

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

The United Republic of Tanzania

**Project for Capacity Development
on Data Collection, Analysis, and
Data-based Reporting under ASDP**

Project Completion Report

November 2020

Japan International Cooperation Agency
(JICA)

International Development Center of Japan Inc.
(IDCJ)

Oriental Consulting Global Co. Ltd.

Map of Tanzania (Regions)



Source : Japanese Team using ARDS Data

Photos



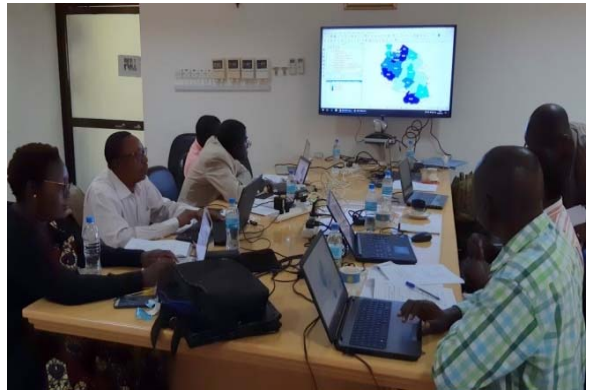
Training for the Technical Team
(January 2017)



Training for M&E TWG
(January 2017)



LGAs Training
(November 2017)



GIS Training
(May 2018)



Test Workshop for Technical Team
(July 2018)



Test Workshop for Technical Team
(December 2018)



Training for M&E TWG Technical Team
(January 2019)



Training for M&E TWG
(January 2019)



Supervising Visit to Dodoma Region
(November 2019)



High-level Seminar
(March 2020)



Training for MATI Tutors under COVID19
(July 2020)



Exhibition in Nanenane
(August 2020)

List of Abbreviations

AASS	Annual Agricultural Sample Survey
ARDS	Agricultural Routine Data System
ASDP	Agricultural Sector Development Programme
ASLMs	Agricultural Sector Lead Ministries (MOA, MLF, MIT, and PO-RALG)
ASR	Agriculture Sector Review
ASSP	Agricultural Statistics Strategic Plan
AWG	Agricultural Working Group (Development Partners)
BMGF	Bill and Melinda Gates Foundation
CC	City Council Administrative unit of local government authorities
COVID-19	Coronavirus disease 2019
CP	Counterparts
DADP	District Agricultural Development Plan
DAICO	District Agriculture, Irrigation and Cooperative Officer
DALDO	District Agricultural and Livestock Development Officer
D by D	Decentralization by Devolution
DC	District Council
DC	District Commissioner
DED	District Executive Director
DFID	United Kingdom Department for International Development (former name of Foreign, Commonwealth & Development Office, UK)
DLDO	District Livestock Development Officer
DLFO	District Livestock and Fishery Officer
DMEO	District Monitoring and Evaluation Officer
DP	Development Partner
DPLO	District Planning Officer
DPP	Department of Policy and Planning
DQMS	Data Quality Management Sheet
DS	District Statistician
DTER	Department for Training, Extension and Research
FAO	Food and Agriculture Organization
FETA	Fisheries Education and Training Agency
FY	Fiscal Year
GOJ	Government of Japan
GOT	Government of Tanzania
ICT	Information and Communication Technology
IT	Information Technology
JICA	Japan International Cooperation Agency
JSR	Joint Sector Review
LGA	Local Government Authority (includes CC, MC, TC, DC)
LGMD	Local Government Monitoring Database
LITA	Livestock Training Agency
MAFC	Ministry of Agriculture, Food Security, and Cooperatives (former name)
MAFF	Ministry of Agriculture, Forestry and Fishery, Japanese Government
MALF	Ministry of Agriculture, Livestock, and Fisheries (The ministry created by the merger of MAFC and MLFD in 2015. MALF was split into MOA and MLF in

	October 2017)
MATI	Ministry of Agriculture Training Institute
M&E	Monitoring and Evaluation
MC	Municipal Council
MIT	Ministry of Industry and Trade (2019-)
MITI	Ministry of Industry, Trade, and Investment (-2018)
MLF	Ministry of Livestock and Fisheries(2017-)
MLFD	Ministry of Livestock and Fisheries Development (-2017)
MOA	Ministry of Agriculture (2017-)
MOLHS	Ministry of Lands, Housing and Human Settlement
MW	Ministry of Water
NBS	National Bureau of Statistics
NCU	National Coordination Unit, ASDP2/ASDP2
NSCA	National Sample Census of Agriculture
O&M	Operation and Maintenance
OPRAS	Open Performance and Appraisal System
PDM	Project Design Matrix
PMO-RALG	Prime Minister's Office - Regional Administration and Local Government (Former name; reorganized to PO-RALG in 2015)
PO-RALG	President's Office - Regional Administration and Local Government
PS	Permanent Secretary
RAA	Regional Agriculture Advisor
RAS	Regional Administrative Secretary
RC	Regional Commissioner
RIC	Region in Charge
RLA	Regional Livestock Advisor
RS	Regional Secretariat
SAE	Small Area Estimates
SV	Supervising Visit
TC	Town Council
TF	Taskforce
TOR	Terms of Reference
TOT	Training of Trainers
TWG	Thematic Working Group
UDSM	University of Dar es Salaam
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VAEO	Village Agricultural Extension Officer
WAEO	Ward Agricultural Extension Officer
WB	World Bank

* The names of Tanzanian government ministries have changed a few times during the duration of this project. This report uses the name that was in use at the time of the reported event.

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Map of Tanzania

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ANNEX

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ANNEX3: PDM (All versions of PDM)

ANNEX4: Succession Plan

Separate Volume (CD)

ANNEX5: ARDS newsletter (No.1&2)

ANNEX6: ARDS brochure

ANNEX7: Operation Guide ver.12

ANNEX8: ARDS Web Portal User Manual (Phase 3~5)

ANNEX9: ARDS Web Portal Operations and Maintenance Technical Manual (Phase 3~5)

ANNEX10: M&E TWG Action Plan for FY 2015/16, 2017/18, and 2018/19

ANNEX11: TWG Technical Team Training Material

ANNEX12: VAEO/WAEO format

ANNEX13: Extension Officers' Manual and District Officers' Manual

ANNEX14: Crop Calendar

ANNEX15: Basic Data Booklet

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1. Basic Project Information

1.1. Background

Tanzania's Agricultural Sector Development Programme (ASDP), launched in July 2006, adopted a sector-wide approach to agricultural development, based on a basket fund supported by the Government of Tanzania (GOT) and various Development Partners (DPs). The four Agricultural Sector Lead Ministries (ASLMs) — consisting of the Ministry of Agriculture Food Security and Cooperatives (MAFC), Ministry of Livestock and Fisheries Development (MLFD), Ministry of Industry and Trade (MIT), and the Prime Minister's Office – Regional Administration and Local Government (PMO-RALG)—jointly implemented the ASDP¹ until June 2013.

To track and assess the performance of the ASDP, the Monitoring and Evaluation Thematic Working Group (M&E TWG)—consisting of ASLM officers—was established in December 2006. The Agricultural Routine Data System (ARDS) has been a primary source of agricultural data and information for ASDP. Under ARDS, data are collected and sent on a monthly basis from the grassroots (village level) to higher levels of administration, where they are further aggregated: district, region, and then, finally, to the ASLMs. Hence, improving the quality of the ARDS was an urgent task, to ensure proper monitoring of ASDP progress and effectiveness.

Against this backdrop, in March 2008, the Project for Capacity Development of the ASDP M&E System was implemented by ASLMs with Japanese team for a period of three years. Based on the activities in the pilot LGAs (Morogoro and Dodoma regions), various improvements were made to the ARDS, including the introduction of (i) the VAEO/WAEO Format, (ii) the Format for Integrated Data Collection, (iii) the software LGMD2, and (iv) training guides and related human resource development. Subsequently, a second phase of support was initiated in August 2011 for a period of four years, called the Project for Capacity Development of the ASDP M&E System Phase 2. Through the Project, ARDS was rolled out nationwide to all LGAs; moreover, the data collection software was improved (ARDS-LGMD2), to create a web-based system for data input as well as data utilization.

Currently, ARDS is officially recognized as a government data collection system for the agricultural sector. ARDS is composed of the following components:

- VAEO/WAEO Format: These are three standardized formats (Monthly, Quarterly, and Annual) for data collection at the village and ward levels
- District Integrated Report Format: These are two standardized report formats (Quarterly and Annual), which are generated by assembling the data from the VAEO/WAEO format and the data collected at the district level.
- ARDS Web Portal: This is a web-based computer software/application through which users can enter, transmit, and analyze data, and prepare reports based on the data. It is a refined version of the previous ARDS-LGMD2. ARDS Web Portal can produce reports from district, region and national level based on the collected data.

The GOT implemented ASDP phase 2 (ASDP2)² as a successor of the ASDP (2006–2013). ARDS continues to be an important data collection system in ASDP2. The steady and effective operation of the ARDS is essential for improving the quality of agricultural data and the statistics system in Tanzania. Against this

¹ These were the Ministry names at that time. Owing to merge and split of ministries since 2016, as of 2020, the major members of the ASLMs are: the Ministry of Agriculture (MOA), Ministry of Livestock and Fishery (MLF), Ministry of Industry and Trade (MIT), and President Office – Regional Administration and Local Government (PO-RALG).

² ASDP2 commenced after this Project started from FY 2017/18 (the President launched the Programme in June 2018); its implementation is ongoing as at the time of writing this completion report.

backdrop, and following the achievements of the previous two projects, the current project—the Project for Capacity Development on Data Collection, Analysis, and Data-based Reporting under ASDP (hereinafter, referred to as the Project)—was jointly initiated by the Government of Tanzania (GOT) and the Government of Japan (GOJ) through Japan International Cooperation Agency (JICA). The Project was implemented with the aims of securing the stable operation and management of the ARDS, improving data quality, promoting data utilization, and harmonizing ARDS with other agricultural statistics.

1.2. Project Basic Information

Basic information regarding the Project is summarized in the table below.

Table 1.1: Basic Information Regarding the Project

No.	Item	Contents
1	Country	United Republic of Tanzania
2	Project Title	Project for Capacity Development on Data Collection, Analysis, and Data-based Reporting under ASDP
3	Project Period	Planned: September 2015 – June 2019 Actual: September 2015 – October 2020
5	Overall Goal and Project Purpose	<u>Overall Goal:</u> Policy dialogue in the agricultural sector is enhanced through the improved agricultural statistics, including ARDS (Agricultural Routine Data System). <u>Project purpose:</u> Utilization of data collected through ARDS is enhanced at the central and local levels.
6	Implementation organization	a) ASLMs ASLMs shall be responsible for leading the overall processes under the Project, with the MOA overseeing coordination among the ASLMs. b) PMO-RALG The Department of Sector Coordination, PMO-RALG, will coordinate between the ASLMs and LGAs. The Department of Information and Communication Technology of PMO-RALG will facilitate database management by LGAs at the regional level. c) M&E TWG The ASDP M&E TWG will oversee the day-to-day activities of the Project. Membership of the M&E TWG has expanded since the end of 2019 due to the start of ASDP2, and it now includes the Ministry of Water (MW), the Ministry of Land and Human Settlement Development (MLHS), and the Prime Minister’s Office (PMO) which controls the ASDP2 National Coordination Unit (NCU).

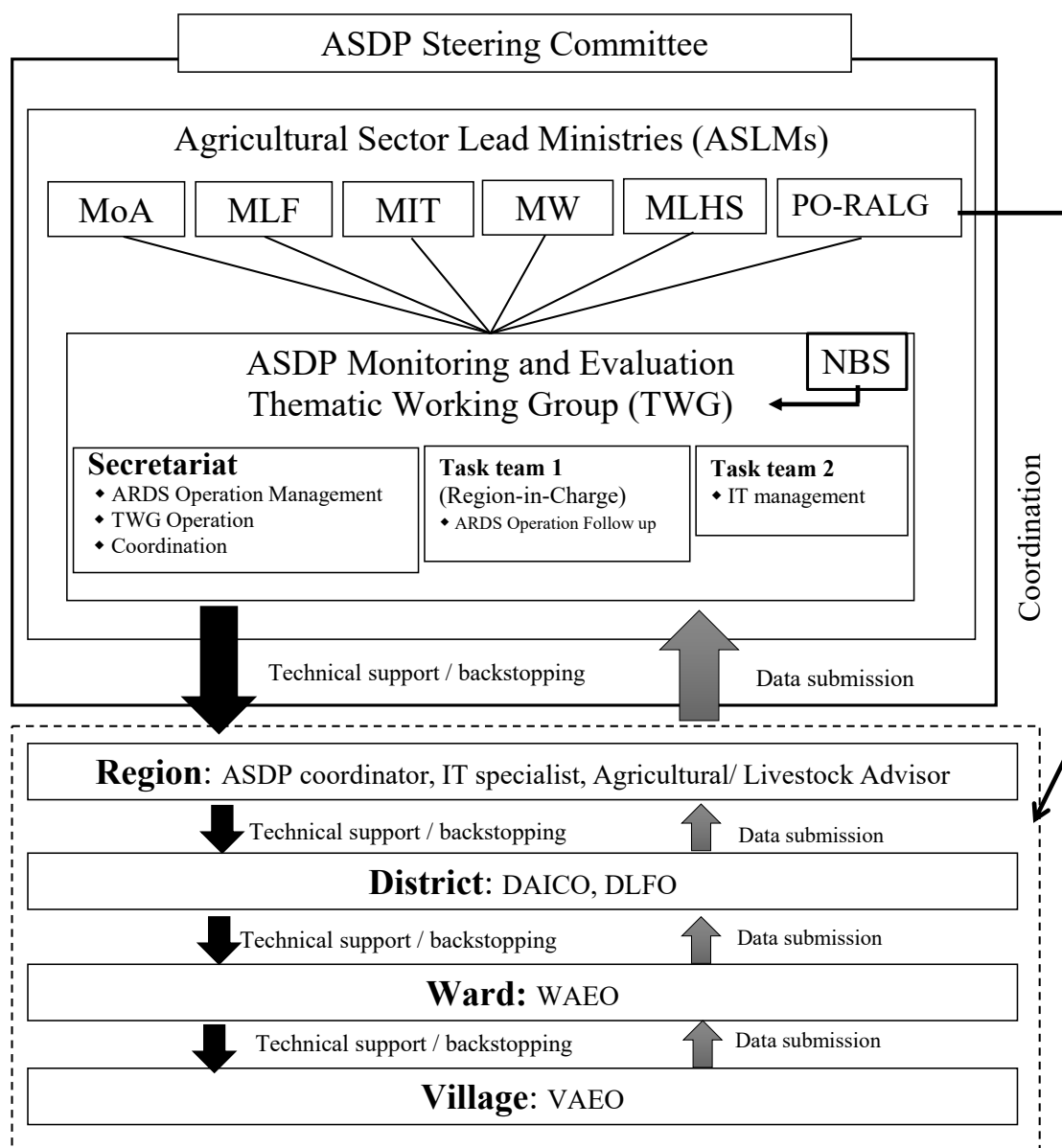


Figure 1.1 Implementation Set-up of ARDS (M&E TWG and ASLMs³)

³ Ministries included in the ASLMs are: MOA (Ministry of Agriculture), MLF (Ministry of Livestock and Fisheries), MIT (Ministry of Industry and Trade), MW (Ministry of Water), MLHS (Ministry of Lands, Housing and Human Settlement), PO-RALG (President's Office – Regional Administration and Local Governments); all Ministry names are as of 2020.

2. Project Results

2.1. Inputs

2.1.1. Inputs by the Japanese Side (Planned and Actual)

The inputs by the Japanese side are summarized in the following table (see ANNEX 1 and 5 for details).

Table 2.1.1: Inputs by the Japanese Side

Input Category	Planned	Actual
JICA Experts	(1) Chief Advisor/Institutional Development (2) Monitoring and Evaluation (3) Administrative Data Management (4) Agricultural Statistics (5) Coordinator (6) Other experts as needed	The experts (1) to (5) provided inputs as planned.
Provision of machinery and equipment for ASDP M&E TWG, RS, and LGAs	Equipment necessary for ARDS operation (1) Central level: vehicles (2) Local level: personal computers, printers, motorbikes, etc.	(3) Central level: 2 vehicles for the MOA, 33 laptop computers (28 out of 33 are for MATI), 14 printers (for MATI), 14 projectors (for MATI), 1 server, 1 UPS, and 1 battery pack for the UPS. (4) Local level: 20 laptop computers, 24 printers, 24 stabilizers, and 19 motorcycles were distributed to newly established LGAs. <i>Note: Other (non-new) LGAs had already received laptop computers and other equipment during the previous phases of the Project.</i>
Local expenses arising from Project activities	(1) A major upgrade of the ARDS Web Portal software, etc. (2) Support for ARDS Backstop training.	(1) Payment for sub-contracts with University of Dar es Salaam for a major upgrade and ongoing maintenance of the ARDS Web Portal software. (2) Expenses relating to ARDS backstop, supervisory visits, and workshops, such as paying per diem allowance and reimbursing transport costs of the CP and participants.

2.1.2. Inputs by the Tanzanian Side (Planned and Actual)

The inputs by the Tanzanian side are summarized in the following table (see ANNEX 1 and 5 for details).

Table 2.1.2: Inputs by the Tanzanian Side

Input Category	Planned	Actual
Counterpart personnel	M&E TWG members (including Follow-up team, IT team, and Management team (to be formulated))	Inputs were mostly as planned. In the M&E TWG, a region in-charge, a technical team, and a small task team for backstopping were appointed.
Office space	Office space for JICA experts	Input as planned. Desks, chairs, lockers, and

Input Category	Planned	Actual
		bookshelves, etc. were also provided.
Supply or replacement	Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts, and any other materials necessary for the implementation of the Project other than the equipment provided by JICA	Additional vehicles were provided for field trips. (Fuel cost borne by Japanese side)
Data and information	Available data and information related to the Project	Input as planned.
Running expenses necessary for the implementation of the Project	(1) Maintenance of the ARDS Web Portal server (2) Upgrade/improvement of the ARDS Web Portal software (3) Printing and distribution of VAEO/WAEO Format	(1) Input as planned. (2) Need did not arise (major upgrade was provided by the Japanese side). (3) Input as planned, although with some shortages.
Transportation expenses relating to the equipment	Expenses necessary for transportation within Tanzania of the equipment provided by JICA as well as for the installation, operation, and maintenance thereof	Transportation expenses to distribute the equipment were provided by the Project.
Necessary facilities for remittance	Necessary facilities for the remittance as well as utilization of the funds introduced into Tanzania from Japan in connection with the implementation of the Project, if required	Need did not arise.

2.1.3. Extension of Project and its Justification

After three years of implementation, GOT evaluated the progress as satisfactory as it had produced some results by then. Reflecting that assessment, the GOT requested the extension of the Project for two years in December 2018 which is to achieve further enhancement of sustainability, promotion of data utilization, and continuous improvement of data quality. Planned activities include improving sustainability to strengthen M&E TWG, continuing the improvement of the data quality through supervising visits and technical support to training institutes. Additionally, promotion and sensitization to wider stakeholders in GOT and Zanzibar, and publication of reports using ARDS data were expected to be achieved. The extension also covers promotion of ARDS in ASDP2. After discussion with JICA, one year of extension without the system development was agreed by both parties.

The Project started activities for the extended period from November 2019, but the actual operation was negatively affected by the pandemic situation caused by the Coronavirus diseases 2019 (COVID-19). Actual activity by the Japanese team was provided only for approximately four months, from November 2019 to March 2020. CPs also faced a few months of restriction on movement after March. Therefore, the Project could not implement some activities including the final backstopping for LGAs. Despite these restrictions, the Project conducted data quality monitoring, supervising visit to two Regions, a high-level seminar with demonstration to Zanzibar, publication of a Agriculture Data Booklet, Training for MATIs, thus contributed to the improvement of sustainability, which was the purpose of extension. On the other hand, it could not finish the activities of coordination with ASDP2, collaboration with other administrative data (NBS and food security data) as well as further use of data to analysis. The GOT needs to strengthen these areas by continuing project activities.

2.2. Results of Activities

This project was initiated with three expected outcomes, namely:

Output 1: Agricultural data are properly collected and submitted through the operation of ARDS,

Output 2: Agricultural data submitted through ARDS are accessed and shared among the users, and

Output 3: Harmonization of ARDS with other agricultural statistics is promoted.

As discussed in chapter 2.2.1, 2.2.2, and 2.2.3, several activities have been implemented to achieve these outputs.

This Project does not have a Joint Coordination Committee (JCC) and is instead managed by the M&E TWG under the Agriculture Sector Development Program- 2nd Phase (ASDP2). M&E TWG is a specialized working group formed under ASDP and its members include representatives from the ASLMs. The M&E TWG meets regularly in M&E TWG Meeting to discuss the M&E of ASDP. The Japanese Team participates in the meeting as members and collaborates to promote monitoring and evaluation of the ASDP and the overall agricultural sector.

The M&E TWG is responsible for coordinating M&E issues among ASLMs related to the ASDP, including ARDS. Since ASDP2 had not yet been implemented at the time of this Project's launch, M&E TWG initially focused on discussing ARDS, including day-to-day management and operational issues. The Japanese Team worked through the M&E TWG. The M&E TWG coordinates all activities, including analyzing issues, institutionalizing, and planning/implementing project activities and outcomes. Almost all crucial activities of ARDS projects are coordinated through M&E TWG meetings. The Japanese Team played a supportive role in the secretariat and assisted with initiatives; it, thus, fostered ownership from the government side. Any decisions and monitoring information are shared with ASLM management through M&E TWG meetings.

In total, the M&E TWG conducted 39 meetings to improve M&E in the sector. Of these, 25 meetings were held in Dar es Salaam, and other meetings were held in Dodoma; sometimes, meetings were held partially remotely depending on the locations of the ministries and COVID-19 situation.

The proceedings of each meeting are summarized in Table 2.2.1. All important activities are discussed and approved by the M&E TWG Meetings. The Japanese Team supported the Secretariat by providing technical advice and tried to foster initiatives and ownership from CPs.

Table 2.2.1: Summary of M&E TWG Meetings

Project Year	GOT Fiscal Year	Date	Major agenda	No. of participants
Year 1	15/16	2015/12/7	Project kick-off meeting hosted by DPP MOA Major issues relating to ARDS, and measures to address them	14
		2016/1/13	Sorting out ARDS technical issues Discussion on set-up of working teams within M&E TWG Action plan of M&E TWG (for FY 2015/ 16)	15
		2016/2/1	Short term contract with UDSM Study on ARDS issues, causes, and measures ARDS regular monitoring	18
		2016/3/10	Outputs of UDSM technical review Results of the study on ARDS issues, causes, and measures TOR for improving the ARDS Web Portal	12
		2016/4/27	Progress of ARDS Web Portal improvement activities	15

Project for Capacity development on Data Collection, Analysis, and Data-based Reporting under ASDP

Project Year	GOT Fiscal Year	Date	Major agenda	No. of participants
Year 2			LGA training plan ARDS regular monitoring	
		2016/6/3	Report on LGA training ARDS function for data validation Establishment of ARDS help desk	15
		2016/6/30	Presentation to MOA management Preparation of newsletters	11
		2016/7/28	Presentation to MOA management Presentation to Regional Commissioner and RAS Progress of ARDS Web Portal improvement activities Preparation of newsletters	12
		2016/11/8	Migration to the new (improved) ARDS Web Portal Explanation of new functions of the improved ARDS Web Portal ARDS regular monitoring	15
		2016/12/6	Testing by CP of the improved ARDS Web Portal Migration and training plans for the improved ARDS	14
		2016/12/16	Training plan for Regions and LGAs on the improved ARDS	13
		2017/2/10	Report on the training to Regions and LGAs	18
		2017/2/28	Response to comments shared by Regions and LGAs during the training TOR for the next ARDS improvement	12
		2017/4/11	LGA's task of report creation Revision of the ARDS Training Guide ASDP2 Result Framework Training to DED	12
	2017/5/9	Training to DED Mapping survey of ARDS data Test of the ARDS Web Portal	10	
	2017/6/20	Preparation of the ARDS Operation Guide Report on DED training ASDP2 Result Framework	11	
	2017/7/24	Inception report of the ARDS data mapping survey	11	
	2017/8/18	Test of the improved ARDS Report on ARDS data mapping survey Preparation of the ARDS quarterly and annual reports ASDP2 Result Framework	7	
	2017/9/6	Draft report of the ARDS data mapping survey ASDP2 Result Framework	14	
Year 3 and 4	17/18	2017/10/19	Test results of the improved ARDS Plans of system migration and training	10
		2017/11/3	Preparation of the training	13
		2018/2/8 (DSM/Dodoma)	Report on the training Mid-term review and measures to address issues TOR for further improvement of the ARDS Web Portal	18
		2018/3/9 (DSM)	New members of M&E TWG Monitoring of ARDS report preparation TOR for the next improvement of ARDS Web Portal VAEO/WAEO manuals	21
		2018/5/29 (DSM/)	Re-arrangement of ARDS monitoring Training plan	15

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Project Year	GOT Fiscal Year	Date	Major agenda	No. of participants
	18/19	Dodoma)		
		2018/7/20 (DSM/ Dodoma)	Finalization of the manuals Extension officer training (MATI) Test of the improved ARDS	9
		2018/9/18 Dodoma (traveling)	System migration Progress of ASDP2 RF	11
		2018/11/8 Dodoma (traveling)	Progress of ARDS improvement activities Quality improvement of ARDS data ARDS regular monitoring (submission rates)	14
		2018/12/4 Dodoma (traveling)	Extension of the JICA Project Implementation of pilot supervisory visits	8
		2019/1/18 Dodoma (traveling)	Preparation of training	8
		2019/3/14 Dodoma (traveling)	Report of the training conducted in February	14
		2019/6/25	Pilot supervisory visits Campaign regarding data quality monitoring	8
	19/20	2019/7/5	Preparation of training for DAICO/DLFO	11
		2019/8/13	Report on the training for DAICO/ DLFO Extension of the JICA Project	7
		2019/10/3	Results of the training for DAICO/DLFO Results of supervisory visits to the Dodoma region Results of the collected 2018/19 data Extension of the JICA Project	12
		2019/10/23	Ad-hoc meeting: Explanation of new functions of the improved ARDS Improvement of data quality	8
		2019/11/19	Revision of regional assignment among M&E TWG members Preparation of high-level meeting How to use the checklist for data quality ARDS Operation Guide Activities and schedule of the last year of the Project	14
		2020/1/27	Publication of the Data Booklet ASDP2 RF Crop calendar	11
		2020/2/14	Training of new M&E TWG members Data quality monitoring	12
Extended year	20/21	2020/7/17 (remote/ online)	Preparation for the conclusion of the Project Data quality monitoring Results of the high-level meeting	13
		2020/9/23 (remote/ online)	Closing data entry of FY2019/20 Approval of Operation Guide (ver12) Discussion on the succession plan	12

2.2.1. Output 1: Agricultural Data Are Properly Collected and Submitted Through the Operation of ARDS

- 1) 1-1. To conduct and improve the periodic monitoring of ARDS data collection and submission by LGAs through status reports on the ARDS Web Portal combined with telephone and email communication

(1) Institutionalizing Specialized Teams within M&E TWG

Mainland Tanzania, which ARDS covers, consists of 26 Regions (185 LGAs), is almost 2.5 times bigger than Japan in terms of area. ARDS processes questionnaires (Ward Monthly Format or WF01) from approximately 3970 wards from this expansive and diverse area every month. Therefore, it is important to monitor and encourage efficient and effective submissions. To ensure effective monitoring with clear and shared responsibility, the M&E TWG adopted a system whereby an officer is assigned to follow up on specific regions, hereafter called the Region in Charge (RIC). The RIC is the point of contact for a Region and all the LGAs under the Region to provide technical support and supervision. Officers from the MOA, MLF, and MIT served as officers of the RIC, and later, officers from the Agricultural Section and Directorate of Sector Coordination began providing administrative support to the RIC as a back-up. In 2019, reflecting the progress in the setup of the ASDP2 coordination unit, officers from the National Bureau of Statistics (NBS), Ministry of Lands, Housing and Human Settlement (MLHS), and National Coordination Unit, Agricultural Sector Development Programme (2nd Phase) under the Directorate of Government Services, Prime Minister's Office also began serving in the RIC.

The RIC comprises leading members of the M&E TWG and is an operational team for following up submission from LGAs in practice. The roles and responsibility of RIC are provided in Operation Guide (version 12). The Japanese Team members trained RICs intensively through TOTs before the annual LGA training and workshops for data quality and monitoring. RIC officers have a clear role and responsibility within the M&E TWG. When members of the M&E TWG change, newly assigned RIC officers also receive training, which enables the M&E TWG to supply more RIC officers when there is a change in personnel. Later, these roles were defined in a document named Operation Guidance.

However, as described in later sections, the command chain of the M&E TWG is constrained by the multi-ministerial member participation. The officers of RIC do have their tasks and priority of their ministry so that their intensions and commitment to RIC duties often been compromised, the system of RIC was established, but has been suffered from limited efficiency. Yet, the Project had made every efforts to institutionalize RIC under the circumstances of the decision made by the M&E TWG.

The RIC system proved to be very effective in monitoring submissions but had limited results in monitoring the quality of data submitted by wards and LGAs. Assuring quality data required a high level of dedication and intensive analysis that was not always achieved. After a while, the Japanese Team proposed a simplified checklist to reduce the workload of members, but it was challenging to make quality monitoring a regular task. In 2019 and 2020, the project conducted annual campaigns for submission and quality monitoring. In the future, the GOT or M&E TWG will conduct monitoring according to the Government's project succession plan.

In terms of the accumulation of troubleshooting knowledge and unified information management, it could be more efficient to set up a one-stop window with dedicated officers or a section to support users from the Regions and LGAs. However, the group desired to promote shared responsibility among ministries under ASDP; moreover, there was also a constraint in that Ministries cannot assign dedicated staff to project activities. Therefore, as the second-best option, the Project has chosen to establish and strengthen RIC as a monitoring mechanism for ARDS.

The Technical team was established to handle IT issues. It consists of not only IT professionals but also representatives familiar with the ARDS Web Portal. The Technical team worked as a storehouse of knowledge and experience spanning software development, operations and maintenance, response to technical failure,

and specialized user support. On technical matters, the project provided training intensively to the Technical team. Capacity development activities in relation to the technical team are reported under section 5 of chapter 2.2.2.

Besides these standing functional teams, small ad-hoc teams were set up to discuss specific issues for preparing training materials and following-up on remaining issues after backstopping. These teams were established in response to specific needs as and when they arose, and proved quite effective.

(2) Monitoring Submissions

To achieve the Project Purpose of enhancing “utilization of data collected through ARDS,” it is necessary to have a large and regular data stream in place. ARDS cannot create its standard reports without data, and if reports are not available, users cannot use it. The project was designed to achieve 70% data submission in the first half of the project implementation period, but the actual submission rate at the start of the Project was 40%. (WF01 reports, May 2015). After a discussion with the Project counterparts (CPs), considering the importance of submission, the Japanese Team worked to improve the submission rate, aiming for a rate of 90% or more as soon as possible.

At the beginning of the Project, CPs reported a malfunction of the ARDS Web Portal, and the submission rate was sluggish. Therefore, although it was not part of the planned activities, the Project team designed, proposed, and implemented a survey (the Issue Analysis Survey) to examine the challenges and issues faced by LGAs in submitting data.

According to the criteria of submission performance, natural/geographical condition, and accessibility, the Project selected 22 LGAs from 6 Regions. The survey team visited these LGAs for interviewing them regarding the challenges they encountered during data collection and submission. One finding was that the LGAs had been receiving formats from Ward Extension Officers. Even in the absence of project activities, Ward Extension officers' submissions to the LGA office had been continuing to some extent. This finding allowed the project to focus on promotion activities rather than reviewing collection activities at the extension officers' level.

Additionally, the survey found technical issues in the ARDS Web Portal; a budget shortage for activities, including printing of the data collection format, collection activities, Internet, and so on; non-involvement of DAICO and DLFO, who head the district sections; and poor understanding of ARDS activities. To mitigate these challenges, the Project refined its activities and tackled both technical and administrative issues one by one. The initial challenges and activities (measures) are summarized in table 2.2.2.

Table 2.2.2: Main Findings from the Issue Analysis Survey and Response Measures

Findings	Measures [Parenthesis]indicates activity number and chapter number in the report.
No knowledge on how to use the ARDS Web Portal	Strengthening Training 【Activity 1-2】 (Section 2, Chapter 2.2.1) Improvement of the system 【Activity 2-5】 (Section 5, Chapter 2.2.2)
Budget shortage	Briefing to LGA officers on backstopping 【Activity 1-2, 2-7】 (Section 7, Chapter 2.2.2)
Inadequate involvement or No acknowledgement from DAICO and DLFO as an official duty	Same as above
Inadequate support from Regions and Central	Strengthening monitoring 【Activity 1-1】 (This section)、 Training of Trainers to M&E TWG members

Additionally, the M&E TWG adopted an RIC system that assigns at least one officer to each Region; this

officer handles monitoring of the Region and all LGAs within the Region. The set-up worked very well, especially immediately after the first training when users face problems with the Internet and system. Furthermore, the M&E TWG and the Japanese Team confirmed compliance through these RICs. The Japanese Team supported the RICs in monitoring submission and following up, by doing these activities together.

After backstopping training (see Sec. 2 Chapter 2.2.1), the Project emphasized the importance of submission among RIC officers supervising Regions and LGAs with poor submission performance. After the second year of operation, the Japanese Team tried to refrain from following up on submissions directly, instead conducting follow-ups through M&E TWG meetings.

As a result of the activities mentioned above, the submission rate of ARDS data increased and remained high, as shown in Figure 2.2.1. Figure 2.2.1 depicts the submission rate of ward monthly formats (WF01) from March 2015 (before the start of the Project) to the present period. The official deadline for submission is the 20th day of the next month (e.g., the 20th day of May in the case of April), and the figure shows submission at the deadline and about one month after the deadline. If LGAs are busy, it is not always possible to collect, enter, and submit data by the 20th day of the following month. If the data quality is questionable, it may be sent for confirmation, so the figure presents submission at the deadline and one month later, which may be more appropriate in some cases. Since the latter half of 2017, submission rates remained high at 80 to 90%. In December 2016, the submission rate was poor because no Project activity had been carried out. In October 2017 and July 2018, system migration to the new version prevented smooth entry in that specific month. Especially in 2018, the server stopped for a month following a change to the input method for the production data of agricultural products. As a result, submissions were delayed for those months, but data were entered after the server was restored.

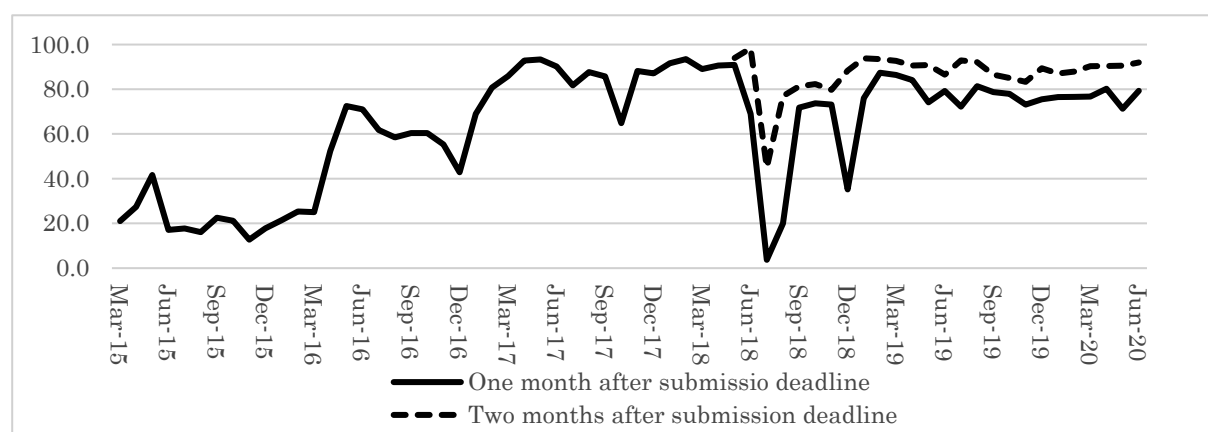


Figure 2.2.1: Change in ARDS Submission Rate (Ward Monthly Format (WF01)) from March 2015 to June 2020

The reasons for the improvement in the submission rate are as follows:

- The Project took measures to ensure uninterrupted data entry by solving software problems at an early stage. For unsolved technical problems that needed system improvement, the Project showed a plan to solve the problems.
- Regarding the submission rate, the performance of various Regions and LGAs was discussed at the backstopping sessions, inspiring competition among participating LGAs. Additionally, the Project team presented the submission rate of Regions to their respective RICs in M&E TWG Meeting, so that they could see their colleagues' performance. By doing so, the Project encouraged responses from RIC officers.

- In the first year, especially, the Project followed up submission directly to encourage Regions and LGAs. The Japanese team also directly followed up submissions with the RICs, allowing for learning by doing, to monitor submission rate.
- Donor-funded projects in Tanzania sometimes face a sustainability problem after their completion; the Project paid attention to maintaining a high submission rate as long as possible to ensure it became standard routine work.
- Later, a task-list function was introduced to the ARDS Web Portal that automatically reminded users of pending data when users logged into the system.

2) 1-2. To provide support (including training, backstopping) to LGAs and Regions to maintain and/or strengthen the capacity for ARDS operation the officers in charge of ARDS operation

The Project covered all 26 regions in mainland Tanzania. Village and ward extension officers throughout the country collect data using the standardized format as their routine work. Since the usage of standard forms is essential, any change in formats, manuals, and entry rules needs to be communicated to LGAs and extension officers immediately. This requires the project to quickly and efficiently conduct backstopping for LGA officers in all 26 regions. As a result, the Project conducts training in a cascaded style. The Project expert leads TOT for counterparts, the trained counterparts provide instruction to LGA officers, and finally, the LGA officers provide backstopping to village and ward extension officers. The Project conducted backstopping for LGA officers with the following objectives:

- To make sure that users understand the upgraded/revised points of formats, ARDS Web Portal, and manuals.
- To provide the officers with technical assistance on how to collect data and use the ARDS Web Portal.
- To promote the use of data.
- To increase awareness regarding the progress of ARDS among higher authorities of LGAs for better operation.
- To provide instructions on how to detect outliers for submitted data to improve data quality

Among these objectives, the first—dissemination of changes in rules—was the most critical objective. This is because the Project had to inform and provide instructions efficiently without delay on newly developed features of the ARDS Web Portal and the revised format before the migration of the latest version. Conducting backstopping at several venues simultaneously, the M&E TWG addressed this challenge in about two or three weeks. Table 2.2.3 shows a list of backstopping activities undertaken during the project period.

Table 2.2.3: List of Backstopping Activities Undertaken

	Implementation period (Number of days)	Target officer	Major contents
First Project Year	May 9 th -12 th , 15 th -18 th , 2016 (8 days in total)	RS, LGA (DS, DMEO)	Overview of ARDS, introduction and use of ARDS Web Portal, explanation of VAEO/WAEO and district Format, and exercise on data entry
	May 13 th , 19 th , 2016 (2 days in total)	RS, DAICO	Overview of ARDS and introduction of ARDS Web Portal
Second Project Year	January 25 th -27 th , January 30 th -February 1 st , 2017 (6 days in total)	RS, LGA (DS, DMEO)	Overview of upgraded ARDS Web Portal, how to configure estimation function, and steps to generate standard reports

	Implementation period (Number of days)	Target officer	Major contents
	June 6 th , 8 th , 2017 (2 days in total)	RS, LGA (DED, DAICO, DLFO)	Overview of ARDS and ARDS Web Portal, report creation and data submission rates, the importance of data collection, indicative budget for ARDS operation, and data utilization
Third & Fourth Project Year	November 14 th -17 th , 20 th -23 rd , 27 th -30 th , 2017 (12 days in total)	RS, LGA (DS, DMEO)	Overview on upgraded ARDS Web Portal, report creation function, data submission, and report creation status, pivot table function, typical errors in data entry
	June 20 th -22 nd , 25 th -26 th , July 4 th -7 th , 9 th -11 th , 2018 (12 days in total)	RS, LGA (DS, DMEO)	Overview of upgraded ARDS Web Portal, District Officers' manual, and Extension Officers' manual
	February 6 th -8 th , 11 th -13 th , 18-20 th , 2019 (9 days in total)	RS, LGA (DS, DMEO)	GIS function, task list function, archive report function, static table function, detecting outliers
	July 18 th -19 th , 22 nd -23 rd , 25 th -26 th , 2019 (6 days in total)	RS, LGA (DAICO, DLFO)	Overview of ARDS and ARDS Web Portal, actions to improve the quality of data, challenges in ARDS operation, and encouraging data use

(1) Planning Backstopping and Improving Effectiveness

The participants in the backstopping sessions belonged to 185 LGAs from 26 regions in mainland Tanzania, a total of approximately 400 officers. Since training was conducted on such a large scale, it took a couple of weeks for planning, preparation, and implementation. The procedures from planning to implementation consisted of the following steps:

① Forming a small task team for planning the backstopping

When M&E TWG decided that conducting backstopping was necessary, the M&E TWG discussed and formed a small task team to plan and prepare for it. The Japanese Team joined the task team and assisted in writing concept notes, drawing budgets, and developing training materials.

② Ad-hoc meeting in the M&E TWG

The small task team usually proposes a concept note in an ad-hoc M&E TWG meeting for discussion and approval of the backstopping intervention. At this ad-hoc meeting, the M&E TWG usually selects 12 members as trainers, although the number varied depending on the nature and purpose of backstopping. The trainers formed four groups of three officers, with the roles of leader, accountant, and member(s). Contacting the RS in a host region and its training venue, the leader played the negotiator's role, facilitating smooth preparations. The accountant was responsible for managing accounts, temporary advances, and making payment against expenses. The other member helped the leader and accountant. Table 2.2.4 summarizes the assigned roles during backstopping.

Table 2.2.4: Assigned Roles During Backstopping

	Major roles
M&E TWG	Discussing a backstopping plan and giving approval, issuing a letter to ASLMs, regions, and LGAs through the M&E TWG Secretariat, holding a practice session.
Small task team	Drafting concept notes, programs, training materials, and a facilitator's guide.
Facilitator (assigned CPs for backstopping)	Coordinating with host regions, arranging refreshments, managing temporary advances, handling payment on the days, and reporting the financial balance to the Japanese Team.

	Major roles
Japanese Team	Estimating budget, supporting training material development, conducting TOT, allocating project vehicles and equipment , procuring stationery, printing handouts, assisting the accountant, troubleshooting, and tallying the pre-training questionnaire and writing financial report.

③ Conducting TOT and practice sessions for facilitators

After approval of the concept notes for the backstopping, the project convened a Training for Trainers (TOT). The TOT discussed draft training materials. Based on the discussion, the training materials were revised and brought to practice sessions, allowing CPs to enhance their understanding of the contents. The series of activities helped secure the quality of backstopping so it could be conducted at several venues simultaneously.

