ Web portal
M&E TWG	21	16	15
Region	69	50	50
LGAs	272	-	384
Total	362	66	449

The expected target numbers of training participants are approx. 20 M&E TWG members, approx. 50 regional officers (2-3 per Region) and approx. 200 LGA officers (1-2 per LGA). In comparison with these, the necessary number of related officers have been trained for data analysis.

Indicator 2-2 attainment:

Usefulness of documents, tools relevant to ARDS	% LGA responding "very useful" or "Useful"		
	Feb-Mar, 2014 (154 LGAs)	Nov-Dec 2014 (21 LGAs)	Mar 2015 (136 LGAs)
VAEO/WAEO Formats	81	95	94
Training Guide for V/W Formats	84	100	90
Training Guide for LGA officers on data collection, entry and analysis	85	62	93
LGMD2/LGMD2i	81	71	79
LGMD2/LGMD2i User manual	83	91	82

According to the results, it seems that LGA officers generally consider all documents or tools are useful. However, the result of the software "LGMD2/LGMD2i" indicates low appreciation suggesting users have some difficulties for the software before upgrading.

Output/ Purpose/ Overall goal	Indicator	Attainment Status
Output 3: Coordination of ASDP M&E to implement ARDS is enhanced.	Indicator 3-1: Number of presentations on ARDS	Number of occasions of ARDS presentation or sharing is shown below. 1) Presentation to higher level (higher than directors) of ASLMs (4 times) - MAFC (January, 2014) - PMO-RALG (June, 2014) - MLFD (December, 2014) - MIT (December, 2014) - In addition, PS of MAFC (December, 2013, and April, 2015) 2) Presentation to Region (3 times) (In addition, Regional Agricultural Advisors and Livestock Advisors have always been invited to ARDS roll-out training) - Regional commissioner (June, 2012) - Regional ASDP Coordinator (May, 2013, and April, 2015) 3) LGA level (4 times) - District commissioner (June, 2012) - DED (District Executive Director) (September, 2014) - DALDO/ DAICO/ DFLO (October, 2014, March, 2015) 4) DPs (2 times) - DPs meeting (June, 2013) - Food security workshop at FAO, Rome (July, 2013) Considering these activities, explanation and sharing of information on ARDS have been conducted to a satisfactory level.
	Indicator 3-2: Number of meetings on the coordination of ARDS related issues.	There were many meetings and gatherings during the Project period on the topics of ARDS in relation to ASDP and overall improvement of agricultural statistics. The number of meetings and gatherings which the Project participated is as follows. - Meetings for ARDS Review (3 times) - Meetings on the Agricultural Statistics Strategic Plan (3 times) - Meetings on general agricultural statistics[30] (TSMP、NSCA、CountrySTAT, etc.) (4 times) - Meetings on livestock conversion factor study (3 times) - Meetings on small geographical area data estimation by FAO (2 times) From above, it is concluded that attendance on meetings related to coordination of 以 ARDS related issues was sufficiently done.

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[30] TSMP (Tanzania Statistics Master Plan）: This is a master plan for national statistics including agricultural statistics. NSCA (National Sample Census of Agriculture）: This is the most detailed agricultural data system with approximately 50,000 samples. It is conducted every 10years. CountrySTAT: This is a web-based data viewing system introduced by FAO. Agricultural data collected by the Statistics Unit of MAFC is uploaded.

3.2. Results of Review based on DAC Evaluation Criteria

The overall assessment is "Fair" which is derived from the scale of five in assessment: *Very satisfactory, Satisfactory, Fair, Unsatisfactory, Very unsatisfactory*. The evaluation of each criterion is as follows:

● Relevancy: Highly relevant

● Effectiveness: Relatively effective

● Efficiency: Relatively Efficient

● Impact: While the potential impact is high, actual attainment thereof depends upon forthcoming results of activities of the Project.

● Sustainability: It is sufficiently sustainable in organizational aspects. But its financial sustainability depends upon the contents of ASDP2.

3.2.1. Relevancy

The relevancy of this Project is considered "highly" with following reasons.

1) The overall goal and the purpose are directly related to ASDS/ASDP which are the development framework of Tanzania agricultural sector.