(2) Attempts to Improve Effectiveness

To improve the effectiveness of training, the small task team and the Japanese Team attempted to introduce some improvements in the training. The following describes a few such attempts:

① Demonstration using a test server (dummy setting) of the ARDS Web Portal (which served as a test environment) (November 2017 and after)

The project provided training before system migration because the application interface would have changed upon migration, causing confusion among the LGAs. Therefore, it was necessary to provide training before system migration. Initially, the training was conducted through lectures and demonstrations using PowerPoint slides with images of the new interface. However, the Japanese Team observed that it would be better to use a new interface rather than PowerPoint demonstrations.

To improve comprehension by participants, the Project therefore used a test server, which also allowed it to test the acceptance of the system in training. The trainers gave demonstrations to explain new functions and the interface of the ARDS Web Portal using a test environment. The participants also could try new features to learn by doing. The test environment remained active after acceptance testing and CPs and MATI tutor will use it for training purpose so that they will learn mechanism of ARDS Web Portal.

② Presentation of the ranking of data submission rate (November 2017 onwards)

In presenting the data submission rates of LGAs that the participants represent, facilitators urged officers with poor performance to justify themselves and submit data. By contrast, they asked officers with good performance to share their tips to improve data submission. Due to a competition held among LGAs, this initiative improved data submission and made it a regular habit for officers.

③ Providing Quick Reference (July 2019)

From the very first training, the Project usually provided only a soft copy of the training material. This was done to benefit participants who would need to train extension officers, and because many participants often left their handouts at the training venue. Occasionally, however, participants requested reference materials during training, so the Project created A4-sized double-sided handouts that showed how to utilize main functions on the ARDS Web Portal such as generating standard reports, pivot tables, data submission, and report creation status. The material is useful as users can operate the Web Portal on the screen while referring to the Quick Reference. The document worked well even for relatively older officers who were not very familiar with using PCs.

④ An opening video message from the director of PO-RALG (July 2019)

The Project prepared a video message from the Director of Sector Coordination of PO-RALG that was played before the training commenced. He encouraged DAICO and DLFO to maintain a high level of data submission and improve data quality. PO-RALG is a Ministry that manages budgets and human resources for LGAs—the message proved persuasive, with some attendees taking notes while watching it.

As for logistics, the Japanese Team reconsidered the venue's selection and participants' travel to improve cost-efficiency. For instance, not only traveling by car but combining choices of travelling by air, CPs would travel around 2-3 venues rather than participants travel longer. Also, the Project arranged to limit participants to attend only from neighboring Regions to lower the costs of transportation and travel allowances.

(3) Evaluation of Backstopping

Post-training evaluation was carried out at the end of each backstopping session. The evaluation from the participants was generally good. In the questionnaire, the participants were asked for opinions on the improvement of training and ARDS operation. Table 2.2.5 shows salient comments from the participants, split into four categories: the venue for training, ARDS operation, system, and others.

Table 2.2.5 Comments on the Training and ARDS Operation

Category	Frequent comments
Venue for training	Training frequency and period should be increased More practical sessions should be added Requesting training sessions on how to monitor or analyze data Free internet access should be provided
ARDS operation	Requesting assistance for VAEO/WAEO such as holding a backstopping session and hiring more officers Requesting and promoting ARDS to the higher authority of LGA repeatedly to foster their understanding and secure the budget for ARDS operation
System	Requesting changes to the Web Portal to allow WAEO/WAEO data to be entered by smartphone
Others	Adding more equipment and replacing existing equipment (motorbikes, PCs, tablets) for ARDS operation

Some suggestions, such as promoting ARDS to the higher authority of each LGA, were enacted in the subsequent backstopping.

(4) Information Collection Survey Taking Advantage of Backstopping

Conducting backstopping is a valuable opportunity for the Project team to interact directly with the LGA officers who usually operate ARDS. Taking advantage of various backstopping interventions since November 2017, the Project team administered a questionnaire and interviewed the officers to plan post-intervention activities and review the overall strategy of Project activities. A paper-based questionnaire was used initially, but aggregating the results proved very time-consuming. Therefore, subsequently, responses were collected through online questionnaires using Google Forms. The online questionnaire allowed for efficient tallying and analysis of the results. The primary survey items were as follows:

- ARDS operation (the reason for not submitting data, the reason for improving ARDS operation, budget for ARDS operation, maintenance system, and status on manual distribution)
- Facts on how each LGA can collect various data components
- Use of ARDS data (whether it is used and the reason for use)

- The status of harmonization of ARDS with other agricultural statistics in each LGA
- Preparation and enforcement of the DADP in each LGA
- Planting and harvest seasons of main crops (refer to section 1 of chapter 2.2.2 in detail)

Regarding the first bullet point above, the Project team has been collecting data since the First Project Year. Table 2.2.6 below indicates the transition in the factors affecting data submission to the ARDS Web Portal.

Table 2.2.6 Factors that Affect Data Submission to the ARDS Web Portal

Issues	Answer		
	First Year	Second Year	Third & Fourth Year
1) VAEO/WAEO Formats are not submitted on time	58%	89.9%	75.6%
1a) because some wards do not have WAEO/VAEO	NA	52.4%	40.8%
1b) because the WAEO finds it difficult to submit data	NA	47.6%	46.7%
1c) The WAEO does not follow instructions	NA	50.0%	31.0%
2) Computers for ARDS do not work properly	26%	18.5%	48.4%
3) Internet connection is a problem	56%	65.5%	58.7%
3a) Internet connection is not available	NA	4.8%	2.7%
3b) Internet connection is available, but the speed is slow	NA	56.0%	57.1%
4) Cannot log into ARDS Web Portal	13%	9.5%	6.5%
5) Technical difficulties after logging into Web Portal	44%	35.7%	27.7%
5a) Not sure how to enter data	1.6%	3.0%	0.5%
5b) Cannot enter data because the entry format does not work properly	36.2%	29.2%	21.7%
5c) The central government does not respond to queries regarding the ARDS Web Portal	7%	5.4%	2.2%
6) Others	NA	20.8%	27.2%
7) Not applicable	NA	7.1%	NA

Although some items were added in certain years and not all items were asked every year, issues such as "Cannot log-in to ARDS Web Portal" and "Technical difficulties after logging into Web Portal" have been resolved by upgrading the system and conducting backstopping. By contrast, as some PCs supplied in the previous phase had become obsolete, the frequency of the response "Computers for ARDS do not work properly" increased.

Concerning the budget for ARDS operation and maintenance, the survey helped the Japanese Team adjust its action plan. Taking an example from the survey conducted in November 2017, the results indicated that some LGAs were running ARDS operation with fewer VAEOs/WAEOs and a lower budget than the Project team had expected. The Other Charges (OC) were assumed to refer to expenses related to ARDS operation, but disbursement was often delayed every year. Thus, this situation forced LGA and extension officers to cover transportation costs for data collection with their own money. However, some LGAs were running ARDS with adequate financial resources such as OC and Own Revenue, with support from the district council and the LGA's higher authorities. This meant that the structure of ARDS maintenance differed among LGAs. In the survey in July 2018, the Project team asked if the VAEO and WAEO had training opportunities and the number of newly appointed (or transferred) VAEO and WAEO who did not have training. Results indicated

that 121 out of 185 LGAs (65%) provided officers with training, while 64 LGAs (35%) did not.

The questionnaire survey during backstopping was constructive in assessing the effectiveness of activities and refining planned actions to allow ARDS to function better. For example, through consistent promotion and lobbying activities, support was secured from the higher authorities of the LGA for the ARDS operation budget. Additionally, manuals and training opportunities for data collectors were planned.

(5) Implementation Challenges and Lessons Learned from Backstopping

As discussed previously, the Project team carried out frequent backstopping at the necessary times. The evaluation from the participants was generally good. Based on the results of the questionnaire administered during the backstopping, it could be said that backstopping worked to strengthen and maintain the capacity of ARDS operators. Simultaneously, some lessons were learned and some challenges were uncovered.

- Addressing the need to support LGAs and resolve technical issues faced by extension officers

Backstopping with uniform content was provided nationwide; however, the circumstances, interests, and priorities of the LGAs that operate ARDS vary greatly, and the Project found that providing top-down training is not enough. It was necessary to follow up on each intervention by considering the LGA's circumstances in addition to providing uniform backstopping nationwide. Additionally, during implementation, the Project found that providing support to extension officers is crucial to improve the quality of data. Providing direct support to VAEO/WAEO was not considered in the design of the project; consequently, few resources could be allocated to such activity. However, the Project decided to conduct cost-effective but essential activities on a trial basis. Implementing technical support to VAEO/WAEO is described in Section 3 of Chapter 2.2.2 in detail.

- Upgrading ARDS Web Portal, the methodology of data collection, and use of ARDS Web Portal

In line with the upgrading of the ARDS Web Portal, backstopping was also conducted to disseminate information regarding new data collection methods and ARDS Web Portal operation methods, but it took time for officers to understand the contents and master its use. For instance, when changing the process to enter crop production data and adding a table for a food security survey (refer to Section 2 of Chapter 2.2.3), it was found that some participants incorrectly entered data even after the Project provided ample time for explanation, demonstration, and exercise. To address this situation, the technical team and the RIC operated a help desk. In addition, a review session was included in the backstopping session. This Project was expected to achieve results within a limited time frame—it implemented essential improvements to the formats and systems in a very short timeframe, but it may be necessary to lower the pace of activities considering the slow pace of capacity development among LGAs and extension officers.

- 3) 1-3. To review the data collection methodology used by the VAEO/WAEO and promote the adoption of the designated methodology

The success of data collection on ARDS depends on the participation of each VAEO/WAEO. The data collection method essentially consists of a standardized collection format and the actual collection process. Both were introduced and thoroughly implemented in the previous phases of the project, but continuous examination and guidance are indispensable. The following activities were carried out regarding the review and promotion of data collection methods.

Table 2.2.7 Activities Regarding the Verification and Promotion of Data Collection Methods

	Activities	Summary
First Year	ARDS Issue-Analysis Survey	The survey identified the challenges and difficulties encountered during ARDS operation by interviewing VAEO/WAEO on their data collection practices (refer to Section 1) of Chapter 2.2).

	Activities	Summary
From First to Fourth Year	ARDS backstopping (refer to Section 2) of Chapter 2.2.1)	The program included a session to discuss revisions to the format. In addition, questionnaires and interview surveys were conducted to identify the challenges and difficulties faced during ARDS operation.
Third Year	Revision of Extension Officers' manual (refer to Section 5) of Chapter 2.2.1)	The original Training Guide (2013) was revised and an Extension Officer's Manual was created for a more precise explanation. Manuals were also distributed to extension officers.
Fourth Year	Supervising Visit (SV) to Regions and LGAs	The Japanese Team and RIC visit the RS and LGA to meet their management and address administrative challenges (such as budget recognition and priority). At the same time, the SV team held a workshop for VAEOs and WAEOs, for explaining points that could be easily mistaken in the manual and for providing the necessary guidance.
Fourth Year	Support for training institutions (MATI) for sustainable capacity development of extension officers	Collaborating with DTER, the Project team provided training materials and held a workshop for tutors of MATIs. This activity enabled the tutors to teach ARDS-related contents such as overviews, data collection, and databases, to students intending to become officers after graduation.

(1) Supervising Visits (SV) to Regions and LGAs

As of the Project's Third Year, by establishing and maintaining the ARDS Web Portal and support systems such as backstopping and training materials, the issue of data quantity had been resolved, and a stable data submission rate had been achieved. The remaining issues were related to administrative and operational matters within the LGAs such as securing budget for ARDS operation and ownership of ARDS in a higher ranking officers of LGAs. In addition, the improvement of the quality of data submitted by the extension officers. Furthermore, it was critical to improve the quality of data to promote the effective utilization of the data. As explained in Sections 2) and 5) of Chapter 2.2.1, the M&E TWG implemented measures such as conducting backstopping and revising and distributing the operation manual to improve the quality of data. However, backstopping interventions for the LGAs in itself was not a very effective strategy. In some LGAs, there was no cascading technical support from the LGA to the VAEO/WAEO, and manuals were not distributed. It became clear that each region and LGA faced a different set of circumstances, leading to difficulties in ARDS operation, such as limited financial resources. Accordingly, the M&E TWG, with technical advice from the Japanese Team, considered an intervention plan that did not rely on this cascading method since Year Four. Of the support activities for VAEOs/WAEOs to improve data and data use quality, the M & E TWG considered two approaches for short- and long-term solutions. The former targeted in-service officers (VAEO/WAEO in the field) and conducted Supervising Visits (SV) to the LGA Headquarter and held meetings with in-service extension officers. The latter targeted pre-service officers (students at the Ministry of Agriculture Training Institute (MATI)) by building MATI tutors' capacity and developing training materials for lectures at MATI.

Regarding the SV to regions and LGAs that targeted in-service officers, the objectives of these activities were to reinforce their responsibility of checking data quality, encourage further ARDS use, as well as hold a workshop for VAEOs and WAEOs, explaining points that could be easily mistaken in the manual and providing necessary guidance. Utilizing the money left over efficiently, the Project tried to establish know-how on this initiative through conducting pilot activities in a few regions since it was unable to cover all the VAEOs and WAEOs of LGAs. The Iringa region, which has varied crop production and is adjacent to the Dodoma region, was selected as a pilot to conserve limited resources. Five target regions were chosen due to their easy accessibility from Dodoma and the necessity of the intervention afterward. Table 2.2.8 shows a summary of each SV.

Table 2.2.8 Summary of Supervising Visits (SV) to Regions and LGAs

Date	Target	Major activities
November 26–December 1, 2018	5 LGAs in Iringa Region	The mission team was split into two and proceeded with the activities. Team A met with leaders in Regions and LGAs, explaining their obligation to check the quality of the data and encouraging further use of ARDS. At the same time, Team B held a workshop for the VAEOs and WAEOs, explaining points that could be easily mistaken in the manual and giving necessary guidance.
May 27–June 4, 2019	7 LGAs in Singida Region	The mission team did not divide duties. First, the team met with leaders in Regions and LGAs, explaining their obligation to check the quality of the data and encouraging further use of ARDS. After that, they held a workshop for the VAEOs and WAEOs, explaining points that could be easily mistaken in the manual and giving necessary guidance.
September 11–24, 2019	8 LGAs in Dodoma Region	
December 1–13, 2019	7 LGAs in Kilimanjaro Region	
September 26–October, 9 2020	9 LGAs in Mtwara Region	

In meeting with regions and the higher authorities in the LGAs, the discussion was based on the latest standard reports, examples of outliers extracted from the pivot table, and the commitment sheet⁴. The main agenda was as follows:

- Increasing demand for ARDS data in the Central Government
- Quality of submitted data
- Role and responsibility of RS and higher authority of LGA

Regarding the promotion of data use, the first step is to make data publicly accessible. Hence, the Project team urged RS and the higher authorities in the LGAs to review the reports submitted, noting an increasing demand for ARDS data in the Central Government; for instance, the data are being used as RF indicators. A problem was reported that in some LGAs, the DS and DMEO were entering data into the ARDS Web Portal without sufficient examination/checking due to understaffing. However, the DAICO and DLFO, who know the area's features such as its productivity and acreage well, can guarantee the data's quality by supervising the content; hence, the Project team requested the DAICO and DLFO to verify the data upon report creation.

As for the workshop for VAEOs and WAEOs, it was aimed at technical support and included the followings:

- Explaining changes to the ARDS Web Portal and to the data collection format and manual
- Distributing the latest data collection format and revised manual

The format and manual were explained, focusing on the parts modified in the last few years. Participants were instructed to bring the format and manual in advance, but some participants did not bring the latest format and manual or did not have them. The Project distributed documents again to participants without manuals. This activity revealed that although LGAs had been repeatedly instructed to provide technical guidance to the WAEO/VAEO, the LGAs had not sufficiently trained the extension officers. Incidentally, some participants requested Swahili translations of the formats and manuals. However, such translation activity would necessarily entail large-scale changes, such as reflecting the translated content on the ARDS Web Portal as well as the format and manual; therefore, the Japanese Team advised the CPs to scrutinize the necessity of translated content and minimize the work to avoid making extension officers confusion.

To enhance support for the WAEO/VAEO, the higher authority of the LGA who attended the meeting was advised to support extension workers. LGA is supposed to be responsible for conducting backstopping for the WAEO/VAEO based on the design of the Project and the fact that that LGAs had extensive experience

⁴ Based on CP's ideas, the Project Team clarified the role of the LGA and created a document requesting the LGA's signature to signal its commitment. However, no LGA actually signed the document and it was only using to explain their roles.

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and know-how from the Project's previous phase. In addition, ARDS's operation in LGA is carried out based on a fundamental framework and under the LGA's responsibility, which includes providing technical guidance to the WAEO/VAEO. However, through this SV, it became clear that the dissemination and maintenance of knowledge are complicated by the poor quality of technical guidance provided to the WAEO/VAEO by the LGA, which is inferior in implementation and financial ability to the Central Government. By contrast, this activity left CP with the know-how to improve the data quality, instruct extension workers, and confirm ARDS operations in the LGA on a regional basis.

The extent to which the intervention improved the data quality was confirmed using the DQMS (Data Quality Management Sheet) detailed in Section 1) of Chapter 2.2.2. Table 2.2.9 and Table 2.2.10 are the results⁵ of the DQMS in relation to a maize production exercise in the Iringa and Singida Regions.

Table 2.2.9: Results of DQMS for Maize Production in Iringa Region (Left: FY2018/19, right: FY2019/20)

	*Error rate:					*Error rate:					Planting Season	Harvesting Season
	Planted Area missing	Harvested Area missing	Productivity missing	Production missing	Productivity range error	Planted Area missing	Harvested Area missing	Productivity missing	Production missing	Productivity range error		
Target	12%	-	12%	11%	2%	10%	-	10%	10%	0%		
July	99%	100%	100%	99%	0%	91%	73%	73%	69%	1%		
August	100%	100%	100%	100%	0%	87%	91%	91%	91%	1%		
September	95%	96%	96%	96%	1%	81%	83%	83%	83%	0%		
October	95%	97%	97%	97%	0%	75%	84%	84%	80%	0%		
November	63%	81%	81%	76%	0%	52%	88%	88%	83%	1%	↕	
December	52%	86%	86%	83%	1%	42%	88%	88%	81%	0%		
January	40%	86%	86%	84%	0%	51%	89%	89%	80%	0%		
February	79%	85%	85%	81%	1%	82%	89%	89%	86%	0%		
March	81%	81%	81%	75%	2%	91%	85%	85%	84%	0%		
April	90%	86%	86%	82%	0%	89%	85%	85%	84%	2%		↕
May	88%	70%	70%	70%	2%	84%	61%	61%	60%	1%		
June	89%	63%	63%	63%	1%	83%	59%	59%	59%	1%		↕

Table 2.2.10: Results of DQMS for Maize Production in Singida Region (Left: FY2018/19, right: FY2019/20)

	*Error rate:					*Error rate:					Planting Season	Harvesting Season
	Planted Area missing	Harvested Area missing	Productivity missing	Production missing	Productivity range error	Planted Area missing	Harvested Area missing	Productivity missing	Production missing	Productivity range error		
Target	10%	-	10%	10%	1%	7%	-	8%	7%	1%		
July	98%	98%	98%	98%	0%	100%	93%	93%	93%	0%		↕
August	86%	86%	86%	86%	0%	100%	100%	100%	100%	0%		
September	86%	86%	86%	86%	0%	100%	100%	100%	100%	0%		
October	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%		
November	89%	99%	99%	97%	0%	51%	100%	100%	99%	0%	↕	
December	30%	99%	99%	76%	0%	33%	100%	100%	100%	0%		
January	18%	100%	100%	82%	0%	22%	99%	99%	99%	0%		
February	73%	100%	100%	99%	0%	69%	99%	99%	96%	0%		
March	89%	99%	99%	99%	0%	93%	96%	96%	96%	0%		
April	86%	91%	91%	90%	0%	95%	40%	40%	39%	0%		
May	53%	22%	22%	22%	1%	100%	23%	23%	23%	0%		↕
June	85%	46%	46%	46%	0%	91%	38%	38%	38%	0%		

⁵ Error Rate defines the number of data missing against the number of wards expected data submission. The reasons for missing data are sorted into 2 types. The first one is due to the seasonality of its crops. They have no data in the month. While the second is due to human errors for some reason. Although it should be in the period when data should be reported, no data is there. The Project worked to differentiate both cases and reduce the second reason.

Considering overlapping seasonality and the crop calendar, the arrows with blue highlights correspond to the planting period, and those with red highlights correspond to the harvesting period, which means data should be reported in these months. In both regions, a decrease in the error rate was observed over time. Productivity range errors have been eliminated in the Singida Region. As described, confirming the quality of data requires detailed work. Regarding conducting SV, a large budget is necessary to invite the WAEO/VAEO to the LGA Headquarter. Owing to limited resources such as time and money, the Project could not cover all regions. Therefore, trying out an intervention, they established only its know-how by pilot activity. The GOT also visited the regional office in the Lake Zone and Morogoro during the period that the Japanese Team was out of the country, but the effect was limited because they could not hold an instructional meeting with the WAEO/VAEO due to budget constraints. Considering other regions that the Project was not be able to provide support, expertise in areas such as preparation of training materials and funding estimation was shared, to be implemented in a certain number of regions while using government funds.

(2) Supporting MATIs for Longer-term Capacity Development

The Division of Training, Extension, and Research (DTER) under the MOA runs a training institute to groom students to be extension officers who work with farmers in the field. For instance, the MOA operates the Ministry of Agriculture Training Institute (MATI). As a long-term improvement measure for WAEO/VAEO that contributes to improving data quality and utilization, negotiations were conducted to incorporate ARDS-related content into the MATI curriculum for pre-services (future field extension officers). At the beginning of 2018, DTER and MATI were updating their curriculum, but a newly ARDS-related module was not adopted, and it was decided to add content related to ARDS to a part of the existing modules. The principal activities are described below:

- Discussion with the director of DTER and other stakeholders

The Project team was invited to a JCC of the Project for Supporting Rice Industry Development in Tanzania (TANRICE 2 Project) by the intermediary of the JICA Tanzania office and made a presentation on ARDS to the participants. The momentum of this activity was enhanced by introducing ARDS to a high-ranking executive of the MOA and the director of DTER.

- Provision of equipment necessary for giving lectures on ARDS (procured by the JICA Tanzania Office)

At the request of the director of DTER, in February 2020, two personal computers, one printer, and one projector were provided to 14 MATIs nationwide. Although the MOA covered costs for the distribution of these equipment, it was started in late June 2020 due to the COVID-19 pandemic. The activity has been completed by early September 2020.

- Holding a workshop for MATI tutors

Inviting MATI tutors who are in charge of ARDS-related subjects such as ICT and data management, this workshop was held to enable the tutors to teach ARDS-related content, such as providing an overview on ARDS and the methodology of data collection to students who will be extension officers.

The outline of the workshop for MATI tutors is as follows:

Table 2.2.11: Summary of Workshops for MATI Tutors

Item		Summary
Date		June 5, 2020 (ToT to facilitators, logistic meeting) June 8-12, 2020 (Batch1, pilot) June 24-26, 2020 (Batch2) June 29 – July 1, 2020 (Batch3) July 6 – 8, 2020 (Batch4) July 13-15, 2020 (Batch5)
Venue	Eight centers in total	
	Batch	Center
	1	Mbeya
	2	Moshi
		Mwanza
	3	Tanga
		Tabora
4	Mtwara	
	Ifakara	
5	Kilosa	
Participants	32 in total (MATI 28, CP 4) Two tutors from each MATI, two officers from M&E TWG, and two officers from DTER office in MOA	
Program		Contents
1	Introduction ARDS	<ul style="list-style-type: none"> Introduction (objectives and overview of the workshop) Overview on ARDS (background, coverage of data, data collection format, and responsibility of extension officers and LGA) Overview on ARDS Web Portal
2	Data collection format Extension Officers' manual	<ul style="list-style-type: none"> Explanation of data collection format (VAEO/WAEO format) Explanation of Extension Officers' manual
3	Lecture to MATI students Way forward	<ul style="list-style-type: none"> Explanation of supplementary training material 1 (overview on ARDS) Explanation of supplementary training material 2 (crop data collection) Discussion and feedback on the supplementary training material (for Batch 2-5 only) Way forward
4	Refinement of supplementary training material (for Batch1 only)	<ul style="list-style-type: none"> Discussion on how to improve supplementary training material Refined the material (proposal)

The Japanese Team conducted ToT for the facilitators of the LGA training and a practice session immediately before the Training to ensure standardized training. Then, trained facilitators were divided into groups that went to multiple venues simultaneously to conduct training nationwide. Due to the coronavirus COVID-19 pandemic, the Project had to make alternative arrangements. Since it was not recommended to meet the MATI tutors in one place, the CP in charge visited several venues. In addition, a pilot workshop was set up as a rehearsal before the full-scale MATI workshop, and all the CPs in charge attended the pilot activity so that it could be held simultaneously at multiple venues as LGA training. The Japanese Team provided remote support from Japan, and the workshop went smoothly due to the accumulated expertise and experience of the CP and local staff.

This activity aimed to enable MATI tutors to give lectures on ARDS outlines and data collection methods to students (future field extension officers). Extension officers' manual and data collection formats were to be distributed as part of the teaching materials, but in addition to these materials, the Japanese Team drafted supplementary training materials that MATI tutors can use in their lectures. The materials complemented the manual and were as compact as possible so as not to burden the tutors. At the end of each topic, an “Exercise

and comprehension check” were provided to evaluate the degree of comprehension.

The participants' evaluation was generally good, and participants deepened their understanding of the outline of ARDS and various data collection methods. The MATI tutors at each venue provided feedback on the drafted supplementary training materials, and the CPs in charge hosted an FAQ session about ARDS, extension officers' manual, and the data collection format. As the way forward, the Project took the following actions:

- Refinement of supplementary training materials for MATI tutors

Regarding the comments received from each venue, the materials were revised. The Japanese Team sent them to participants through the CPs in charge.

- Discussion with DTER office

The Japanese Team and CPs in charge reported MATI training results to the DTER office. It was challenging to establish a new module related to ARDS because there was inadequate time to officially revise the curriculum for incorporating ARDS content into the MATI curriculum. Therefore, instead of new module, the Project worked to add ARDS-related contents to the current curriculum, as mentioned by the Director of DTER. Specifically, the Project discussed with the DTER whether the following modules could be added with ARDS-related content as Sub-enabling Outcomes (SEOs)⁶

- (1) Field Data Management (GST 05209) – (NTA Level 5) for Certificate in General Agriculture.
- (2) Principles of Crop and Livestock Experimentation (GST 06211) – (NTA Level 6) for Diploma in General Agriculture.
- (3) Principles of Food Crop and Livestock Experimentation (FNT 06211) – (NTA Level 6) for Diploma in Food Production and Nutrition.

The proposed SEOs and Related Tasks (RTs) are shown in the table below. The M&E TWG and the Project Team have already provided the participants with draft supplementary teaching materials related to the above contents. The DTER office gave directions to each MATI regarding teaching ARDS contents to their students.

Table 2.2.12: Proposed SEOs and RTs

Lesson No	Sub-enabling Outcomes	Related Tasks
1	Describe coverage of the Agricultural Routine Data System (ARDS)	(a) Explain ARDS
		(b) Identify categories of data for ARDS
		(c) Identify kinds of data collected by VAEO/WAEO
		(d) Describe the flow of data for ARDS
		(e) Identify key crops for ARDS
		(f) Prepare calendar for the key crops
2	Apply ARDS data collection methods	(a) Explain proper methods of data collection in the field
		(b) Estimate data when missing
		(c) Employ a random sampling method of data collection
		(d) Collect data in the field
		(e) Explain the relationship between ARDS data and food security data

⁶ A SEO is a part of the curriculum that students achieve through studying a specific subject. It is ranked at the bottom of the three layers (Principal Learning Outcome, Enabling Outcome, Sub-enabling Outcome) of achievements defined as learning outcomes. Multiple Sub-enabling Outcomes are defined for one Enabling Outcome, and Related Tasks for achieving each Sub-enabling Outcome are also defined. The implementation of Related Tasks is designed to lead to the achievement of the SEO, and further, to the achievement of the Enabling Outcome and the Principal Learning Outcome.

Lesson No	Sub-enabling Outcomes	Related Tasks
		(f) Describe the nature of the ARDS food security data
	Apply ARDS data processing techniques	(a) Explain the importance of ratio and normalization
		(b) Compute simple average and weighted average
		(c) Explain the importance of units of data
		(d) Convert data to different SI Units

● Conducting Post-Training Web Questionnaire to MATI tutors

For evaluating outcomes of the intervention, a Post-Training online questionnaire using Google form was conducted and 24 responses from 14 MATIs have been received. It has come to know that the participants were in charge of ICT modules such as Data Management, with 9.83 years of teaching experience on average. Given 75% of the respondents were also Field Practical sessions in charge, the intervention was fruitful to introduce ARDS contents to key stakeholders in MATI. The summary of the questionnaire shows as below:

Table 2.2.13: Summary of Post-Training Web Questionnaire to MATI Tutors

Survey Item	Answers
1. Implementation status and its teaching materials of a lecture featuring the ARDS related contents	<ul style="list-style-type: none"> All the tutors gave a lecture on ARDS contents to students. As teaching materials, all the tutors used and distributed the WAE0/WAE0 format to students and 96 % of the tutors also did the Extension Officers' manual. About 50 % of the tutors referred to the supplemental training materials the Project provided since some tutors understood the ARDS contents sufficiently.
2. Implementation status of field practical session and handling of contents related to ARDS	<ul style="list-style-type: none"> Except for Kidatu, Inyara, Mlingano, and KATC, 10 out of 14 MATIs already implemented the field practical session. 95 % of the tutors in the 10 MATIs used VAE0/WAE0 format and 75 % of them used the Extension Officers' manual as teaching material.
3. Expected support and action by the M&E TWG (government body for ARDS operation) for MATIs in the future	<ul style="list-style-type: none"> All the tutors requested to have an ID of the Web Portal for demo use. Also, there were many requests such as training for MATI teachers, supervisory visit when implementing Field Practical, additional VAE0 / WAE0 format and distribution of the Extension Officers' Manual.

● Additional support for MATI

The questionnaire results above told that MATI tutors distributed their students the data collection format and the Extension Officers' manual as teaching materials when conducting the field practical. In addition to providing the 50 sets of both documents at the workshop, the Project delivered additional sets.

The fundamental issue is the lack of training for new extension officers; MOA or PO-RALG does not have such a system currently. Most of the new extension officers gain knowledge through learning by doing from their senior colleagues. In rare cases, trainings and briefings are held in some LGAs, but it depends on the situation. Additionally, the extension officer does not have opportunities to receive in-service training. This implies that rapid improvement and standardization of data quality without intervention is challenging for ARDS that operates nationwide, and there might be a need for the GOT to invest in a training system for the extension officers.

4) 1-4. To upgrade the data checking/cleaning methodology within the ARDS Web Portal to minimize abnormal data input

In the process of ARDS, data collected by the VAEO and WAEO are submitted in paper-based VAEO/WAEO formats to LGAs; data are then entered into the ARDS Web Portal by the District Statistician (DS) and District Monitoring and Evaluation Officer (DMEO) in the DAICO/DLFO office of each LGA. To ensure data quality and eliminate abnormal or unexpected values, the DS and/or DMEO examine the data before digitize the data.

In addition to manual checking by the DS and DMEO, the ARDS Web Portal can show messages to flag abnormal data entry by officers. The user can set entry rules for the data, and the application will recognize whether the data conform to the pre-set rules. For example, data for the number of rainy days in a month should have a range of zero to 30. If an ARDS operator tries to input 100 to the cell for the number of rainy days in a month, the system returns an alert message to the operator before accepting the figure. In addition, if the operator enters text-based data to the cell that only accepts a figure, the entry becomes invalid. Since the operator sometimes inputs amount of rain instead of the number of rainy days in a month, in this example, this kind of function will assist operators in adding collected data correctly. This function helps the operator enter expected data and reduce operator errors. However, as discussed in this report, while it does reduce errors to an extent, it is by no means a silver bullet to eliminate them completely.

(1) Introduction of the Validation Function

The M&E TWG discussed and set up the validation rule to remove abnormal values to be programmed in the first system improvement in the Year 2016. The rules are set as table 2.2.13.

For the first improvement, the process of setting a value range for each product—which requires complicated customization and functions that return errors by referring to historical data (such as referring to data for the previous month or year)—may make programming complex, and thus, may cause a delay in the system's background process. It may also cause issues such as a time-out or interruption on the user-side in LGAs with low processing capacity and communication infrastructure. Therefore, the Project decided to develop a simple validation function based on the simple rules.

Table 2.2.14 : Validation Rules

Report Type	Table No.	Data	Validation Rule
Ward Monthly Report	1.1	Number of rainy days	less than 31
	2.0	Crop planted area (Target)	less than Ward area
		Crop planted area (implemented)	less than Target area
	3.0	Crop disease affected area	less than Ward area
		No. of households served for disease control	less than the number of HH in the Ward
		Area rescued	less than the disease-affected area
	5.0	No. of animals affected by the disease	less than the number of animals slaughtered
	6.2	No. of hide and skin	less than the number of animals slaughtered
	7.1	No. of animals treated	less than the number of animals affected
No. of animals recovered		less than the number of animals affected	
No. of animals dead		less than the number of animals affected	
Ward Quarterly Report	3.0	Number of farmers trained	less than the total population of the Ward
		Number of farmers trained (less than a week)	less than the number of farmers trained
		Number of farmers trained (more than a	less than the number of farmers trained

Report Type	Table No.	Data	Validation Rule
		week)	
Ward Annual Report	2.0	Number of households involved in contract farming	less than the number of households engaging in agriculture
	7.0	Total number of registered animals	less than the total number of animals by variety (indigenous and improved variety)
	9.0	Total grazing land	less than the Ward area
		Utilized grazing land	less than the total grazing land
		Total demarcated area	less than the total grazing land
Total area leased		less than the demarcated area	
District Integrated Annual Report	8.0	Number of female members in finance management	less than the district population (female)
		Number of male members in finance management	less than the district population (male)

(2) Developing a Function to Display Error Messages for Irregular Entries in Production Data

As described in the previous section, the Project installed a validation function to the Web Portal in 2016. While operators accumulate data in the database after that, significant mistakes—such as mistakes in digits in production data, which are data that are used frequently—were found, negatively affecting the credibility of the data. The Japanese Team requested the UDSM to develop a function to configure minimum and maximum values for the planted area, harvested area, and productivity in the ARDS Web Portal. The function will show an alert when outliers from the range are entered into the specific cell. Additionally, the same function was to be applied to milk production per head per day.

This function was implemented in October 2019. As a result, when the LGA officer inputs abnormal data values on these indicators, alert messages will show up immediately, allowing LGA officers to correct these data. Accordingly, the data quality was expected to improve. After testing and implementation, the Japanese Team taught this function to the M&E TWG after adding an explanation of this function in the user manual.

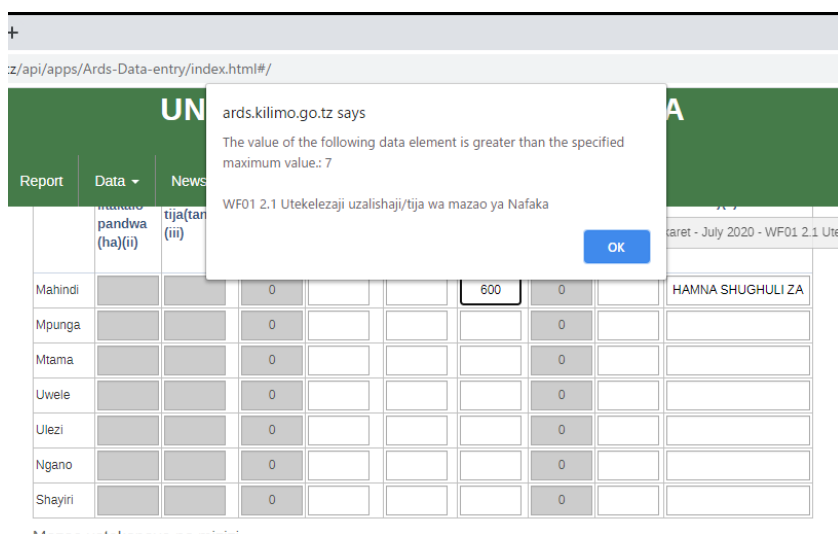


Figure 2.2.2: Error Message Related to Minimum and Maximum Value Range

(3) Implementation of Value Estimation and its Suspension

At the beginning of ARDS operations, because it requires data entry from approximately 4000 wards every month, it was anticipated that the submission rate might remain low, and thus, the executing organization needed to respond to this scenario. The M&E Project (Phase 2), which preceded this Project, designed a value estimation function to respond to such a scenario. The Project developed and activated the estimation function as a part of the first system development. The function was activated during the first system migration in January 2017, and reports were created according to the rules of the estimation function.

However, this estimation function encountered serious issues in implementation.

- There is no reliable estimation methodology, though it depends on the character of data.
- The reports were created based on a mixture of actual data and estimated data and cannot differentiate between the two.
- The estimation function allows the system to fill gaps by creating data. However, it may be an accountability problem since this function creates data without the knowledge of LGAs even though it operates under the agreed rule.

The Japanese Team discussed the reasonability of this estimation function with the CPs. In conclusion, following a high submission rate of 90% after one year of operation, the Project decided to suspend the estimation function from fiscal year 2018/19 after intensive discussion. Instead of allowing the system to estimate data automatically, it is recommended to encourage submission by examining submitted data, as well as to estimate data based on the professional judgment of the LGA in case of missing ward submissions.

The program for the estimation function remained on the ARDS Web Portal, enabling the CP to reactivate the function whenever necessary.

5) 1-5. To upgrade and revise ARDS Web Portal, VAEO/WAEO format and related guidance based on the feedback from the operators

(1) System

System development was conducted three times. The ARDS Web Portal Version 2, which was developed under M&E Project Phase 2, was upgraded to Versions 3, 4 and 5. The third version improved data entry and functioning of standard reports. The fourth and fifth versions improved functionality for utilization and analysis, respectively. All development reflects and responds to feedback and opinions of users from the LGA and the M&E TWG. The system improvement and related activities (including training) are reported in Section 5 of Chapter 2.2.2.

(2) Revising Formats, Manuals, and a List of Indicators

VAEO/ WAEO Formats: The Village Agriculture Extension Officer format and Ward Agriculture Extension Officer format are nationally standardized questionnaires to collect data from the grassroots (village and ward) level. The extension officers deployed to the village level collect data according to the format and submit them to the ward. After tabulation, the ward extension officer submits data to the LGA. Therefore, whenever there is any addition or revision in the data to be collected, it is essential to immediately reflect such changes to the format, and ensure full dissemination to the LGA and extension officers. Additionally, changes in formats should be preceded by adequate preparation. As there are data in the database, M&E TWG and users need to examine the implications of any changes to the existing (submitted) data as there may be a loss of comparability across time. Ideally, the data collection items, or forms, should be adjusted flexibly to meet demand at that time. In practice, changing the forms requires a series of activities, such as checking data availability, standardization of collection method, updating various manuals, organizing nationwide

training and so on, leading to a large number of tasks. In addition, the M&E TWG tends to increase the number of indicators as preparation for various queries from politicians and other stakeholders. However, adding indicators to the current questionnaire may be overburdening for data collectors. The Japanese Team decided to make the minimum formatting changes necessary since increasing indicators may carry risks.

The Project revised the format two times. An overview of the changes is provided in Table 2.2.14.

Table 2.2.15 : Summary of Format Changes

Time	Summary
The first revision (FY2017)	At the request of the LGAs, since 2016, poultry eggs and inland water farming data were added, and some errors in the table of food situation and diseases of livestock were corrected.
The second revision (FY2018)	Change in method of collecting crop production data (from cumulative to single month), expanding the function of food security forecast (WF01 table 2.2), and replacing and rearranging some tables.

The format was developed during the previous project and used in this Project without significant changes until 2017. Although the Project intends to keep formatting changes to a minimum, to respond to the needs of quality improvement, the Project made significant changes in the format, to reflect the revised collection and input method, in 2018. This major revision includes the crop production data tables.

As of 2017, the format required cumulative data entry for crop production, that is, the reporter needed to report monthly data by adding the current month's output to the sum of the previous months' data. This accumulative data reporting was required in a few tables: crop production, planted area under irrigation schemes, and cultivated area by cultivation methods. However, a closer look at the data reveals that those data are reported monthly, not in an accumulative way.

Since the ARDS Web Portal is programmed to process data submitted in an accumulative manner, the Project tried to collect data in that way. However, after examining the formats, it was found to be technically challenging to report data accumulatively in the production of many crops. For example, if a crop has multiple harvest seasons (as maize has a long-rain and a short-rain season), calculating the cumulative productivity is a complicated process. Considering that complexity, the Japanese Team thought it was too demanding to require extension officers to make such calculation. Therefore, in the midst of the portal's implementation, the Project team decided to change the methodology for collection and entry. Additionally, in line with the revision, the VAEO/WAEO format was also revised.

These revisions were explained to the DS and DMEO as well as RS through the nationwide training session, along with reflecting on the extension officer's manual (see below). It was also assumed that the DS/DMEO in each LGA would further cascade the explanation to the extension officers, to make them aware of the revisions to the VAEO/WAEO Format. Unfortunately, guidance and interviews during supervising visits revealed some cases where the old VAEO/WAEO format had remained in use with no changes.

As explained in detail as in Activity 1-3 in Section 3, Chapter 2.2.1, the VAEO/WAEO Format and extension officer's manual were confirmed for distribution in the subsequent training and guidance during the supervising visit. Additional delivery and distributions were organized for some LGAs as necessary.

Under ARDS, there are more than 17,000 extension officers collecting data in the outskirts of the field, that is, villages and wards. This makes it challenging to ensure thoroughness in data collection. It has also been observed through experience that revisions to the VAEO/WAEO Format will need to be handled with serious caution in the future, but only when it is truly needed. Additionally, it is essential to provide clear instruction to the DAICO and DLFO as well as RAA, to disseminate and distribute the revised format. In practice, technical and financial support from the ministry is essential, rather than relying on the spontaneous initiative of the LGAs.

(3) Extension Officer's Manual

The Extension Officer's Manual for the Agricultural Routine Data System provides instructions on how to collect and enter data using the VAEO/WAEO Format. The extension officers are expected to follow the descriptions to collect data at the village level.

In 2013, during the previous phase of this project, the reference manual “Training Guide for Preparation of Village and Ward Agricultural Sector Report” was produced and distributed when implementing the ARDS national training. Swahili and English versions both were prepared. This manual was used by the LGAs to train extension officers for ARDS data collection. However, when it comes to changing the data collection and input methods and format, the manual became necessary as a self-study material for extension officers to make them fully aware of the proper ARDS operation. Therefore, the extension officer's manual was reviewed, revised, and published to coincide with the revision of the VAEO/WAEO Format to change the data collection requirement in August 2018.

Due to time and resource constraints, nationwide training for extension officers was not conducted by the Project. Concerning the distribution of the manual, due to the budgetary constraint, it was sent to all LGAs with the relevant number of copies by EMS, on the premise that it would be distributed only to ward extension officers. Although the actual distribution required time and follow-up through reminders over phone or using other means, it eventually was completed.

(4) District Officer's Manual

The District Officer's Manual for the Agricultural Routine Data System provides instructions on how to collect and input data on a quarterly and annual basis using the Integrated Data Collection Format (IDCF), as well as instructions for preparation before distribution of the VAEO/WAEO Format.

IDCF is a nationally standardized format for LGA officials to collect aggregated data at the district level based on quarterly and annual cycles, distinct from the data collection using the VAEO/WAEO Format. As mentioned above, the extension officer's manual with the VAEO/WAEO Format has been prepared in the past, and extension officers have collected data according to its instructions. Meanwhile, no manual for IDCF has been prepared. Thus, the Project decided to prepare a manual corresponding to IDCF, and then distributed it at the national training sessions for LGA officials and explained its contents.

(5) Definition for Indicators

The purpose of the Definition for Indicators is to clarify the contents of the ARDS data that will be collected using both the VAEO/WAEO format (Word Entry Formats, WF) and District Formats (DF)⁷. In addition, it provides a concise summary of the data collection methods for wider stakeholders of ARDS as well as for those who practically use the data by themselves. Therefore, the Definition for Indicators is described not based on the input forms but rather on the standard reports (DR/RR, DIR/RIR/NIR)⁸ from ARDS Web Portal.

The objective behind the creation of the Definitions of Indicators is that, to promote the use of ARDS, referential materials from the perspective of data users are needed, rather than materials for data collectors—both the Extension Officer's Manual and the District Officer's Manual are prepared and produced primarily for users accessing the ARDS entry forms, such as CPs and officials of each district and region.

By contrast, owing to a broadening user base, a document that concisely summarizes the data items contained in the reports would make it easier for users to understand the contents at a glance. It is also expected that users who wish to search the data in the Web Portal will find the data items accessible.

⁷ WF, DF: Word Entry Formats for ARDS and District Formats

⁸ DR/RR, DIR/RIR/NIR: ARDS produce district reports (DR), region reports (RR), district integrated reports (DIR), regional integrated reports (RIR), and national integrated reports (NIR).

(6) Operation Guide

The ARDS Operation Guide is a document that assembles and explains all major aspects of ARDS operation and its overall system. It covers such topics as data collection, data entry, data utilization, structure of data system, administrative powers and responsibilities, and system maintenance. When this project began, the document was in Version 9. Then, updating and revisions continued as ARDS improved in terms of data coverage, quality of manuals, stringent data quality monitoring, and the system itself. The current one is Version 12, and this is the latest.

Moreover, this version added key manuals and other materials relevant to the ARDS operation as attachments, enhancing benefits to users. The contents of the Guide are as shown below. All users, operators and administrators should refer to this guide when they engage in the ARDS operation.

Table 2.2.16 : Contents of Operation Guide (V. 12)

No.	Area/Subject
1.	Introduction
1	Purpose of the ARDS Operation Guide
2	Scope of the ARDS Operation Guide
2	Outline of ARDS
1	Purpose of ARDS
2	Composition of ARDS
3	Institutional setting of ARDS
4	Data to be collected
5	Data and process flow of ARDS
3	ARDS operational actors and responsibilities
1	LGA level
2	Regional level
3	National level
4	Operational components (key actions in the ARDS operation)
0	Operation cycle
1	Budgeting
2	Format distribution
3	Data collection
4	VAEO/ WAE0 data submission/ reception
5	Data quality check
6	Feedback
7	Data entry to ARDS Web Portal
8	Monitoring of data submission
9	Report production
10	Data transmission and submission
11	Data approval, cancellation of approval, and re-approval
12	Fiscal year end lock (annual data lock)
13	Data analysis and utilization (Benefit of ARDS)
14	Data management
15	Campaign and promotion of ARDS
16	Maintenance and improvement of ARDS
17	Communications among LGAs, Regions, and National level
	Contact on ARDS issues
	Other materials relevant to ARDS

2.2.2. Output 2: Agricultural data submitted through ARDS are accessed and shared among the users

1) 2-1. To revise/improve training materials on data processing and analysis with ARDS Web Portal

(1) Training Materials for Data Processing

The ARDS Web Portal processes and analyzes data in the system, and it is possible to create standardized reports at monthly, quarterly, and yearly intervals. It also creates reports at various geographical levels—the LGA, Regional, and National levels. Before starting this Project, ARDS had not created any report except for some pilot areas. Therefore, the target of this activity was set as the creation of training materials related to data processing and report creation using the ARDS Web Portal.

Since there was no data in the database at the start of the Project, the Japanese Team encouraged data submission in the first year of operation. Additionally, the report creation function of the ARDS Web Portal introduced an error in the calculated value, owing to which the Project invested in fixing the computing issues in the early days.

Regarding training for central and LGA on data processing and use, the Project initiated full-scale training using standard reports and a pivot table from November 2017. As shown in Table 2.2.3, the Project provided a series of trainings for this purpose that covered the process and analysis of standard reports (November 2017), using pivot tables (November 2017), and archiving reports and use of data in GIS (February 2019). Moreover, when training the DAICO and DLFO, a Quick Reference was distributed to those officers responsible for using ARDS data at the LGA level.

(2) Attempts to Improve the Data Quality of ARDS

The Project activities have led to a stable rate of ARDS data submissions. Thus, the Japanese expert team started to examine the quality of the submitted data. The team scrutinizes data even down to the ward level and found out following issues:

- Although some wards had not submitted data, such missing data were not identified. This is because even if some ward data are not available, data can still be summed up at the district level.
- Even if data were submitted, some figures were not valid, were either extremely large or extremely small.

To rectify this situation, the Project designed a DQMS to allow the ARDS-related officers (at both the central and regional levels) to check the monthly data at the ward level. It also was helpful to provide feedback to LGAs on the validity of the data.

The sheet is based on Excel with simple macros. The users can extract data using the pivot table of the ARDS Web Portal, and downloaded to the user's computer as an Excel table. Then, by simply pasting the data on the sheet, the user can identify which wards are not reporting or reporting outlier.

Checking the quality of the data one by one was an enormous task; the Project limited the number of the indicators to be examined harvested area, production quantities, and productivity; also limited the variety of crops to maize, paddy, cassava, and milk production. Since the production and harvesting of a crop have seasonality, the Key Crop Calendar (refer to the following sections) was used to check the timing of harvesting.

① Checklist of ARDS Data

The Checklist is a simple single sheet that presents the workflow to conduct quality analysis of ARDS using DQMS. This is another tool designed for the use of central and regional ARDS personnel. The content is a checklist that identifies the tasks to be done step by step. Specifically, the steps are as follows:

Table 2.2.17: Checklist Contents

Step No.	Description of tasks
1	Access ARDS Web Portal on the 26th day of each month for monthly data checking
2	Review the status of each LGA's monthly reports and their approval by Region
3	Check annual target of crop and milk production
4	Check the availability of the relevant production data while referring to the crop production calendar
5	Check for missing values and outliers using the Data Quality Monitoring Sheet
6	Report the result to ARDS Regional Coordinator and the LGA officers
7	Report the result and submit DQMS at the following M&E TWG meeting

As a general rule, the submitted data are treated as "accurate" in principle, because as administrative data, ARDS cannot be processed statistically. However, to improve the quality of ARDS data, a reducing missing data and outliers at the ward level would be effective. Therefore, as immediate action, the checklist and DQMS have been used as data monitoring activities at the central level. In addition, guidance for raising awareness and disseminating information has been provided to extension officers in LGAs during the supervising visits.

Meanwhile, workshops for data quality improvement were held with the use of checklists. However, due to the interruption of activities by COVID-19 and other factors (i.e., preparation and implementation of NSCA), the Project could held workshops twice.

② Key Crop Calendar for major crops

The Key Crop Calendar was initially prepared to examine whether data reported empty (missing data) is genuine or not. When the TWG members found data is missing from ward monthly format, the system does not tell if it is because the WAEO did not report data or the production is not in season. Therefore it is necessary to know whether the target crops were grown and harvested in respective LGA in specific seasons no production data would be submitted during the non-harvest season. The Project selected maize, paddy, cassava, and beans as the targets because they are major food crops that are important for agricultural production in Tanzania. Afterwards, the team add sunflowers in the list as a popular cash crop.

The Key Crop Calendar shows the planting and harvesting seasons of the target crops monthly for every LGA. In finalizing the document, the contents were validated and reconfirmed by the DAICO in each LGA.

The MOA used to had a crop calendar; however, it provides data by zone or by region, not by LGAs. In Tanzania, the climate conditions are diverse from one district to another even in the same region. Thus, a more detailed crop calendar, that is by districts, was inevitably needed for the betterment of ARDS data quality. This Key Crop Calendar was distributed as a simple book to relevant departments in MOA for checking ARDS data as well as for use in routine work in the ministry.

2) 2-2. To provide training (including TOT) to officers of the central ministries on data processing, analysis, report writing, and presentation by utilizing ARDS Web Portal

(1) Training for the M&E TWG Members

The Project provided training to officers and staff of ASLMs. The training was often conducted as a TOT for the training of LGA officers. In the initial project design, the users of ARDS were assumed to be general

ASLM staff, but when the project started, it was found that CP (M&E TWG) did not have any immediate interest in expanding the number of users. This was, initially, due to a lack of data in the database and the inability to ensure accurate data (problems in data quality and system deficiencies), and later, due to a lack of confidence among CPs regarding data quality. Since CPs cannot help increase the number of users, the Japanese Team also followed a realistic approach in conducting training. Originally, it planned to carry out data accumulation and dissemination (namely increasing the number of users) almost simultaneously, but later, the team decided to approach the issues of data accumulation, improvement of data quality, and expansion of users sequentially. Therefore, training on data processing, analysis, and report preparation and presentation was conducted for M&E TWG users first, and then it was expanded to other users after the 4th year of the Project.

In many cases, Trainings for M&E TWG members are also served as TOT for LGA officers; therefore, the expected outcome of the training was similar to that of LGA training. The summary of the training conducted during the Project period is presented in Table 2.2.18. (Some information in the table is a duplicate of Table 2.2.3).

The Project also provided training of data process using maps, geographical information for M&E TWG members. This training was in response to the request of a few members who wanted a more flexible use of GIS for more visual presentation and analysis. As discussed in Section 5), Chapter 2.2.2, the ARDS Web Portal has a GIS module however it has some limitations as a built-in module. Therefore, the Project provided additional training to members for use in reporting and presentation using QGIS, an open sourced geographical information system software.

Table 2.2.18: Summary of Data Processing Training

Name of Training	Date	Target	Contents
Training for backstopping (M&E TWG and TOT) in the 2nd project year	January 2017	M&E TWG	Data analysis and processing of standard reports
Training for backstopping (M&E TWG and TOT) in the 3rd project year	November 2017	M&E TWG	Data analysis using Pivot table function on ARDS Web Portal
Training for backstopping in 4th year	February 2019	M&E TWG	Analysis using GIS function
Training on GIS using QGIS software	May and September 2018	M&E TWG	Presentation and analysis of ARDS data using GIS software

(2) Dissemination/promotion of Use to Technical Departments

To promote the use of ARDS, discussions were held with each relevant section in the technical departments as follows. Firstly, the data created during the process of the Agricultural Basic Data Booklet was shared with each relevant section. Then, views for the potential use of ARDS were exchanged. Discussions with technical departments for utilizing ARDS data are referred to in the following table.

Table 2.2.19: Discussion with Technical Departments

Date	Organization and Contents of Discussion	
October 2018	Crop Monitoring and Early Warning, National Food Security Department (NFSD), Ministry of Agriculture	<ul style="list-style-type: none"> - Presentation of ARDS and discussion regarding data use - NFSD expressed difficulties in using ARDS, with the representative denying its usefulness. - Confirm the validation of ARDS data, based on a comparison with data collected by NFSD, to see whether the ARDS data can be useful.
November 2018	Agriculture Mechanization, Plan Health, Input, Promotion in Department of Crop Development (DCD), and Extension Services in Department of Training, Extension and Research (DTER), Ministry of Agriculture	<ul style="list-style-type: none"> - Presentation of ARDS Web Portal and discussion regarding data use - Coordination between Department and project - DCD expressed interest in the system and discussed how to coordinate the use of data such as providing ID etc. - A consensus was achieved to utilize ARDS in the future.
January 2020	<p>Data were extracted from ARDS, and then, available statistics were presented to each section in the department (DCD and DTER) of the MOA with questions and discussions as follows:</p> <ul style="list-style-type: none"> - The annual use amount of both fertilizer and improved seeds was compiled and presented to the Input Section of DCD. - Data on agricultural machinery such as tractors and power tillers and compiled data on the number of machinery and area under cultivation, was then presented to the Agriculture Mechanization Section of the DCD. - Data on the deployment of agricultural extension officers and available means of transportation etc. were presented to the Extension Service section of DTER. 	
February 2020	<p>Extracted data from the ARDS and presented the statistical information available to the department.</p> <ul style="list-style-type: none"> - The annual data on agricultural mechanization of tractors and cultivators were presented to the head of the Mechanization Section. Discussed the possibility of using the ARDS data in the future. - The data on the deployment of agricultural extension workers maintained by ARDS were presented to the head of the Extension Service section, followed by a discussion on the possibility of providing workshops. In response to their request, the team also downloaded additional data from ARDS and showed the status of agricultural training for farmers. 	
March 2020	<p>An exchange of views on the possibility of using the data in the future and confirmation regarding continued dialogue and discussion from now on.</p> <ul style="list-style-type: none"> - Explained the contents of the ARDS data to the Marketing section of DCD while presenting the Key Crop Calendar. - Discussed the possibility of using ARDS by presenting the data for the Basic Data Booklet to the Inputs section of DCD. - Confirmed continued discussions with the Mechanization section of the DCD and the Extension Service Section of DTER. 	

The officers in charge of each section expressed interest in the use of ARDS, but they prefer to receive the data in an Excel format rather than having to make full use of ARDS themselves. That is why the M&E TWG firstly introduced and provided ARDS data to users, and then gradually increased the number of users.

Further promotion of the system was greatly affected and limited by the outbreak of COVID-19. In response to the high-level seminar, activities to increase the number of users in the ministry were planned. However, unfortunately, these activities had to be scaled back. User accounts will be distributed to the deputy directors of each ministry, and instructions on how to use the system will be shared. For this purpose, for example, a user manual, a simplified version of the manual, and video materials (posted on YouTube) are being introduced.

3) 2-3. To provide training to officers at Regions and LGAs on data processing and analysis by utilizing ARDS Web Portal

This activity aims to enable LGA officers to use data in the ARDS. The expected users of data are the DAICO, DLFO, and officers under their office, including the District Agriculture Statistician (DS) and District M&E

Officer (DMEO). As a system, the DS and DMEO enter submitted data from extension officers to the database under the supervision of the DAICO and DLFO and report, as aggregated data needs to be approved by officers at the Region level. Therefore, the reports and data would not need any further confirmation and authorization, which was a requirement at the national level. Thus, after accumulating data to some extent, the Project provided training for data processing, data analysis, and reporting. However, the Project did not provide any training on presentation as it would be too general and different LGAs have different needs.

Table 2.2.19 summarizes the training activities focusing on data use conducted by the Project. (Note that the content of the table partly duplicates Table 2.2.3.)

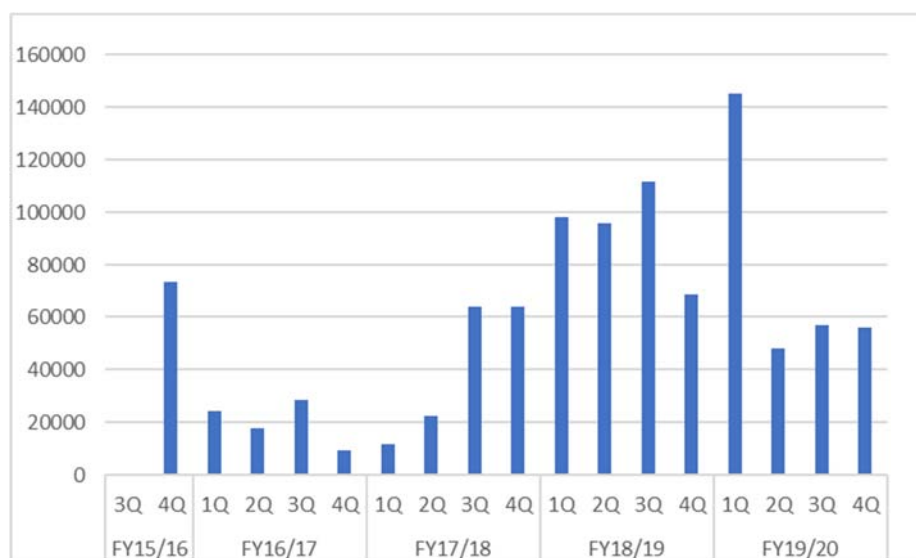
Table 2.2.20 : Conducting LGA Training

Name of training	Date	Target	Contents
Backstopping for DAICO	May 2016	RS, LGA (DAICO, DS, and DMEO)	Explanation of the data processing function of ARDS Web Portal and report creation
Backstopping in Second Project Year	January 2017	RS, LGA (DS and DMEO)	Standard report creation
Backstopping in Third Project Year	November 2017	RS, LGA (DS and DMEO)	Data analysis using Pivot table function of ARDS Web Portal
Backstopping in Fourth Project Year	February 2019	RS, LGA (DS and DMEO)	Data analysis using GIS function and extraction of past data on ARDS Web Portal
DIACO and DLFO training	July 2019	LGA (DAICO and DLFO)	Report circulation to the higher authority of LGA and how to use

4) 2-4. To conduct periodical monitoring on the access to and downloading data from ARDS Web Portal

The ARDS Web Portal can generate statistics. It monitors and records some indicators such as the number of users who access the pages, data, and report downloads.

Before starting the Project, the data entry had been stagnating, and the number of users remained sluggish. However, after the project began, access increased rapidly and stayed high. Since the ARDS Web Portal is not a database open to the public, and many users belong to LGA operators, M&E TWG, and other stakeholders, the current trend will remain as it is for some time.



Source ARDS Web Portal

Figure 2.2.3: Change in Number of Users Accessing ARDS Web Portal

Statistics related to utilization in terms of use of the pivot table and report downloads are as follows. The use of data in ARDS is measured by the number of users of the pivot table and standard reports. The use of the pivot table is presented in table 2.2.20. The project activities in the latter half of the project period promoted the use of the pivot table.

Table 2.2.21: Number of Downloads Using Pivot Table (by Tanzanian Fiscal Year)

	FY2016/17	FY2017/18	FY2018/19	FY2019/20	FY2020/21
Number of downloads	1,306	33,702	12,317	24,139	34,275
Number of data items	181	2,200	1,734	3,451	2,557

Source: ARDS Web Portal

Additionally, Table 2.2.21 presents the number of downloads of standard reports in the year 2020. The number of monthly downloads reached 1,400 on average. The Japanese Team expected wider use of standard reports. However, the use of standard reports was less than anticipated and remained as stated.

Table 2.2.22: Number of Downloads of Standard Reports (Year 2020)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Number of report downloads	1,330	1,393	1,270	1,477	1,382	1,198	2,452	1,366

At the beginning of the Project, the M&E TWG did not have a consensus on “assumed users of ARDS,” and after discussion, they agreed that the users of ARDS should be within the GOT. As the ARDS Web Portal is online and can be accessed with just a username and a password, it was expected that researchers, the private sector, and other interested parties could access it. Still, even though the Regional Secretariat approves the data, the aggregated data are not approved by the central government; it was decided that the ARDS would be an internal database for the time being. Data disclosure and publicity will be done through other publication efforts such as Data Booklets, various progress reports, and other publications. Additionally, ASDP 2 has a plan to create a dashboard connected to the ARDS data.

5) 2-5. To upgrade the data utilization interface of ARDS Web Portal based on the feedback from users

The database software used in ARDS is called ARDS Web Portal and was developed as a web application. The ARDS Web Portal was designed during the preceding project, the M&E Project Phase 2, and the basic specifications were also defined then. This activity in this Project was carried out to improve the ARDS Web Portal to increase the submission rate of ARDS data, promote utilization of ARDS data, and build the capacity of government officials to conduct the operation and maintenance of the ARDS Web Portal.

The major activities over the past five years are summarized in Table 2.2.23.

Table 2.2.23: Major System Development Activities

Project Year	Period	Activities	Contents
First	From January 25 to March 10, 2016	Technical review with Technical Assistant	Listing issues in ARDS Web Portal Fixing minor issues Creating TOR for succeeding upgrade of ARDS Web Portal
	From April 18 to July 29, 2016	The upgrade of ARDS Web Portal version 3 (First Project Year subcontract)	Improvement of application performance Improvement of data aggregation logic to create standard reports Development of estimation function Development of message board function
Second	From November 7, 2016 to March 13, 2017	Migration to version 3 and related activities	Acceptance test by the Technical Team Migration Training for Technical Team Training for M&E TWG users (also served as TOT for LGA training)
	From February 28 to August 31, 2017	The upgrade of ARDS Web Portal version 4 (Second Project Year subcontract)	Improvement of usability (Pivot Table, downloading Excel formatting, Region level reports) Improvement of entry function by additional data elements Improvement of management and administration (Report producing process, rate of report creation)
Third	From September 4 to November 3, 2017	Migration to version 4 and related activities	Acceptance test by the government Migration Training for technical team Training for M&E TWG users
	From March 1 to August 15, 2018	The upgrade of ARDS Web Portal version 5 (Third Project Year subcontract)	Change in entry rule for some important tables Improvement of downloading entry formats GIS function Introduction of static table and strengthening of archiving.
	From July 23 to September 7, 2018	Migration to version 5 release 1 and related activities	Test workshop Migration
Fourth	From November 30, 2018 to January 18, 2019	Server migration and migration to version 5 release 2 and related activities	Test workshop Migration Training
	From March 1 to October 31, 2019(Later this is	Maintenance contract and its assessment	

Project Year	Period	Activities	Contents
	extended by the end of October 2020)		
	September 2019	Documents preparation for sustainability	Manual FAQ Video training materials
	September 2019 to October 2019	Improvement of validation function	
Fifth	From July 1, 2019 to October 31, 2020	Upgrade of the pivot table to improve performance to download large amounts of data	

(1) ARDS Web Portal Technical Review with Technical Assistant (TA)

Before the commencement of the Project, the CPs had listed and reported the technical issues with the ARDS Web Portal in October 2015. Therefore, the Japanese Team employed a Technical Assistant (TA), an engineer who was involved in ARDS Web Portal development in the M&E Project Phase 2, to categorize the reported issues into technical issues and non-technical issues and to propose countermeasures. Two experts from the Japanese Team and three CPs formed a Technical Team and conducted a technical review of the ARDS Web Portal with the TA.

The major achievements of this review exercise are summarized as follows.

- Most of the technical issues hindering data entry have been resolved.
- The Technical Team of the M&E TWG became able to respond to questions or requests from LGA officers with confidence and to solve technical issues that previously hindered LGAs' data entry into the ARDS Web Portal.
- Items to be developed in the later ARDS Web Portal upgrade have been clarified.

(2) The Upgrade of ARDS Web Portal Version 3

Terms of Reference (TOR) for the ARDS Web Portal improvement subcontract were prepared to document the needs of the M&E TWG and the outputs of the above technical review. It was approved by the M&E TWG meeting on March 10, 2016. After that, the Japanese Team sent a request for a proposal to four private companies.

Among them, only the University of Dar es Salaam (UDSM) submitted proposals and signed the contract (subcontract); the Japanese Team and M&E TWG jointly evaluated the proposals from the UDSM and found them to be above the pre-determined threshold both in technical quality and cost. The period for the subcontract was from April 18 to July 29, 2016. During the subcontract period, the Technical Team arranged progress management meetings with UDSM. These meetings were held once every two weeks.

(3) ARDS Web Portal Migration to Version 3 Developed in First Project Year

After the second Project Year, since government officials had not yet conducted an acceptance test for version 3, the acceptance test was carried out so that the Tanzanian government could confirm and accept the quality of the new system. A total of four Technical Team members in the M&E TWG were in charge of the testing from November 3 to 22, 2016 and reported that although minor bugs still existed, they would not hinder migration to version 3 since UDSM was fixing them.

However, in the M&E TWG meeting on November 29, 2016, system migration was not approved since bugs still existed, even though they were trivial issues. M&E TWG decided that the timing of migration would be discussed again in the next week. After that, the Japanese Team and the Technical Team fixed the remaining issues with UDSM and planned the migration to version 3. Then, M&E TWG 2016 approved the completion of the upgrade on December 6, 2016 and decided that the migration would be conducted in January 2017.

Prior to the migration, two technical trainings were conducted, one for the Technical Team and another for M&E TWG members. The training program for the Technical Team covered basic configuration of servers, backups and recovery, and guidance on operating the new system. This was conducted by a UDSM lecturer from January 9 to 11, 2017.

In the training for M&E TWG, the upgraded functions were explained, and the participants asked their questions to the lecturer. This was also done by the UDSM lecturer from January 17 to 19, 2017. The participants were satisfied with the upgraded functions such as estimation and data validation checks and hoped the functions would be effective after the migration to version 3. The composition of the participants was as follows. The MOA: 7 members, the MLF: 5 members, and the MITI: 2 members.

The ARDS Web Portal, which was upgraded in the First Project Year, was migrated to version 3. The work was from January 17 to 19, 2017. Achievements from this task were as follows.

- At the beginning of the project, the ARDS Web Portal was not functioning properly. Specifically, data aggregation rules had not been identified, and most of the data shown in the standard report were not properly calculated. During this upgrade, the calculation rules were properly documented, and ARDS Web Portal began to output correct results in the reports following the rules.
- The Project introduced an improved software development method. The local subcontractor's performance was not good enough at the beginning and the program they initially handed over to the Japanese Team had a lot of technical problems. Thus, the Japanese Team introduced a software development method (clear requirement definitions, subcontractor management, and a detailed acceptance test) that was not common in Tanzania to develop software in better quality, and eventually succeeded in the upgrade of the ARDS Web Portal
- Since the system began to operate as designed, the CPs and LGAs are motivated to use the ARDS, and they began to trust the Japanese Team. This contributed to stable and high ARDS data submission rates (more than 90% completion of the Ward Monthly Entry Form).
- The estimation function that was designed in M&E Project Phase 2, but not implemented was implemented, and the system became able to estimate and calculate LGA level data even if the data from some wards are missing.
- A data validation function (data checking function) was implemented and it became possible to trigger an alert message during data entry when text is improperly inputted, such as adding text to a cell that should have a number.

(4) The Upgrade of ARDS Web Portal Version 4 (Second Project Year Subcontract)

To further upgrade the ARDS Web Portal in the Second Project Year, after discussion with CPs, the Japanese Team prepared TOR and reached a consensus on it in the M&E TWG meeting held on February 28 and March 6, 2017. Then, the Japanese Team entered a contract (subcontract) with UDSM on March 10, 2017 with the contract period from March 13 to August 31, 2017. During the subcontract period, the Technical Team arranged progress check meetings with UDSM. These meetings were held once every two weeks.

During the update contract in First Project Year, UDSM handed over a poor-quality program to the Japanese Team without enough testing, which delayed the Japanese Team's completion of the acceptance test to reach acceptable quality. Thus, the Japanese Team requested UDSM to hand over programs step by step after they completed some functions before completing all, so that the Japanese Team could start acceptance testing

earlier and bugs could be fixed sooner. By doing so, the team further improved the development process for the system upgrading task.

(5) ARDS Web Portal Migration to Version 4 Developed in Second Project Year

After Third Project Year, before the migration to version 4, a training for the Technical Team was conducted on October 25, 2017 on administrative functions of the ARDS Web Portal. Training for M&E TWG also was held on October 26 and 27, 2017 to learn the improved functions of the ARDS Web Portal, and to answer any questions from the participants. The participants expected that ARDS data utilization would increase with the newly upgraded pivot table. The composition of participants was as follows. The MOA: 4 members, MLF: 4 members, the MITI: 1 member.

The ARDS Web Portal upgraded in the Second Project Year was migrated to version 4 from October 30 to November 3, 2017. Achievements from this task were as follows.

- As a result of the improvement of the Pivot Table function and implementation of the Excel format report download function, ARDS data utilization among the national government and LGAs was promoted since these functions allowed data to be exported to the necessary format.
- Regional report functions promoted data utilization in regions.
- Addition of eggs and fisheries data stipulated the collection and utilization of these data. LGAs had aspired these data from M&E Project Phase 2.
- Since functions to confirm whether LGAs created reports or not and LGAs configured prior estimate parameter or not were developed, monitoring activity of ARDS-related activities by LGA was strengthened, and report creation was promoted. As a result, data utilization was spread.
- Improvement of administrative functions eased fixes of bugs in the data calculation in the reports.

(6) The Upgrade of ARDS Web Portal Version 5 (Third Project Year Subcontract)

To further upgrade the ARDS Web Portal System, the Japanese Team entered a contract (subcontract) with UDSM in March 2018. The team planned two migrations; the first migration was as release 1 was planned in August 2018 and release 2 was planned in January 2019.

In release 1, existing functions were improved. A manual defined that crop production information should be inputted in an accumulative manner from the beginning of the fiscal year; however, according to LGA officers, only monthly crop production information was inputted in the ARDS Web Portal, and the Japanese Team found that the data in the ARDS Web Portal were unreliable. To solve this issue, after consulting with the Japanese Team, the M&E TWG decided to change the data input rule to input the data of the month into the ARDS Web Portal. As a result, the ARDS Web Portal outputs both the data of the month and the accumulative data into reports. Since M&E TWG wanted to change this rule from the beginning of FY 2018/2019 and July 2018 data would be submitted in August 2018, the upgrade of this function was prioritized and developed in release 1. The Japanese Team judged that if other new functions were included in release 1, the timing of migration would be delayed to later than August 2018 and decided that new functions would be included in release 2. Additionally, the missing data estimate function was disabled in release 1. In the past, many wards had not submitted entry forms, and M&E Project Phase 2 judged this function was necessary. However, in the beginning of the Third Project Year, the submission rate of ward entry forms exceeded 90%, and it was difficult to define a logic to estimate missing data properly. Therefore, the Japanese Team judged this function would affect data quality negatively and decided to disable it.

In release 2, new functions were developed. The ARDS Web Portal had an issue because it maintained only the latest administrative boundary but did not manage the past one. This led to two issues: “1. Past data based on the administrative boundary then could not be referred to,” and “2. Reports for administrative units which

existed in the past cannot be read.” Thus, new functions, “1. Static table to save data such as crop production based on the administrative boundary then at the end of fiscal year” and “2. Interface to access the reports for the past administrative boundary” were implemented. Moreover, GIS functions to color each region or LGA on a map by value to promote data utilization, and the task list function to urge LGA officers or RSs to perform their tasks such as ward entry form submission was developed.

The period of the upgrade was from April 9, 2018 to February 28, 2019. During the subcontract period, the Technical Team arranged progress check meetings with UDSM periodically. Additionally, the ARDS Web Portal was maintained in a cloud server. M&E TWG requested the Japanese Team to purchase a new server, and decided that the server would be located in the office of the Tanzanian government in Dodoma and that the ARDS Web Portal should be migrated to this server. The Japanese Team decided that the server migration also should be included in release 2.

(7) ARDS Web Portal Migration to Version 5 Release 1

From July 23 to 27, 2018, the Japanese Team held a workshop in order for the Technical Team to acquire the required knowledge and experience of testing before releasing the developed ARDS Web Portal into the live environment. Six officers in the Technical Team attended the workshop and a Japanese expert served as the lecturer. The workshop explained the software development process, the necessity of an acceptance test, a method to manage bugs, and included some testing exercises. The M&E TWG judged ARDS Web Portal version 5 release 1 to be ready for migration during the workshop. From August 28, 2018, the migration of ARDS Web Portal version 5 release 1 was carried out, with the migration spanning two weeks. Achievements from this task were as follows.

- The data entry rule for crop production information was changed from accumulative data entry to monthly entry and ARDS Web Portal began to include both the data of the month and the accumulative data in its reports. After this release, the system calculation logic matched with the data entry rule and practice.
- The missing data estimation function was disabled. Reports created before migration were re-created by disabling missing data estimation to ensure consistency in the reports before and after this release.

(8) ARDS Web Portal Server Migration and Migration to Version 5 Release 2

To migrate the server from a cloud service to an on-premise server in Dodoma and to configure backup, the Japanese Team added the setup service to the on-going ARDS Web Portal version 5 contract and amended the contract on November 30, 2018. The Japanese Team decided that the newly purchased server would be used as the main server, and the old server purchased during M&E Project Phase 2 would be the backup server, and that the backup would be done every night.

Server migration took place after the discussion with the Japanese Team. At first, the Japanese Team discussed the location of the servers with the CPs. Initially, the CPs considered locating the server in the President’s Office - Regional Administration and Local Government where the power supply is stable. However, although the Ministry of Agriculture requested them to prepare space for the server, they did not have enough space. Thus, instead, the Tanzanian government decided to place the main server in Kilimo 4 and the backup server in UDOM although the power is not stable there.

After the acceptance test for release 2 was almost completed, the Japanese Team hosted a testing workshop from December 12 to 14, 2018. Toshiaki Suzuki acted as lecturer. This workshop provided an overview of the acceptance test and practice exercises. After this workshop, the government acknowledged that the quality of release 2 was satisfactory and approved the plan to begin the migration in the beginning of January.

Migration of the ARDS Web Portal version 5 release 2 took place from January 5 to 15, 2019. Consequently, a Training for the Technical Team was organized on January 16, 2018, covering the administrative functions

of the ARDS Web Portal. Training for the M&E TWG was held on January 17 and 18, 2018 to discuss the improved functions of the ARDS Web Portal and answer any questions from the participants regarding the later training for RS and LGA officers. The participant composition was as follows. The Ministry of Agriculture: 8 members, the Ministry of Livestock, and Fisheries: 2 members, the Ministry of Industry, Trade, and Investment: 2 members, and National Bureau of Statistics: 1 member.

Achievements from this task were as follows.

- The server for The ARDS Web Portal was migrated to the office of the Tanzanian government as requested and its operation and maintenance became stable.
- The Task List showed pending tasks for LGA and RS officers (entry form submission, report creation, or report approval) in the home screen of the ARDS Web Portal and the Portal became able to push them to complete these tasks automatically.
- GIS allowed the coloring of each LGA or region on a map by value, with this feature expected to further promote the utilization of the ARDS Web Portal.
- Archived reports enabled users to retrieve reports for administrative units that existed in the past.
- Static reports became able to show data based on the administrative unit for the relevant year, instead of the latest administrative unit. For example, when a LGA is divided into two LGAs in a year, the data before the year will be presented for the entire LGA, while the data after the division will be displayed separately for the two LGAs.

(9) ARDS Web Portal Maintenance Contract

On February 20, 2019, a maintenance contract was signed with UDSM to maintain stable operation of the ARDS Web Portal. The contract period was from March 1, 2019 to July 30, 2019. The scope of the maintenance was to fix bugs, troubleshoot technical issues, respond to inquiries from CPs or the JICA Technical Team, and create the monthly report. Later, the contract was extended to October 31, 2019 since the project itself was extended by then.

Initially, the Japanese Team estimated 12 man-months for the maintenance activities since the system had just migrated. However, after analyzing the contents of the maintenance activities during the maintenance period, the Japanese Team found that the man-months actually allocated were low. Just before this contract period ended, the CPs decided to negotiate the cost of the maintenance contract with UDSM with support from the Japanese Team and agreed to reduce the cost to 4 man months. Since the project was extended again to the Fifth Project Year, the Japanese Team renewed the maintenance contract from November 15, 2019 to October 31, 2020 based on the negotiated cost.

(10) Preparation of a User Manual, a Maintenance Manual, and FAQs

A user manual on how to use the ARDS Web Portal for general users (national, regional, and district users) and a maintenance manual for the Technical Team, who are the administrators of the ARDS Web Portal, both delivered by UDSM, included too much text and it was difficult to find the necessary information. Thus, the Japanese Team prepared a simplified version of the user manual and maintenance manual in PowerPoint with many screen images and less text to make it easy to read. Additionally, by collaborating with a CP, videos demonstrating the operation of the ARDS Web Portal were created for users. Moreover, the Japanese Team found that the Technical Team shared even easy questions they received from LGAs—which should have been solved within the Technical Team itself—with UDSM, creating a delay in solving even minor issues. Thus, the Japanese Team created FAQs (Frequently Asked Questions) and trained the Technical Team.

(11) Performance Improvement of the Pivot Table Function

In July 2020, the data were calculated on the client side in the Pivot Table of the ARDS Web Portal; however, poor browser performance limited the amount of data that could be downloaded at once. It was possible that this might affect sustainability of ARDS operation negatively since this would make it difficult to download a lot of data from the ARDS Web Portal, such as when data books are created. Thus, the Japanese Team decided to update this function; when a lot of data is requested through the Pivot Table, calculation is moved to the server side and the calculated data are downloaded from the server. This improvement is further expected to increase ARDS Web Portal utilization.

(12) Lessons Learnt from System Development

The system development activity aims to develop a main M&E system for agriculture that is used on a nationwide level, which is one of main activities in this Technical Cooperation Project. Lessons learnt from this activity are as follows.

- Software development is a relatively new activity in the ODA industry both on the JICA side and consultant side. It is generally believed that after software development is subcontracted to a software developer, they will complete the software even if the ordering party does not clarify what they develop, check the quality of the software, and manage whether the developer is doing proper jobs in proper timing or not. However, in many cases, software developers in developing countries are not good at detailed work and usually cannot complete the development by themselves. Thus, to develop excellent software, in developing countries, it is necessary to assign an ICT expert who has adequate experience to complete the software development work. ICT experts should have knowledge of the software development process such as requirement definitions, design, implementation, acceptance tests, and migration.
- Software development takes longer than generally imagined and sufficient time should be allocated to software development planning. In this project, it took 2.5 to 3 months to fix requirements with CPs and to sign a contract with the software developer, around 3 months for the software developer to implement software for the handoff to the Japanese Team, and 3 to 5 months for the Japanese Team to complete the acceptance test. Specifically, it is important to allocate ample time for implementation to the software developer and for acceptance test to the Japanese Team to improve software quality.
- Since software development takes time, it is important to assign enough time to the ICT expert. If the assigned time is too short, the project may end before software development is accomplished. Thus, in case the budget is not sufficient for the length of time required, it is better to exclude software development from the project. In this project, the man-month assignment for the ICT expert was enough and the software development was successful.
- The software development process should be managed with an assumption that the software quality handed over from the software developer is poor. In particular, detailed software specifications such as the list of all necessary functions, screens, and workflows must be exhaustively written in the TOR to clarify the responsibility of the software developer. Additionally, during the acceptance test, the ICT expert must list all software behavior patterns written in the TOR and confirm these functions work properly. If bugs are found, the contents of the bugs must be shared with the software developer and then be solved. In this project, the Japanese Team faced difficulties fixing bugs since UDSM could not solve some bugs after a long time and the Japanese Team needed to explain the same issues repeatedly to them. As the result, the acceptance test was prolonged. Before software development, this difficulty should be expected, and countermeasures should be included in the software development planning.
- Since the software developed by UDSM was of poor quality, when the Japanese Team conducted an acceptance test in the First Project Year after the software developer had completed the development process, the Japanese Team could not find even one function that worked as requested, and it took time to fix every issue. Consequently, in the Second Project Year software subcontract, the Japanese Team

requested UDSM to hand over some functions that UDSM had completed step by step so that the Japanese Team could start the acceptance test earlier. This process improvement worked well, and the acceptance test period became shorter after the Second Project Year.

- When software development is carried out as a component of a technical cooperation project, the stable and functional operation of the software is critical. For this Project as well, a functional ARDS Web Portal was a precondition for other activities. Therefore, the Project prioritized the development of software rather than capacity development through software development. In terms of capacity development, attention is focused more on to the operation and maintenance of the ARDS Web Portal rather than the development of software itself. In this way, the focus and goal of capacity development in software development should be flexibly set.
- 6) 2-6. To set up clear mechanism of ARDS reports sharing and put it in place at central and local level for better information sharing within the organization

(1) Region and LGA level

At the LGA level, various standard reports are created from data entered by the LGA into the ARDS Web Portal, and supervisors of LGA, a Regional Secretariats (RSs) approve them after confirmation. At LGA it is desirable to circulate those reports within LGAs, among high-level officers and politicians such as District Commissioner, District Councilors, and DED). Also for RS, the reports should be circulated to the sections for Economic and Productive Sectors, regional executive officers. The Project indeed promoted the circulation of reports during trainings conducted as part of supervisory visits. When the Project conducted training for DAICO and DLFO in July 2019, the M&E TWG members reemphasized the importance of using standard reports by circulating them among high-ranking officers and politicians in RSs and LGAs.

However, Regions and LGAs also produce and circulate reports in their formats to suit their needs. Particularly, LGAs generate monthly and quarterly reports required by the district council and other ad-hoc reports required by the District Commissioner and DED, and the data from the ARDS Web Portal is used for creating these reports. This indicates that pre-defined standard formats do not necessarily meet the needs of all LGAs, and therefore, expecting LGAs to produce regular reports is not always correct or desirable. Regarding reports with standardized formats, after discussion with CPs, the Project team emphasized more on the critical use of data rather than the use of the standard report as it is.

(2) Central Government level

Even at the central level, the circulation of standard reports is preferable from the Project's point of view. However, the officers in central ministries only want data of their interest, and there is a gap between what a standard report can provide and what those officers want. Therefore, ad-hoc requests using pivot tables are more frequent than the use of standard reports. Additionally, officers usually prefer to simply receive the necessary data (without learning how to operate the ARDS Web Portal). In many cases, officers will request M&E TWG members to retrieve their requests.

Consequently, after a discussion regarding the sharing of reports, although it is not consistent with the Project's original intention, the project considers it more fruitful to encourage the use of data by responding to ad-hoc requests, which would result in promoting the use of data as well as improving the quantity and quality of data.

7) 2-7. To conduct sensitization meetings to ASLMs and other stakeholders

The Project is being implemented at the request of the Government of Tanzania, and ASDP2 also stipulates that ARDS will always be used as a data collection tool, so there should have been no need to sensitize

stakeholders, especially high-ranking officials in the related ministries. However, at the individual level, individual interests and priorities may influence understanding and support from the top level. For example, when top management is transferred, even if ARDS is included in succession notes, it does not necessarily guarantee the same level of support as predecessors to drive the Project. Therefore, the Project implemented sensitization activities including meetings to update executives and top management of ministries so that they are adequately informed of the progress of the project. The activities are conducted whenever the Project finds an opportunity. It can be categorized based on the targets for sensitization and its purposes as summarized in Table 2.2.23..