2) ARDS which is the target of the Project occupies an important position in the overall Tanzania agricultural data (statistics) system as defined in the Agricultural Statistics Strategic Plan (June 2014). Moreover, a program document is currently under preparation for ASDP 2, within which a monitoring and evaluation system is envisioned, including ARDS as part of the overall arrangement.

3.2.2. Effectiveness

Based on following reasons, the Project is judged to be "relatively effective".

1) As to the Project Purpose "ASDP M&E is conducted on the basis of national agricultural data collected through improvement of ARDS", the data submission to the national level is still limited at the level of around 40%, despite the gradual tendency of improvement. Data use at the national level is thus not sufficient at present. However data are used at the district level for a broad range of purposes including regular reporting to the management, reports to the local congress, DADP preparation, Budget preparation, and even for responding to data inquiries by the national level, NGO and private companies. Full operation and utilization of ARDS therefore requires further time and continuing engagement of GoT.

2) Through the supports of the Project, ARDS has been nationally rolled out. Because of the development and improvement of the software (ARDS-LGMD2/ Web Portal), ARDS is in the right track to the full operation, having laid out the foundation for the ASDP monitoring and evaluation.

3) Also understanding on the roles and functions of data systems has been enhanced   within

agricultural sector, and in the process the roles of ARDS was clarified for the purpose of achieving effective ASDP monitoring and evaluation of ASDP.

3.2.3. Efficiency

Due to following reasons, the efficiency of the Project is assessed "relatively efficient."

1) As for the costs of the Project, the delay and reduction of budget disbursement which were caused by the transition of ASDP from phase 1 to 2, had significant effects on the Project implementation in terms of travel expenses needed for training to the local officers. In addition, the costs of the Project was expanded due to the increase of the number of extension officers and the local governments. The latter also caused the Project to spend much longer time for the planned activities,

2) On the other hand, the M&E TWG which has been the counterpart of the Project from Phase 1 continued its active engagement to the Project organizing meetings regularly. Moreover, for the activities of national roll-out of ARDS, it organized itself in a set of small groups so that the activities were conducted in a more efficient and effective manner, saving the time and costs of the implementation.

3) The Project has an important component of software development and upgrading. The Project, while utilizing the local developers as much as possible, mobilized technical experts as Project team members and assured proper execution of the process.

4) In combination with the limited internet environment of the country, the Project needed to spend more than planned time for software upgrading, resulting the national roll-out of the final version of the software (ARDS-LGMD2/ Web Portal) only in March 2015.

3.2.4. Impact

In view of the following, impact of the Project is assessed as "while the potential impact is high, actual attainment thereof depends upon commitment of GoT to operationalize ARDS."

1) The Overall Goal "ASDP Monitoring and Evaluation (M&E) is improved through interactive operation of relevant activities," is being attained. This is because the important role of ARDS has been demonstrated by the ARDS review conducted in the 2nd year.

2) The coordination among different data systems of agricultural sector has been stipulated by the Agricultural Statistics Strategic Plan (ASSP) which was finalized in June 2014. . Based on the Plan, actions such as the implementation of the Annual Agricultural Sample Survey are being taken, and GoT and DPs are jointly following a comprehensive approach for the overall improvement of agricultural statistics and data.

3.2.5. Sustainability

Sustainability can be discussed in organizational, financial and technical terms. In view of the assessment below, it is concluded that the Project is sustainable in terms of organizational aspects while financial

sustainability is still uncertain as it will be affected by the budget allocation to LGAs and the central ministries under ASDP2. In the technical respect, there are remaining challenges in strengthening of IT environment and capacity development of IT staff of ASLMs for operation and maintenance of IT parts of ARDS. Overall sustainability is judged "relatively sustainable".

Organizational sustainability:

1) As to the operation of ARDS, its front line, i.e. VAEO/WAEOs, is already firmly established, although the number of officers is by no means sufficient. While the deployment of extension officers is gradually improving, LGAs take responsibility of training newly employed VAEO/WAEOs.