Table 2.2.24: Sensitization Activities in the Project

Target	Methodology	Purpose
DPP, MOA	Briefing meeting	The Project held briefings in the case of personnel changes,
DPP, MLF	Briefing meeting	Same as above. DPP, MLF is an ex-officio chairperson of M&E TWG and they have strong influence in decision making.
ASLM	Presentation in management meetings	In GOT, important decisions are made in a management meeting consisting of executives and directors. The Project held presentations to share an update on the progress of the Project to get additional support.
ASLM and LGA	Newsletters	To discuss the progress of the Project with broad stakeholders (The years 2016 and 2017)
Executives in LGA (DED or DC)	Courtesy call	When the Project team visited an LGA, the team made a courtesy call to the executives to explain progress.
General stakeholders	Participation in Nanenane (Agricultural) Festival	The Nanenane festival is an opportunity for stakeholders related to agriculture, including at the political level, to meet. The Project team arranged exhibitions and presentations in the outlet in the Ministry of Agriculture to carry out public relations activities for the years 2019 and 2020.
High-ranking officers in the ministries	High-level seminar	(Please see below)

The most important event among these sensitization activities was the high-level seminar held in March 2020. The outline is presented in Table 2.2.26. This seminar was initially planned as an official launch event for ARDS, but due to the time required for coordination within the government, the Ministry of Agriculture took the initiative to share information and a progress update on the ARDS Project. This meeting was convened by the Permanent Secretary of the Ministry of Agriculture and hosted by DPP and M&E TWG. In addition, the Deputy Minister participated in the event as a primary guest of honor. The event had many participants from the MoA, MLF, PMO and other related ministries. The seminar covered the introduction of ARDS and a panel discussion on the use of data, making it a practically meaningful seminar.

The preparation of the seminar also resulted in the side effects of leadership and ownership from the office of DPP in MOA. The officers increased their involvement and leadership skills. They had a few preparatory meetings with top officials of ASLMs, including Management Meetings at MOA and PO-RALG. Through this process, the “unrecognized” ARDS gained recognition and acknowledgment as a cross-government initiative.

The deputy minister's speech and the DPP's remarks expressed appreciation toward the progress as a whole and urged the improvement and utilization of ARDS in the government. The government also presented the

initiative, signaling an increase in ownership from the government side. After the seminar, the Project planned a few activities to expand the use of data. However, the activity was suspended due to the response to COVID-19 after March.

Table 2.2.25: Summary of the High-level Seminar

Date	March 4, 2020 09:00-14:00
Venue	Morena Hotel, Dodoma
Host	MOA, Tanzania
Chair and Co-Chair	DPP, MOA and DPP, MLF
Participants	Deputy Minister for Agriculture (Main Guest), Chief Representative, JICA Tanzania Office, Director/ Crop Development, Director/ Training, Extension and Research, Acting Director/ National Food Security Department, Director/ Administration, DPP/ MLF, Director/ Veterinary Service, Marketing Dept, MIT, DPP, PO-RALG, Ministry of Agriculture, Zanzibar, National Statistical Office, Zanzibar, NBS,
Program	<ol style="list-style-type: none"> 1) Opening: DPP, MOA 2) Introduction to ARDS: M&E TWG Secretariat and Technical Team 3) Speech by Deputy Minister 4) Utilization of ARDS in the Agriculture Data Booklet 5) Panel discussion on the use of ARDs data (MOA, MLF, MIT, PMO, PO-RALG, NBS) 6) Discussion and closing remarks (DPP, MLF, and Chairperson, M&E TWG))

(1) Publication of Agriculture Basic Data Booklet

The Agriculture Basic Data Booklet (hereafter referred as the Booklet) is a statistical yearbook containing basic data for the agricultural sector, published periodically by the MOA. The figures in the Booklet are an official data of the ministry. In particular, the figures provide statistical data on agricultural production, such as yields of major crops by time-series, not only on a national level but also on a regional and district level.

However, due to a lack of funding, annual publication of the Booklet halted since its last edition in 2009/10. The Japanese Team considered the publication of the Booklet to be important for promoting the use of ARDS data and decided to support financially and technically to produce the Booklet. In particular, while following the content of the previous volumes of Booklet, it has also been encouraging CPs to use some of the ARDS data as an opportunity to add new statistical information such as the inclusion of figures on the achievement of annual production targets for major cereals.

Meanwhile, it has been repeatedly emphasized to CPs that the process of finalizing data as official figures is important. The data obtained from ARDS should be sent back to the LGAs through RS, and the LGA should verify the data again and finalize the figures. This approach is expected to become standardized in the future.

The Booklet has been finalized and published in October 2020. The chapters of the Booklet are as follows:

Table 2.2.26 : Outline of Agriculture Basic Data Booklet

Chapter	Title
Chapter 1	Agricultural Demographics
Chapter 2	Crop Production
Chapter 3	Extension Service
Chapter 4	Mechanization
Chapter 5	Cooperatives
Chapter 6	Agricultural Input, Fertilizer and Improved Seed

2.2.3. Output 3: Promoting the harmonization of ARDS with other agricultural statistics

- 1) 3-1. To hold and/or participate in periodical and ad hoc meetings/reviews on agricultural statistics to discuss on the better coordination among the agricultural statistical surveys, ARDS, etc

In Tanzania, there are four initiatives relating to statistics in the agricultural sector, with relevant data/statistics collected by several systems. As shown below, ARDS is one of them. Table 2.3.1 summarizes the agricultural statistics data collection system in Tanzania.

Table 2.2.27: Agricultural Statistics Data Collection System in Tanzania

Name of System	Type	Frequency	Data Coverage	Data Source	Data Unit	GOT CP
Agricultural Routine Data System (ARDS)	Routine/Administrative Data	Monthly, Quarterly and Annual	Various data related to production, input, pesticides	Various administrative units (village, ward, and district)	District (LGAs)	MOA, MLF, MIT and PO-RALG
National Sample Census of Agriculture (NSCA)	Statistical Data (Direct Estimation)	Every ten years	Estimates for most crops/animals/commodities	Sampled farmers	National and Regional	NBS, MOA, MLF
Annual Agricultural Sample Survey (AASS)	Statistical Data (Direct Estimation)	Annual	Mostly production data of core crops/animals	Sampled farmers	National and Regional	NBS, MOA, MLF
Small Area Estimates (SAE)	Statistical Data (Model-based Estimation)	(Pilot) Annual	Same as AASS	AASS and auxiliary data from ARDS and NSCA	District (LGAs)	NBS, MOA, MLF

This activity involves participation in regular and ad-hoc meetings and research activities for coordination and collaboration between various agricultural statistics data collection systems and ARDS. Through consultations with the CPs, the Project team has identified three collection systems (as described in Table 2.3.1) to pursue coordination with ARDS. In addition, since 2016, a sub-group dealing with agricultural statistics (chaired by the FAO) has been organized under the DP's Agriculture sector Working Group (AWG). A total of 12 meetings were held for coordination and collaboration as shown in Table 2.3.2. Through these meetings, the project introduced its activities and raised awareness of ARDS among the DPs. An overview of each agricultural statistics data collection system and the results of the consultations and discussions are described below.

Table 2.2.28: List of AWG Agricultural Statistics Meetings

Date	Name of Meeting	Topics of Discussion
December 14, 2016	AWG Statistics Meeting	Introducing ARDS
April 23, 2017	AWG Statistics Meeting	Reporting progress on the Agriculture Statistics Strategic Plan
June 14, 2017	AWG Statistics Meeting	Reporting ARDS activities
October 20, 2017	SEA Workshop	Discussing possible coordination with ARDS

December 7, 2017	Food Production Forecast Workshop	Discussing possible coordination with ARDS
February 21, 2018	AWG Statistics Meeting	Reporting progress of related activities
April 25, 2018	SAE Wrap-up meeting	Presenting results and conclusions of the SAE Project
June 13, 2018	AWG Statistics Meeting	Discussing possible coordination between ARDS and NSCA
August 29, 2018	AWG Statistics Meeting	Discussing possible coordination between ARDS and NSCA
November 22, 2018	AWG Statistics Meeting	Discussing revised statistics law and possible coordination between ARDS and NSCA
April 9, 2019	AWG Statistics Meeting	Reporting progress of related activities
May 15, 2019	AWG Statistics Meeting	Presentation for ARDS

Note that no meeting has been held since mid-2019 when the government office was fully relocated to Dodoma.

(1) National Sample Census of Agriculture

The National Sample Census of Agriculture (NSCA) is a national statistical survey to collect quantitative information across the agricultural sector at large. In principle, the NSCA is supposed to be conducted every five years, but the timing of its implementation is not necessarily fixed, as it relies solely on the contributions of development partners to secure funding. The last time it was implemented was between June and August 2009, covering data for the 2007/08 agricultural year (October 2007 to September 2008). Incidentally, at that time, the UK's Department for International Development (DFID) and the Japanese government provided financial support for the 2007/08 NSCA.

For NSCA, the United States provided funds that had been earmarked for the Annual Agricultural Sample Survey (AASS), and the World Bank resumed its funding for the NSCA, which had been suspended due to a concern about the revised statistical law. As a result, the survey was planned for the next agricultural year.

Starting from this survey, tablet terminals were distributed to the enumerators for field surveys and the data entry could be done directly with these terminals in order to save labor and time in data processing work. At the pilot stage, however, it was reported that some input errors were observed due to the unfamiliarity of the enumerators themselves with the tablet terminals.

The sampling was designed in units of Enumeration Areas (i.e., Census basis), whereas it had been based on village units in the last 2007/08 NSCA. Although a member of the Japanese Team pointed this out, the NBS considered that the sampling design was appropriate in view of consistency with the coming census, and the survey is being conducted in that way.

A workshop was conducted for stakeholders of the NSCA on February 20, 21, and 22, 2019 at which the survey questionnaire was finalized. During the workshop, the questionnaire was thoroughly examined item by item. Though only for one day, the Project sent to the workshop for coordination with ARDS data. The summary of the workshop is as follows.

Table 2.2.29: Summary of the Workshop for NSCA Questionnaire Finalization

Dates	February 20-22, 2019
Location	Dodoma NBS Conference Room
Participant	Total: 14 persons. MLF, MIT, FAO, Aspires, NBS, Japanese Team (MOA members were absent on 22 nd because the discussion centered on parts of the questionnaire related to the MLF sector.)
Contents	Finalization of the NSCA Questionnaire: <ul style="list-style-type: none"> - Refinements in principle followed the pattern of the questionnaires of “NSCA 2007/08” and “AASS”. - The Japanese Team pointed that some ARDS data are included in the NSCA questionnaire with same expression. It also explained the definitions and background of such data in ARDS and requested the workshop members to adjust the questionnaire contents to be consistent with ARDS. Such consistency makes mutual data comparable.

Due to the delay in the disbursements of funding from Development Partners (DPs) and the interruption of all activities such as meetings and workshops due to the spread of COVID-19, preparations for the agricultural census were postponed, and the implementation of the agricultural census itself was temporarily suspended. Meanwhile, the government, including the NBS and the MOA, has arranged to begin census preparation again for the 2019–20 agricultural year (October 2019–September 2020), and some field work has begun. NSCA data collection started August 2020 and ended in October 2020. Data cleaning and analysis is in progress.

(2) Annual Agriculture Sample Survey

The Annual Agriculture Sample Survey (AASS) is also a national statistical survey administered by the National Bureau of Statistics. Its purpose is to provide annual estimates of production statistics in the agricultural sector, such as planted/harvested area and yield of major crops as well as number of livestock on an annual basis. This information is expected to contribute to planning and policy formulation. Thus, the scope of collected data is relatively more limited than the NSCA. To date, the survey has been conducted twice, in 2014–15 and 2016–17. The total sample size is about 15,000, and it is assumed that figures at the region level are estimated, but not at the district level. The survey was funded by the USAID, although the government's contribution was paid out of the budget of the Ministry of Agriculture. In this sense, the survey is dependent on the funding by DPs. The United States Department of Agriculture (USDA) is also providing technical assistance to the National Bureau of Statistics in conducting this study.

The survey was originally proposed to be conducted every year for five years (hence the name "annual"), with the understanding that DP's funding would be gradually reduced and the government's share of the budget would increase over the five-year period. However, the implementation of the survey did not take place as planned, because the government had difficulties preparing it every year, and because the budget was almost 100% dependent on the external support. After the implementation of the NSCA, the National Bureau of Statistics plans to make some rearrangements for the future AASS, including the securing of budgetary resources.

Unlike ARDS⁹, AASS is a statistical survey. Ensuring the quality of the data remains a crucial issue, even for a statistical survey (see Box 1).

⁹ The feature of ARDS is to aggregate the values of targeted indicators as district, regional and national totals. Therefore, it is not a statistical survey.

[Box 1]

The following Table Box 1 was prepared by extracting data from the AASS reports. Comparing maize production between AASS 2014/15 and 2016/17, a significant drop in figures was observed. The same trend was also observed for paddy. In addition, as Table Box 2 below shows, there was also a significant decrease in the number of farmers. Considering these findings, the accuracy of the estimated figures might be questionable. In other words, ensuring the quality of data is not easy, even for a statistical survey.

Table Box 1: Comparison of maize production between AASS 2014/15 and 2016/17

Region	2014/15 Short & Long Rainy Season			2016/17 Short & Long Rainy Season			QTY difference
	Planted Area (ha)	Harvested Area (ha)	Quantity Harvest (tonnes)	Planted Area (ha)	Harvested Area (ha)	Quantity Harvest (tonnes)	
Mbeya	356,563	344,629	539,726	375,799	334,940	578,230	38,504
Tanga	547,082	477,523	587,042	494,682	414,617	555,522	-31,520
Tabora	814,104	743,385	621,299	690,341	524,185	551,342	-69,957
Manyara	391,826	297,551	308,688	420,939	367,447	443,813	135,125
Kigoma	359,464	325,959	463,944	297,916	227,788	388,496	-75,448
Rukwa	248,595	244,376	465,138	185,640	181,375	337,576	-127,562
Ruvuma	173,822	171,279	275,940	168,796	157,205	313,890	37,950
Singida	367,072	270,077	197,324	309,273	293,649	289,075	91,751
Morogoro	193,561	178,367	204,059	176,397	172,263	245,378	41,319
Dodoma	438,149	305,606	164,803	377,233	308,588	233,172	68,369
Njombe	128,192	125,688	204,367	134,966	128,349	223,050	18,683
Mara	304,927	277,516	351,302	332,630	221,589	215,720	-135,582
Geita	399,948	372,157	546,836	331,719	263,509	189,371	-357,465
Iringa	237,770	228,634	442,584	113,076	100,566	163,217	-279,367
Shinyanga	409,518	369,156	362,882	301,459	196,562	143,648	-219,234
Mwanza	378,894	331,912	320,451	332,119	185,080	143,236	-177,215
Pwani	147,190	121,284	95,885	128,678	99,964	126,413	30,528
Simiyu	448,251	331,220	274,610	289,068	224,383	108,855	-165,755
Kilimanjaro	149,983	124,749	194,855	86,947	76,230	104,063	-90,792
Arusha	143,935	98,283	131,585	99,683	60,264	86,384	-45,201
Kagera	178,744	157,936	190,867	147,615	103,750	84,687	-106,180
Mtwara	143,566	135,099	95,519	117,288	113,313	84,678	-10,841
Katawi	150,420	135,949	187,762	71,972	70,271	82,731	-105,031
Lindi	199,483	190,313	92,243	75,466	68,018	65,277	-26,966
Dar-es-salaam	1,433	899	673	2,186	1,916	1,494	821
Mainland	7,312,688	6,359,583	7,755,277	6,062,433	4,896,306	5,759,863	-1,995,414

Table Box 2: Trends in the number of agricultural workers in AASS

Operators	2014/15			2016/17			Difference
	Mainland	Zanzibar	Total	Mainland	Zanzibar	Total	
Crop only	6,693,222	82,459	6,775,681	4,777,530	109,295	4,886,825	-1,888,856
Livestock only	236,093	17,225	253,318	202,053	11,547	213,600	-39,718
Crop & Livestock	4,144,364	92,308	4,236,672	3,594,870	67,972	3,662,842	-573,830
Total	11,073,679	191,992	11,265,671	8,574,453	188,814	8,763,267	-2,502,404

(3) Small Area Estimates

The Small Area Estimate (SAE) is a kind of model-building method that incorporates auxiliary indices obtained from other sources besides statistical surveys, to calculate lower administrative level estimates, which cannot be calculated with a limited sample size. This technical and financing assistance has been supported by both FAO and the Embassy of Ireland in Tanzania (Mainland and Zanzibar). The Japanese Team attended a wrap-up meeting held at the occasion of the SAE project's completion as follows:

Table 2.2.30: Reporting Meetings for Small Area Estimate

Date	April 25, 2018
Location	Dar es Salaam, FAO Office
Reported by	Mr. Eloi Ouedraogo (FAO, Roma) and Ms. Monica Pratesi (Technical Expert, Italian Statistical Society)
Participants	Ministry of Agriculture, Ministry of Livestock and Fishery Development, National Bureau of Statistics, OCGS from Zanzibar, FAO, Ireland, Japanese Team
Discussion and Q&A	<p>Discussion:</p> <ul style="list-style-type: none"> - The model is built based on the regression equation. - The data items to be estimated at the district level are the Planned Area, Harvested Area, Harvested (Production) Quantity, and Yield. -The main variables to be fed into the model are the 2014/15 AASS data, data from the 2012 National Census data (including agriculture-related) and land use data. - The estimation results were generally favorable, and the validity of the model was confirmed.

Through participation in the meeting, the following advantages and challenges regarding the SAE were determined.

Advantages:

- AASS values, which are statistical data based on random sampling, can be processed quantitatively to estimate district-level figures. They are also useful for assessing policy after the fact.

Issues:

- Since AASS is the main data resource to be included in the SAE model, the feasibility of the projections depends on the status of AASS implementation, which is not guaranteed every year. Thus, there is a concern that SAE estimates may be difficult to update without implementing AASS on an annual basis.
- In addition to the AASS, complementary data from other resources will be needed as auxiliary variables in the econometric model (data from the Census, NSCA, ARDS, and GIS/Land Use Information will be essential).
- To modify model, external expertise is necessary, and thus sustainability of maintaining SAE is not sufficient.

2) 3-2. To rationalize the ARDS data collection (scope and methodology) based on the discussions above (3-1)

The original design of the Project intended to improve ARDS data through collaboration with other agricultural statistics presented above. However, owing to the delayed implementation of the NSCA, partial implementation of AASS, and the fact that SAE was not applied nationwide, the Japanese Team has been unable to discuss the above initiatives during their preparation and implementation fully. The Project team has only participated and provided information on lessons learned from its experience of ARDS's operation, as well as the details of both ARDS data contents and data collection method. On the other hand, the importance of the ARDS has been widely recognized. Because only ARDS can provides the data that is continuously collected, while ARDS data collection is incorporated into the daily operations of the government.

Consistency with other important administrative data includes the following:

- ASDP2 Results Framework (RF)
- Crop data collected by the National Food Security Department (NFSD)
- Data for GDP estimates collected by the National Bureau of Statistics (NBS)

Efforts to ensure consistency are described below.

(1) Consistency with ASDP2 Results Framework (RF)

ARDS was initially conceptualized as a tool to monitor the progress of ASDP1 with M&E TWG. However, ASDP2 began the process of developing a results framework (the Results Framework (RF)) for the purpose of monitoring and evaluating its results. The ARDS and ASDP2 Result Framework (RF) must be coordinated to make both comparable. ARDS, which can provide its data for monitoring purpose, has already started the nationwide operation before ASDP2 RF finalizes. Therefore, the Project made specific contributions to the government during the preparation of ASDP2 RF by providing comments to the M&E TWG on the selection of RF short-listed indicators and the M&E framework, thus maintaining coordination between ARDS and ASDP2 RF.

In addition, in promoting the use of ARDS in each of the technical departments, we discussed the possibility of obtaining each indicator from ARDS, referring to the draft of the RF, and worked to build a consensus.

As of October 2020, while RF has identified ARDS as one of the main data sources, it is currently awaiting approval of its final version.

(2) Ensuring Consistency with Crop Data Collected by the National Food Security Department (NFSD)

The Crop Monitoring and Early Warning section of the National Food Security Department regularly collects crop data twice a year (June and December) on maize, paddy, sorghum, bulrush millet, finger millet, wheat, cassava, sweet potato, Irish potato, beans, and bananas. Data items are harvested area and production quantities. The Preliminary Forecast in June is especially important in predicting the annual amount of harvests.

For these crops, the system was modified so that once a year in May, the data of the total harvested area and production forecast for June–September can be entered as Table 2.2 in Ward Monthly Format (WF01). Later, guidance on the collection of such data was provided to RS and DS/DMEO through nationwide training.

At present, the National Food Security Department has raised the issue of improving the quality of ARDS data. Due to that reason, data collection activities are concurrently operated through the regime of ARDS and by the department on its own. It is highly expected that the department will be able to fully utilize ARDS to collect data in the future.

(3) Ensuring Consistency with Data for GDP Estimates Collected by the NBS

The NBS has its own operational flow for the regular collection of agricultural production data for GDP estimation. Data are collected quarterly for crops and livestock used in GDP estimation calculations, with monthly production quantities and average prices collected for each district every quarter. Like ARDS operations, the data collection format is filled out and completed directly by extension officers (VAEO/WAEO). Data are collected and compiled at the district office, then sent to the headquarters of the National Bureau of Statistics through its regional offices.

Like the NBS, ARDS is also separately collecting data on sweet banana and cooking banana as crop

production items. Moreover, regarding reporting monthly crop production data, ARDS has changed the frequency of data collection from cumulative to monthly, as discussed previously. It can be emphasized that these are consistent with the data collection methods for GDP estimation.

A questionnaire administered at the time of nationwide training for DAICO/DLFOs and DS/DMEOs, who are responsible for the operation of ARDS, also indicated that ARDS data are used in the submission of data for GDP estimates in actual operations.

2.3. Achievements of the Project

2.3.1. Outputs and Indicators

The Project was designed to achieve three outcomes, each with multiple indicators to measure the degree of achievement. The progress of the outcome and indicators are described below.

1) Outcome 1 “Agricultural data are properly collected and submitted through the operation of ARDS”

For the expected outcome 1, the indicators are set to 1-1 ‘Percentage of submission of ARDS data (WF01), 1-2 ‘Proportion of LGAs that collect production data according to the designated methodology/ guidance. Indicator 1-1 has a target of 90% submission, and as explained in Section 1) of Chapter 2.2.1, the target has been exceeded, and the submission rate has been achieved. As for the indicator 1-2, 92.9 % of LGAs answered that they are collecting data using the specified methodology, according to the questionnaire survey administered during training in January 2019. Although issues remain regarding the quality of the data, some results have been achieved as a project activity.

Table 2.3.1: Indicators, Targets and Achievement Status of Outcome 1

Indicator	Target	Achievement Status
1-1. Percentage of submission of ARDS data (WF01)	90%	98% in FY 2018/19
1-2. Proportion of LGAs that collect data according to the designated methodology/ guidance	50%	92.9%

2) Outcome 2 “Agricultural data submitted through ARDS are accessed and shared among the users”

For outcome 2, indicators 2-1 “number of LGAs that use ARDS data” and 2-2 “Number of monthly access to ARDS Web Portal on the internet” are set. As for indicator 2-1, it was reported in the training report that ARDS data from 161 LGAs were used for internal reporting, food security, GDP, and other data submissions. Regarding access statistics, the monthly average number of report downloads (the number of reports obtained from the ARDS Web Portal) from January to July 2020 is 1,484, achieving the target of the indicators. (See Section 4) of Chapter 2.2.2.)

Table 2.3.2: Indicators, Targets and Achievement Status of Outcome 2

Indicator	Target	Achievement Status
2-1. Number of LGAs which use ARDS data	90%	98% (FY2018/19)
2-2. Number of monthly access to ARDS Web Portal on the internet	1,400	1,484 (monthly)

3) Outcome 3 “Harmonization of ARDs with other agricultural statistics is promoted”

For outcome 3, two indicators, namely, 3-1 “number of meetings on the harmonization of the ARDS data with other agricultural statistics” and 3-2 ‘ Number of events/ occasions where ARDS data are used in relation to other agricultural statistics” are set. Indicators, targets and achievements are summarized in Table 2.3.3.

Table 2.3.3: Indicators, Targets and Achievement Status of Outcome 3

Indicator	Target	Achievement Status
3-1. Number of meetings on the harmonization of the ARDS data with other agricultural statistics	8	12
3-2. Number of events/ occasions where ARDS data are used in relation to other agricultural statistics	4	More than 4

For indicator 3-1, DPs have a regular meeting to discuss agricultural statistics, and the target is met. Regarding indicator 3-2, this project, which was started after the completion of ASDP1, was operated under ASDP2 and started in 2018. ASDP2 did not start producing reports using data until after the implementation period, so there was no opportunity to discuss ARDS data. Additionally, regarding expected “other agricultural statistics,” an AASS was conducted only once in the Year 2017, and the NSCA was delayed to August 2020 for which no meeting has been held. Therefore, the number of events based on ARDS data is limited. Under such circumstances, considering the intention of this outcome and indicator as numbers of meetings to discuss utilization of ARDS data and experience, at least four meetings have been held for that purpose, as summarized in Table 2.3.4. The outcome is considered achieved as these activities have contributed to maintaining consistency with other systems.

Table 2.3.4: Meetings to Discuss ARDS and Other Agricultural Statistics

Date	Name of Meeting	Discussion point related to ARDS
April 2018	The final presentation of small area estimates	The estimation technique used in SAE uses ARDS data. It was discussed that, to deepen the use of SAE, it is necessary to use ARDS data.
February 2019	Final discussion on the questionnaire of Sample Census	Discussed questionnaire reflecting experience from ARDS
December 2019	Discussion of RF, ASDP2	Presented ARDS as data feed-in tool for RF
March 2020	High-level Seminar	Presentation of data Booklet that used ARDS data

2.3.2. Project Purpose and Indicators

The Project purpose is ‘Utilization of data collected through ARDS is enhanced at central and local level’. Utilization at the local level, that is LGA level, gradually started from the time that LGAs began data collection systematically according to the questionnaire survey. At the central level, utilization started in the 4th and 5th year when there was reasonable data consistency across LGAs. From these points, the Project purpose was achieved.

Table 2.3.5: Indicators, Targets, and Achievement Status of the Project Purpose

Indicator	Target	Achievement Status
1. Number of agricultural reports and plans prepared centrally under ASDP or ASDP2 by using ARDS data (e.g. Agriculture Annual Databook, ASDP2 RF, ASDP2 performance report, ASR/PER, JSR etc)	2	Achieved as two reports are published. (Agriculture Data Booklet and Economic Survey) Additionally, RF using ARDS as main source will be approved.
2. Number of DADPs prepared by using the ARDS data	90% of published DADP	Undeterminable
3. Number of LGAs using ARDS Web Portal for preparing regular reports (month, quarter and annual)	123 LGAs (66% of total number of LGAs)	167 (90.2%)

There are three indicators to measure achievement of the Project purpose; 1. The number of agricultural reports and plans prepared centrally under ASDP or ASDP2 by using ARDS data (e.g., Agriculture Annual Databook, ASDP2 RF, ASDP2 performance report, ASR/PER, JSR etc.), 2. Number of DADPs prepared using the ARDS data (Target: 90% of published DADPs), and 3. Number of LGAs using ARDS Web Portal for preparing regular reports (month, quarter, annual) (Target: 2/3 of the total number of LGAs at the end of the Project)

At present (September 2020), there are no ASDP2 related reports like the Agriculture Sector Review (ASR) or Public Expenditure Review (PER). However, currently GOT is in the final process of approving the Results Framework (RF) of ASDP2. The ASDP2 RF places ARDS as the main data collection tool; therefore, ARDS will be used for the RF and ASDP2 Progress Reports after the approval process. Beside ASDP2, ARDS data are used in two reports, namely an annual data report of the Agriculture Data Booklet by the Ministry of Agriculture, as well as the agriculture marketing section of the Economic Survey, which assures achievement of indicator No. 1.

Two surveys support the achievement of indicator No. 3; a questionnaire survey in January 2019 revealed that 90.2 % of LGAs use ARDS data in regular reports. A questionnaire survey in July 2019 to DAICO and DLFO at the time of training found that 97% of participants answered that ARDS data are used for their regular work. According to the latter survey, they use the data for reporting to district councils and executive directors, covering food security reports, plant health and animal health, estimation of GDP and estimation of own revenue.

The second indicator needs further clarification. Originally, the project had been expecting the use of data in District Agriculture Development Plans (DADPs). DADPs in full-scale mainly consist of a situation analysis and project plan, and the ARDS data was expected to be used in the situation analysis. Full-scale DADP was one precondition for the Project. However, after completion of ASDP1, formulation of DADP, especially full scale, has stagnated, and the current DADP simply consists of a list of projects and activities that the LGA maintains for budget formulation purposes and it is often omitted in situation analysis.

Given that the precondition is not met, it is appropriate to make the indicator indefinable. For information, that In January 2019, the project studied if ARDS was used as a reference when creating the DADP. At that time, 109 LGAs out of 185 responded that they used ARDS data.

Since the project target area includes all LGAs nationwide, the Project team did not conduct new evaluation surveys or questionnaire surveys but collected this information using questionnaires conducted during training. Due to the COVID-19 pandemic beginning in March 2020, the final training in 2020 could not be conducted and it was not possible to conduct a new survey either. For this reason, the data from national training in January 2019 and the DAICO / DLFO training in July 2019 are used, and there is a time gap between this report and the survey.

2.3.3. Overall Goal and its Achievement Status

The project has an overall as ‘Policy dialogue in the agriculture sector is enhanced through the improved agricultural statistics including ARDS.’ The achievement status of this overall goal is measured by the ‘number of policy discussion based on the agricultural statistics.’ Since the Project does not have baseline data and target for this overall goal during its implementation, this section chapter provides qualitative assessment on the status of achievement.

At the time of the Project completion, overall goals have been gradually achieved. Use of ARDS has been begun in LGAs and ministries that have building foundations for policy dialogue that was envisaged by overall goal. Additionally, RF of ASDP2, which is a base of Agriculture Policy in Tanzania, will be finalized and publicized soon. RF will be operationalized shortly and discussion based on data from ARDS and other source will be increased. Overall goal will be gradually achieved while the government put efforts to continue activities to encourage use of ARDS. Please see further discussion on overall goal in Chapter 4.2,

2.3.4. History of PDM Modifications

The Project Design Matrix (PDM) of this project was formulated while designing the project activities. This PDM Ver0 was modified three times without changing expected outcomes and activities. The summary of the modifications is provided in Table 2.3.6.

Table 2.3.6: Modification of PDM

Versions	Main points changed
Version 0 to Version 1 (February 2016)	It is agreed to change the name of the system from ‘ARDS-LGMD2’ to ARDS Web Portal.
Version 1 to Version 2 (February 2018)	The Project duration was extended by three months. Reflecting the discussion from the mid-term review, outcome and output indicators were changed to improve clarity. Additionally, the baseline and target of indicators were agreed upon.
Version 2 to Version 3 (October 2019)	Project duration was extended by one year to October 2020. Additionally, the project area was changed to include Zanzibar to enable the project to share information with Zanzibar.

3. Results of Joint Review

This Project is managed by M&E TWG with government officers from ASLMs and the Project experts instead of JCC. The Project reported the progress and achievement of the Project activities to the M&E TWG meetings. Therefore, the results of the review are also shared with the M&E TWG. The results are as follows.

3.1. Results of Review Based on DAC Evaluation Criteria

This chapter discusses the result of the review according to DAC evaluation criteria, namely (i) Relevance, (ii) Effectiveness, (iii) Efficiency, (iv) Impact, and (v) Sustainability. Each parameter is assigned one of five ratings: High, Relatively High, Moderate, Less than expected, and Unsatisfactory. Table 3.1.1 summarizes the self-rating of each criterion. The discussion in the following sections supports each rating.

Table 3.1.1: Self-rating According to DAC Evaluation Criteria

Criteria	Results
Relevance	High
Effectiveness	Relatively High
Efficiency	Relatively High
Impact	High
Sustainability	Moderate

3.1.1. Relevance

Relevance is rated as high. ARDS is considered a central data collection system for the agricultural sector, which is a priority sector in Tanzania, and it is now a data collection tool for the RF for ASDP2. For the foreseeable future, ARDS's central role as a data collection tool in the sector is not expected to change, based on the following considerations:

- Agriculture is a priority sector for the GOJ and JICA for ODA, and on this point, there are no changes in the current Country Assistance Policy for Tanzania “Country Development Cooperation Policy for the United Republic of Tanzania (September 2017)” which maintains the focus on the agricultural sector as one of leading sectors for economic development. Additionally, Japan has long been a supporter of agriculture and ASDP; it has a comparative advantage in continuity. Furthermore, the Technical Cooperation Project has made good use of experience in Japanese agricultural statistics practices such as data definitions and collection methods of the Japanese annual crop survey, and also of examples of data utilization.
- ARDS is one of the major tools together with NSCA and AASS in the Agricultural Statistics Strategic Plan (ASSP) (2014/15-18/19) prepared by the National Bureau of Statistics (NBS). The implementation period of ASSP ended in FY2018/19, and has not been renewed. However, this does not mean the GOT/NBS no longer prioritize agriculture statistics. Currently, the NBS is focusing on the implementation of the Agriculture Sample Census, and they are not able to spend their limited resources on activities except NSCA. However, the Project team confirms that NBS will continuously be committed to improving agricultural statistics, and they are now a regular member of the M&E TWG, frequently sending some officers to the forum.
- ARDS was authorized by PO-RALG as the official data collecting tool for Tanzania's agricultural sector in 2014. PO-RALG issued another letter in 2019 to remind the LGAs and Regions the status and affirm their commitment to ARDS. Tanzania's overall commitment to ARDS is unchanged.
- Furthermore, the ASDP2 Program Document uses ARDS as its formal data collection tool (Annex 16), and its Results Framework (Final Draft) depends on many indicators related to ARDS (Annex 16). ASDP2 is a program that should be used for longer than five years, and for the foreseeable future, the relevance of ARDS and the Project remains high.

- Tanzania originally had a system of routine data collection based on monthly reports by extension officers, so the modernized ARDS is not a completely new setup. The current ARDS is a standardized and systematized version developed from the traditional routine data system by incorporating modern IT technology and a web-based database. The development of the new system has brought about such positive changes as standardization of collected data, improvement of data submission, better data quality, and regular updating of data scope. Thus, the modernization and standardization of the existing system are adequate.
- The United Nations FAO and the World Bank support the NSCA, and the USAID/ USDA supports the implementation of AASS. Thus, Development Partners (DPs) support data and statistics in the Agriculture sector, and there is no duplication. Instead, these forms of support are strategically complementary. For example, the pilot introduction of the Small Area Estimates (SAE), which Ireland and FAO supported from 2015 to 2017, used ARDS data for its estimation variant. As such, other DPs have high expectations for the improvement of agriculture data through ARDS.
- The counterpart organization for this Project is M&E TWG, organized by officers of ASLMs. This M&E TWG is organized under ASDP to monitor the progress of ASDP jointly by ASLMs. Based on an agreement between ASLMs, a Director of Policy and Planning from the Ministry of Livestock and Fisheries was chosen as the chairperson for the M&E TWG. However, the Project has been implemented based on the Record of Discussion signed by MOA, PO-RALG, and JICA. This discordant arrangement might not be the best set-up for the Project, as has been discussed in a later chapter, but this is considered to be the given condition of the Project. After implementing some countermeasures, the Project does not have the leverage to change this framework, and this arrangement does not necessarily jeopardize the relevance of the Project purpose.

3.1.2. Effectiveness

The Project has high effectiveness because of the following reasons.

- The Project Purpose “Utilization of data collected through ARDS is enhanced at the central and local level” has been achieved. ARDS is utilized in relevant reports such as the Economic Survey and Data Booklet. Additionally, it will be used in the preparation of RF and its progress report of ASDP2.
- The ARD data are widely used at the LGA level. As discussed in Section 6) of Chapter 2.2.2, each LGA produces reports for the District Councils using ARDS data by retrieving data of their interest from the ARDS Database. Their reports are based on their format that suits their needs.
- Usually, reporting from the LGA to the Central entities (MOA, MLF and NBS) is based on ARDS and other methods. Specifically, LGAs use ARDS data in reporting GDP estimations to the NBS, and food forecasts to the National Food Security Department of the MOA.
- Rapid and early increases in data submission promoted utilization. Progress in utilization again created a demand for quality data, with the resulting improvement in data quality again encouraging the use of data. This positive cycle is emerging. On the other hand, when the speed of improvement in data quality is slower than the user’s expectation, utilization may stagnate. Therefore, the government needs to continue improving data quality.

3.1.3. Efficiency

Project activities can be rated as relatively high in efficiency.

- As discussed in Chapter 2.3.1, the outputs have been achieved. Output 1 is better data collection, and the data collection rate from LGA reached over 90% right at the early stage of the Project implementation. This improved access to data, consequently increasing utilization rates. Challenges remain in the quality of the data. Improvement of data quality will take time, but the Project paved the way for improved data quality by introducing such measures as the Data Quality Check List, DQMS a quality checking tool, deployment in the application of the function of identifying extreme values, and capacity development of CP for supervising visit to specific Regions/ LGAs.

- Output 2, access and sharing of data, has also been achieved. At the beginning of the project, users of ARDS were not defined. After a lengthy discussion, it was decided that ARDS should be used by the ASLMs in the Government. ARDS data will be published and disseminated only after processing and validation by the Government. Currently, the MOA is in the process of preparing a Booklet, which has been pending for ten years. In this way, access and sharing was successfully achieved.
- Output 3, assuring harmonization with other data systems, has also been achieved. The Project team and counterparts participated in discussions between government stakeholders and DPs to harmonize the ARDS with other data systems. The Project played a role in preparing the NSCA and AASS by explaining ARDS in detail to maintain its harmonization with other systems.
- However, the preparation of the NSCA was delayed and did not finish during the Project period. The project did not have the opportunity to receive feedback from the NSCA, which could have been beneficial to improve harmonization and data quality. AASS was supposed to be an annual exercise; however, it was not conducted after 2017. These are external factors over which the project had no influence.
- The Project period was extended two times. The reason for the first extension was to harmonize the project duration and activity cycle. The ARDS data are produced as per the cycle of the Tanzania fiscal year (starting on July 1st and ending on June 30th next year). It ends in June, with the results becoming available in August or September. Therefore, it was reasonable to end the project in October, allowing stakeholders to see the results of annual data. The second extension (for one year) was to respond to the delay caused by the GOT 's relocation to Dodoma and the preparation of ASDP2 documents, especially the Result Framework. This extension was also considered to improve the sustainability of ARDS, data quality, and data utilization. These extensions were necessary and adequate.
- There were needs of additional activities unexpected at the beginning of the Project. In particular the revision of formats and manuals implemented in 2018 required significant resources and time. Namely in the original plan of the Project, data quality could be improved by ensuring the data collection fully in accordance with the manuals, and revisions would be rather minor in response to field conditions. However, defects were found during the earlier stage of the Project, entailing revisions of formats and manuals necessary. Moreover, the revision further caused the modification of the Web Portal system, additional training and adjustments of past data, etc. As such, this revision greatly affected the all components of the Project. In addition, because this revision caused discrepancy in the crop production data between before and after 2017/18, activities for enhancement of data utilization were also postponed to the later stage of the Project.
- The Project cost, inputs, and scale were reasonable. The Project covers 26 Regions, 185 LGAs, and 4 Ministries. The project operates activities all over mainland Tanzania, which is 2.5 times bigger than Japan in terms of area. Additionally, the ARDS Web Portal is a central database in the sector. The scale entails considerable project input. Transport and travel expenses accounted for a large share of the Project expenditure; however, both the Project and the counterparts attempted to use limited resources efficiently, for example, with a limited number of counterparts or lean and effective arrangement of travel plan, contributing to the efficient use of available inputs.
- The Project has a system development component. The Project contracted out the upgrading of the ARDS Web Portal. This was an expensive decision, as the unit remuneration is high compared to the rest of Tanzania's labor market. Considering the tight supply of good programmers, however, the high cost was reasonable. The Project tried to control the expenditure by limiting the scope of the work to only necessary modules, as well as strengthening monitoring in implementation. Additionally, because maintenance is required after development, contracting out to a Tanzanian developer would be efficient.
- On the other hand, there was a challenge in cascaded training. LGA trainings financed by the Project were effectively and efficiently conducted. However, trainings from LGAs (trained by the Project) to extension officers were sometimes not conducted because of various issues inherent to the LGAs. Challenges included budget and conflicting priorities. As the Project does not have the resources to provide and repeat training to extension officers, the Project revised the District training guide and

Extension Officer's manual (with a Kiswahili version) to improve readability and clarity. The manual has been printed and distributed to all LGAs. Moreover, in collaboration with the M&E TWG, the Project developed a methodology to conduct an audit of data via supervisory visits.

- In addition, there was no training institute to provide adequate training; therefore, the M&E TWG itself plans and implements training. Generally, it is efficient to contract out the training provision to third-party training providers. However, the development of software, collection methodology, and other challenges, such as improvements in quality and auditing, was a continuous process; therefore, the Project and M&E TWG continuously provided training directly. Additionally, in the last year of its implementation, the Project invested in capacity development at the Ministry of Agriculture Training Institutes (MATIs). Capacity development in the MATI will benefit ARDS by educating students (who are expected to become extension officers after training). It will encourage government institutions to provide in-service training, and thus, contribute to improving training efficiency as well.

3.1.4. Impact

The impact is high.

- The current President of Tanzania is now the fifth President of Tanzania since the inception of the Project, and there has been no change in the governing party, Chama Cha Mapinduzi. The current President, like his predecessors, also accords great importance to the agriculture sector. However, the President emphasizes industrialization and large-scale infrastructure, leading to limited budget allocation to and restricted activity implementation of the agriculture sector.
- The overall goal for the Project, which is “enhancing policy Dialogue in the agricultural sector through improved agricultural statistics, including ARDS,” will be achieved or has been achieved to some extent. Policy dialogue used to be hampered by missing data in the past; however, through the Project, the accessibility and availability of agriculture data have dramatically improved, contributing to the quality of policy dialogue at all levels.
- During the formulation process of ASDP2 RF, there were problems with its data source. However, ARDS and its operation promote meaningful discussions. At this moment, the RF is not yet launched; however, ARDS will play a central role in providing data for the RF exercises.
- ASDP2 plans to improve data availability and accessibility for the public. The government plans to develop what they call the agriculture dashboard. This is an attempt to disseminate information on the agriculture sector's development through the Internet. ARDS is also expected to be a primary data source for that purpose.
- The GOT is paying more attention to data and databases, especially for administrative and routine data. Other than ARDS, the government has also launched initiatives such as a farmers' registration database and agriculture marketing database.
- The GOT publishes an Economic Survey to report on economic progress. The Economic Survey is based on various data sources, and ARDS is one of them. ARDS provides information on agriculture marketing facilities. This is evidence of the use of data at the ASLM level, and it could be considered a positive impact from the Project.
- During the designing stage, the Public Expenditure Review and the Agriculture Sector Review were expected to result from improved policy dialogue and were shown as such in the Project Design Matrix (PDM). However, because of changes in the ASDP framework, such reports are not currently produced. However, this does not mean inactivity in terms of policy dialogue; policy dialogue still continues and has been enhanced by ARDS's improved accessibility and data availability, as discussed earlier.
- On the other hand, while the Government, in particular the counterparts of the Project were not very familiar with system development and updating, the operation and maintenance of such a system, the Project exposed them to these tasks through the on-the-job training and other engagements, helping them learn and accumulate experience and skills in these areas.

- Also, the Project produced the crop calendar as a byproduct of pursuing better quality of ARDS data. The calendar is visualization of implicit knowledge existing among LGA officers about the kinds of crops and seasonal cycle of the cultivation prevailing over particular areas. Such a material would be helpful and expected to be used at both national and local levels for their policy and activity planning.
- There are no negative impacts envisaged in the social and environmental domains after the end of the Project. The Project covers all of mainland Tanzania, and does not influence the expanding disparity among regions or ethnic groups. However, ARDS does not cover Zanzibar. Nevertheless, the Project has started to arrive at an information-sharing arrangement with Zanzibar at the high-level seminar in response to a request from the Zanzibar Government.

3.1.5. Sustainability

Performance against the sustainability criteria can be rated moderately satisfactory.

- In the technical aspect of the Project, sustainability is considered relatively high. The M&E TWG has developed the capacity for data collection, data processing, and their utilization. It is believed that the technical knowhow and skills have been accumulated in each of the TWG Secretariat, the Technical team, and the Region-in-Charge members. The scope of the technical aspects extends from data handling to database management and training implementation. Although the improvement of data quality is still in progress, the inclusion of the Supervising Visit, which provides guidance to the extension officers who carry out data collection at the end of the system, and MATI support, which provides guidance to pre-job extension officers, further contributed to the technical sustainability of ARDS. The extension officers will continue to change generations in the future, but it is expected that the officers who will have graduated from MATI will fill the gap.
- Sustainability in policy and institutions has been maintained. First, the RF of ASDP2, which is a fundamental and comprehensive program in Tanzania's agriculture sector, adopts ARDS as the main data collection tool. It requires the GOT to use ARDS continuously, for the duration of the program period. In addition, the PO-RALG has repeatedly asked LGAs to use the ARDS data. As such, the GOT's institutional commitment remains secure.
- There are no adverse effects in terms of social and environmental considerations. This project focuses on data collection and analysis so that it can enhance policy for efficient resource allocation indirectly, and thus, no negative social or environmental effects are expected.
- There may be a challenge in the counterpart's institutional setting. This project is arranged under an agreement between both the MOA and PO-RALG and JICA, but technical counterpart is the M&E TWG, which consists of ASLMs. The project provided technical and financial support to the M&E TWG and its members. At the individual level, each M&E TWG member has developed its capacity in technical matters (data collection, database operation, and use of data) and maintenance, with ownership of the initiative being evaluated as high. Thus, this will be an excellent element to assure sustainability. Therefore, under the current leadership of each ASLM, overall sustainability would be high. However, as previously discussed, since M&E TWG is a group in the government, there may be limitations, especially with regard to leadership, as the chairpersonship is with the MLF, and the secretariat is under MOA, and the roles are not straightforward. There is no chain of command under the chairperson, and there would be no independent budget under the group. Furthermore, there are some government rules that stipulate that a ministry's budget should be used only for that budget; therefore, if the MLF secures an operation budget for M&E TWG, it would be difficult to use it for officers from other ministries. Each ASLM needs to secure its own operational budget, and there might be no incentive for ASLMs as long as the Project operates.
- The lack of a chain of command in the group may create the risk of inadequate operation management for the current ARDS. The ARDS is shifting from the "formation" to "operation" stage, and the function of coordination, in which M&E TWG has an advantage, may be less important, but operation functions such as monitoring, as well as planning improvement, would be more important. However, without adequate instruction and enforcement, the operation may be dispersed among the ASLMs, the officer

and leadership may remain passive actors, and continuous improvement may not be achieved.

- Under ASDP2, M&E TWGs were envisaged to be formed with participation from various ministries. However, at present, the M&E TWG is the only TWG under ASDP2, and although there is a plan for the NCU, ASDP2 to establish other TWGs in the future, no actions have been taken and the future direction—including the future of the M&E TWG—is not clear. The only way to maintain sustainability in terms of chain-of-command and budget would be for a specific ministry (or agency) to take responsibility, and so far, only the MOA is responsive to that issue raised by the Project team. In the latter half of the Project, efforts were made to improve the sustainability of ARDS by strengthening the TWG's secretariat, centering on the office of the Assistant Director (Monitoring & Evaluation and Statistics) within the DPP and MOA; however, the formal set-up is not established yet, and consensus within the GOT might be necessary. To mitigate these remaining issues, the Project team, together with the secretariat, created a succession plan (SP) to be formulated with the TWG and Directors in the Government.
- There are budgetary issues as well. Under Tanzania's budgetary system, the budget related to the Project needs to be shifted to a recurrent budget (called "Other Charges"), but there is a strict ceiling to the recurrent budget. Tanzania also faces cash-budget constraints¹⁰ so that actual allotment from the treasury may be unstable in timing and amount (large discrepancy between budget and actual disbursement). The recurrent budget is divided into three parts: ARDS operation costs borne by LGA under the supervision of PO-RALG; Operation and Maintenance cost of the system under IT section, MOA; and cost at TWG operation by MOA and ASLMs. Although the recurrent budget is not stable due to the constraints above, there have been promising actions by the Government such as MoA secured the 2020/21 budget necessary for the maintenance services of ARDS Web Portal after the Project for the duration between November 2011 and June 2021. On the other hand, in the future, since the demand for data will shift year by year, it will be necessary to renew the system, servers, and related equipment, and in that case, it will be necessary to set aside a development budget for such investment. There might be a possibility for new funds from DPs from both a financial and technical perspective.

3.2. Key Factors Affecting Implementation and Outcomes

3.2.1. Necessary Adaptations of the Project Implemented as a part of a Series of Projects

This Project is, in effect, the third phase of a series of projects that have supported the development of ARDS. Such a long-term engagement has many advantages because it can utilize tangible and intangible assets: for example, the capacity base of CP, social relations with stakeholders that facilitate a conducive environment for project implementation (primarily the system developer in this case), and lessons learned. However, such projects are sometimes subject to unexpected adversities stemming from the conditions of previous phases.

The first relates to the large number of ARDS data items. ARDS is supposed to collect data against many indicators from the agricultural sector in a broad sense (including those under the Ministry of Agriculture and the Ministry of Livestock and Fisheries). This is one of the characteristics and advantages of ARDS; however, doing so involves a great deal of labor and cost, and this labor and cost should not be ignored in the effort to increase the submission rate. For example, in the case of crops, ARDS requires the reporting of potentially 90 kinds of crop production data, and the data collection format was not always clear about which data should be collected by which method. CPs' understanding and guidance to LGA and field officers was also mixed. Although the format required crop production data to be reported based on a cumulative value (adding this month's data value to the previous month's) to identify various types, irrigation schemes, and cultivation methods, the actual data was not cumulative, and instead reported the monthly value. Since the system was constructed as receiving cumulative data, it was best to ask field officers to submit cumulative data according

¹⁰ Cash-budget constraints: A financial rule in public sector financial management, where expenditure is constrained by the availability of cash in the national treasury. The rule is typically adopted to prevent the government from running into the status of deep debt. But the rule generates uncertainty of budget disbursement affected by the availability of cash in the treasury.

to the format.

By contrast, it was noted that, if cumulative data as specified by the format were submitted, a set of complicated calculations had to be undertaken, including converting the accumulated data into dis-accumulated data for obtaining the productivity data. This procedure was therefore considered to entail a high risk of mistakes, if followed. Therefore, it was decided, in the middle of the Project, to change the collection and input method of the crop production data.

The system (the software of the ARDS Web Portal) also had its flaws. The first is that the geographical attributes of the data have not been historically preserved. For example, suppose data were submitted from Ward (a) of the LGA named ZZZ in 2020. Then suppose that the Ward (a) was incorporated into the LGA named YYY in 2022 due to changes in the administrative boundary. In such a case, if data of LGA YYY were queried after 2022 for a period before 2022, the system responds with data including data of Ward (a) (even though Ward (a) was not part of LGA YYY before 2022). This happens because the system is not able to preserve the historical and geographical attributes of the data. This problem was discovered relatively early, but because it was a problem rooted deeply in the system design of the ARDS Web Portal, the solution required long-term consideration and consultation with the developer.

Another was the data estimation function designed during Phase 2 of the Project. As mentioned above, this function was not well implemented. Eventually, it was suspended in the middle of the Project.

The problems mentioned above were not detectable during the previous project phases because the volume of collected data was small, and they were discovered only after data had been accumulated to a certain level, and their review became feasible. As a result, there was inevitably some trial and error at the beginning of the Project. It could be said that, to avoid this, the Project could have performed at the onset of the Project an overall review of the system and data processing procedure in such aspects as details of data definitions, steps of data compilation (addition or averaging, etc.), accumulation and updating methodologies of data in terms of content, time point and location, and procedures of all these handlings in the system. However, since the Project was not a pilot of a new system, but rather a follow-up of the one already in operation nationwide, the progress the Tanzanian side eagerly envisioned, it was difficult to carry out such a comprehensive review. It was also a concern that such a review might bring about adverse effects on the operation site, like jeopardizing the trust that users might have had by then. Possible lessons from these experiences and observations are, given the anticipated expansion of geographical coverage and widened variation of data conditions due to the increased number of users: (1) the roll-out of a new system across a country should be conducted with great care and step-by-step reviews; (2) In the case of projects with system development, a detailed simulation should be implemented to the possible extent before it is deployed over a wide area, in which specific attention should be paid to each of the system components (data definitions, contents of reports generated in the system), and consistency along the data processing (compilation, accumulation and updating). This is necessary because a software system contains many automated processes that are difficult to follow and understand once they are built in and the system is set. Therefore, it is necessary to put the processes on paper, visualizing what types of data are taken in, what the computation rules are, and how the outputs are produced.

3.2.2. Government's Relocation to Dodoma

The Tanzanian Government began full-scale relocation of offices to Dodoma in 2017, causing the Project CPs to also start moving to Dodoma. Since this relocation was carried out under a strong political initiative, the Government and ministries were not well prepared, dealing setbacks to the smooth operation of the Project. Specifically, the relocation assumed priority among the CPs, causing them to work less on Project activities. The project activities also stagnated because the Japanese Team operated out of the office at Dar es Salaam for a long time. This was because offices for the Project were not quickly provided in Dodoma, and the official relocation of the Team occurred only in August 2019, more than a year after the relocation of CPs. From 2018 to mid-2019, the Project coped with the situation by traveling from Dar es Salaam to Dodoma. Even after moving to Dodoma, the project office was in the Dodoma University student dormitory, which was temporarily rented out for government work, as the government buildings had not been constructed yet.

In addition, the CPs work in different buildings across Dodoma city¹¹, seriously hindering communication and joint work (like chatting and meetings, etc.). As a result, the face-to-face consultation or group work activities, which are an advantage of JICA Technical Cooperation, were difficult to employ. It should also be noted that this Project involved the participation of multiple ministries; as a result, the M&E TWG, which was the major forum for the coordination, could not be held frequently enough, disrupting the consultation and often delaying the implementation. Although the Japanese Team made an effort to overcome the hardship by using the video conferencing facility of the Ministry of Agriculture, and frequent trips, it was by no means sufficient to achieve the efficiency in place before the Dodoma relocation.

3.2.3. Discontinuation of Japanese Expert Dispatch to Tanzania due to COVID-19 Pandemic

Due to the spread of COVID-19 in 2020, the dispatch of Japanese experts was suspended at the end of March 2020. Even in Tanzania, overall government activities have declined since April as domestic travel was restricted and meetings of government officials were discouraged. In March 2020, just before the suspension, a high-level seminar was successfully held, inviting the new DPP of the Ministry of Agriculture, representatives from the PMO, and a deputy minister as a political figure. The Project anticipated that this seminar would advance awareness and help establish organizational arrangements within the ministry for sustainable ARDS. In this context, the COVID-19 interruption had a tremendous negative impact. In particular, with regard to the organizational arrangement, the Project's proactive engagement in key officers, an important intervention tool of a technical cooperation project, was taken away from the Team, and the approach of establishing the arrangement turned to rely on discussions within the Government. As discussed in the lessons learned, the Project has had inherent organizational problems for ARDS operation. However, it was unfortunate that the COVID-19 interruption deprived many possible activities enhancing the sustainability of the Project, including the valuable opportunity for improving the organizational arrangement through heightened momentum after the seminar.

3.2.4. ASDP2

The circumstance that has had and will have the greatest impact on the activities and outputs of the Project is the specific modalities of ASDP2 implementation. Although the program document has already been finalized and approved by the government, the specific modalities of its implementation, especially the modality of financial support, have not yet been decided. The government has asked DPs to set up a basket fund, but there is no agreement between the two. Without a basket fund in ASDP2, the LGA has very scarce resources for its routine operations, such as routine monitoring activities, data collection, and planning work, unless it receives government funding support. This matter will soon be discussed at a joint session of the government, DPs, and other agricultural stakeholders. In any case, it is likely that the budget for LGA's routine work will be low, limiting their activities and hence, circumscribing the achievements of the Project. In this regard, the M&E TWG needs to persist in working with the LGA to secure the budget needed to operate ARDS, even if there will not be a basket fund in ASDP2.

Management of ARDS based on the M&E TWG system is another concern. The TWG system was designed under ASDP1, and the Project, following this set-up, has carried out capacity development around the M&E TWG and its Secretariat, the Ministry of Agriculture. However, in ASDP2, even after two years following its launch, no clear decisions or guidelines have been issued regarding the TWG system. At the time of ASDP1, multiple TWGs were established. At present, however, only the M&E TWG is active due mostly to the existence of this technical cooperation project. The budget for the M&E TWG activities mostly relies on the Project or is occasionally supported by the meeting budget of ASDP2. The ASDP2 NCU in the PMO that coordinates ASDP2 has a general plan for organizing the ASDP2 activities according to the TWGs set up for each component, and the M&E TWG is for Component 4. In addition, the PMO is said to have a plan to

¹¹ As of September 2020, the office distribution is as follows: Key offices such as Minister, Permanent Secretary, and Directorates of Secretariat Affairs are at Mtumba (or so-called Government City) which is located at the outskirts of Dodoma City. Other major offices are at the building of Kilimo 4 behind the Parliament. Planning officers of the DPP work out of a building within Dodoma City. Finally many other officers have been given office space at University Dodoma, which is 7 km away from Dodoma City.

manage the M&E TWG directly, but no definite information has been forwarded nor clear instructions given. In the future, the transfer of the management of the M&E TWG to PMO should carefully be deliberated and discussed, because the major task of the M&E TWG is the management of ARDS and the benefits of ARDS are to the Ministry of Agriculture and other ASLMs. Additionally, ARDS is, first and foremost, a general data collection tool for the agriculture sector, not simply a data source of ASDP2, so it will be effective to task benefitting ministries with the responsibilities of its management. Management of the M&E TWG by the PMO may be possible but is probably less effective as the ministry has less relevance to the data and concerning issues. Noting these advantages and disadvantages, it is expected that the PMO would promptly provide clear guidelines on the TWG system under ASDP2. If restructuring is required, careful consideration should be given on how to smoothly transfer or retain the abilities and authorities indispensable for the ARDS operation.

3.2.5. Response to the Request from Zanzibar Government

The ARDS covers the former Tanganyika (Mainland) of Tanzania. However, a request was made to expand the system to include the Zanzibar islands by the Zanzibar government, which is part of the United Republic of Tanzania. The CP and the Japanese Team discussed how to respond to the request. Including Zanzibar, whose major industries are significantly different from the mainland, would require major system modifications. Since there was no consensus, it was feared that rapid expansion would be problematic. Therefore, the response was limited to providing Zanzibar with information through the Ministry of Agriculture, such as invitations to high-level seminars.

3.2.6. Possibility of Adopting Portable Devices

From the beginning of the Project, there has been a trend of requesting the Project to provide CP and Tanzanian government officials with tablets to collect data. Although the Japanese Team was aware of this trend, the Team has come to understand that it is a future issue beyond the project period. First, it seems unsustainable with respect to the initial cost as well as maintenance costs for tablet distribution because tablets will need to be given to as many as 17,000 extension officers. Since the introduction cost is too large to be supported by JICA alone, other donors should be involved in the undertaking. In addition, since the coverage of people is so wide that damage, theft, loss, breakdown, and so on, would surely occur, the necessary replacement cost should also be considered. Furthermore, such IT equipment is expected to become obsolete in about five years, and the cost of updated equipment will also be high.

Network conditions are also an issue. At the start of the Project, there were not many LGAs that could use the standard 3G communication network. Since then, although the situation is gradually improving, the overall network conditions are still less favorable regarding the use of mobile devices at villages and wards.

Furthermore, building a support system is also an issue. Currently, the data are collected and entered into the system at the LGA level. Therefore, the central government's role is limited to technical support and backstopping the LGA actions of data collection and submission. However, once the data can be sent directly from the extension officers to the server, the central government would become responsible for data collection. Moreover, it will be tasked with technical responsibility for tablet malfunctions. As such, a drastic review of the support system will be necessary.

Accordingly, the Project judged that the use of tablets in the field is ineffective due to the time constraints of the Project. As a small-scale introduction of these devices was tried during the SAE and the National Sample Census for data collection, and as network conditions improve across the country, the use of tablets for data collection may become feasible in the future.

3.3. Evaluation of Results Concerning Risk Management of the Project

The risks associated with the activities and outputs of technical cooperation projects are those conditions written in PDM as important assumptions and prerequisites. The situation and countermeasures to each

condition are as follows.

3.3.1. Important Assumption

"Major changes in agricultural policy that may affect the project implementation not taken place."

This assumption remains valid today. The President launched ASDP2 in June 2018. Although ASDP2 emphasizes industrialization and commercialization over agricultural production, M&E activities and data utilization remain important. In his speech, the President clarified his stance of emphasizing M&E, and hence, the role that ARDS can play is increasing. Agricultural policy has changed gradually in relation to changes in politics, but it did not affect the activities of the Project.

On the other hand, in terms of budget, the Government has been allocating a greater portion of funds to large projects aiming at national industrialization, while ASDP2 has not been able to set up a basket fund. Under these circumstances, LGAs lack funds ear-marked for M&E activities. Additionally, even though there are no major changes in agricultural policy, the Government is inclined toward a stronger centralization approach. Since the operating cost of this Project in the LGA is designed to depend on the LGA budget based on DADP funds and support from the Government along with D by D policy¹², LGAs' ARDS operation has been greatly affected by the changes in the government budget allocation. As an alternative, the Project sought to secure the necessary budget by consulting with PO-RALG and working directly with LGAs to secure the necessary budget for ARDS. (Some LGAs can secure the budget, but some others are unable to secure it due to local circumstances.)

3.3.2. Preconditions

- 1) "ARDS continues to be considered as important data collection method in ASDP & ASDP2 M&E Framework at both central and local levels."
This condition is still valid. In the ASDP2 Results Framework (RF), ARDS is designated to be the main data source. Members from the ASDP2 NCU have joined the M&E TWG since 2019 and are participating in monitoring activities.
- 2) "ARDS Web Portal continues its stable function."
This condition is still valid. Improving the Web Portal is part of the activities of this Project, and the continuation of its stable functioning has been ensured by the Project. Currently, the Web Portal provides a good operational environment, partly due to the continued functional improvements rendered by the Project. Of the hardware, the server and UPS power supply were provided by the Project, and it is unlikely that they will break down for several years. The backup server was, however, provided by the previous project: the M&E Project Phase 2, and has surpassed its service life. In addition, there has been no redundancy increase in the network-related equipment of the Ministry of Agriculture (i.e., for the core system, spare equipment is installed as a standby); therefore, it is vulnerable to breakdowns. Hence although the downtime (the time when the server is not connected) may be long, the failure of the network equipment has not created a crisis situation for the operation of the Project.
- 3) "Project CPs, trained Region/ LGA officers, and VAEOs/ WAEOs continue to engage in ARDS-related duties."
Since CPs, LGA officers, and VAEOs/ WAEOs often quit or reach retirement age, the turnover rate is high. In 2017, there was an official instruction from the central government (Prime Minister) to all LGAs in that only three officers should be stationed at the DAICO office (LGA headquarters), and all other officers need to be assigned to field offices. As a result, there have been some disruptions in the operation of ARDS (data collection/ reception, data entry, data quality checks, etc.). There were frequent changes in ministry management during the project period. The DPP of the Ministry of Agriculture changed three times, while the DPP of the Ministry of Livestock changed twice. Additionally, the chair of the M&E TWG was absent for a long time, substituted by an acting chair. Thus, this precondition

¹² D by D: Decentralization by Devolution. This is a decentralization policy that the Tanzanian Government has been pursuing, in which the power of policy making and other issues is given to the local government so that public services and other government activities are to be rendered at a closer point to the general populace.

was often inadequate. The Project addressed this risk by involving many members in the activities in the case of CP, by encouraging internal training in the case of LGA, and by expanding the use of manuals through preparing hardcopies and distributing them, and by developing video teaching materials.

- 4) "Necessary equipment for ARDS operation at LGA is maintained in a good condition or provided in a timely manner when renewal is required. "

The situation of equipment at the central level is appropriate. Many LGAs use the equipment provided in the previous Project, and since more than five years have passed, many are approaching the time of renewal. Requests for renewal have often been made. It is expected that there will be many cases across LGAs where equipment will not be updated. Since the submission rate has not dropped, it seems that some measures are being taken. Since the previous Phase 2 Project, the prices of equipment such as PCs have become cheaper, and communication conditions have improved. It is thought that LGAs often deal with this issue by relying on private computers or using equipment from other departments.

- 5) "DADP are to be created by all LGAs in full scale."

The role and requirements of DADP in ASDP2 are not clear. The original plan was that DADP would be prepared with analyses of the LGA's agricultural conditions, and ARDS is designed to provide data necessary for the analysis. However, the DADP is currently often just a list of projects and activities, and no analysis is made for the agricultural sector. Additionally, in ASDP1, funds were distributed from the basket fund for projects and M&E activities, according to the DADP. It was thus assumed that the expenditure of the LGA for ARDS operation would be covered by these funds. Since such a situation never materialized, this precondition has not been applicable at all.

3.4. Lessons Learnt

3.4.1. Points/ aspects that the Project Focused on

This Project is a large-scale project in which almost 4000 formats are collected from all over the country every month and are processed in a database. Therefore, the points and aspects to which the Project paid particular attention and the lessons learnt in carrying out the activities during the five years are described below.

1) To Place the Project Activities Under the PDCA Cycle, Starting with Issue Analysis

Collecting data is the first step, and without it, we cannot improve nor use the data. However, at the start of the Project, the submission rate was sluggish, and the data accumulation was not sufficient for use. Therefore, urgent actions were required to start a positive cycle: better submission \Rightarrow greater demand \Rightarrow better submission. To find out why the submissions were not made, the Japanese Team conducted an Issue Analysis Survey with sample LGA visits at an early stage. Through the Survey, problems were identified in the field and important issues were determined. After analysis, an activity plan was created to deal with each of the issues, with priority being accorded to those issues that seemed to generate positive effects quickly. Moreover, activities such as training and system modification were carried out to address the prioritized issues. In addition, the team exploited the technical backstopping and other occasions as opportunities to conduct a questionnaire survey by collecting the information on the current situation and opinions from general stakeholders on the above issues. The results of these questionnaire surveys were used as a reference for activities after the training. Since the technical backstopping was conducted approximately once a year, the cycle of a) finding the issues to be addressed during the project period, b) setting the activities to be implemented, and c) reviewing the activities and the contents of the year, were implemented year by year. As observed in the gradual improvement of the data submission, usage, and quality year by year, the adoption of the annual PDCA cycle is considered to have contributed to the effectiveness and efficiency of the Project operation.

2) To Start Engaging in Activities that Produce Tangible Outputs Quickly

At the beginning of the Project, the expectations of the CP side were not high. Submission rates were sluggish, and the ARDS Web Portal was failing to fulfill its expected role. At the Secretariat of the M&E TWG, some were skeptical of the expected outcomes of the Project, and building trust was an urgent issue. Therefore, the Japanese Team hired a technical assistant so that simple technical problems such as minor bugs were immediately eliminated, and improvements were easily seen at an early stage. Additionally, efforts were made on the operation side to raise the submission rate with the introduction of numerical measures of submission. In addition, technical backstopping was conducted relatively early in May 2016, and since then, the submission rate started exceeding 50%, which has made it possible to show the progress of ARDS to M&E TWG and LGA officials. It set the environment for the Project to become more favorable at this early time, and such visible improvements contributed to raising the motivation of the people concerned. The visible result of improving the submission rate at an early stage encouraged the majority of LGAs to submit data regularly and facilitated the Project to have a smooth beginning and steady progress.

3) To Remember to Create a "Positive" Cycle

Prior to the project, data available in the agricultural sector was limited and ARDS was not utilized. There was a negative cycle where data was not used because they were not there, then, if not used (demanded), they were not submitted. It was something like a diminished equilibrium of demand and supply. Technical issues on the supply side were mostly solved during past projects through data standardization, training for data collection, and so on. However, due to the diminishing equilibrium, the improvement of data availability did not automatically lead to utilization.

There was another issue on the demand side: the quality of available data and reports. Poor quality data cannot be used. The CPs, who compile the data, were hesitant to disseminate "poor quality data" within the ministry. On the supply side as well, when data were not used, because the quality is not good, LGAs are not encouraged to collect and submit. Hence the quality of data becomes an issue of encouraging or discouraging the data collection and submission, affecting the motivation of LGAs and other stakeholders and sustainability of the system. The importance of adequate institutional arrangements for the operation is obvious, but within the arrangement, individuals have had different commitments in working for the operation, and some staff felt burdened by the increase in work brought about by this Project. The Japanese Team also recognized that "various levels of commitment" were becoming a vulnerability in the system, which needed to collect data from 3940 Wards of the country every month. The Team perceived this vulnerability as a serious risk if not addressed, leading to LGAs becoming tired of submitting data, unless it stimulated the demand side at an early stage.

Therefore, the Japanese Team focused on the following. (1) Improving the submission rate, (2) Ensuring a standard report, (3) Checking which data are used by whom and which data are in demand among many data items, (4) Improving the quality of high-demand data, (5) Directly promoting the use of data in the LGA and central ministries (in the LGA, the easy availability of reports to DAICO and DLFO is emphasized in training. At the central level, activities that use data such as GIS training and publication of a Booklet have been conducted.) These activities stimulated the demand for data. Attempts have also continued with the understanding that such activities will lead to a positive cycle from "data is not required, so there is no need to submit data" to "data is required, so high quality data will be submitted on time".

However, the activities of stimulating demand were not sufficient, and outcomes have not satisfactorily been achieved. Although activities were implemented swiftly so that results would be produced soon, the annual cycle of the system limited the progress: It takes one year to improve the program of the system; then, one year is necessary to fully cycle the collection data based on the new system. Hence, the utilization of consistent data could begin only from the third year. In addition, because problems were found in the third year in the method of crop production data collection, and needed to be amended, the accumulation of frequently used crop data began in the fourth year. Consequently, activities for data utilization were also limited to the latter half of the Project period.

3.4.2. Institutional Arrangement

In this Project, the M&E TWG that is responsible for ASDP M&E across ministries was designated to be the CP. The end of 2015, when the Project initiated activities, coincided with the end of ASDP1, and since there was no budget from ASDP, the M&E TWG had only a small budget from each ministry other than the resources made available under the Project. In addition, although the M&E TWG had a hierarchy with the chairman at the top, there was no chain of command to other ministries. Thus, activities tended to rely on volunteers. Such a system was—despite the lack of a budget and no command system—effective up to the previous phase of the ARDS project for coordinating relevant ministries, formulating plans, and building the ARDS system. However, it has become less effective in the phase where the system is to be maintained and constantly monitored to ensure data submission and quality. Since ARDS operations are carried out daily, it is necessary to have a system in which full-time staff take responsibility for routine work such as maintenance and monitoring.

In future ARDS, the M&E TWG itself should be responsible for the coordination of the concerned parties and decision making on overall goals and strategies, while the Secretariat, the Ministry of Agriculture, will manage the routine operation under the M&E TWG. However, in ASDP2, the use of ARDS is expected to increase, especially in preparing the RF. Moreover, ASDP relies on coordination across ASLMs. Hence, it is expected that the PMO NCU, which coordinates ASDP2, will take part in providing financial and technical support to ARDS.

3.4.3. Lessons from the System Development Experience

In this Project, system development was a component of technical cooperation, which has been materialized during the process of the Project. It was also a tool for technical cooperation activities. In such cases, priorities should be carefully considered, as the goal of building a fast and sound system and the pace of developing CPs' capacity according to their understanding and readiness are not always in line. Especially in this Project, many activities are conditional on the system working properly as expected, which is a critical path for subsequent activities. Moreover, in principle, it is advantageous to carry out system development by subcontracting to a local (or neighboring country's) software developer, considering subsequent tasks such as system corrections and maintenance management but it is also critical to understand that system development is highly affected by the ability of that developer.

In this Project, based on the above recognition, emphasis was placed on developing a system that functioned as expected, rather than considering it as part of the activities of technical cooperation (that is, technology transfer). In addition, when selecting a local developer, efforts were made to prepare a specification that clarified the functions expected in terms of data input and output. The acceptance test was carefully implemented to thoroughly manage the bugs that are inherent in program development. This has narrowed the scope of CP capacity development a little, but it is essential for the smooth progress of the activities. In this way, in a project where system development is included, it is necessary to assess whether the capacity of system development is to be developed or the capacity of activities using the system is to be developed.

3.4.4. Project Duration

The Project duration was initially four years but was extended to five years, which is a relatively long period for a technical cooperation project. In terms of time, this length was appropriate. However, the flow of activities for this Project was web-based database development ⇒ data collection ⇒ data usage, and the first year was spent in database development (specification preparation, programming, acceptance test, migration) and training thereof. The second year was spent on collecting data based on the developed system. Hence, a two-year run-up period is required before the data can be put to use. Moreover, the Project required system modification because the input method was changed in the middle of the operation. Given these circumstances, the data collected consistently are just for the last two years, FY 2018/19 and FY 2019/20, which may have been too short to fully establish the data use. The future outcomes will be dependent upon

the efforts of the government.

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

4.1. Prospects of Achieving Overall Goals

Overall goal: Policy dialogue in the agricultural sector is enhanced through the improved agricultural statistics including ARDS (Agricultural Routine Data System)

As described in Chapter 3, the overall goal of the Project is gradually being achieved. At present, the overall policy of the Tanzania agricultural sector is guided by ASDP2. Hence, the policy dialogue is based on the implementation of ASDP2. Moreover, data necessary for the assessment of its progress are systematized in the ASDP2 Results Framework (RF) and have been collected regularly according to the RF. In the RF, ARDS is clearly identified as one of the major data sources and given an important role in the evidence-based discussion of ASDP2. Recently the Government has been inclined to consider factual data as important information in handling agricultural policy as evident from its efforts to establish a database for farming household registrations. Under such a trend, the importance of ARDS will be further increased. Hence, it is anticipated that ARDS will play a greater role in expanding the use of agricultural data in the policy dialogue and contribute to deepening the substance of discussion.

On the other hand, ARDS is still a part of the whole system of agricultural statistics. For the improvement of the whole system, other parts need to be properly established. In the past, the Government prepared the Agricultural Statistics Strategic Plan (ASSP) covering multiple data/statistical systems, through which it envisioned gradual improvement of agricultural statistics overall. However, following the expiration of the ASSP in 2019, no new plan has been published, halting the anticipated gradual improvement. One of the statistic systems under ASSP, the National Sample Census of Agriculture (NSCA), is currently on-going. It is supposed to be implemented every 10 years. However, because of the dependency on the support from Development Partners, the current undertaking is already 3 years behind schedule. ARDS, on the contrary, because it is embedded in the government's routine system (reporting of field extension officers), is steadily operating without disruption due to external conditions. Such stability is valuable as a reliable data source.

Based on the deliberation above, further actions and improvements are necessary for ensuring the achievement of the overall goal and the long-term advancement of agricultural statistics. In addition to the present status of ARDS, actions such as the re-formulation of ASSP, and establishment of a statistics system that complements the ARDS are desirable for enhancing the overall agricultural statistics systems. Moreover, the following are necessary for better operation of ARDS:

- Improvement of the institutional arrangement of the ARDS operation
- Further refinement of ARDS data quality
- Allocation of sufficient budget for the ARDS operation and maintenance

4.2. Plan of Operation and Implementation Structure of the Tanzanian side to Achieve the

Overall Goal

As mentioned earlier, the overall goal is partially being achieved. However, to ensure certain and comprehensive achievement, the following measures on the Tanzania side are desired.

The basic policy of the agricultural sector in Tanzania is ASDP2, and for its implementation, the government has already set up the National Coordination Unit (NCU) under the Prime Minister's Office. It is expected that NCU will lead the coordination among relevant ministries (expanded ASLMs) and policy dialogue with Development Partners. In addition, the ASDP2 RF has been almost finalized as a monitoring tool for ASDP2,

and the mechanism is already in place. Based on these foundations, the government should advance data collection and report preparation in the future.

As for the implementation arrangement of ASDP2, the NCU envisions the establishment of TWGs for the relevant field, like those under ASDP1. NCU is currently considering how to set up TWGs and in which fields, but the M&E TWG will probably be maintained as is, because ASDP2 needs requires data collection and reporting for the RF. In addition, the formal establishment of this M&E TWG and its effective operation is crucial for strengthening policy dialogue based on agricultural statistics.

By contrast, for ARDS to be used appropriately in ASDP2 monitoring and to produce the necessary data effectively, it is critical to have a stable and effective institutional arrangement for ARDS operation. This point will be explained in detail in the "Recommendations for the Tanzanian Side" section below, but under the present arrangement of the TWG system, it is important to strengthen the capacity of the Secretariat that handles the routine work of ARDS and to reinforce the IT Technical Team, which is responsible for maintenance of the Web Portal.

In addition, among various agricultural statistic systems, ARDS has an advantage in sustainability because it is operated within the regular work of extension officers as administrative data collection and imposes minimal burden in terms of administrative and budgetary efforts. However, in terms of statistics of the agricultural sector, ARDS should be used together with other complementary statistical data such as NSCA and AASS. From this viewpoint, the revision of the ASSP and the reliable implementation of other statistical surveys are still strongly desired.

4.3. Recommendations for the Tanzanian Side

There are many aspects from which the Tanzanian side should take action to achieve the overall goal. The major recommendations are described below according to the relevant field.

4.3.1. Institutional Aspect

- First of all, the RF of ASDP2, the basic policy of the Tanzania agricultural sector, should be finalized and publicly announced. The framework provides the basic structure of monitoring and evaluation of the progress and results, and it specifies the role of ARDS in the process. By doing so, ARDS operation and data collection at the LGA level will be further ensured across the nation, leading to an improvement in the stable supply of agricultural data.
- On the other hand, clear specification of the M&E TWG's roles, functions and responsibilities is essential as an operational organization for ARDS. Since ASDP1, this M&E TWG has continued its activities as JICA's technical cooperation continues. The M&E TWG should be sustained in both its existence and functions for the stable operation of ARDS under ASDP2. However, along with the creation of the TWG system under ASDP2, the roles, functions, authorities, and responsibilities should be re-established.
- The M&E TWG should continue existing for the operation of ARDS, but it is more crucial to strengthen the Secretariat of the TWG for the efficient and effective operation of ARDS. Between the M&E TWG and the Secretariat, the former should be responsible for discussing and deciding overall policies and strategies for ARDS and agricultural statistics in general, while the latter should be responsible for the routine operations of ARDS and the stable performance of the Web Portal, its technical component. The Secretariat should be headed by the Assistant Director of M&E and Statistics of DPP, Ministry of Agriculture, and at least two officers should be assigned exclusively to ARDS. In addition, regarding ARDS operation costs, given the contribution to ASDP2, efforts should be made to obtain support from the NCU as much as possible.
- For the proper operation of ARDS, the Secretariat should regularly check the data submission status and

data quality every month. If any issues are identified, the Secretariat should promptly contact the Region/LGA to assess the situation and take necessary countermeasures. In communicating with Regions and LGAs, the Secretariat should mobilize the Region-in-Charge, the TF members who are assigned to Regions for monitoring duties. There are 26 Regions in Tanzania, and dealing with each Region individually is a cumbersome task. Therefore, it is much easier and effective for continuous follow-up if the task is divided among the members of the M&E TWG, and the members work with a smaller number of Regions/ LGAs. If the working of the Region-in-Charge is insufficient, the Secretariat must directly intervene.

- A small group in charge of IT is responsible for the maintenance of the IT aspects of ARDS (Web Portal, etc.) separately from the Secretariat. The group has already been established through the activities of technical professionals under the leadership of the IT section of MOA. The mission and activities of this team will be described in "(3) Technical aspects" below.
- PO-RALG is responsible for LGA's effective ARDS operation, especially in terms of the budgetary measures.
- If further instructions or enforcement are necessary for the ARDS operation, the MOA and PO-RALG will work together to issue official instructions.
- To clarify the responsibilities of officers from national, regional as well as LGAs who engage in the ARDS routine operations, it is desirable to include the duties in Open Performance Review and Appraisal System (OPRAS)¹³ which is the performance assessment system of the Tanzanian government officers.

4.3.2. Budgetary Aspect

- Since ARDS is relevant to the entire agricultural sector, budgets for its operation and maintenance should be included in the budget of ASLMs, NBS, and the Prime Minister's Office (ASDP2 NCU).
- The most important budget is for the maintenance of the ARDS Web Portal. This budget should be secured by the IT section of the MOA. It is necessary to contract with UDSM, the developer of the Web Portal, and outsource the maintenance work.
- In addition, if it is necessary to improve the ARDS system due to changes in the IT environment, it is important to secure the cost for the improvement. Currently, the field data collection and reporting are done using paper formats, but when it is changed to be based on electronic devices such as tablets, the system needs to be adjusted accordingly.
- On the other hand, for the administrative costs of M&E TWG such as meetings and coordination of M&E TWG, it is desirable that the NCU, which is the ASDP2 Secretariat, will secure the budget, considering the contribution of ARDS to ASDP2 and the fact that M&E TWG activities are, in principle, under ASDP2.
- Furthermore, each LGA should secure a budget for the ARDS activities, including the costs for LGA officers at LGAs, headquarters, and the field extension officers. PO-RALG should make sure that the necessary budget is locked into the LGA's budget plan. It should be noted that currently, the allocation to LGAs within the entire budget of the government is witnessing a downward trend. Hence it is recommended that the government reverse the trend and expand the allocation of budgets to LGAs.

¹³ The Open Performance Review and Appraisal System (OPRAS) is an open, formal, and systematic procedure designed to assist both employers and employees in planning, managing, evaluating and realizing performance improvement in the organization with the aim of achieving organizational goals. (GOT 2011, OPRAS guideline)

4.3.3. Aspects of ARDS Data and Utilization

- The submission rate of ARDS data has been relatively high and stable, and the system itself is already established. However, further improvement of data quality is important when considering future expansion of data use and establishing ARDS as a reliable data source. Specifically, the issues are the reduction of unreported or missing data and the reduction of outliers. Countermeasures against these problems have been devised and installed during the Project period. The counterparts should continue monitoring and using these measures so that the data quality will improve. The M&E TWG Secretariat should play a leading role in this regard. An effective approach to this problem requires a nationwide response, which requires collaboration between the M&E TWG and the ASDP2 NCU.
- As mentioned in “4.3.1. Institutional Aspect” above, it is essential to mobilize the Region-in-Charge, members of M&E TWG, to carry out regular checking of the quality of the submitted data and contact individual LGAs. Regular checking and improvements to data quality will lead to the expansion of the use of ARDS. The range of data to be checked should be expanded gradually in the future.
- Since ARDS encompasses a variety of data, it is expected that the use of ARDS will be further expanded. Special attention will be given to the use of ARDS data in the Data Booklet and the regular food security reports (the Food Crop Production Forecast) issued by the MOA. Attempts have already been made in these areas during the Project period. It is expected that the MOA will continue these works.
- Expanding the use of ARDS data is not only important in itself, but increasing data use leads to improved data quality. Therefore, it is important for the M&E TWG and the Secretariat to continuously introduce ARDS data to various technical departments of central ministries and encourage their use. Promotion should also be extended to Regions and LGAs. It has already been decided that ARDS data will be used for monitoring ASDP2. It is also used in the Ministry of Agriculture's Annual Data Booklet and NBS economic data. Based on these, and after confirming the data as official government data, they should be supplied to other government publications and general users.
- Moreover, in data utilization, it is important to confirm the consistency with existing data systems (data from the National Food Security Department) and expand its versatility.
- As a long-term issue, further scrutiny and selection of ARDS data are also necessary. Present ARDS includes a broad range of data. It is hoped that the range will be narrowed to the extent necessary. In the current situation, where the data coverage is broader than the actual need, it is less sustainable as the workload for field extension officers is large and is less effective in terms of cost as it includes unused data. However when a plan of revising the data coverage is discussed, due consideration should be given to the possible stretch of works affected by the revision such as modification of the data collection formats, system adjustments to the new range of data and their processing, and public announcement and ensuing demands for training among users. The plan of the revision should include all these considerations with foreseeable costs and time.

4.3.4. Technical Aspect

- The IT section of the Ministry of Agriculture is responsible for resolving technical problems with the ARDS Web Portal. It should act in a timely manner and provide proper maintenance, while answering user questions as necessary. In addition, the IT section needs to set up a Help Desk together with the Secretariat to enhance support services for users.
- On the other hand, the M&E TWG and the Secretariat are responsible for the overall content of the ARDS. In other words, they discuss, judge, and respond to problems, questions, and improvements related to the ARDS data. They are also responsible for information and contacts placed on the ARDS Web Portal, and their updates. As mentioned above, a Help Desk should be set up in cooperation with the IT section.
- The IT section is also responsible for the long-term maintenance of equipment related to the ARDS

system. Appropriate measures should be taken to replace servers, optimize networks, and safely relocate equipment when ministry offices move.

4.3.5. Capacity Development Aspect

- LGAs, which are responsible for the field-level operation of ARDS, need to ensure extension officers collect and report data in a proper manner. To do that, LGAs need to provide appropriate training to extension officers to maintain or enhance their understanding of data and collection capacity. In addition, it is helpful for LGAs to disseminate and improve the knowledge, understanding, and skills of ARDS among other LGA staff.
- Central ministries, especially the MOA and MLF, need to expand the understanding and use of ARDS data within the ministries and accelerate their ability to formulate data-based policies.
- The MOA's Department of Training, Extension and Research (DTER) should, through MATIs under its umbrella, implement ARDS training during extension officer (or student) training and deepen extension officers' understanding of ARDS. Thereby, it can promote appropriate data collection and allow extension officers to guide farmers based on data. Efforts should be made to maintain the ARDS contents introduced by the Project in the curriculum, teaching materials and put them into practice in actual lectures and field practicals.
- Based on the experience of incorporating ARDS contents into the training materials at MATI, similar measures should be taken at Livestock Training Agencies (LITAs) and Fisheries Education and Training Agencies (FETA). At that time, it is expected that DTER of the MOA will provide effective facilitation to MLF and other ministries...