2) At LGA level, almost all LGAs have both agricultural statistician and M&E officers assuring the ARDS operational. However, when statisticians and M&E officers are good at computer operation, they are likely given more work in report preparation and other duties due to their computer proficiency. In order to avoid such unfair situations, involvement of other officers (forming a team and diverging duties) and their capacity building in data processing and analysis must be pursued. Also in-house training for new (replacing) officers in charge of ARDS is essential at both regional and LGA levels.

3) Another hurdle for the ARDS operation is a structural reform in dividing DALDO office into crop section (DAICO) and livestock section (DLFO) at LGA level. LGAs are encouraged by the M&E TWG as well as by the ARDS Operation Guide to assure that DAICO and DLFO offices should work together for the ARDS operation as well as putting effort to allocate both crop and livestock extension officers in ward level.

4) At the national level, ARDS operation monitoring must be further strengthened in order to improve data submission from LGAs and data utilization. Institutionalization of ARDS supports such as routine activities of the TWG's monitoring team and official specification and demarcation of responsibilities on ARDS operation should in the job description of officers in charge of ARDS at all levels.

Financial sustainability:

1) Financial situation of LGAs (including extension officers) has greatly been and will be affected by the budget allocation of ASDP1 and 2. Although it is not clear at present how much funds will be supplied to LGAs in ASDP2, if the level of budget is lowered in comparison to the present level, the ARDS operation will be significantly restricted by the lack of funds. In the Project, the basic cost items and exemplary level of costs were shown in the ARDS Operation Guide so as to facilitate LGAs to secure necessary budget for the ARDS operation.

2) In the past, during ASDP1, LGAs had a steady inflow of budget from the ASDP Basket Fund. But as the resources of the Basket Fund dwindled towards the end of ASDP1, DADP funds to LGAs rapidly decreased to the very limited amount in the last few years of the Program. The reduction was especially severe in ACBG and AEBG which are very relevant to the ARDS operation, and

adversely affected the ARDS operation at LGA level. The Project lessens the budgetary pressure for the ARDS operation by developing page-reduced WAEO/VAEO formats which helps LGAs to reduce the costs for paper and photo-copying.

3) Budget allocation to the central ministries under ASDP was also a serious concern. They were frequent delay in disbursement and reduction in actual amount of disbursement. In the coming ASDP2, while the details are now under preparation, if budgets for central activities are restricted there, the ARDS operation is further disrupted due to limited backstopping supports to LGAs by the center and limited resources for server management and software upgrading..

4) ASDP2 budget is currently under discussion between GoT and DPs. While it is not certain, there is a proposal that core budget should be distributed to all LGAs for their routine activities. The ASDP2 Program Document explicitly states indispensable of such activities as planning and M&E for the overall agricultural sector management. Such a financial arrangement of ASDP2 should positively supports the ARDS operation.

Technical sustainability:

1) In the effective operation of ARDS, the software for data assembly and transmission (ARDS-LGMD2/ Web Portal) is an important component. The Project employed local developers for the upgrading of the software. Such an arrangement made easier counterpart's future consultation and engagement for improvement of the software, enhancing the sustainability of the Project. In particular, the development of the web-based software has greatly reduced the trouble of re-distribution and installation of upgraded version of the software, and improved the capacity of data transmission.   The latter made the ARDS operation and management in the technical areas much easier.

2) On the other hand, the operation and maintenance of ARDS server has been placed in the hands of an American private company because the IT environment of MAFC and MLFD (insufficient channel capacity for data transmission, frequent power outage, limited power backup and air-conditioning capacity, etc.) has been poor. This arrangement demands less budget and in fact effective. However if GoT will aim at its own management of the server, it is the must that GoT should improve the IT conditions greatly.

3) For effective management and maintenance of the above software and server, capacity development of IT staff of MAFC and MLFD is indispensable. The Project attempted to enhance the sustainability of this respect by strengthening the capacity of a few IT staff by providing technical training. The trained staff shared their skills and knowledge with other IT members of the office. Although such supports assured the sustainability to some extent, further actions are needed in such areas as expansion of engagement of IT team of the M&W TWG to the IT management of ARDS, establishment of routine works of server maintenance and data backup, capacity of negotiation and contract management of IT staff necessary for working with local developers, and other overall capacity for IT related management.

3.3. Achievements of the Project

Through the implementation of the Project, following have been achieved.

(1) Steady progress to the full operation of ARDS

As a member of the M&E TWG, the Project completed the national roll-out of ARDS and attained laying down foundations for further improvement for full operationalization. Also it advanced the level of the backstopping capacity of the M&E TWG. Although there are challenges requiring continuous efforts by the TWG for fulfilling the effective operation, we consider the purposes of the Project have almost been accomplished. In addition, ARDS has been firmly placed as one of the agricultural data/ statistics systems by the ASSP.

The letter issued by PMO-RALG after the completing the national roll-out also officially recognized ARDS as a formal data collection system of the sector, directing its proper operation to LGAs. Moreover, the technical problems associated with LGMD2 and 2i have been lessened considerably by the introduction of the web-based application, ARDS-LGMD2. This conversion circumvented such field difficulties as irregularities taking place during program installation and caused by site-specific IT conditions (obsolete OS of computers, insufficient memory or CPU capacity, etc.), enabling the ARDS operation further accessible.

(2) Knowledge and skill Improvement of stakeholders of ARDS

The Project provided ARDS training (about data collection formats) to about 8,000 extension officers of the country. Now all officers use the same formats, and collect and submit data in the same cycle. Because of this undertaking, knowledge and understanding of extension officers (what and how they are supposed to collect data) were facilitated greatly. Furthermore, in addition to the use of formats, officers at LGA were trained in terms of data quality check, simple data analysis and report writing with ARDS data. Their understanding and skills were strengthened in not only ARDS operation but also data processing and analysis.

At the central level, capacity of the M&E TWG has been improved. The national roll-out of ARDS was almost all carried out by the TWG members. Through the relevant activities like preparation of the materials, conducting rehearsal, and responding to questions from regions and LGAs, they deepened the understanding of ARDS (definition and practical issues of data, collection methods, aggregation, etc.) In the third year, they received a training specifically designed for data analysis, extracting useful information from a set of data. In the fourth year, corresponding to the upgrading of the application to ARDS-LGMD2, the members further acquired technical skills of data processing and analysis on the web-portal. Farther the TWG improved report writing, organization of meeting with efficient communication, time management, regular reminding of necessary actions among each other, all of which facilitated TWG's efficient implementation of day-to-day activities.

(3) Commitment of Tanzania government

Throughout the Project period, Tanzanian side with the M&E TWG at the center continuously showed firm commitment to the Project. The TWG meetings were regularly convened on monthly basis, and ad hoc meetings were also possible when needs arouse. Upon the close of ASDP1, many TWGs became dormant, but the M&E TWG had been almost only one active group with on-going activities of ARDS roll-out. Management of MAFC has also been supportive to the Project with understanding of the importance of ARDS.

3.4. Others

(1) Results of Environmental and Social Considerations

Not applicable

(2) Results of Considerations on Gender/ Peace Building/ Poverty Reduction

Not applicable

4. Lessons learnt

(1) Maintaining the participatory process, while encountering its shortcomings later

In the every aspect of the Project, efforts were made to encourage the TWG to lead the process. Principles and basic directions, contents, preparation and implementation of activities have all been discussed in the TWG meetings and secured agreements from the members. If one sees that ARDS roll-out and operationalization are equivalent to the adoption of a new institution, the necessity of such a mode of project implementation is too obvious. Without such involvement no sustainability or viability of a system such as ARDS will be assured.

As a result of the implementation mode, as described above, the counterpart and the government side in general maintained firm commitment to the Project. Consequently the TWG continued positive engagement in the Project and took large parts in the roll-out and other activities, advancing their own knowledge and skills.

However, as practical operation of ARDS occupies central space of the Project, the participatory implementation process gradually start showing shortcomings. For supporting and administering the ARDS operation, more routine, day-to-day and quick actions became necessary. Such actions demand a small group with specific mandates, making swift actions under clear communications. On the contrary, the original mode of operation where all issues are discussed and decided by the TWG of more than 15 members is not well-suited to such jobs because involvement of many members means decision making takes long time and responsibilities of actions are diluted, resulting in lots of unfulfilled jobs. Noticing such inadequacy, the Project proposed to select a few members to deal with specific tasks. However due to its long practice of joint work, it took some time for the TWG to really set up a team for monitoring and administrative work of ARDS. Eventually two teams were formed: one is for ARDS operation monitoring and the other is for IT issues (a group of administrators for ARDS-LGMD2 technical issues). Still more works need to be done to institute a whole of effective monitoring and administrative body for ARDS operation.