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

No particular plan is anticipated.

ANNEX

ANNEX 1: Results of the Project

1. Dispatch of Expert

FY	Name	Task	Duration of dispatch
2015/16	Retsu Hagiwara	Chief Advisor/ Institutional Development	Nov. 27 ~ Dec. 20, 2015 (24 days) Jan. 16 ~ Mar. 16, 2016 (60 days) Apr. 06 ~ Jun. 04, 2016 (60 days) Jul. 12 ~ Aug. 28, 2016 (48 days)
	Fuminori Arai	Deputy Chief Advisor /Monitoring and Evaluation	Nov. 27 ~ Dec. 25, 2015 (29 days) Jan. 09 ~ Feb. 03, 2016 (26 days) Jun. 01 ~ Jul. 20, 2016 (50 days)
	Hakan Yuksel	Administrative Data Management 1	Jan. 13 ~ Feb. 26, 2016 (45 days) Apr. 01 ~ Apr. 30, 2016 (30 days)
	Toshiaki Suzuki	Administrative Data Management 2	Jan. 13 ~ Mar. 29, 2016 (75 days) May. 10 ~ Aug. 05, 2016 (88 days)
	Kenji Kamikura	Agricultural Statistics	Jun. 18 ~ Jul. 17, 2016 (30 days)
	Seiya Watanabe	Coordinator/ Monitoring and Evaluation Support	Nov. 27 ~ Dec. 25, 2015 (29 days) Feb. 10 ~ May. 05, 2016 (86 days) Jun. 05 ~ Aug. 18, 2016 (75 days)
2016/17	Retsu Hagiwara	Chief Advisor/ Institutional Development	Oct. 15 ~ Nov. 25, 2016 (42 days) Jan. 07 ~ Mar. 25, 2017 (78 days) Jun. 06 ~ Sep. 03, 2017 (90 days)
	Fuminori Arai	Deputy Chief Advisor /Monitoring and Evaluation	Nov. 09 ~ Nov. 13, 2016 (05 days) Nov. 24 ~ Dec. 25, 2016 (32 days) Mar. 21 ~ Jun. 13, 2017 (85 days)
	Hakan Yuksel	Administrative Data Management 1	Nov. 14 ~ Dec. 18, 2016 (35 days) Apr. 17 ~ Jun. 10, 2017 (55 days)
	Toshiaki Suzuki	Administrative Data Management 2	Oct. 15 ~ Nov. 27, 2016 (44 days) Feb. 06 ~ Apr. 09, 2017 (63 days) May. 24 ~ Aug. 24, 2017 (93 days)
	Kenji Kamikura	Agricultural Statistics	Feb. 25 ~ Mar. 26, 2017 (30 days) Jun. 26 ~ Jul. 25, 2017 (30 days)
	Akira Sakayori	Coordinator/ Monitoring and Evaluation Support	Oct. 15 ~ Dec. 18, 2016 (65 days) Jan. 10 ~ Feb. 23, 2017 (45 days) May. 06 ~ Jun. 27, 2017 (53 days) Jul. 29 ~ Sep. 03, 2017 (37 days)

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FY	Name	Task	Duration of dispatch
2017/18	Retsu Hagiwara	Chief Advisor/ Institutional Development	Oct. 15 ~ Nov. 12, 2017 (29 days) Jan. 06 ~ Feb. 10, 2018 (36 days) Mar. 04 ~ May. 12, 2018 (70 days)
	Fuminori Arai	Deputy Chief Advisor /Monitoring and Evaluation	Nov. 03 ~ Dec. 15, 2017 (44 days) May. 15 ~ Jul. 02, 2018 (49 days)
	Hakan Yuksel	Administrative Data Management 1	Jan. 15 ~ Feb. 04, 2018 (21 days) Apr. 07 ~ May. 27, 2018 (51 days)
	Toshiaki Suzuki	Administrative Data Management 2	Oct. 17 ~ Dec. 15, 2017 (61 days) Jan. 15 ~ Mar. 14, 2018 (59 days) May. 22 ~ Jul. 29, 2018 (69 days)
	Kenji Kamikura	Agricultural Statistics 1	Feb. 28 ~ Mar. 29, 2018 (30 days)
	Nobuyuki Yasui	Agricultural Statistics 2	Jan. 13 ~ Mar. 14, 2018 (61 days) Apr. 23 ~ Jul. 02, 2018 (71 days)
	Akira Sakayori	Coordinator/ Monitoring and Evaluation Support/Training Planning	Oct. 15 ~ Dec. 13, 2017 (60 days) Jan. 13 ~ Mar. 03, 2018 (51 days) May. 20 ~ Jul. 18, 2018 (60 days)
2018/19	Retsu Hagiwara	Chief Advisor/ Institutional Development	Jul. 12 ~ Sep. 30, 2018 (81 days) Nov. 01 ~ Dec. 09, 2018 (39 days) Mar. 02 ~ Apr. 20, 2019 (50 days) Jun. 18 ~ Aug. 14, 2019 (58 days)
	Fuminori Arai	Deputy Chief Advisor /Monitoring and Evaluation	Jan. 12 ~ Feb. 10, 2019 (30 days)
	Hakan Yuksel	Administrative Data Management 1	Aug. 21 ~ Oct. 07, 2018 (48 days)
	Toshiaki Suzuki	Administrative Data Management 2	Oct. 10 ~ Dec. 17, 2018 (69 days) Jan. 07 ~ Feb. 24, 2019 (49 days)
	Kenji Kamikura	Agricultural Statistics 1	Mar. 26 ~ Apr. 19, 2019 (25 days)
	Nobuyuki Yasui	Agricultural Statistics 2	Oct. 14 ~ Nov. 17, 2018 (35 days) Feb. 16 ~ Mar. 26, 2019 (39 days) May. 07 ~ Jun. 08, 2019 (33 days)
	Akira Sakayori	Coordinator/ Monitoring and Evaluation Support/Training Planning	Aug. 26 ~ Oct. 26, 2018 (62 days) Jan. 18 ~ Mar. 05, 2019 (47 days) Jun. 18 ~ Aug. 04, 2019 (48 days)
2019/20	Retsu Hagiwara	Chief Advisor/ Institutional Development	Sep. 02 ~ Oct. 08, 2019 (37 days) Nov. 09 ~ Dec. 08, 2019 (30 days) Jan. 11 ~ Mar. 15, 2020 (65 days)
	Fuminori Arai	Deputy Chief Advisor /Monitoring and Evaluation	Oct. 07 ~ Oct. 29, 2019 (23 days)
	Hakan Yuksel	Administrative Data Management 1	
	Toshiaki Suzuki	Administrative Data Management 2	Sep. 17 ~ Oct. 26, 2019 (40 days)
	Kenji Kamikura	Agricultural Statistics 1	
	Nobuyuki Yasui	Agricultural Statistics 2	Aug. 18 ~ Sep. 16, 2019 (30 days) Nov. 06 ~ Dec. 08, 2019 (33 days) Jan. 17 ~ Mar. 20, 2020 (64 days)
	Akira Sakayori	Coordinator/ Monitoring and Evaluation Support/Training Planning	Sep. 10 ~ Oct. 26, 2019 (47 days) Nov. 08 ~ Dec. 08, 2019 (31 days)
	Akira Sakayori	Agricultural Statistics 3	

2. List of Counterparts

FY	Name of C/P	Position(Title)	Profession	Duration	Name of experts	Duration of employment
2015/16 - 2019/20	Janet Simkanga (~FY2017/18)	DPP, MoA	Economics	November 2015 ~ September 2016	Retsu Hagiwara Fuminori Arai Hakan Yuksel Toshiaki Suzuki Seiya Watanabe Kenji Kamikura	n/a
	Kessy Maduka (Mar~Jul 2018)	DPP, MoA	Economics			
	Obey Nkya (Nov 2018- Nov 2019)	DPP, MoA	Economics			
	1. Obadiah Nyagiro	DPP, MOA	Economics	(Mr. Masunga and Mr. Nsiima retired from his office in April 2016)		
	Catherine Joseph (~FY2017/18)	DPP, MoLF	Economics			
	Sayi Magessa (Aug 2018~2019)	DPP, MoLF	Economics			
	2. Amosy Zephania (2019-)	DPP, MoLF				
	3. Oswald Ruboha	Ast. Dir. (M&E and Stat.), MoA	Economics			
	Salim Mwinjaka	Ast. Dir. (M&E and Stat.), MoLF	Economics			
	Sophia Mlote (~FY2017/18)	Officer (M&E), MoLF	Economics	October 2016~ September 2017	Retsu Hagiwara Fuminori Arai Hakan Yuksel Toshiaki Suzuki Kenji Kamikura Akira Sakayori	
	4. Da Silva Mlau	Officer (M&E), MoLF	Statistics			
	5. Irene Lucas	Head M&E Unit, MoA	Economics			
	Malemi Nyanda (-FY2017/18)	Head Stat Unit, MoA	Statistics			
	6. Benjamin Kalekezi	Head, Stat Unit, , MoA	Statistics			
	7. Martin Mwakalindile	Officer (Stat), MoA	Statistics			
	8. Kassim Msuya	Officer (M&E), MoA	Economics			
	Robert Chacha (~FY2017/18)	Officer (M&E), MoA	Economics	October 2017~ March 2020	Retsu Hagiwara Fuminori Arai Hakan Yuksel Toshiaki Suzuki Kenji Kamikura Nobuyuki Yasui Akira Sakayori	
	Happy Pascal (FY2016/17)	Officer (M&E), MoA	Economics			
	Tumaini S. Maganga	Officer (M&E), MoA	Economics			
	Jofrey Oleke (~FY2017/18)	Officer (M&E), MoA	Economics			
Phillip Shayo(~FY2017/18)	Officer (IT), MoA	IT				
Salehe Kejo (~FY2017/18)	Officer (IT), MoA	IT				
9. Rashidi Likiligo	Officer (IT), MOA	IT				
14. Stephen Michael	Officer (M&E), MoLF	Economics				
15. Raphael Sendalo	Head IT Unit, MoLF	IT				
16. Abel Anthony	Officer (Stat), MoLF	Statistics				
17. Priscilla Joseph	Officer (IT), MoLF	IT				
18. Leokadia Mkira	Officer (M&E), MoLF	Economics				
19. Genya Genya	Officer (M&E), MITI	Economics				
Elizabeth Msengi (-2017/18)	Ast. Dir (DPP), MITI	Economics				
20. John Chassama (-2019)	Officer (M&E), MITI	Economics				

Note: MoA: Ministry of Agriculture

MoLF: Ministry of Livestock and Fisheries

DPP: Director/ Department of Policy and Planning

MITI: Ministry of Industry, Trade, and Investment

PO-RALG: President Office, Regional Administration and Local Government

NBS: National Bureau of Statistics

MoLHS: Ministry of Land, Housing, Human Settlement

PMO: Prime Minister's Office

3. List of Seminar/Training/Workshop

FY	Course name	Date	Duration	No. of participants	Target	Remarks
2015/16	ARDS Backstop Training	May 16 ~ May 20, May 23 ~ May 27, 2016	10 days	569	LGA: DAICO, DS, DMEO Region: Regional Agriculture Adviser	Held in 4 venues: Dodoma, Mbeya, Morogoro, Mwanza
2016/17	ARDS LGA Training	Jan 25 ~ Jan 27, Jan 30 ~ Feb 01, 2017	6 days	396	LGA: DS, DMEO Region: Regional Agriculture Adviser	Held in 4 venues: Iringa, Shinyanga, Tabora, Tanga
2016/17	ARDS DED Training	May 29 ~ May 31, Jun 01 ~ Jun 03, Jun 06, Jun 08, 2017	1 day	561	LGA: DED, DAICO, DLFO Region: Regional Agriculture Adviser	Held in 11 venues: Arusha, Bagamoyo, Dodoma, Kigoma, Lindi, Mbeya, Morogoro, Mwanza, Njombe Tabora, Tanga
2017/18	ARDS LGA Training	Nov 14 ~ Nov 17, Nov 20 ~ Nov 23, Nov 27 ~ Nov 30, 2017	12 days	397	LGA: DS, DMEO Region: Regional Agriculture Adviser	Held in 10 venues: Arusha, Dodoma, Kibaha, Kigoma, Mbeya, Morogoro, Mtwara, Mwanza, Tabora, Tanga
2017/18	ARDS LGA Training	Jun 20 ~ Jun 22, Jun 25 ~ Jun 27, Jul 04 ~ Jul 06, Jul 09 ~ Jul 11, 2018	12 days	396	LGA: DS, DMEO Region: Regional Agriculture Adviser	Held in 11 venues: Arusha, Dodoma, Kibaha, Kigoma, Mbeya, Morogoro, Mtwara, Mwanza, Songea, Tabora, Tanga,
2018/19	ARDS LGA Training	Feb 06 ~ Feb 08, Feb 11 ~ Feb 13, Feb 18 ~ Feb 20, 2019	9 days	396	LGA: DS, DMEO Region: Regional Agriculture Adviser	Held in 11 venues: Arusha, Bukoba, Dar es Salaam, Iringa, Mbeya, Mtwara, Mwanza, Njombe, Singida, Tabora, Tanga,
2019/20	ARDS DAICO/DLFO Training	Jul 18 ~ Jul 19, Jul 22 ~ Jul 23, Jul 25 ~ Jul 26, 2019	6 days	422	LGA: DAICO, DLFO Region: Regional Agriculture Adviser, Regional Livestock Officer	Held in 12 venues: Babati, Dar es Salaam, Geita, Kigoma, Mbeya, Morogoro, Msoma, Mtwara, Njombe, Shinyanga, Tabora, Tanga
2019/20	ARDS Highlevel Seminar	Mar 3, 2020	1 day	73	ASLMs	

4. List of Equipment Provided

1) List of equipment

No.	Arrival	Name of equipment	Model	Maker	Price	No. Unit	Section	Place	Procurement	Purpose	Status/Condition ^{*1}
FY 2015/16											
1	28, Apr. 2016	Computer	Inspiron 15(3542)	Dell	@USD 805	15	RAA	Regions of Dodoma Iringa	Tanzania	Facilitate activities of TC	Good
2	28, Apr. 2016	Stabilizer	1500VA	Tronic	@USD 110	19	RAA	Katawi Manyara Mara Morogoro	Tanzania		Good
3	28, Apr. 2016	Printer	LaserJet Pro M402dn	HP	@USD 557	19	RAA	Mtwara Mwanza Pwani Ruvuma Singida	Tanzania		Good
FY 2016/17											
4	09, Nov. 2016	Computer	Inspiron 15(3542)	Dell	@USD 800	5	RAA	Regions of Dar es Salaam Kigoma	Tanzania	Facilitate activities of TC	Good
5	23, Jun. 2017	Stabilizer	1500VA	Tronic	@USD 115	5	RAA	Pwani Songwe	Tanzania		Good
6	23, Jun. 2017	Printer	LaserJet Pro M402dn	HP	@USD 585	5	RAA		Tanzania		Good
FY 2018/19											
7	03, Dec. 2018	Server	Pro Liant DL380 Gen10	HP	@TZS 14,752,360	1	ICT, MoA	Ministry of Agriculture,	Tanzania		Good

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No.	Arrival	Name of equipment	Model	Maker	Price	No. Unit	Section	Place	Procurement	Purpose	Status/ Condition*1
8	11, Jun. 2019	UPS	SRT 3000VA	APC	@TZS 7,098,880	1	ICT, MoA	Kilimo4 office in Dodoma	Tanzania	Facilitate activities of TC	Good
FY 2019/20											
9	19, Sep. 2019	UPS	SRT 96V 3kVA RM Battery Pack	APC	@TZS 4,575,450	1	ICT, MoA	Ministry of Agriculture, Kilimo4 office in Dodoma	Tanzania	Facilitate activities of TC	Good

Note *1: These status/ conditions are tentative. Inquiry is under way for the updated status / condition of equipment.

(Equipment for project operation)

No.	Arrival	Name of equipment	Model	Maker	Price	No. Unit	Section	Place	Procurement	Purpose	Status/ Condition
1	11, Dec. 2015	Computer	250 G4	HP	@USD 910	1	DPP	MALF	Tanzania	Project operation	Good
2	11, Dec. 2015	Printer	LaserJet Pro M402dn	HP	@USD 635	1	DPP	MALF	Tanzania	Project operation	Good
3	14, Jan. 2016	Photocopier	TaskAlfa 3010i	Kyocera	@USD 8,772	1	DPP	MALF	Japan	Project operation	Good

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No.	Arrival	Name of equipment	Model	Maker	Price	No. Unit	Section	Place	Procurement	Purpose	Status/ Condition
4	16, Feb. 2016	Projector	EB-S31 LCD	EPSON	@USD 700	1	DPP	MALF	Japan	Project operation	Good

(Equipment procured by JICA)

No.	Arrival	Name of equipment	Model	Maker	Price	No. Unit	Section	Place	Procurement	Purpose	Status/ Condition
FY 2015/16											
1	12, Apr. 2016	Vehicle	Land Cruiser Prado TX-L	TOYOTA	@USD 42,307	2	DPP	MALF	Tanzania	Project operation	Good
FY 2016/17											
2	1, Aug. 2017	Motorcycle	XTZ125	YAMAHA	@TZS 8,214,235	19	RAA	Regions of Dar es Salaam Pwani Mtwara Iringa Ruvuma Songwe Katavi Kigoma Morogoro	Tanzania	Facilitate activities of TC	Good

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No.	Arrival	Name of equipment	Model	Maker	Price	No. Unit	Section	Place	Procurement	Purpose	Status/ Condition
FY 2019/20											
3	25, Feb. 2020	Computer	250G7	HP	@TZS 1,550,049	28	DTER	MoA	Tanzania	Facilitate activities of TC	Good
4	25, Feb. 2020	Printer	LASER JET Pro M404dn	HP	@TZS 531,060	14	DTER	MoA	Tanzania		Good
5	25, Feb. 2020	Projector	EB-S41	Epson	@TZS 1,102,400	14	DTER	MoA	Tanzania		Good
6	25, Feb. 2020	Computer	250G7	HP	@TZS1 1,593,440	5	DPP	MOA	Tanzania	Activities of TC	Good

ANNEX 2: List of Products Produced by the Project

The products produced by the Project are shown as below. The actual products are attached in Separate Volume.

Table A2-1: List of Products Produced by the Project

No.	Name of Products
ANNEX 5	ARDS Newsletter No.1-2
ANNEX 6	ARDS Brochure
ANNEX 7	Operation Guideline ver.12
ANNEX 8	ARDS Web Portal User Manual
ANNEX 9	ARDS Web Portal Operations and Maintenance Technical Manual
ANNEX 10	M&E TWG Action Plan (for FY 2015/16, 2016/17, and 2017/18)
ANNEX 11	Training Material for M&E TWG members
ANNEX 12	VAEO/WAEO format
ANNEX 13	District and Extension Officer's Manual for ARDS
ANNEX 14	Key Crop Calendar (Maize, Paddy, Cassava, Beans and Sunflower)
ANNEX 15	ARDS Basic Data Booklet
ANNEX 16	ARDS2 related documents

ANNEX 3: Project Design Matrix (Version 0)

Title: Project for Capacity Development on Data Collection, Analysis and Data-based Reporting under ASDP

Target Area: Tanzania mainland (All the districts)

Period: Sep 2015 to Aug 2019

Counterpart: MAFC DPP (Units of M&E, Statistics and ICT), ASDP M&E TWG (Monitoring and Evaluation Thematic Working Group), ASLMs, NBS

As of June, 2015

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Policy dialogue in the agricultural sector is enhanced through the improved agricultural statistics including ARDS (Agricultural Routine Data System).	- Number of policy discussion based on the agricultural statistics	- Minutes of sector meetings	
Purpose Utilization of data collected through ARDS is enhanced at central and local level.	1. Number of agricultural reports and plans prepared centrally under ASDP by using ARDS data (e.g. ASR/PER, JSR) 2. Number of DADPs prepared by using the ARDS data (90%) 3. Number of agricultural reports prepared by using ARDS data by LGAs	1. Various reports in the sector (ASR/PER, JIR, etc.) 2. DADP documents /Questionnaire to LGAs 3. Questionnaire to LGAs	1. Forum for sector dialogue (e.g. Joint Sector Review) is established and taken place.
Outputs			
1 Agricultural data are properly collected and submitted through the operation of ARDS.	1-1 Number of timely submission of ARDS data by LGAs 1-2 Proportion of data collected according to the designated methodology/guidance	1-1. ARDS-LGMD2 submission status reports 1-2. Interview and/or questionnaires to WAEO/VAEO	1. DADPs are to be prepared by all LGAs in full scale. 2. Necessary budget for agricultural statistics (including ARDS) is allocated and the surveys are implemented as planned schedule.
2 Agricultural data submitted through ARDS are accessed and shared among the users.	2-1 Number of the trained officials on data processing, analysis and reporting Number of access to and downloading from ARDS-LGMD2 data on the internet 2-2 Number of reports periodically shared by te director level both at central and local level 2-3	2-1. Training reports 2-2. ARDS-LGMD2 access status 2-3. Reports to directors (or through questionnaire)	
3 Harmonization of ARDS with other agricultural statistics is promoted.	3-1 Number of meetings on the rationalizing the ARDS data collection Number of review/study related to ARDS 3-2	3-1. Invitations, Minutes of meetings 3-2 Reviw/study reports	
Activities		Inputs	
1-1 To conduct and improve the periodical monitoring of ARDS data collection and submission by LGAs through status reports of ARDS-LGMD2 with combination of telephone and email communication.	Japanese side 1. JICA Experts -Chief Advisor/Institutional Development -Monitoring and Evaluation -Administrative Data Management -Agricultural Statistics -Coordinator -Other experts as the needs arise 2. Provision of machinery and equipment for ASDP M&E TWG, RS and LGAs. -Equipment necessary for ARDS operation (Central level: vehicles, Local level: personal computers, printers, motorbikes, etc.) 3. Training of counterpart personnel in Japan and /or over the third countries -Agriculture Statistics 4. Local expenses for the Project activities - major upgrade of ARDS-LGMD2 software, etc.	Tanzanian side	1. Adequate amount of budget for ARDS operation is regularly secured by ASLMs and LGAs. 2. ARDS operation is stipulated in the job description of concerned officers of ASLMs. 3. Counterparts and trained regional/ LGA officials, WAEO/VAEO are continuously assigned to the ARDS related jobs. 4. Necessary equipment for ARDS operations at LGAs is maintained in a good condition or provided in a timely manner when renewal is required. 5. ARDS-LGMD2 continues its stable function. 6. ASLMs' ICT environemnt (LAN, email, websites) is properly functioning.
1-2 To provide support (including training, backstopping) to LGAs and Regions to maintain and/or strengthen the capacity for ARDS operation of the officers in charge of ARDS operation.		1. Counterpart personnel M&E TWG members (including Monitoring team, IT team, and Data team(to be formulated))	
1-3 To review the current status of data collection methodology by VAEO/WAEO and promote the adoption of the designated methodology.		2. Office space for JICA experts	
1-4 To upgrade the data checking/cleaning methodology within the ARDS-LGMD2 to minimize abnormal data input.		3. Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA	
1-5 To upgrade and revise ARDS-LGMD2, ARDS Web portal, VAEO/WAEO format and related guidance based on the feedback from the operators.		4. Available data and information related to the Project	
2-1 To revise/improve training materials on data processing and analysis with ARDS Web portal.		5. Running expenses necessary for the implementation of the Project This includes the cost for - maintenance of ARDS-LGMD2 server - upgrade/improvement of ARDS-LGMD2 software - printing and distribution of VAEO/WAEO format	
2-2 To provide training (including TOT) to officers of the central ministries on data processing, analysis, report writing and presentation by utilizing ARDS Web portal.		6. Expenses necessary for transportation within Tanzania of the equipment provided by JICA as well as for the installation, operation and maintenance thereof	
2-3 To provide training to officers at Regions and LGAs on data processing and analysis by utilizing ARDS Web portal.		7. Necessary facilities for the remittance as well as utilization of the funds introduced into Tanzania from Japan in connection with the implementation of the Project in case it is required	
2-4 To conduct periodical monitoring on the access to and downloading data from ARDS-LGMD2.			
2-5 To upgrade the data utilization interface of ARDS-LGMD2 based on the feedback from users.			
2-6 To set up clear mechanism of ARDS reports sharing and put it in place at central and local level for better information sharing within the organizations.			
2-7 To conduct sensitization meetings to ASLMs and other stakeholders.			
3-1 To hold and/or participate in periodical and ad hoc meetings/reviews on agricultural statistics to discuss on the better coordination among the agricultural statistical surveys, ARDS, etc.			
3-2 To rationalize the ARDS data collection (scope and methodology) based on the discussions above (3-1).			
Regional staff : ASDP coordinator, IT specialist, Agricultural Advisor and Livestock Advisor etc. LGAs officials : DAICO, DLFO and WAEO/VAEO.			Pre-Conditions ARDS is continued to be considered as important agricultural data collection method in ASDP M&E Framework at both central and local level.

Project Design Matrix (Version 1) (Proposed part is underlined.)

Title: Project for Capacity Development on Data Collection, Analysis and Data-based Reporting under ASDP

Target Area: Tanzania mainland (All the districts)

Period: Nov. 2015 to June 2019

Counterpart: MALE DPP (Units of M&E, Statistics and ICT), ASDP M&E TWG (Monitoring and Evaluation Thematic Working Group), ASLMs, NBS

As of February, 2016

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Policy dialogue in the agricultural sector is enhanced through the improved agricultural statistics including ARDS (Agricultural Routine Data System).	- Number of policy discussion based on the agricultural statistics	- Minutes of sector meetings	Major changes in agricultural policy that may affect the project implementation are not taken place.
Purpose Utilization of data collected through ARDS is enhanced at central and local level.	1. Number of agricultural reports and plans prepared centrally under ASDP by using ARDS data (e.g. ASR/PER, JSR) 2. Number of DADPs prepared by using the ARDS data (90%) 3. Number of agricultural reports prepared by using ARDS data by LGAs	1. Various reports in the sector (ASR/PER, JSR, etc.) 2. DADP documents /Questionnaire to LGAs 3. Questionnaire to LGAs	
Outputs			
1 Agricultural data are properly collected and submitted through the operation of ARDS.	1-1 Number of timely submission of ARDS data by LGAs 1-2 Proportion of data collected according to the designated methodology/guidance	1-1. ARDS <u>Web-Portal</u> submission status reports 1-2. Interview and/or questionnaires to WAEO/VAEO	
2 Agricultural data submitted through ARDS are accessed and shared among the users.	2-1 Number of the trained officials on data processing, analysis and reporting 2-2 Number of access to and downloading from ARDS <u>Web-Portal</u> data on the internet 2-3 Number of reports periodically shared by director level both at central and local level	2-1. Training reports 2-2. ARDS <u>Web-Portal</u> access status 2-3. Reports to directors (or through questionnaire)	
3 Harmonization of ARDS with other agricultural statistics is promoted.	3-1 Number of meetings on the rationalizing the ARDS data collection 3-2 Number of review/study related to ARDS	3-1. Invitations, Minutes of meetings 3-2 Review/study reports	
Activities		Inputs	
1-1 To conduct and improve the periodical monitoring of ARDS data collection and submission by LGAs through status reports of ARDS <u>Web-Portal</u> with combination of telephone and email communication.	<p>Japanese side</p> <p>1. JICA Experts -Chief Advisor/Institutional Development -Monitoring and Evaluation -Administrative Data Management -Agricultural Statistics -Coordinator -Other experts as the needs arise</p> <p>2. Provision of machinery and equipment for ASDP M&E TWG, RS and LGAs, -Equipment necessary for ARDS operation (Central level: vehicles, Local level: personal computers, printers, motorbikes, etc.)</p> <p>3. Training of counterpart personnel in Japan and /or over the third countries -Agriculture Statistics</p> <p>4. Local expenses for the Project activities - major upgrade of ARDS <u>Web-Portal</u> software, etc.</p>	<p>Tanzanian side</p> <p>1. Counterpart personnel M&E TWG members (including Follow-up team, IT team, and Management team(to be formulated))</p> <p>2. Office space for JICA experts</p> <p>3. Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA</p> <p>4. Available data and information related to the Project</p> <p>5. Running expenses necessary for the implementation of the Project This includes the cost for - maintenance of ARDS <u>Web-Portal</u> server - upgrade/improvement of ARDS <u>Web-Portal</u> software - printing and distribution of VAEO/WAEO format</p> <p>6. Expenses necessary for transportation within Tanzania of the equipment provided by JICA as well as for the installation, operation and maintenance thereof</p> <p>7. Necessary facilities for the remittance as well as utilization of the funds introduced into Tanzania from Japan in connection with the implementation of the Project in case it is required</p>	<p>Pre-Conditions</p> <p>1. ARDS is continued to be considered as important agricultural data collection method in ASDP M&E Framework at both central and local level. 2. ARDS <u>Web-Portal</u> continues its stable function. 3. Counterparts and trained regional/ LGA officials, WAEO/VAEO are continuously assigned to the ARDS related jobs. 4. Necessary equipment for ARDS operations at LGAs is maintained in a good condition or provided in a timely manner when renewal is required. 5. DADPs are to be prepared by all LGAs in full scale.</p>
1-2 To provide support (including training, backstopping) to LGAs and Regions to maintain and/or strengthen the capacity for ARDS operation of the officers in charge of ARDS operation.			
1-3 To review the current status of data collection methodology by VAEO/WAEO and promote the adoption of the designated methodology.			
1-4 To upgrade the data checking/cleaning methodology within the ARDS <u>Web-Portal</u> to minimize abnormal data input.			
1-5 To upgrade and revise ARDS <u>Web-Portal</u> , ARDS Web portal, VAEO/WAEO format and related guidance based on the feedback from the operators.			
2-1 To revise/improve training materials on data processing and analysis with ARDS Web-Portal.			
2-2 To provide training (including TOT) to officers of the central ministries on data processing, analysis, report writing and presentation by utilizing ARDS Web-Portal.			
2-3 To provide training to officers at Regions and LGAs on data processing and analysis by utilizing ARDS Web-Portal.			
2-4 To conduct periodical monitoring on the access to and downloading data from ARDS <u>Web-Portal</u> .			
2-5 To upgrade the data utilization interface of ARDS <u>Web-Portal</u> based on the feedback from users.			
2-6 To set up clear mechanism of ARDS reports sharing and put it in place at central and local level for better information sharing within the organizations.			
2-7 To conduct sensitization meetings to ASLMs and other stakeholders.			
3-1 To hold and/or participate in periodical and ad hoc meetings/reviews on agricultural statistics to discuss on the better coordination among the agricultural statistical surveys, ARDS, etc.			
3-2 To rationalize the ARDS data collection (scope and methodology) based on the discussions above (3-1).			
Regional staff : ASDP coordinator, IT specialist, Agricultural Advisor and Livestock Advisor etc. LGAs officials : DAICO, DLFO and WAEO/VAEO.			

Project Design Matrix (Version 2) (Proposed part is underlined.)

Title: Project for Capacity Development on Data Collection, Analysis and Data-based Reporting under ASDP Target Area: Tanzania mainland (All the districts) Period: Sep 2015 to Oct 2019 Counterpart: MOA DPP (Units of M&E, Statistics and ICT), ASDP M&E TWG (Monitoring and Evaluation Thematic Working Group), ASLMs, NBS				
Narrative Summary		Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal		- Number of policy discussion based on the agricultural statistics	- Minutes of sector meetings	Major changes in agricultural policy that may affect the project implementation are not taken place.
Purpose Utilization of data collected through ARDS is enhanced at central and local level.		1. Number of agricultural reports and plans prepared centrally under ASDP <u>or ASDP2</u> by using ARDS data (e.g. Agriculture Annual Databook, ASDP2 RF, ASDP 2 performance report, ASR/PER, JSR, etc.) (Target: Two throughout project duration) Number of DADPs prepared by using the ARDS data (Target: 90% of published DADPs) 2. Number of LGAs using ARDS Web Portal for preparing regular reports (month, quarter, annual) (Target: 123 LGAs (2/3 of total number of LGAs at the end of project)) 3.	1. Various reports in the sector (ASR/PER, JIR, etc.) (Baseline 0) 2. Questionnaire to LGAs (Baseline 0) 3. Questionnaire to LGAs (Baseline 0)	
Outputs				
1	Agricultural data are properly collected and submitted through the operation of ARDS.	1-1 <u>Percentage (%) of submission of ARDS data (WF01) (Target: 90% average in FY 2018/19)</u> 1-2 Proportion of LGAs that collect production data according to the designated methodology/guidance (Target: 50% of LGAs in July 2019)	1-1. ARDS Web Portal submission status reports (<u>submission rate within two month: Baseline 10.8%, Oct 2015</u>) 1-2. Interview and/or questionnaires to LGAs to check production data of maize and slaughtered cattle (Baseline 0%)	
2	Agricultural data submitted through ARDS are accessed and shared among the users.	2-1 Number of LGAs which use ARDS data (165 LGAs (approx. 90%)) Number of monthly access to ARDS Web Portal on the internet (Target: <u>more than 1,400</u>) 2-2	2-1. Questionnaire to LGAs (Baseline 0 or 0%) 2-2. ARDS Web Portal access status (Access to 'standard report'. monthly 140 in Oct 2015)	
3	Harmonization of ARDS with other agricultural statistics is promoted.	3-1 Number of meetings on the <u>harmonization of the ARDS data with other agricultural statistics (Target: Eight as total of project duration)</u> Number of events/ occasions where ARDS data are used in relation to other agricultural statistics (Target: Four, throughout the project duration) 3-2	3-1. Invitations, Minutes of meetings (Baseline 0) 3-2 Questionnaire to ASLMs and NBS (Baseline 0)	
Activities		Inputs		
1-1	To conduct and improve the periodical monitoring of ARDS data collection and submission by LGAs through status reports of ARDS Web Portal with combination of telephone and email communication.	Japanese side 1. JICA Experts -Chief Advisor/Institutional Development -Monitoring and Evaluation -Administrative Data Management -Agricultural Statistics -Coordinator -Other experts as the needs arise	Tanzanian side 1. Counterpart personnel M&E TWG members (including Monitoring team, IT team, and Data team(to be formulated)) 2. Office space for JICA experts 3. Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA 4. Available data and information related to the Project 5. Running expenses necessary for the implementation of the Project This includes the cost for - maintenance of ARDS-LGMD2 server - upgrade/improvement of ARDS-LGMD2 software - printing and distribution of VAEO/WAEO format 6. Expenses necessary for transportation within Tanzania of the equipment provided by JICA as well as for the installation, operation and maintenance thereof 7. Necessary facilities for the remittance as well as utilization of the funds introduced into Tanzania from Japan in connection with the implementation of the Project in case it is required	
1-2	To provide support (including training, backstopping) to LGAs and Regions to maintain and/or strengthen the capacity for ARDS operation of the officers in charge of ARDS operation.	2. Provision of machinery and equipment for ASDP M&E TWG, RS and LGAs, -Equipment necessary for ARDS operation (Central level: vehicles, Local level: personal computers, printers, motorbikes, etc.) 3. Training of counterpart personnel in Japan and /or over the third countries -Agriculture Statistics 4. Local expenses for the Project activities - major upgrade of ARDS-LGMD2 software, etc.		
1-3	To review the current status of data collection methodology by VAEO/WAEO and promote the adoption of the designated methodology.			
1-4	To upgrade the data checking/cleaning methodology within the ARDS Web Portal to minimize abnormal data input.			
1-5	To upgrade and revise ARDS Web portal, VAEO/WAEO format and related guidance based on the feedback from the operators.			
2-1	To revise/improve training materials on data processing and analysis with ARDS Web portal.			
2-2	To provide training (including TOT) to officers of the central ministries on data processing, analysis, report writing and presentation by utilizing ARDS Web portal.			
2-3	To provide training to officers at Regions and LGAs on data processing and analysis by utilizing ARDS Web portal.			
2-4	To conduct periodical monitoring on the access to and downloading data from ARDS Web Portal.			
2-5	To upgrade the data utilization interface of ARDS Web Portal based on the feedback from users.			
2-6	To set up clear mechanism of ARDS reports sharing and put it in place at central and local level for better information sharing within the organizations.			
2-7	To conduct sensitization meetings to ASLMs and other stakeholders.			
3-1	To hold and/or participate in periodical and ad hoc meetings/reviews on agricultural statistics to discuss on the better coordination among the agricultural statistical surveys, ARDS, etc.			
3-2	To rationalize the ARDS data collection (scope and methodology) based on the discussions above (3-1).			
Regional staff : ASDP coordinator, IT specialist, Agricultural Advisor and Livestock Advisor etc. LGAs officials : DAICO, DLFO and WAEO/VAEO.				Pre-Conditions 1. ARDS is continued to be considered as important agricultural data collection method in ASDP & ASDP2 M&E Framework at both central and local level. 2. ARDS Web-Portal continues its stable function. 3. Counterparts and trained regional/ LGA officials, WAEO/VAEO are continuously assigned to the ARDS related jobs. 4. Necessary equipment for ARDS operations at LGAs is maintained in a good condition or provided in a timely manner when renewal is required. 5. DADPs are to be prepared by all LGAs in full scale.

(version 2)

ANNEX 4: ARDS Succession Plan

ARDS Succession plan (Final Draft)

October 2020
M&E TWG, ASDP2

Background

the Project for Capacity Development on Data Collection, Analysis and Data-based Reporting under ASDP (ARDS Project or the Project) was conducted from October 2015 to date. The progress of the Project is good. Short-term and technical issues are properly addressed.

Long term improvement is still required. So continuous guidance and support under ASDP2 are necessary.

To have sustainable activities, management, budget and technical responsibility needs to be succeeded to government organizations before the end of JICA-sponsored project in Oct 2020.

This succession plan addresses issues upon the termination of the Project in three aspects, namely managerial, financial and technical. Each section consists of issues and actions with a short explanation.

Against the above background, the stakeholders, namely ASLMs, M&E TWG, NCU-ASDP2, consent to the issues concerning the succession of ARDS described below, and recognize shared responsibility under the continued implementation of ARDS.

ARDS Succession Plan

Managerial Aspect

- Monitoring and Evaluation Thematic Working Group (M&E TWG) under ASDP2 will be continuously responsible for coordinating ASLMs on monitoring and evaluation issues, including ARDS. DPP, Ministry of Livestock and Fisheries will be a chairperson of the discussion at the group.
- Secretariat of M&E TWG will be under Assistant Director-MES, Directorate of Policy and Planning, Ministry of Agriculture. Secretariat will take a leading role in managing ARDS and ARDS Web Portal. The functions which have partly been taken care by the Technical Cooperation team (or JICA team) will be fully taken care by the office of DPP, MOA with financial and administrative support from National Coordination Unit (NCU), ASDP2.
- The secretariat of M&E TWG will be deployed by at least two officers who are tasked with the ARDS operation as their primary responsibility.
- The secretariat of M&E TWG will conduct a regular monthly check of the data submission at the LGA level. The checking report will be produced and submitted to the TWG and ASLM management. If the checking reveals any problems, the secretariat should request the Region-in-Charge to communicate with the concerned Regions and/ or LGAs to address the problem.

Or the secretariat contacts directly with the concerned Region/ LGAs for actions.

- The support and guidance to LGAs will be continuously under RS and PO-RALG. Such support and guidance cover administrative (assignment of officers and extension services), budgetary, and effecting of the use of ARDS.
- As for members from all ASLMs and NBS, it is encouraged to reflect issues on improving ARDS to respective officers' OPRAS.
- Discussion on the reorganization of TWGs, including M&E is ongoing. This includes the discussion of chairpersonship and roles of PMO and ASLMs. Director of Government Service (DGB), PMO who is responsible for ASDP2 management assures smooth handing over of responsibilities and operation when such changes happen.
- Promotion of sensitization of ARDS would be a joint responsibility of ASLMs, and PMO, PORALG.
- This managerial setup is documented in Operation Guidance (version 12, 2020), and this would be a guiding document to continue ARDS operations.

Financial Aspect (Budget)

- All ASLMs should secure the necessary budget for managing and operating ARDS and ARDS Web Portal. In principle, all required budget should be brought through a budgetary contribution from each ASLM, NBS and PMO (ASDP2 NCU). Related ministries, regional secretariats and LGAs should properly take the issue of agricultural statistics and M&E, including ARDS into the budget by addressing it in the budget guideline(s).
- IT section, MOA with support from DPP office of MOA, will be responsible for preparing operational and maintenance budget of ARDS Web Portal (System). This includes but not limited to a maintenance contract (necessary maintenance budget for a year under current condition is USD17,500) with UDSM from November 2020 to June 2021 and onwards.
- If need arises, the necessary budget for improving ARDS (system, manuals, formats and backstopping, etc.) will be brought by each sector Ministry (ASLM). IT Section, MOA and Technical Team of M&E TWG will provide technical support if necessary.
- Tentatively necessary budget to run meetings may be brought by NCU, ASDP2 with collaboration with ASLMs.
- PORALG is responsible for securing a budget for LGAs on the operational budget for ARDS.

Technical Aspect

- Issue of submission of good quality data in a timely manner is under the leadership of Secretariat of TWG with support from TWG chair and ASDP2 NCU.
- The quality of data needs continuous attention. The TWG members, especially officers for region-in-charge (RIC), will continuously be engaged in supervising the quality of data through monthly monitoring using the check sheet and data quality management sheet as well as occasional supervising visit.

- The quality of data does not improve in a day. The quality of data will be improved through various instruments developed in the Project, which include monthly check sheet, data quality management sheet, supervising visits and backstopping. In FY 2019/2020, TWG focused main crops (Maize, Paddy, Cassava, and Beans) on improving through a check sheet. This should be expanded to other crops (cash crops, oil crops, etc.) or other crops that need special attention according to the political needs (e.g. cotton or sunflowers).
- The use of data further needs encouragement. The technical departments of ASLM should be provided with username and password. ASLMs should continuously provide regular publication (physically and/or electronically) data booklet from ARDS Web Portal.
- Need to encourage further use of ARDS for various publications
- Continue efforts to harmonize routine data to ARDS, for example, between ARDS and National Food Security Department.
- After a few years of experience, ASLM and NCU should consider restructuring indicators to reduce the collection burden at the local level. The collection and aggregation need to be confined to 'need to know' indicators and exclude 'good to know'.
- IT section of the MOA will be fully responsible for the operation and maintenance of ARDS Web Portal, including managing the outsourced maintenance services. IT section will set up an ARDS HELP DESK as the one-stop window of technical issues for ARDS Web Portal with at least two technical officers.
- IT section further needs attention to the life of the equipment. The main server, which was procured in 2019, does have a product life of 4-5 years. The back-up server which has been bought by the previous project needs replacement very soon. In addition, the IT section should consider making redundancy arrangement for network equipment (i.e. switches, cables and connections). Furthermore, when government village is fully operational with adequate infrastructure, the relocation of the server to the site should be smooth and problem-free. (Preparation includes fully functional Internet connectivity with new global IP, new DNS and firewall setting.)
- PORALG is responsible for supervising the maintenance of PCs in LGAs.
- The training institutes for educating extension officers under MOA and MOLF of ASLMs teach and train the ARDS contents. Collaborating with related departments and authorities, the TWG should work on the following points:
 1. Incorporating the contents into their curriculum
 2. Introducing the ARDS and its contents to the institutions
 3. Providing the departments as well as the institutions with technical support such as the distribution of the data collection format and the extension officer's manual. Conducting a supervising visit to the institutions with the officer of the departments would be preferable.
- The experience to support training institute is expanded to livestock and fisheries subsector. The MLF needs to consider the possibility of securing funding for such activities, and MOA needs to assist MLF to conduct such training.