(2) Active engagement with the activities for agricultural statistics improvement

Parallel to the Project, there was a significant movement of improving overall agricultural statistics systems. Because ARDS is one of the agricultural data systems, the Project together with the TWG actively participated in the movement. Attending various meetings, the Project supported the preparation of the Agricultural Statistics Strategic Plan (ASSP) which compiled and harmonized all relevant statistics/ data systems of agricultural sector. In the process of the ASSP preparation, a review of ARDS was proposed and undertaken to clarify the roles and benefits of ARDS. The Project helped this review from the beginning to the end. The Project also recognized the importance of the Annual Agricultural Sample Survey (AASS) which is proposed by and included in ASSP to assume a central role for collecting a viable set of agricultural statistics.

(3) Persistent engagement with various stakeholders of ARDS

Many stakeholders were related to the ARDS improvement and roll-out, the Project intently engaged in them through many meetings and discussions. For instance, the Project participated in meetings and workshops of agricultural DPs and made presentation on ARDS. The same was done for the government side where a number of ministries are involved such as MAFC, MLFD, MIT, PMO-RALG, and NBS. The Project made use of many opportunities of gatherings for explaining the workings and benefits of ARDS. It seems that such persistent efforts resulted in the positive outcomes such as clear account of ARDS in the agricultural data/ statistics by ASSP and the issuance of formal letter by PMO-RALG on the ARDS.

(4) Use of local sub-contractor for system development

Following the phase 1, the Project continued to use local developers for the system development and upgrading. This approach is advantageous in terms of the utilization of local services and sustainability of the system the Project introduced. However, because of limited ability of the local sub-contractor, the Project encountered a number of challenges in the process. Eventually the Project had chosen a new sub-contractor and made substantial changes to the system. In combination with inadequate internet environment of the country, the process of system development and upgrading took much longer time than originally planned, having exerted fairly large influence on the progress of the Project.

In future, it is necessary that while software management is in principle done by sub-contractors, the Project needs to provide proper guidance. In addition, it is important to set the plan with sufficient time, taking into consideration of necessary duration for system upgrading.

(5) Close communication with JICA Tanzania office

Throughout the period, the Project has been implemented under close communication with JICA Tanzania Office. Usually there was a weekly meeting with the office where progress, issues and plans of the Project was reported and advices were sought from the JICA Office. On the other hand, information on overall agricultural sector including activities of DPs and JICA's planned actions were shared by the office. Such interactions were indispensable especially in the field of agricultural statistics improvement. The Project greatly benefited from such close and continuous communication. The advices and shared information were valuable for the Project in setting general direction of and prioritizing activities, enabling effective and efficient project implementation.

5. For the Achievement of Overall Goals after the Project Completion

(1) Full operationalization of ARDS

The national roll-out of ARDS has completed by the Project, and bases of the operation have been laid out. Still continuous efforts should be rendered to materialize full and steady operation of ARDS. Necessary actions are described below.

 1) ARDS operation monitoring

Although the national roll-out completed, the operation at LGA level is not satisfactory, remaining low in its data submission. As to the submission of the monthly data, the rate is around 40% and in the trend of gradual improvement. The submission rate of the quarterly data is about 30% from the extension officers, while the same from the district officers (Quarterly report needs both types of data) is 13% (as of the end of June), showing the engagement of district is still weak. The submission status of the annual data needs to be seen, the fact that the quarterly and annual data are all additions to the monthly data requires careful follow up of the status of such data submission. In order to improve the situation, the monitoring by the center must be further strengthened. In this respect, the Project prepared basic structure and operation of the monitoring. But the institution should be improved by carrying following measures.