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

**United Republic of Tanzania
Project for Capacity Development
on Data Collection, Analysis, and
Data-based Reporting under ASDP**

**Project Completion Report ANNEX
Separate Volume (CD)**

November 2020

**Japan International Cooperation Agency
(JICA)**

**International Development Center of Japan Inc.
(IDCJ)**

Oriental Consulting Global Co. Ltd. (OCG)

TZ
JR
20-002

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ASDP Monitoring and Evaluation (M&E)

ARDS NEWSLETTER No. 1 of 2016/17

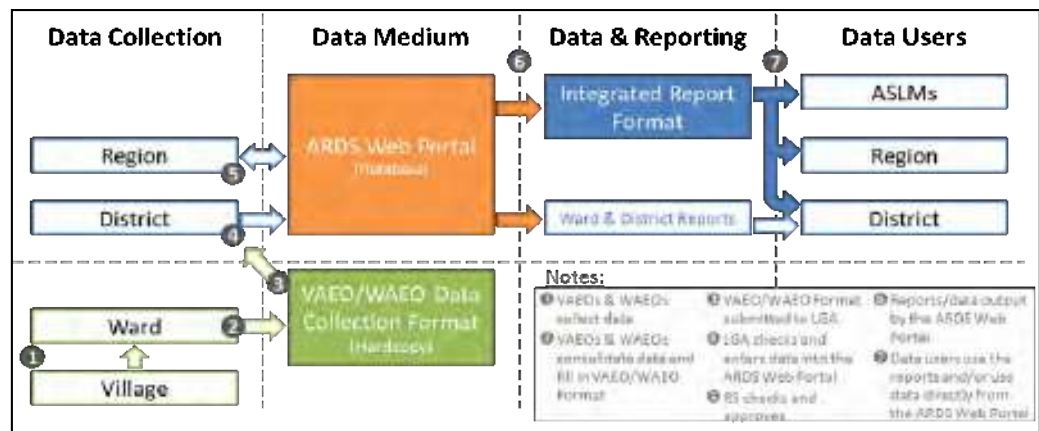
Agriculture Sector Lead Ministries (ASLMs):
 Ministry of Agriculture, Livestock, and Fisheries (MALF)
 Ministry of Industry, Trade, and Investment (MITI)
 President's Office, Regional Administration and Local Government (PO-RALG)
 National Bureau of Statistics (NBS)



1. Introduction

Evidence-based decision-making involves considerable emphasis in gathering figures and quality data. The Agricultural Sector Development Programme (ASDP) Monitoring and Evaluation (M&E) Thematic Working Group has been working to improve the availability of agricultural information through the **Agriculture Routine Data System (ARDS)** since 2008. In ARDS, gathered data in standardized formats flows from the villages/wards to the districts, where it is entered into the web portal and integrated to report formats, allowing data flow to the users (as shown below). **ARDS Web Portal** is a web-based application for capturing, processing, and sharing agricultural data.

ARDS Data Flow Process



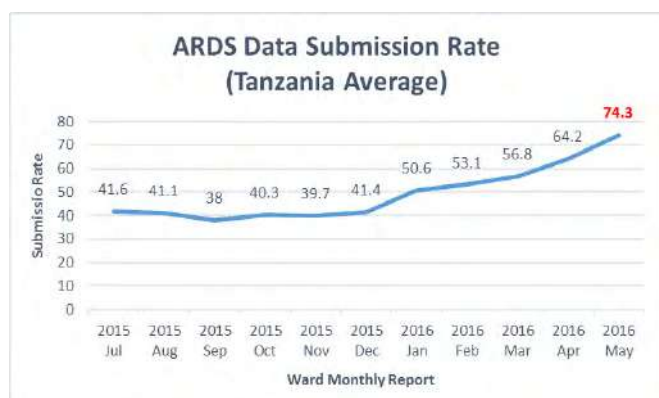
2. Major Improvement of ARDS Web Portal

ARDS Web Portal is in full operation across the country, wherever with Internet connection. The major system improvements for more user-friendly web portal are ongoing to enable the system to operate more efficiently in both data entry and utilization. Currently, any registered users can access ARDS through a link <http://www.ards.go.tz> for entering data (only for LGA level), viewing standard reports, searching data, downloading data with only simple steps.

ARDS Log in Page



Following major improvements recently done in ARDS Web Portal, the submission rate (national average) has increased from 41.4% to 74.3% in the last 6 months. Therefore, the data gathered through ARDS are ready to use for planning and decision making in agricultural sector.



3. Future Outlook

In order to utilize ARDS for evidence-based decision-making, keeping high submission rate is indispensable as the accuracy of data depends on the submission rate among other key factors. The goal for the submission rate, currently about 74%, has been set to reach 90% by the end of June, 2016. To achieve this target, ASDP M&E TWG will continue to monitor monthly ARDS submission status, support LGAs to increase submission rate, and quickly solve issues as they arise.

4. ARDS sustainability

For the sustainability of ARDS web portal operation, ASDP M&E TWG and PO-RALG will ensure that:

- ASDP M&E TWG continues to support ARDS Web Portal including monitoring ARDS operation of LGAs so that agricultural data can be more trusted and utilized for evidence-based decision making at both local and national levels.
- PO-RALG continues to support LGAs to secure sufficient budgets for ARDS including stationaries, distribution, transport and communications, as well as human resources for data entry and monitoring ARDS regular operation.

If you have questions or comments, please contact:

ASDP M&E Thematic Working Group Secretariat
 Ministry of Agriculture, Livestock, and Fisheries, Kilimo Complex 1, Kilimo Street 15471, Dar es Salaam
 Tel: 022 - 286 2074 Fax: 022 - 286 2077

All documents are available at <http://www.kilimo.go.tz/index.html>

ARDS Web Portal: <http://www.ards.go.tz> E-mail: ARDS@kilimo.go.tz

This newsletter is prepared and printed by the ASDP M&E TWG in collaboration with Japan International Cooperation Agency (JICA) through Project for Capacity Development on Data Collection, Analysis and Data-based Reporting under ASDP





Ufuatiliaji na Tathimini (M&E) ASDP

JARIDA LA ARDS Na. 1 La 2016/17

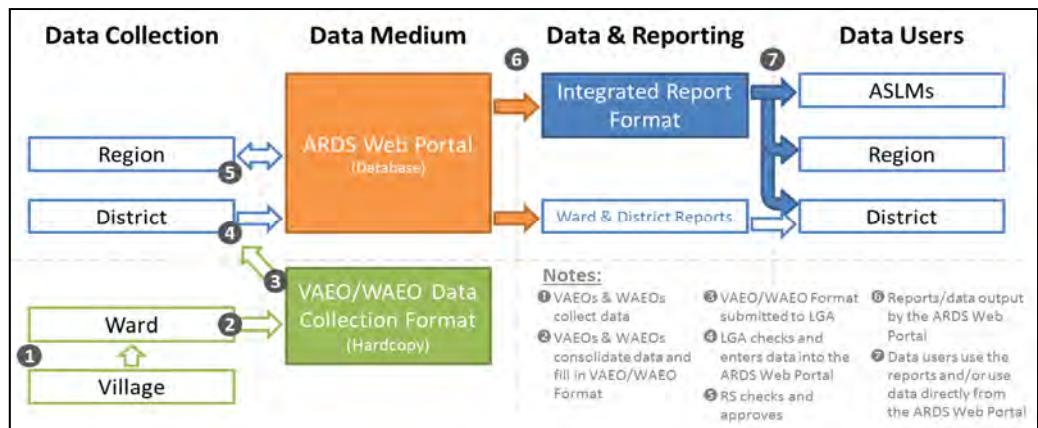
Wizara za Kisekta za Kilimo (ASLMs):
Wizara ya Kilimo Mifugo na Uvuvi (MALF)
Wizara ya Viwanda Biashara na Uwekezaji (MITI)
Ofisi ya Rais Tawala za Mikoa na Serikali za Mitaa (PO-RALG)
Ofisi ya Taifa ya Takwimu (NBS)



1. UTANGULIZI

Utoaji maamuzi kwa kuzingatia ushahidi unahusisha msisitizo mkubwa katika ukusanyaji na ubora wa Takwimu. Kikundi kazi cha ufuatiliaji na tathimini kimekuwa kikifanya Ufuatiliaji na Tathimini (M&E) ya Mpango wa Maendeleo ya Sekta ya Kilimo (ASDP) ili kuboresha upatikanaji wa taarifa za kilimo kupitia **Agriculture Routine Data System (ARDS)** tangu mwaka 2008. Kapitia ARDS, ukusanyaji wa takwimu unafuata mtiririko wa mifumo sanifu kutoka katika vijiji / kata na wilaya, ambapo takwimu na ripoti huingia katika muundo jumuishi. Ambao huruhusu upokeaji wa Takwimu kati yake na watumiaji (kama inavyoonekana hapa chini). Mfumo huu wa **ARDS** ni mtandao msingi wa kupokea maombi, kuhifadhi, na kubadilishana takwimu za kilimo.

ARDS Data Flow Process



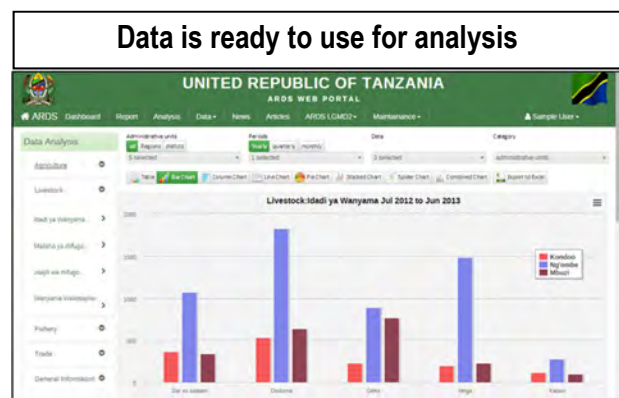
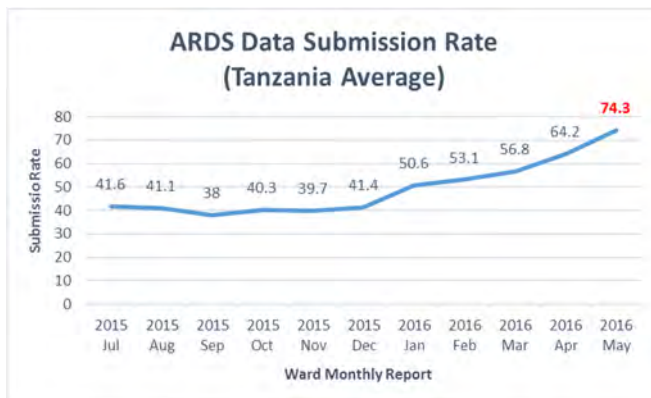
2. Maboresho makuu ya mtandao wa ARDS

Hivi sasa mtandao wa ARDS unafanya kazi nchini kote, katika maeneo yaliyo unganishwa na mtandao wa intaneti. Maboresho makubwa ya mfumo wa mtandao ili uweze kuwa rafiki kwa mtumiaji yanaendelea ili kuwezesha mfumo kufanya kazi kwa ufanisi zaidi katika uingizaji na utumiaji wa takwimu. Hivi sasa, watumiaji wowote waliosajiliwa wanaweza kupata taarifa za ARDS kwa kupitia <http://www.ards.go.tz> kwa ajili ya kuingiza takwimu (kwa ngazi ya halmashauri tu), kuangalia taarifa zenye kiwango, kutafuta takwimu, kupakua takwimu kwa kufuata hatua rahisi tu.

ARDS Log in Page



Takwimu (wastani wa kitaifa) kimeongezeka kutoka 41.4% hadi 74.3% katika miezi 6 iliyopita. Kwa hivyo, Takwimu zilizokusanywa kupitia ARDS ziko tayari kwa kupanga matumizi na kufanya maamuzi katika sekta ya kilimo.



3. Malengo

Ili kutumia ushahidi wa taarifa zitokanzo na ARDS katika kufanya maamuzi, kupanga malengo ya juu uwasilishaji ni muhimu kwakuwa usahihi wa takwimu unategemea kiwango cha uwasilishaji. Kupitia mtandao huu wa ARDS, inategemewa kuwa kiwango cha uwasilishaji wa takwimu kutoka 74% hadi kufikia 90% ifikapo mwisho wa Juni, 2016. Ili kufikia lengo hilo, ASDP M&E TWG itaendelea kufuatilia kila mwezi hali ya uwasilishaji wa ARDS, kuwezesha Serikali za Mitaa kuongeza kiwango cha uwasilishaji, na kutatua kwa haraka masuala kama yanavyojitokeza.

4. Mkakati

Kwa uendeshaji endelevu wa mtandao wa ARDS, ASDP M&E TWG na Ofisi ya Rais Tawala za Mikoa na Serikali za Mitaa (PO-RALG) itahakikisha kwamba:

- ASDP M&E TWG itaendelea kusimamia Mtandao wa ARDS ikiwa ni pamoja na ufuatiliaji wa wake, kuzifuatilia Serikali za Mitaa ili ziweze kukusanya takwimu za kilimo zinazoaminiwa zaidi na kutumika kwa ajili ya kutoa maamuzi yenye kuzingatia ushahidi katika ngazi zote za mitaa na taifa.
- Ofisi ya Rais Tawala za Mikoa na Serikali za Mitaa (PO-RALG) itaendelea kusaidia Serikali za Mitaa ili kupata Bajeti ya kutosha kwa ajili ya mfumo wa ARDS ikiwa ni pamoja na Vifaa vya Ofisi, usambazaji, usafiri na mawasiliano, pamoja na rasilimali watu kwa ajili ya kuingiza Takwimu na Ufuatiliaji wa kazi za ARDS mara kwa mara.

Kwa maswali au maoni, tafadhali wasiliana na:

Kikundi Kazi cha ASDP M&E

Wizara ya Kilimo Mifugo na Uvuvi, Kilimo Complex 1, Mtaa wa Kilimo 15471, Dar es Salaam

Simu: 022 - 286 2074 barua pepe: 022 - 286 2077

Nyaraka zote zinapatikana katika <http://www.kilimo.go.tz/index.html>

Mtandao ARDS: <http://www.ards.go.tz>

Barua pepe: ARDS@kilimo.go.tz

jarida hili limeandaliwa na kuchapishwa na ASDP M & E TWG kwa kushirikiana na

Shirika la Misaada la Japan (JICA) kupitia

Mradi wa Maendeleo ya Uwezo juu ya ukusanyaji wa takwimu, Uchambuzi na uwasilishaji wa Taarifa chini ya ASDP





ARDS NEWSLETTER No. 2

Agriculture Sector Lead Ministries (ASLMs):
Ministry of Agriculture, Livestock, and Fisheries (MALF)
Ministry of Industry, Trade, and Investment (MITI)
President's Office, Regional Administration and Local Government
(PO-RALG)
National Bureau of Statistics (NBS)



1. Achievements and activities of the last fiscal year (2016/17)

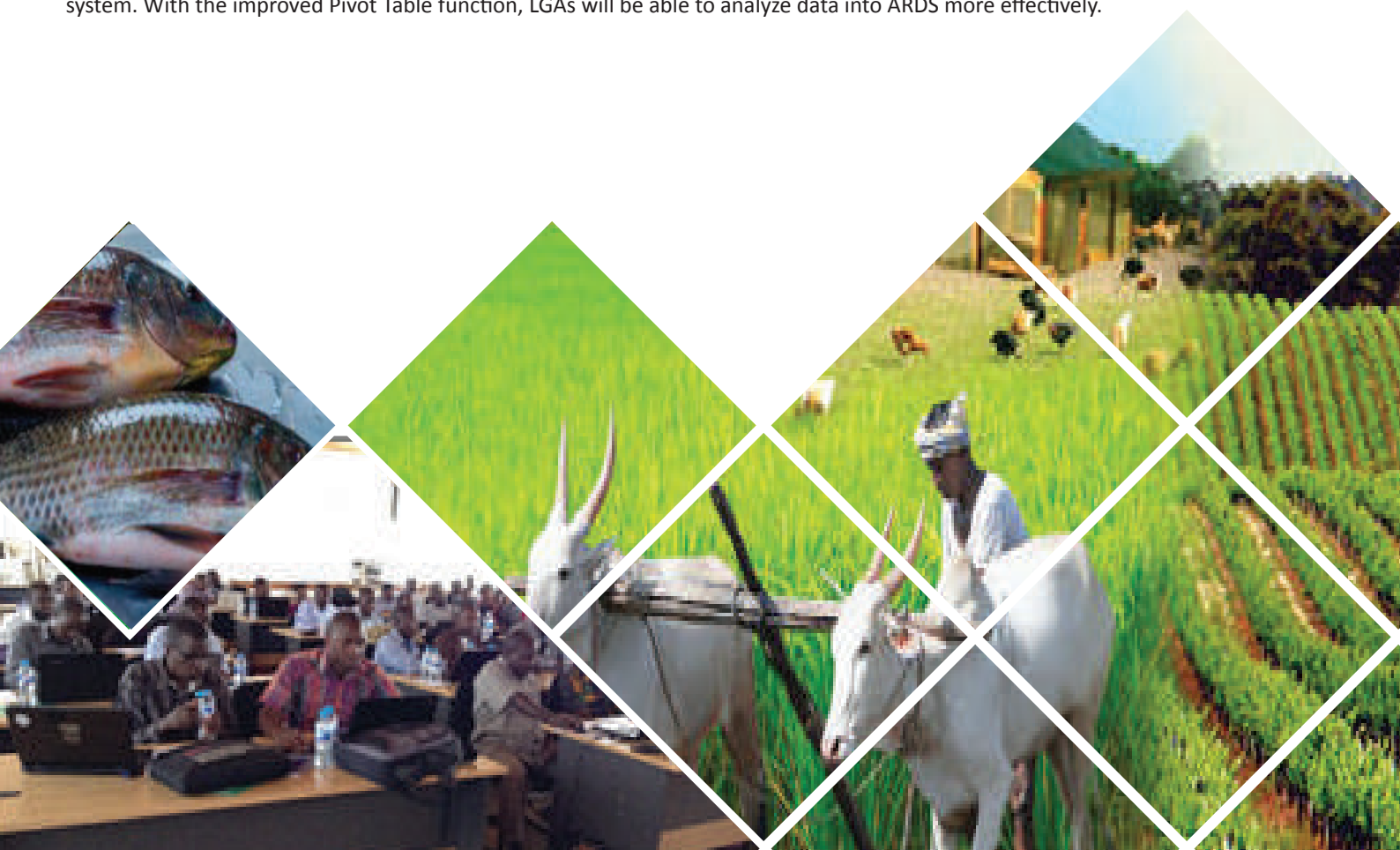
In 2016/2017 fiscal year, the ASDP M&E Thematic Working Group (TWG) continued to improve the availability of agricultural information through the Agriculture Routine Data System (ARDS). The TWG focused on training of LGA officers to further improve their capacity and strengthening monitoring of data collection and submission by LGAs. To ensure the sustainability and support to ARDS by LGAs, socialization workshops on ARDS were organized to Regional Commissioners (RC's), District Commissioners (DC's), Administrative Secretariats (RAS's) and District Executive Directors (DEDs) from all Regions and District Councils in Tanzania. These workshops aimed at engaging the Regional Authorities and District Councils to own the system and allocate sizable budget to support the operations of the system. In these sensitization workshops, RC, RAS and DEDs were impressed by usefulness of ARDS and indicated their commitments to continue supporting the system. The TWG appreciates cooperation from all stakeholders on ARDS operation and would like to ask for your continued support for ARDS in the next fiscal year 2017/18.

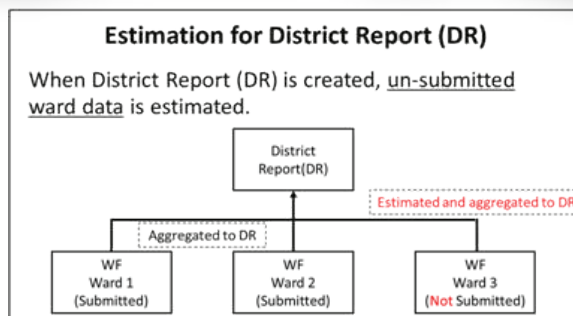
2. New ARDS web portal is on debut!

The ASDP M&E TWG and Japan International Cooperation Agency (JICA) has continued to work with Department of Computer Science and Engineering of University of Dar es Salaam (UDSM) to upgrade ARDS Web Portal. Issues in calculation have been solved and standard reports are completely available. The Web Portal has been upgraded with the following new features:

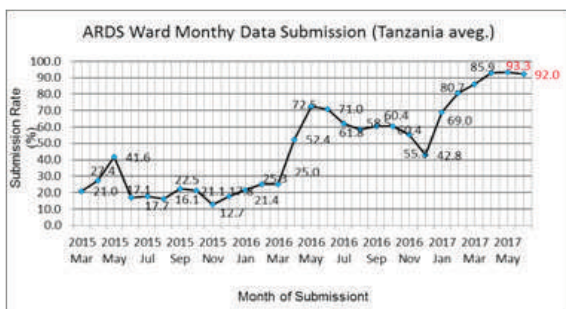
- (1) A function to estimate district data when a few wards do not submit data
- (2) Complete / Undo Complete process, Validation Rules, and Trigger to create District Reports
- (3) A communication tool, "Message board" between Central/Regional officer and LGAs

Through estimation function, the ARDS Web Portal has been made user friendly. Currently, following the improvement, users can generate standard reports. Functions such as Regional Report and Pivot Table Analysis are now being upgraded and integrated into the system. With the improved Pivot Table function, LGAs will be able to analyze data into ARDS more effectively.





3. Data submission rate exceeded 90%



In using any data, the amount of data is critical. In order to foster using data generated by ARDS, the ASDP M&E TWG members have continued to guide LGA officers to submit the data into ARDS Web Portal in time. These efforts have resulted into more improvements of the quality and amounts of data in ARDS. The submission rate is now registered at more than 90% using of ARDS WF01 data submission form. More improvements of the system involve data submission of Quarterly forms (WF02, DF02) and Annual Forms (WF03, DF03). Next step is to improve submission rates of Quarterly and Annual forms to obtain District/Regional/National Integrated Reports (DIR, RIR, and NIR).

4. Nationwide training for ARDS Users

Continuing from last fiscal year the ASDP, M&E TWG also conducted backstop training twice this fiscal year 2016/17. The first backstop training organized for DS and DMEO aimed at updating the participants with new improvements done on ARDS. These improvements included creation of standard reports. The second training was organized for executive officers in LGAs such as DED, DAICO and DLFDO. The aim of this training to engage the district policy makers to understand and support the operations of ARDS by allocating budgets for ARDS each year

5. Towards utilization of ARDS data

The major system improvements for more user-friendly web portal are ongoing to enable the system to operate more efficiently in both data entry and utilization. Following these improvements, current submission rate has increased to more than 90%. Thus, as implementation of the Agriculture Sector Development Programme phase 2 (ASDP II) is expected to kick-start this year, it is envisaged that ARDS will be one of the main sources of data for monitoring the progress of ASDP II. The TWG will continue to strengthen ARDS so that adequate, reliable and accurate data can be available for decision makers and stakeholders.

If you have questions or comments, please contact:

ASDP M&E Thematic Working Group Secretariat,
 Ministry of Agriculture, Livestock, and Fisheries, Kilimo Complex 1
 Officer Tel: 0624 - 161412
 Officer Tel: 0754 - 007008
 JICA Project Office Tel: 022 - 2862881
 ARDS Web Portal: <http://www.ards.go.tz> E-mail: ARDS@kilimo.go.tz

This newsletter is prepared and printed by the ASDP M&E TWG in collaboration with Japan International Cooperation Agency (JICA) through Project for Capacity Development on Data Collection, Analysis and Data-based Reporting under ASDP





JARIDA LA ARDS TOLEO LA 2

Wizara za Sekta ya Kilimo (WSK):
Wizara ya Kilimo, Mifugo na Uvuvi (WKMU)
Wizara ya Viwanda, Biashara, na Uwekezaji (WVBU)
Ofisi ya Rais, Tawala za Mikoa na Serikali za Mitaa (TAMISEMI)
Ofisi ya Taifa ya Takwimu (NBS)



1. Mafanikio na Kazi zilizofanyika kwa mwaka wa fedha uliopita (2016/17)

Kwa mwaka wa fedha wa 2016/2017, Kikundi Kazi cha Ufuatiliaji na Tathmini cha Programu ya Kuendeleza Sekta ya Kilimo (ASDP M & E (TWG)) kiliendelea kuboresha upatikanaji wa taarifa na takwimu za sekta kilimo kupitia Mfumo wa Takwimu za Kilimo (ARDS). Kikundi Kazi hiki kilijielekeza katika kuboresha uwezo wa Halmashauri zote nchini kusimamia ukusanyaji wa takwimu na uwasilishaji wa taarifa. Ili kuhakikisha usimamizi endelevu na madhubuti wa Mfumo wa Takwimu, warsha za kujenga uelewa zilifanyika kwa Wakuu wa Mikoa, Makatibu Tawala wa Mikoa, na Wakuu wa Wilaya na Wakurugenzi Watendaji wa Halmashauri zote nchini. Warsha hizi zililenga kuzileta pamoja Mamlaka za Maamuzi za Mikoa na Halmashauri za Wilaya kutumia mfumo huu na kutenga bajeti ya kutosha ya kusaidia shughuli za kila siku za ARDS. Kupitia warsha hizi washiriki walivutiwa na namna mfumo wa ARDS unavyofanya kazi. Washiriki pia waliahidi kuendelea kuunga mkono jitihada hizi. Kikundi Kazi kinathamini ushirikiano kutoka kwa wadau wote katika uendeshaji wa ARDS na kingependa kuwaomba kuendelea kutoa ushirikiano thabiti kuhakikisha mfumo huu unaendelea kutumika kukusanya takwimu za kilimo.

2. Maboresho mapya kwa Mfumo wa Takwimu na Taarifa "ARDS Web Portal"

Kikundi kazi (ASDP M & E TWG) kwa kushirikiana na Shirika la Kimataifa la Ushirikiano la Japan (JICA) wameendelea kufanya kazi na Chuo Kikuu cha Dar es Salam, Idara ya Sayansi ya Kompyuta kuboresha Mfumo wa Takwimu (ARDS Web-portal). Changamoto za awali za majumuisho ya takwimu zimeshatatuliwa na sasa taarifa rasmi zinapatikana kirahisi. Maboresho yaliyofanywa katika mfumo ni kama pamoja na haya yafuatavyo:

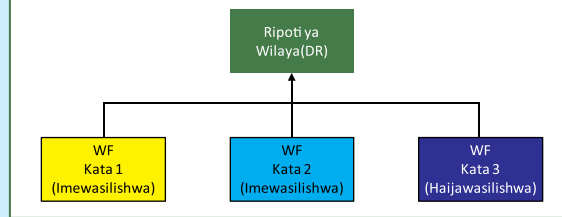
- (1) Kuongeza uwezo wa mfumo kukadiria takwimu za Wilaya pale ambapo kata chache zimeshindwa kuwasilisha takwimu.
- (2) Kuruhusu kuwasilishwa kwa takwimu zilizokwishajazwa.
- (3) Kubatilisha takwimu zilizosafirishwa tayari na kuamuru ripoti zitengenezwe.
- (4) Eneo maalum katika mfumo kwa ajili ya mawasiliano ya maandishi kati ya afisa wa Serikali kuu/Mikoa na Halmashauri.

Kupitia kitufe cha kukadiria takwimu, mfumo wa ARDS Web-portal umekuwa rahisi kwa mtumiaji. Kufuatia maboresho haya, mtumiaji pia anaweza kutengeneza taarifa rasmi na kutengeneza ripoti rasmi za mikoa kutumia jedwali la 'pivot' zilizoboreshwa. Kupitia Jedwali hilo

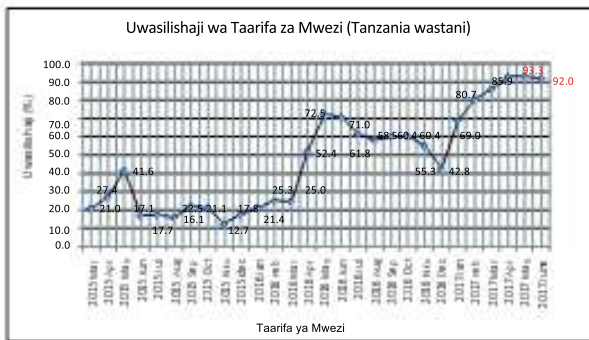




Jinsi ya kutengeneza taarifa za Wilaya (DR)



3. Kiwango cha uwasilishaji taarifa kimevuka 90%



Ili kuongeza matumizi ya takwimu zitokanazo na ARDS, timu ya ASDPM&E TWG, imeendelea kuwahimiza maafisa wa Halmashauri kuwasilisha takwimu kwa wakati. Jithada hizi zimesaidia kuongeza ubora na kiasi cha takwimu kwenye mfumo wa ARDS. Kiwango cha uwasilishaji kimeongezeka hadi asilimia 90 kwa fomu za taarifa za mwezi (WF01). Maboresho zaidi ya mfumo yanahimiza uwasilishaji wa Fomu za kila robo mwaka (WF02, DF02) na Fomu za kila Mwaka (WF03, DF03). Hatua inayofuata ni kukuza viwango vya uwasilishaji wa fomu za robo mwaka na zile za kila mwaka kwa ajili ya kupata ripoti zilizounganishwa za Wilaya/ Mkoa/ na Taifa (DIR, RIR, na NIR).

4. Mafunzo ya Kitaifa kwa watumiaji wa ARDS Web Portal

Kwa kuzingatia kazi za mwaka wa fedha uliopo, timu ya ASDP M&E TWG pia ilifanya mafunzo mara mbili kwa mwaka huo wa fedha 2016/17. Awamu ya kwanza ya mafunzo yalifanyika kwa watakwimu(DS) wa Halmashauri na maafisa ufuatiliaji na Tathmini (M&E) wa Halmashauri kwa lengo la kuwafahamisha kuhusu maboresho mapya yaliyofanyika kwenye mfumo. Maboresho haya yalijumuisha utengenezaji wa taarifa. Awamu ya pili ya mafunzo yaliwalenga Watoa maamuzi/Watendaji Wakuu wa Halmashauri kama vile Wakurugenzi Watendaji wa Halmashauri, Miji na Majiji na Wakuu wa Idara za Kilimo na Mifugo. Lengo la mafunzo haya lilikuwa ni kuwashirikisha watunga sera katika ngazi ya Wilaya kuelewa na kuwa tayari kugharimia na kutenga bajeti stahiki kwa ajili ARDS kila mwaka.

5. Kuelekea Matumizi ya takwimu/taarifa za ARDS Web Portal

Maboresho makubwa kwa ajili ya kutengeneza mfumo rafiki wa ARDS yanaendelea. Lengo ni kuwezesha mfumo kufanya kazi kwa ufanisi zaidi katika kukusanya takwimu na matumizi yake. Hivyo, kwa kuwa utekelezaji wa Mpango wa Kuendeleza Sekta ya Kilimo Awamu ya Pili(ASDP-II) unatarajiwa kuanza mwaka huu, inatarajiwa kuwa ARDS itakuwa moja ya vyanzo vikuu vya takwimu kwa ajili ya ufuatiliaji wa maendeleo ya ASDP-II. Timu ya ASDP M&E TWG itaendelea kuimarisha mfumo huu ili takwimu za kutosha, kuaminika, zinazopatikana kwa wakati na sahihi ziweze kupatikana kwa watunga sera na wadau wote kwa ujumla.

Kama una maswali au maoni, tafadhali wasiliana na:

Kikundi Kazi cha Ufuatiliaji na Tathmini cha Programu ya Kuendeleza Sekta ya Kilimo (ASDP M & E TWG)
Wizara ya Kilimo, Mifugo na Uvuvi (WKMU)

Afisa simu: 0742 - 161412

Afisa simu: 0754 - 007008

Simu ya Mradi (JICA): 022 - 2862881

Mfumo wa Takwimu (ARDS Web-portal)

Tovuti: <http://www.ards.go.tz> Barua pepe: ARDS@kilimo.go.tz

Jarida hili linaandaliwa na kuchapishwa na ASDP, M&E na TWG kwa kushirikiana na JICA kupitia Mradi wa Maendeleo ya Uwezo wa Ukusanyaji wa Takwimu, Uchambuzi na Taarifa za Takwimu chini ya Programme ya Kuendeleza Sekta ya Kilimo (ASDP)

ANNEX6: ARDS brochure

Agriculture

Routine

Data

System



ASDP M&E Thematic Working Group

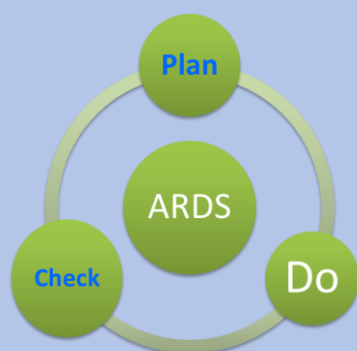
With Support from Japan International Cooperation Agency

Improved Agriculture Routine Data System (ARDS): Highlights

1. Background and Overview

Agricultural Routine Data System (ARDS) is a data collection and reporting system of Tanzania's agricultural sector. The agricultural extension officers in villages and wards collect data¹ during their field work and submit them in a regular interval to the headquarter of the Local Government Authorities (LGA). The system has been improved remarkably since the beginning of the Agricultural Sector Development Programme 1 (ASDP1).

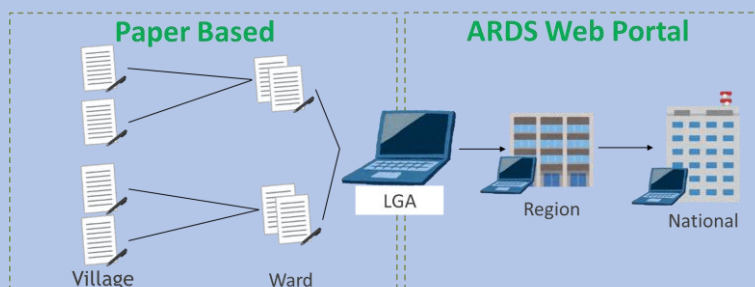
At the onset of ASDP1, the Agricultural Sector Lead Ministries (ASLMs) set up the Monitoring and Evaluation Thematic Working Group (M&E TWG) to monitor Programme's progress and impacts of events.



While preparing the ASDP M&E Framework and Guidelines and conducting regular field monitoring, the TWG also engaged in a project of revitalizing ARDS. During the pilot stage of the project, data items were carefully chosen, and a set of standardized data forms were designed. Data flow was also specified with clear reporting cycles. In the national roll-out stage, the improved ARDS was introduced to all LGAs with the designed forms and data processing software. Next came the operationalizing stage where the software and other aspects of ARDS

have further been improved. LGAs have continuously been encouraged to operate ARDS by repeated training and close supervision by the TWG. Throughout this project, substantial resources were directed to the improvement of the data processing system, which is now a web-based central database (ARDS Web Portal) with stable and user-friendly functions. The system maintains a central server at the national level, where all data are stored and accessible by users for reporting and analysis. With these improvements, ARDS is now in reliable operation and LGAs across the country utilize the data.

The field officers collect data at villages and wards and record in paper-based data entry forms. They submit data to the LGA headquarters. Also, LGA officers collect District level data. The District Statisticians (DS) and the District M&E officers (DMEO) who are responsible



for ARDS operation at LGAs enter data into the ARDS Web Portal. The data are then formally registered to the ARDS database once approved by the Regional Office. The work takes place regularly at frequencies of monthly, quarterly and annual. These data are assembled to the Integrated Reports by ARDS Web Portal. Collected data are used at various levels of the Government, LGAs, Regional Administrations and Ministries for monitoring plans and implementation.

¹ The data are called administrative data as they are gathered as part officers' administrative work.

2. Main Characteristics

- **Wide**
 - The data available through ARDS is limited but covers various aspects of the sector; not only production data but plant/ livestock health, trade, irrigation, extension services and other qualitative data. Table 1 presents main indicators and information that ARDS is collecting/ reporting.
 - Data are collected from villages and wards, based on extension workers' regular (monthly, quarterly, and annual) reports and be aggregated to district, region and national level.
- **Frequent and Fast**
 - Data are collected monthly, quarterly and annually, so that updated data are always available.
- **User friendly**
 - How to use the Web Portal is intuitive and self-explanatory. Reporting and tabulation functions are user-friendly for officers who are not very familiar with computer.
- **Sustainable**
 - Based on the existing system of extension officer's wide network, ARDS does not require large additional cost to operate and maintain.
 - The Web Portal database has been developed by an open-source software by Tanzanian developer. If necessary, modification will be undertaken by Tanzanian resources.

3. Data Coverage

Table 1 present a list of information available through ARDS from villages and wards.

Table 1: Information available through ARDS

Monthly	Quarterly	Annual
Crop (Target, Planted Area, Harvested Area, Yield, Production, and Price) Plant Health Situation Livestock Slaughtered Meat Inspection Livestock Products Livestock Health Fish Farming	Food Situation Extension Services Biological Control Measures Irrigation (Area, production) Situation of Soil Erosion Cultivated area and means of cultivation	Population Irrigation (Water Source, Area, IO) Contract farming Agriculture/Livestock/ Fishery Machines Situation of Farmers Field School Production Input Livestock Population Livestock Infrastructure Grazing Land Pasture Dissemination of Agricultural Information
District Integrated Quarterly Report		District Integrated Annual Report
Livestock Movement (a) Livestock Movement (b) Livestock Auction Marketing of Livestock Products Livestock Inputs (a) Animal Feeds, Acaricides, Vaccines and Treatment (b). Inputs for reproduction of improved livestock Farmers Group (SACCOS, others)		Food Situation Oxenization Centres and Tractor Hiring Services Extension Services (a) Number of Extension Officers (b) Level of Education (c) Working Facilities/ Equipment (e) Number of Extension Officers Trained (h) Non-Government Agricultural Extension Service Providers Livestock Population (Large Scale Farmers) (on June 30th) Livestock Products Processing Plants / Units Livestock Infrastructure and Status Grazing Land Pasture (Crop Residues) Number of Ward Agricultural Resource Centers

5. Main screens of ARDS

Screenshots (Image) of ARDS.

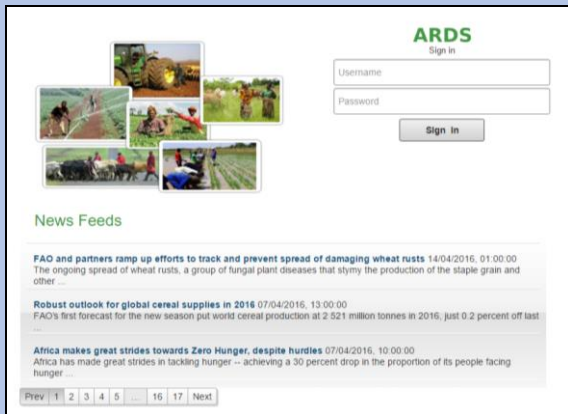


Figure 1: Log in Screenshot

Data is protected by user name & password

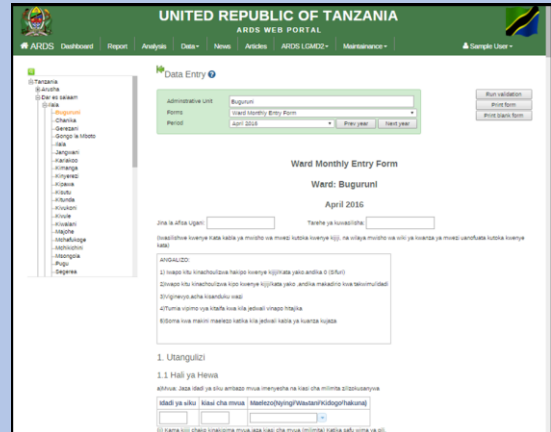


Figure 2: Entry Screen

Officers can enter data through easy-to-use screen

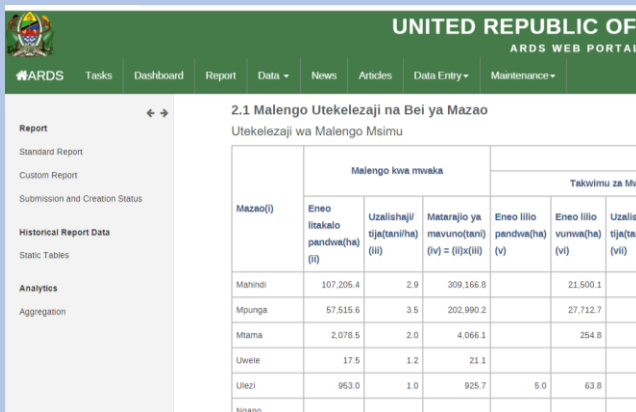


Figure 3: Standard Report (Regional Report)

After entry of data, all levels of Government officer can retrieve reports.

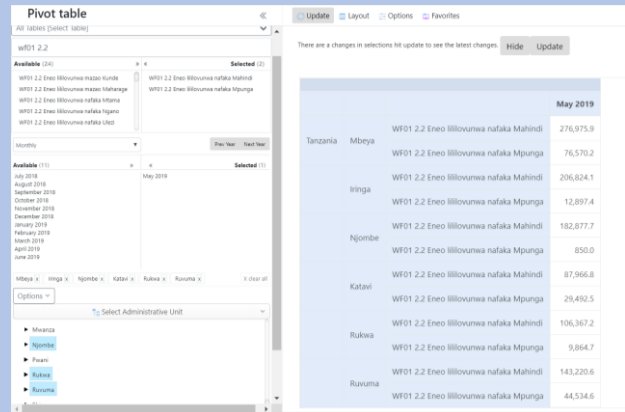


Figure 4: Pivot Table

The web portal has strong analysis tool, pivot table.