- Regular reminding and follow-up (on Format distribution and data entry on time, etc.)
- Encouragement to LGAs on ARDS team formation to ensure steady operation of ARDS.
- Intervention to LGAs with poor performance and praising of LGAs with good performance
- Instruction to LGAs of poor internet connectivity about sending data by email or other means.
- Regular report of the ARDS operation to the management of ASLMs
- Sharing of good practices of ARDS operation with other LGAs
- Single window for inquiries from LGAs and accumulate and disseminate the inquiries and answers

 2) Administration, maintenance and improvement of ARDS

ARDS consists of many components including VAEO/WAEO Format, Integrated Data Collection Format, ARDS-LGMD2/Web Portal, various guides and guidelines. For steady and continuous operation of ARDS, these components must be reviewed on regular basis and if necessary revised. The Project confirmed the contents of the activities and their frequencies, actual cyclical actions have not yet started. From now on, following tasks should be carried out by the government with the M&E TWG at the center. Guidelines and manuals should eventually be compiled as attachments to the ARDS Operation Guide.

- Basic information for data entry (list of region and LGA, list of crop name and animal name, etc.) must be reviewed.
- VAEO/WAEO Formats need to be reviewed.
- ARDS Operation Guide, and other Training Guides need to be reviewed.

● Updating of ARDS Web Portal (Dashboard, News and Articles, and User ID)

● Updating of ARDS-LGMD2 user manual and technical manual.

(2) Appropriation of budget for ARDS operation

All LGAs need to secure minimum amount of budget for the ARDS operation. This minimum amount is illustrated in the ARDS Operation Guide as shown below whereby LGAs are encouraged to secure at least this level of budget.

Table 3.4.1: Minimum budget for ARDS operation at LGA level
(VAEO/WAEO Formats are distributed only up to the Ward)

Item	Details	Number (WAEO xx, VAEO zz)	Page/liter/day		No of Copies/ Event	Unit price	Frequency	Cost
			Amount	Unit				
		(1)	(2)	(3)	(4)	(5)	(6)	(7)=(1)x(2)x(4)x(5)x(6)
Printing and Photocopying	Monthly	20	5	page	2	150	12	360,000
	Quarterly	20	4	page	2	150	4	96,000
	Annual	20	11	page	2	150	1	66,000
Fuel for WAEO	Monthly	20	3	liter/month	1	2,200	12	1,584,000
Bicycle maintenace for VAEO	Monthly	80	1	time/month	1	2,000	12	1,920,000
Stationary for VAEO/WAEO	Monthly	100	1	time/month	1	500	12	600,000
Submission of comlete VAEO/WAEO format (by bus, etc.)	Monthly	20	1	time/month	1	2,000	12	480,000
Monitoring by DMEO	Monthly	1	4	days/month	1	45,000	12	2,160,000
	Fuel	1	10	liter/month	1	2,200	12	264,000
ARDS-LGMD2 internet connection	Monthly	1	1	time/month	1	10,000	12	120,000
(A) Total								7,650,000

Assumption: There are **20 WAEOs and 80 VAEOs**.

As observed in the table, major cost items are payment to VAEOs and WAEOs for their activities. These are parts of LGA's recurrent budget. Therefore understanding of LGA's management is even more important for securing budget for the ARDS operation. However, LGAs' budget has dwindled towards the end of ASDP1 and during the transition to ASDP2, hence hindering the steady operation of LGAs not only of ARDS but any other general duties. Because the budget is the most fundamental function of the government, such an issue is beyond the scope of the Project. Still stakeholders including the TWG should take necessary measures to the extent possible. Following are two of such measures.

● To request PMO-RALG to issue a letter demanding all LGAs to set aside budget for the ARDS operation.

● To encourage the management of LGAs whenever opportunities arise on the necessity of securing budget for the ARDS operation.

On the other hand, budget should also be assured at National level for ARDS operation. Their major responsibilities include regular monitoring and communication with LGAs, technical backstopping to Regions and LGAs, provision of training to regions and LGAs on data processing and analysis, maintenance of server and data backup, upgrading of ARDS-LGMD2/ Web portal for better operability of the system. If the maintenance of server and data backup are outsourced to a service provider in Tanzania, it will require approximately USD 5,000 per year. Other costs vary depending upon the scope and scale of the activities. These must be included in their annual budget.

(3) Utilization of ARDS data

In the future, focus of ARDS supports should be placed more on the utilization of collected data, in addition to the realizing the full operation of ARDS. In the present Project, because a greater amount of time was spent on roll-out, introductory training and effort for initial stabilization of the operation, promotion of data utilization was limited to several trainings which parted basic knowledge and skills for data analysis. At present, data utilization is more progressed at LGA level. At least several LGAs are surely using ARDS data for regular reporting to the management. On the contrary, the utilization is still unsatisfactory at central level due mostly to the fact that not all LGAs submit their data so that the center is unable to aggregate and analyze data. In the coming years, we need to work harder for data utilization in line with activities of sensitization of ARDS and quality improvement. Following are specific activities.

1) ARDS data utilization (Data utilization at central and local levels, and improvement of data quality, etc.)

[At local level]

● Training on data analysis and application to policy making and planning

● Dissemination of good practices of data utilization

● Promotion of use/ application of ARDS data to specific data collection (those data requested by the center, like GDP data)

[At central level]

● Training on data analysis and application to policy making and planning

● Report preparation based on ARDS and other data

[Improvement of data quality]

● Enhancement of understanding of LGA on data quality (making sure extension officers follow the directed method of data collection, and quality checking on data entry like rejecting extreme values among collected data, etc.)

● Improvement of auto functions for extreme-value-rejection and missing data estimation

● Improvement of consistency with Annual Agricultural Sample Survey (re-allocation of data and calibration of data)

2) Dissemination and sensitization of ARDS

● Regular presentation to higher authorities of ASLMs.

● Regular presentation to higher authorities of region and LGA offices

● Distribution of newsletters and pamphlets

(4) Further upgrading of ARDS

The current version of ARDS has sufficient functions for the present demand of data collection,

aggregation and analysis. But further improvement is desirable for easier and more effective operation and data utilization at central, regional and LGA level. Specific improvements are as follows.

[Improvement of ARDS-LGMD2/ Web portal]

- To equip with message board function for smooth and easy communications among users, central, regional and LGA users.

- Improvement of data analysis screens (the current screens are still complex and not user-friendly)

- Auto reply function when data is submitted to the server

- To activate the function of missing data estimation to address possible situation that LGAs are unable to submit data for all wards (non-submission or unable to collect data).

- To modify the print layout of the quarterly or annual report to include a field for DAICO/ DLFO (or equivalent) confirmation of the report, with which involvement of management in data use should be enhanced.

- In anticipation that the ARDS server will be placed at MAFC again, further improvement of the internet environment (to have a new contract to obtain internet connection with greater number of bands) and physical environment for steady running of the server (to provide a generator to secure power supply to air conditioning during power shutdown).

[Simplification of VAEO/WAEO Formats]

- Re-assessment of the scope and types of data to be collected by ARDS so as to reduce work load of extension officers and to increase the sustainability of the system.

(5) Further harmonization of ARDS with other statistics and data systems of agricultural sector

The Agricultural Statistics Strategic Plan (ASSP) has been finalized, presenting clear demarcation of major statistics/ data systems of agricultural sector. From now, each system is given responsibilities to collect, assemble and report relevant data along their cycles. From the ARDS viewpoint, immediate concern is the harmonization with Agricultural Annual Sample Survey (AASS) which is scheduled to begin in 2015/16. ARDS should be adjusted to AASS by comparing obtained data from the two systems. ARDS also needs to be adjusted to other administrative data such as the Early Warning data of MAFC and animal disease data of MLFD. Expected actions are as follows.

- Adjustment with AASS (comparison of data values, deriving algorism for the adjustment, adjustment in data scope and types)

- Adjustment with the Early Warning data of MAFC (adjustment of data scope and possible cooperation in data collection)

- Adjustment with other administrative data (disease data of crop and livestock, agricultural mechanization data, irrigation data, farmer group data, and farmer training data, etc.)

6. Monitoring Plan from the end of the Project to Ex-post Evaluation

Not applicable. (A subsequent Technical Cooperation Project is planned.)