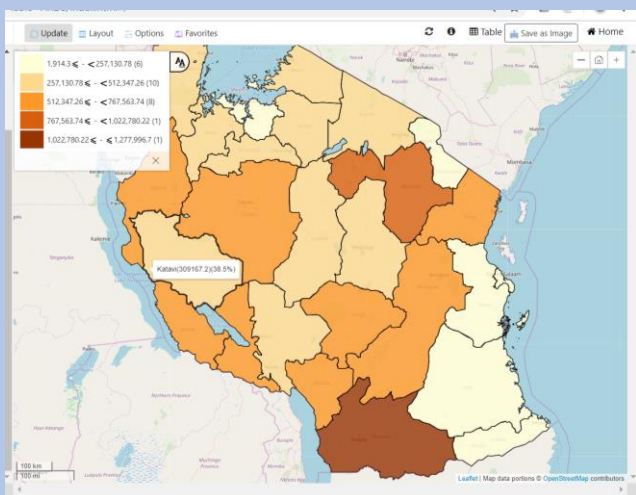


Figure 5: GIS

The Web Portal can show some data on the map.

ANNEX7: Operation Guideline ver.12

United Republic of Tanzania



**AGRICULTURAL SECTOR DEVELOPMENT PROGRAM
(ASDP)**

**AGRICULTURAL ROUTINE DATA SYSTEM
(ARDS)**

OPERATION GUIDE

(Ver. 12)

Final

October 2020

ASDP M&E THEMATIC WORKING GROUP

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(17) Communications among LGAs, Regions and National Level (M&E TWG)	30
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Attachment:

1. The letter “MFUMO WA UPATIKANAJI WA TAARIFA ZA SEKTA YA KILIMO NCHINI (AGRICULTURAL ROUTINE DATA SYSTEM - ARDS)” issued from PMO-RALG on 09/25/2014
2. Extension Officer s Manual
3. VAEO/ WAEO Formats
4. District Officer’s Manual
5. Budget table
6. Data Quality Management Sheet
7. Crop List and Definition
8. Conversion table

ACRONYM

ARDS	Agricultural Routine Data System
ASDP	Agricultural Sector Development Programme
ASLMs	Agricultural Sector Lead Ministries (MOA, MOLF, MITI and PO-RALG)
BFSC	Basket Fund Steering Committee
DADP	District Agricultural Development Plan
DAICO	District Agriculture, Irrigation and Cooperative Officer
DLFDO	District Livestock and Fisheries Development Officer
DC	District Council
DC	District Commissioner
DED	District Executive Director
DLFDO	District Livestock and Fishery Development Officer
DME0	District Monitoring and Evaluation Officer
DPLO	District Planning Officer
DPP	Department / Director of Policy and Planning
DP	Development Partner
DS	District Statistician
FAO	Food and Agriculture Organization
FY	Fiscal Year
GoT	Government of Tanzania
IT	Information Technology
JICA	Japan International Cooperation Agency
LGA	Local Government Authority
LGMD	Local Government Monitoring Database
MAFC	Ministry of Agriculture, Food Security and Cooperatives (-2016)
M&E	Monitoring and Evaluation
MC	Municipal Council
MALF	Ministry of Agriculture, Livestock and Fisheries (2016-2017)
MITI	Ministry of Industry, Trade and Investment
MLFD	Ministry of Livestock and Fisheries Development (-2016)
MOA	Ministry of Agriculture (2017-)
MOLF	Ministry of Livestock and Fisheries (2017-)
NBS	National Bureau of Statistics
NSCA	National Sample Census of Agriculture
PDM	Project Design Matrix
PO-RALG	President's Office - Regional Administration and Local Government
RAA	Regional Agriculture Advisor
RAS	Regional Administrative Secretary
RLA	Regional Livestock Advisor
RS	Regional Secretariat
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
TOT	Training of Trainers
TWG	Thematic Working Group
VADP	Village Agricultural Development Plan
VAEO	Village Agricultural Extension Officer
WAEO	Ward Agricultural Extension Officer

CHAPTER I

1. Introduction

1.1 Purpose of the ARDS Operation Guide

The ARDS Operation Guide is an official guidance document for the operation of the ARDS which is formally authorized for the agricultural data collection at LGA level by the government letter “MFUMO WA UPATIKANAJI WA TAARIFA ZA SEKTA YA KILIMO NCHINI (AGRICULTURAL ROUTINE DATA SYSTEM - ARDS)” issued from PMO-RALG on 09/25/2014 (Attachment 1.). The purpose of this Guide is to provide guidance and direction on how to operate and use ARDS in practical terms. The ARDS operation must follow and be ruled by this document.

1.2 Scope of the ARDS Operation Guide

The areas and subjects covered by this document are as follows.

Table 1: Scope of the ARDS Operation Guide

No.	Area/Subject
1.	Introduction
1	Purpose of the ARDS Operation Guide
2	Scope of the ARDS Operation Guide
2	Outline of ARDS
1	Purpose of ARDS
2	Composition of ARDS
3	Institutional Setting of ARDS
4	Data to be Collected
5	Flow of ARDS Data
3	ARDS Operational Actors and Responsibilities
1	LGA level
2	Regional level
3	National level
4	Operational Components (Key Actions in the ARDS Operation)
0	Operation cycle
1	Budgeting
2	Format distribution
3	Data collection
4	VAEO/ WAEO data submission/ reception
5	Data quality check
6	Feedback
7	Data entry to ARDS Web Portal
8	Monitoring of Data Submission
9	Report Production
10	Data Transmission and Submission
11	Data Approval, Cancellation of Approval and Re-approval
12	Fiscal Year End Lock (Annual Data Lock)
13	Data Analysis and Utilization (Benefit of ARDS)
14	Data Management
15	Campaign and Promotion of ARDS
16	Maintenance and Improvement of ARDS
17	Communications among LGAs, Regions and National level
	Contacts on ARDS issues
	Other materials relevant to ARDS

This Guide is intended to actors of all administrative levels relevant to the ARDS operation. Major officers of the levels are summarized below.

- Field level: Village Agricultural Extension Officer (VAEO) and Ward Agricultural Extension Officer (WAEO)),
- LGA HQ level: District¹ Agriculture, Irrigation and Cooperative Officer (DAICO),

¹ This guide does not distinguish LGA and District. District includes district, municipality, town, and city.

District Livestock and Fisheries Development Officers (DLFO), District M&E officer (DMEO), District Agricultural Statistician (DS), District Subject Matter Specialists in agriculture, and any other district officers related to agriculture sector²).

- Regional level: Regional Agricultural Advisor (RAA), Regional Livestock Advisor (RLA),
- National level: Officers of Agricultural Sector Lead Ministries (ASLMs)³ and NBS, in particular the M&E TWG, the IT Section and the M&E Section (or section responsible for statistics) of ASLMs.

This Guide should be referred to whenever the actors engage in the ARDS operation.

This Guide will be routinely reviewed and revised as needs arise. This version 12 is the latest version as of Year 2020 (September).

² In this guide, agricultural data means data on crop, livestock and fisheries sub-sectors.

³ Under ASDP2, ASLMs consist of Ministry of Agriculture, Ministry of Livestock and Fisheries, Ministry of Industry and Trade, Ministry of Water, Ministry of Lands, Housing and Human Settlements Development, and President Office – Local Government and Regional Administration.

CHAPTER II

2. Outline of ARDS

2.1 Purpose of ARDS

The present ARDS to which this Guide specifies the operation is an improved version of the previously existing one. The present ARDS brings improvement by introducing the followings:

- Standardized formats of data collection with clear definitions of data to be collected
- Clear instruction on the method and channels of data collection, compilation and transmissions.
- Electronically arranged data/ report transmission, browsing and utilization system.

Data collection and reporting are an integral part of Monitoring and Evaluation (M&E) and Statistics for an agricultural development policy and planning. In order for M&E to be effective, the data collected must be accurate, up to date, and accessible. The ARDS has been re-activated with improvement for this purpose.

The purposes of this improved ARDS can be summarized as follows.

- ❑ To provide agricultural data on a timely manner for district officers for their reporting, analysing, planning, monitoring and evaluation of the agricultural sector.
- ❑ To provide agricultural data for regional and central government officers for their overall reporting, analysing, monitoring and planning of the agricultural sector.
- ❑ To improve resource utilization (money, manpower and time) by having a uniform and comprehensive data collection system in the agricultural sector.
- ❑ To help stakeholders make proper decisions at all administrative levels from village up to national level.
- ❑ To provide information so that national and regional level estimates of annual sample surveys are broken down to district estimates.
- ❑ To provide data to ASDP 2 (or any other national policies) so that stakeholders can adequately monitor progress of ASDP 2 (or any other national policies) through its Results Framework (RF).

2.2 Composition of ARDS

The ARDS is composed of:

- ❑ The VAEO/WAEO Format (for the data collection at Mtaa/Village/Ward levels),
- ❑ The District Integrated Report (compiles data at District level), and
- ❑ ARDS Web Portal (a website for ARDS data entry and data/report browsing and utilization).

ARDS Web Portal URL:

<https://ards.kilimo.go.tz/dhis-web-commons/security/login.action>

2.3 Institutional Set-up of ARDS

The ARDS operation requires following sets of institutional arrangements (offices and officers with duties) described in an ascending order of the administrative structure. *Details of their duties are described in Section 3.*

Village: Village Agricultural Extension Officer (VAEO) (or Village Executive Officer (VEO)) collects data from village level. Village Registry⁴ is a good source of data, and to be

⁴ Village Registry is a book of basic data of a village containing information about all the people in the village and

updated regularly.

Ward: Ward Agricultural Extension Officer (WAEO) is responsible for receiving data from VAEO and consolidates them to ward level data. When some/ all villages under specific WAEO's coverage do not have assigned VAEO, the WAEO is responsible for data collection in all village level under her/him.

District (LGA): There are DAICO and DLFO. The office has both DMEO and DS. DAICO/ DLFO is staffed with sufficient number of officers who can guide and supervise field extension officers as well as process the data at district office.

DAICO and DLFO jointly assume entire responsibility for the ARDS operation including its budgeting, data collection, data quality, data entry, analysis, reporting and transmission to the region and the national level in a timely manner. They should cooperate with each other to secure smooth operation of ARDS.

District Executive Director (DED) is one of key stakeholders in ARDS. DED is responsible for implementing district policies including agriculture sector. DED supports the office of DAICO/ DLFO to operate ARDS financially (budget) and administratively (assigning enough extension officers). Also, District Planning Officer (DPO) who plan and monitor all activities in LGA is important officer.

Region: In Regional Secretariat (RS), the officers, RAA and RLA (or ASDP Coordinator) are responsible for the ARDS operation. He/she is the officer who is supervising the LGAs' ARDS operation, the data quality and are tasked to approve (or give comments on) the ARDS report submitted by LGAs to the region.

National level: The ASDP M&E TWG which is made up of members from ASLMs' M&E sections (statistics issues included) and IT units, and officers from NBS is responsible for general coordination among subsectors (crop, livestock, fishery, trade, etc.), making decision on ARDS overall policy and approaches, and advising each management of ASLMs. This TWG should be functional with a sufficient number and expertise of staff for the on-going operation of the ARDS.

Under the overall management of the TWG, there is a core operation team consisting of **TWG Secretariat** (with TWG members of Region-in-Charge) and **Technical Team (IT)** for the ARDS operation. This operation team is responsible for day-to-day operation such as monitoring LGAs' data submission, routine communication with LGAs/Regions, regular reporting of the ARDS operation to ASLMs' management and maintenance of ARDS technical aspects. Interventions and guidance to RS/ LGAs are implemented by the **Region-in-Charge** (members of TWG assigned to specific Regions). The core team will be coordinated by a head of the Secretariat. The organogram of TWG is show as Figure 1.

is updated as events of births or deaths or migration occurs. The information should be referred to when VAEO/WAEO needs to know the total population and to select a set of sample farmers for interview.

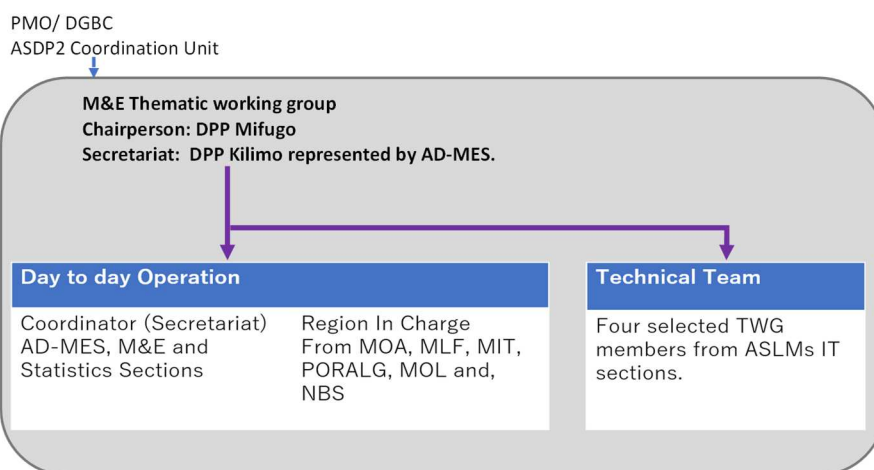


Figure 1 Organogram of TWG

2.4 Data to be Collected

By VAEO/ WAEO: The ARDS collects categories of data as shown below by the field officers, VAEO/ WAEO. Details of the data within the category should be referred to in the VAEO/WAEO formats and manual.

Table 2: Data to be collected by VAEO/ WAEO

VAEO/WAEO Monthly Report	VAEO/WAEO Quarterly Report	VAEO/WAEO Annual Report
1. Introduction (weather condition, disasters, activity summary, achievements, and challenges) 2. Crop (annual target, planted area, yield, production and prices) 3. Plant Health and Chemical Control 4. Livestock Slaughtered 5. Meat Inspection 6. Livestock Products 7. Livestock Health 8. Fish farming	1. Village Food Situation 2. Extension Services 4. Biological Control Measures 4. Irrigation (planted area, production, etc.) 5. Soil Erosion 6. Area Cultivated and Means of Cultivation	1. Introduction (population and number of households) 2. Contract Farming 3. Irrigation (water source, area, IO members, etc.) 4. Agricultural, Livestock and Fishery Machines and Implements 5. Extension Services (FFS) 6. Input Use 7. Livestock Population 8. Livestock Infrastructure 9. Grazing Land 10. Pasture 11. Dissemination of Agricultural Information (TV, radio, and telecommunication)

By LGA: In addition to the data collected by VAEO/WAEO, some data are to be collected at the district/LGA level. DS and DMEO will seek cooperation from other officers in respective LGA to have accurate and timely data.

Table 3: Data to be collected by LGA

District/LGA Quarterly Data	District/LGA Annual Data
1. Livestock/ Products Movement (a) Livestock Movement (b) Livestock Auction 2. Marketing of Livestock Products (meat from commercial farms) 3. Livestock Inputs (a) Animal Feeds, Acaricides, Vaccines and Treatment (b) Inputs for reproduction of improved livestock 4. Association Groups (a) SACCOS (b) Other Association/Groups	1. Food Situation 2. Number of Oxenization Centres and Tractor Hiring Services 3. Extension Services (a) Number of Extension Officers (b) Level of Education (c) Working Facilities/ Equipment (d) IT Facilities (e) Number of Extension Officers Trained (f) Non-Government Agricultural Extension Service Providers 4. Livestock Population (Large Scale Farmers) 5. Livestock Products Processing Plants / Units 6. Livestock Infrastructure and Status 7. Grazing Land 8. Number of Ward Agricultural Resource Centres

2.5 Flow of ARDS Data

Data flow in the ARDS is shown in Figure 2 below.

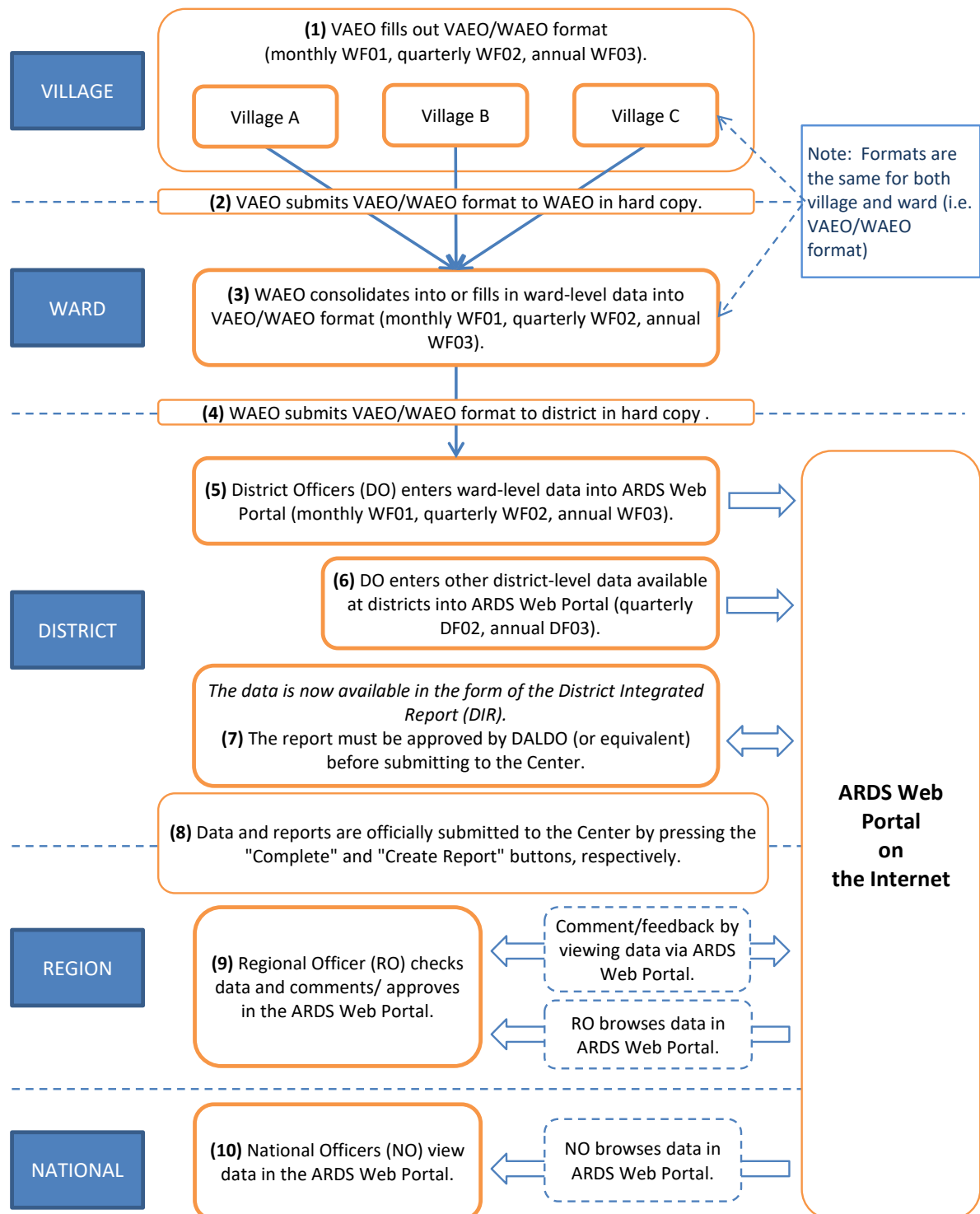


Figure 2: Data flow in ARDS (web-based system)

CHAPTER III

3. ARDS Operational Actors and Responsibilities

3.1 LGA Level

(1) VAEO (at Village / Mtaa)

- VAEO visits farmer groups, individual farmers, stockist, etc. to collect necessary data as a part of extension activities, regardless of his/her specialty is (crop, livestock, etc.). In collecting (or estimating) data, follow the methodologies specified in the Extension Officer's Manual for ARDS (Attachment 2).
- VAEO fills out the two copies of the VAEO/WAEO format (Attachment 3) with the data and information.
- VAEO submits one filled-in format (monthly, quarterly and annual) to WAEO. The deadline for each format is as follows:
 - Monthly format: Before the end of each month.
 - Quarterly format: Before the end of each quarter (Sep. Dec. Mar. and Jun.)
 - Annual format: Before the end of June.
- VAEO keeps the other copy of the filled-in format for the planning at the village level.

(2) WAEO (at Ward)

- WAEO analyses and evaluates the submitted VAEO monthly/quarterly/annual reports (formats) and provide feedback to respective VAEO.
- Based on the analysis above and adding information on agricultural activities in the ward obtained from direct visits to the villages, WAEO fill up the ward agricultural monthly/quarterly/annual reports (formats) (Same as the VAEO format). WAEO should collect data of villages which are not covered by VAEO. WAEO should perform appropriate calculation (summation, averaging, etc.) to prepare the WAEO reports (formats).
- For preparing the monthly/quarterly/annual reports (formats), WAEO should follow the methodologies specified in the Extension Officer's Manual for ARDS.
- WAEO submits the WAEO reports (formats) to DAICO/ DLFO on time. The deadline for each format is as follows⁵:
 - Monthly format: By the end of 1st week of the following month.
 - Quarterly format: By the end of 1st week of the 1st month of the following quarter (October, January, April and July).
 - Annual format: By the end of 1st week of the 1st month of the following fiscal year (July)
- WAEO posts the [monthly/quarterly/annual] reports (formats) on the notice board of ward offices so that everyone (including VAEO) can see the reports, as a part of feedback.

Extension Officer's Manual for ARDS (Attachment 2):

- All VAEOs/ WAEOs must follow the instructions and guidance specified by this manual. They should be given the manual when they are assigned to their field, and are expected to be conversant with the instructions.

VAEO/ WAEO Format (Attachment 3):

- VAEO/ WAEO Formats are to be used for data collection of ARDS. The formats are distributed to VAEO/ WAEO in a timely manners. Also the formats should be those latest in revision.

⁵ Though the multi-sectoral reports should be submitted through WEO, the agricultural reports should follow the technical line (from WAEO to DAICO/ DLFO).

(3) DAICO/ DLFO, DS, and DMEO (at LGA)

The main actors at this level are DAICO/ DLFO, DS and DMEO (under DAICO or DLFO). The district (DAICO/ DLFO) must maintain a sufficient number of officers who are capable of and committed to the ARDS operation. It is desirable to form a District Agricultural Data Management Team (DADMT) by which the district can address challenges in the ARDS operation.

DAICO/ DLFO should make every effort to increase the number of staff (in addition to DS and DMEO) who can handle ARDS, in particular the ARDS Web Portal operation so that the data processing task can be jointly shared by several people, hence avoiding work concentration to a few capable officers. The DADMT mentioned above is helpful in this respect.

ARDS is for the whole agricultural sector. Therefore, despite the split of DALDO into DAICO and DFLO, the responsibility for the ARDS operation must be borne by both offices. The district officers as well as field extension officers (VAEOs/WAEOs) should also work jointly for ARDS. The district has to secure good collaboration between the two offices.

The main roles and responsibilities of the district are as follows. Specific instructions for data collection must be referred to the District Officer's Manual for ARDS.

District Officer's Manual for ARDS (Attachment 4):

Key activities including data collection at LGA level are described by the District Officer's Manual. District officers should refer to this manual when engaging in the ARDS operation.

In Regular ARDS Operation and Utilization

- To budget for ARDS activities: Reference should be made to Section 4 (1). Given the importance of data for both agricultural reporting and planning, all LGAs must secure budget for the ARDS operation which enables all activities below. An indicative budget is given in Table 5.
- To ensure that DAICO and DFLO work jointly for the ARDS operation.
- To distribute VAEO/WAEO forms to all villages/wards on time.
- To collect filled-in VAEO/WAEO format from WAEO on time.
- To make the best use of the Submission Status Report of ARDS Web Portal which show the Wards whether they submitted or not on time. Keep the record of the WAEOs' performance.
- To check quality of data submitted by VAEO/WAEO.
- To provide feedback to the villages and wards.
- To enter data into ARDS Web Portal
- To prepare report for the district management (e.g. DED, Council etc.)
- To click the "Complete" button at the bottom of the data entry screen to indicate that data is ready to be reviewed by the region.
- To obtain approval for data by the region by informing them that you have already submitted (or "completed") the report.
- To analyse and utilize data in reporting, monitoring and planning
- LGAs should use ARDS data for the general data collection requested by the national agencies such as GDP data collection by NBS, Economic data collection by BoT, or Food Security data collection by MAFC. Refer to Section 4 (12) and (13).

In Maintenance, Updating and Promotion of ARDS

For this part, refer to Section 4 (14) and (15).

- To explain to high ranking officers including political members the importance of the "evidence-based discussion", i.e. to use data in reporting, planning and any policy analysis.

- To take every opportunity to high ranking officers in explaining the benefit of ARDS.
- To ensure involvement and commitment of LGAs' decision makers such as DED and DC.
- To keep updating ARDS components (formats, manuals and any other related ones) to the latest version.
- To maintain and secure the User ID and password for the ARDS Web Portal operation.
- To maintain ARDS relevant computers and other electronic components virus-free and avoid from any unnecessary damages (physical or electronic).
- To fix, repair or replace with its own expenses the computer and necessary browser software if they crash or contaminated by virus.
- To keep the original VAEO/WAEO data (those data on paper submitted by WAEO to the district) for at least three years
- To carry out necessary training with its own expenses for the officers newly recruited or transferred from other locations such as DAICO/DLFO, DS/DME and VAEO/WAEO.
- To carry out necessary refresher training for existing VAEO/WAEO.

It is desirable that if the district has IT officers, DAICO/ DLFO should promote good communications between DMEO/DS with the IT officers for reliable technical support to the ARDS operation

3.2 Regional Level

(1) Region

The main actors at this level are RAA, RLA, or ASDP regional coordinator. Their main roles and responsibilities are to ensure all districts operate ARDS properly. For this, the region must first make sure itself being ready for the ARDS operation. Only then it can implement proper and regular guidance, monitoring and supervision to LGAs. The specific responsibilities of the region are as follows.

Region's Own Deployment

- The region must have a functional computer for the use of ARDS Web Portal.
- The computer with good internet connection with sufficient air time (if necessary) is properly managed and continuously protected from virus and other disturbances.
- The region has at least two staffs (RAA, RLA or ASDP coordinator) who is capable of and fully committed to the ARDS operation.
- The regional IT may closely be involved in the ARDS operation. He/she could be regularly updated by RAA, RLA or ASDP coordinator on the development of ARDS.
- The region should actively communicate with neighbouring (or other regions) for sharing experiences.
- The region should utilize the ARDS data for its own purposes such as reporting to RAS, important visitors and data inquiries from the centre.

Facilitation to LGAs

- To ensure by using the Submission Status Report of ARDS Web Portal that the district enters data into the ARDS Web Portal and submit reports in a timely manner.
- To check quality of the data from the districts,
- To provide feedback to the district on their reports,
- To approve or give comments about the data submitted by the district without delay.
- Submitted data are locked after they are approved by the Region. Therefore when some data need to be corrected afterwards, the Region must "cancel the approval" and do "re-approval" after the correction. Close cooperation with LGAs is required.
- To promote ARDS data utilization at the district especially in the DADP preparation and reporting.

Main Roles and Responsibilities of Regional IT

- To provide technical facilitation to the district on the operation of ARDS Web Portal and

- related issues.
- To provide feedback to the National ARDS Web Portal technical team (Sub-group of the M&E TWG)

3.3 National Level

(1) Agricultural Sector Lead Ministries (ASLMs)

The Directors of Policy and Planning in the ASLMs have the following duties as far as ARDS is concerned. The duties may be executed via the M&E TWG, IT and M&E sections.

- To prepare reports on national component of ARDS (nationally consolidated data).
- To review reports on the local component and provide feedbacks.
- To collate data needed to monitor ASDP implementation, analyse and comment on the monitoring results, and submit regular monitoring reports.
- To coordinate the M&E systems of the ASLMs and examine agricultural sector performance at national level.
- To coordinate capacity building activities that support better M&E understanding and practices for planners and agricultural staffs in the ASLMs.

PO-RALG

The Director of Sector Coordination (DSC) and the Director of Information, Communication and Technology (DICT) are the main actors in PO-RALG. Their main roles are:

- To enforce LGAs and the regions to use ARDS as a formal data collection system in the agricultural sector.
- To disseminate and maintain ARDS at regional and district offices.
- To ensure and promote consistency between ARDS and other LGA's data system such as LGMD.
- To supervise and support the data submission by LGA
- To ensure RA and LGAs have adequately budgeted for operation of ARDS.

(2) ASDP M&E Thematic Working Group (TWG) (with the IT Sections, Statistics Units of ASLMs and NBS)

The M&E TWG together with the IT and M&E sections of ASLMs is the central body responsible for the ARDS routine operation, dissemination, maintenance and improvement. In order for them to perform their full responsibilities, it must establish an effective and durable organizational arrangement (as shown in Figure 1) that ensures steady workings of the ARDS operation. The arrangement assures close collaboration among the M&E TWG, the IT and M&E sections.

The expected functional arrangement is described in Section 2.3. The TWG itself is responsible for overall management of ARDS such as policy and strategy. It is also responsible for overall coordination among ARDS stakeholders including Ministries and LGAs. On the other hand, the day-to-day routine operation of ARDS and correspondence with ARDS user/ operators will be handled by the Secretariat of TWG. There is also the Technical Team which deals with the technical issues of ARDS. The Secretariat is facilitated by the group of TWG members who are assigned to specific Regions (**Region-in-Charge**). These members work in close collaboration with the Secretariat and the Technical Team. They are front-line supervisors/ advisors who keep close communication with Regions and LGAs. There should be a **Help Desk** to which ARDS users/ operators can access and make inquiries any time. The Help Desk should be staffed at least by two officers, one from the Secretariat and the other from the Technical Team. Their roles and responsibilities are following.

Overall Management Concerned with ARDS (by TWG itself)

- To discuss and make decisions regarding ARDS overall policies and strategies
- To introduce, disseminate, maintain and Improve ARDS.
- To coordinate stakeholders relevant to ARDS
- To prepare the ASDP Performance Report by collecting the latest data for the ASDP M&E indicators.

Regular Monitoring of ARDS (by the Secretariat, Region-in-Charge, and Tech. Team)

- To establish a steady and continuing mechanism to monitor, guide and supervise the ARDS operation at LGA and Regional levels.
- To track the LGAs' and Regions' ARDS operation status on monthly basis by checking the "Submission Status Report".
- To check the quality of submitted data every month by using the Data Quality Management Sheet (DQMS), and inform the results of the quality to LGAs and Regions for improvement. (Refer to Attachment 06 "Data Quality Management Sheet")
- To perform the "Fiscal Year End Lock" so that, at the end of a fiscal year, the data and the reports of that year are all locked and secured against any changes or disturbance afterwards.
- To inspect the ARDS central server on monthly basis whereby the latest data transmission status of LGAs is monitored.
- To report the ARDS operation status at least quarterly to the M&E TWG meeting, and then to high ranking officers periodically.
- To make inquiry or demand to the districts which fail to submit data/ report on time.
- To make inquiry or demand to the regions which fail to approve/comment on the data/ report submitted by the district.
- To carry out necessary measures (identifying causes of the problems, facilitating their solving the problems, or demanding proper actions) to LGAs and regions if their operation has problems.
- To establish, if necessary, a special support mechanism to address IT related problems, in cooperation with the IT sections.

Promotion of ARDS (by TWG itself and the Secretariat)

- To explain to high ranking officers including political members the importance of the "evidence-based discussion", i.e. to use data in reporting, planning and any policy analysis.
- To take every opportunity to high ranking officials of the government and politicians to introduce, disseminate and promote the usefulness of ARDS.
- To communicate with other stakeholders about effective use of the data collected by ARDS.
- To organize if possible workshops and gathering to explain and sensitize stakeholders about the usefulness of ARDS.

Data Utilization (by TWG itself, the Secretariat and the Region-in-Charge)

ARDS data is indeed useful at all levels of the administration (LGA, Region and National). Given this potential and assuming the responsibility for the overall ARDS operation, the M&E TWG should promote the use of ARDS data at all levels including its own use.

- To promote the use of the ARDS Web Portal for accessing ARDS data.
- To encourage LGAs and the regions to use ARDS data in any possible occasions, including LGAs' own reporting and response to data inquiries by the centre.
- To demonstrate or share examples of good data utilization in reporting and planning.
- To utilize ARDS data at the national level in reporting, policy analyses and planning.
- In particular, ARDS data are usable for MoA's annual "Basic Data Book". Effort should be made to generate greater part of the Book with the ARDS data.
- The ARDS data should also be available for the food security data, especially for the two

reports of food security: “The Preliminary Forecast Report” and “The Final Forecast Report”.

- To collaborate closely with NBS to make the best use of the ARDS data in various national or sectoral reports.
- To connect ARDS data to the FAO CountrySTAT.
- To streamline the ARDS data with other agricultural data such as those in Food Security, Crop and Livestock Development, and agricultural GDP estimation by NBS.
- To ensure consistency between the ARDS data and agricultural statistical data such as the Annual Sample Survey and National Sample Census of Agriculture.

ARDS Maintenance, Revision and Improvement (by TWG itself, the Secretariat and the Tech. Team)

The M&E TWG should be responsible for the maintenance and improvement of ARDS. In the areas of information technologies (IT), the Technical Team together with IT sections of ASLMs should work closely with the TWG. Their specific roles and responsibilities are as follows.

Central Server:

- To keep the central server safe and functional all the time (24 hours throughout a year) without disruptions or disturbances.
- For the purpose of stable operation of the server, it is responsibility of the Technical Team to guarantee the stable power supply and regular re-booting without delay if the server is down. Data backup must regularly be implemented.
- The central server should be improved or replaced, reflecting the progress of data accumulation and server capacity.

Data:

- The TWG and the Technical Team must maintain intact the data stored in the server. Access to the server for data management should be restricted to only authorized officers of the TWG and the Technical Team.
- Under the lead of the Technical Team, at the end of every fiscal year, the ARDS data and the reports must be secured by the operation of “Fiscal Year End Lock”. This operation is necessary to secure and keep the data entered and the reports created during a particular fiscal year intact against changes or disturbances in the future. For this operation, both the Technical Team and Secretariat should start examining the status of data submission and report creation from the end of July through the time of Locking (maybe August or September). The timing of the Locking should be decided in relation to the status of submission and report creation, as well as the improvements of LGAs according to the demand/instruction by the Technical Team and Secretariat for additional data entry, report creation.

ARDS Web Portal (data entry):

- To operate and maintain the ARDS Web Portal software and related software on the server.
- To provide technical support to users. The TWG, the Secretariat and the Technical Team establish the Help Desk and other effective mechanism for technical support, and implement the support accordingly.
- To amend or improve ARDS Web Portal in a timely manner in response to the changes taking place in the VAEO/ WAE0 formats and the way data are to be collected.
- To improve ARDS Web Portal in response to the changes in the national internet conditions.
- Tasks to be carried out include (with recommended frequency):
 - Updating the Administrative Units (Annually)
 - Updating the data scope (additions and removing) (Annually)
 - Updating the table forms including relevant data entry screens and reports in the ARDS Web Portal (Annually)

ARDS Web Portal (data browsing and utilization):

- To maintain the operability of the analysis tools and reports of ARDS Web Portal.
- The tasks to be performed regularly include (with recommended frequency):
 - Updating the home page, news, and articles (Quarterly)
 - Uploading relevant documents (Quarterly)
 - Managing the set of "favourites" for pivot tables and charts (Annually)

VAEO/WAEO Formats and Data Collection Method:

- To maintain and improve the VAEO/WAEO formats and the data collection method at the ground.
- To amend and fine-tune the formats as needs arise, and when amended to ensure that proper resources/budget are provided to upgrade the ARDS Web Portal.
- To review the method of data collection in response to changes taking place in the actual situation of VAEO and WAEO.
- To adjust ARDS to the overall agricultural statistics/data systems of the country.

Other ARDS documents:

- To update/ modify regularly the ARDS documents as follows.
 - ARDS Operation Guide (this document)
 - Extension Officer's Manual for ARDS
 - District Officer's Manual for ARDS
 - Data Quality Management Sheet
 - Crop List and Definitions

CHAPTER IV

4. Operational Components (Key Actions in the ARDS Operation)

Below are major operational components of ARDS. Many of them are directly concerned with LGAs, but Regions and the National level should also be responsible for the components. The parties with which the component is concerned are indicated by the following abbreviation at the section title:

V/W: VAEO/WAEO, **D:** District level, **R:** Regional level, **N:** National level

(0) Operation Cycle

ARDS consists of data collection in monthly, quarterly and annual cycle. The timing of key actions is summarized below.

Table 4: ARDS Operation Cycle

Data\ Action	Blank format distribution	Submission (VAEO to WAEO)	Submission (WAEO to LGA)	LGAs' entering data in ARDS Web Portal	Integrated Report Approval by Region
Monthly	-Distributed quarterly. -B/w 20th and 30th of last month of previous quarter	-By the end of the month	-Within 1st week of the following month	-By 15th day of the following month.	n.a.
Quarterly	-Distributed quarterly. -Same time as the Monthly format	-Ditto	-Ditto	-By 15th day of the 1st month of the following quarter.	-By 25th day of the 1st month of the following quarter
Annual	-Same time as the 4th quarterly format	-Ditto	-Ditto	-By 15th day of the 1st month of the following fiscal year.	-By 25th day of the 1st month of the following fiscal year.

Note that monitoring by Region or National officers (for submission and data quality) typically starts **after the 25th of the month of submission** (e.g. for April data which are to be submitted to the district by 1st week of May, and data entry complete by 15th of May, monitoring will be done after 25th of May).

Routine Data Lock and Data Correction:

As routine process, all data are locked once they are approved by Region. However, if some data need to be revised, there must first be "cancellation of approval" by Region. Then LGAs can modify the data and Region will "re-approve" the data (or report).

Annual Data Lock (Fiscal Year End Lock):

Every year, the entire data entered into the ARDS Web Portal and the reports created during a fiscal year will be locked and secured as final values. The annual data lock become effective typically at the end of August. Once data and reports are annually locked, revisions and corrections of data are in principle not allowed. All LGA officers must complete the data entry with correct data value by this dead line. This end time may be extended according to the status of data submission and report creation. The judgement should be made jointly by the TWG Secretariat and the Technical Team. The Secretariat and the Technical Team should fully be aware of the operation and take necessary steps when the deadline is approaching. The details of this operation is explained in Section (12) Fiscal Year End Lock.

(1) Budgeting [D, R, N]

■ District Level

Every activity needs adequate budget, and ARDS is not an exception. Proper budgeting for ARDS is mandatory for all LGAs as part of M&E budget. The key for securing adequate budget is the understanding of the importance of ARDS by high ranking district officials such as DED, DPLO, and DAICO/DLFO. To facilitate their understanding, the district officers in charge of ARDS should take the following measures:

- To explain how effectively it stores and manages agricultural data,
- To show the reports produced by ARDS data to the high ranking district officials and councillors,
- To explain how the use of data is indispensable for the improvement of district agricultural planning.
- To explain how it can effectively monitor the progress of agricultural projects and other activities, and
- To explain how it can effectively respond to a number of questionnaires sent by national ministries and agencies (such as the data inquiry for GDP estimates by NBS), regions and district stakeholders including the District Council.

The ASDP M&E Thematic Working Group shall also support this effort by

- Explaining the importance of ARDS to high ranking district officials whenever the TWG members visit the district, or have opportunities to communicate with those officers in national conference or workshops, and
- Preparing a leaflet or newsletter which explains the importance and usefulness of the ARDS.

For smooth ARDS operation, the budget should include the following, but not limited to:

For the Minimum Requirement of the ARDS Operation

An indicative budget estimates are shown in Table 1(A) with major cost items. The items of budget should be adjusted according to the local needs and the number of WAEOs and VAEOs.

For Better and Improved ARDS Operation (Additional enhancement)

An indicative budget estimates are also shown in Table 1(B). The items should be adjusted according to the local needs and the number of WAEOs and VAEOs. Additional factors are:

- Additional blank formats to VAEOs,
- Budget for technical support by Regional IT staff in case of computer malfunctioning
- Annual workshop / review for ARDS with the participation of all VAEOs / WAEOs,
- Refresher/ Training for LGA officers on, for example, Excel

Table 1 (A) and (B) shown in the next page are examples of annual ARDS operation costs (indicative) with an assumption that the LGA has 20 Wards (20 WAEOs) and 80 villages (VAEOs).

Blank tables for the budget estimation are given in Attachment 2. To prepare realistic budget, district officers put adequate numbers for ww (number of WAEOs), vv (number of VAEOs), yy (amount of litres necessary to monitor VAEO/WAEO per month), and mm (number of officers in DAICO/ DLFO's office) and compute.

Table 5: Indicative Cost Estimate (Example)

Indicative Annual Cost for ARDS Operation

(A) Minimum cost necessary for adequate ARDS operation (blank format only up to WAEOs)

Revised on 22/02/2015

Item	Details	Number (WAEO xx, VAEO zz)	Page/litre/day		No of Copies/ Event	Unit price	Frequency	Cost
			Amount	Unit				
			(1)	(2)				
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	litre/month	1	2,200	12	1,584,000
Bicycle maintenance 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 complete 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	litre/month	1	2,200	12	264,000
ARDS Web Portal 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**.

Expnses for Fuel for WAEO and Bicycle Maintenance are not additional costs as they are necessary even without ARDS monitoring

(B) Additional cost for better and improving operation of ARDS

Enhancement: (a) Blank format to VAEOs, (b) Bi-annual facilitation by Regional IT,

(c) Annual refresher workshop to WAEOs/VAEOs, (d) Refresher/Training to LGA officers.

Revised on 22/02/2015

Item	Details	Number (WAEO xx, VAEO zz)	Page/litre/day		No of Copies/ Event	Unit price	Frequency	Cost
			Amount	Unit				
			(1)	(2)				
Printing and Photocopying	Monthly	80	5	page	1	150	12	720,000
	Quarterly	80	4	page	1	150	4	192,000
	Annual	80	11	page	1	150	1	132,000
Bi-annual facilitation by regional IT specialist (in case of computer malfunctioning)	Per diem	1	2	days/event	1	65,000	2	260,000
	Travel	1	2	time/evet	1	10,000	2	40,000
Annual workshop with all VAEO/WAEO	Per diem	100	3	days/event	1	45,000	1	13,500,000
	Per diem (DMEO, DS, DALDO)	3	2	days/event	1	32,500	1	195,000
	Travel	100	1	time/event	1	5,000	2	1,000,000
Training for LGA officers	Per diem (DMEO, DS, DALDO)	5	1	days/event	1	32,500	1	162,500
(B) Total								16,201,500

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

Grand Total (A+B)								23,851,500
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■ **Regional Level**

While major challenge of budgeting is at the district level, the regional level should also make sure that they secure necessary resources for the ARDS operation for their guidance, supervision, facilitation and instruction to the district in the ARDS operation. The budget is also necessary for their own data utilization, like report production, analysis and presentation.

■ **National Level**

Similar to the Regional level, the National level should also secure appropriate budget for the ARDS operation. In particular, the National level needs to secure budget for the maintenance of the ARDS Web Portal (System) which includes the cost for maintenance contract with outside experts. The national budget should include other usual costs such as supervising, monitoring, their own data utilization, etc.

In long term, budget may be necessary, if needs arises, for improving ARDS components and structure (system, manuals, formats and backstopping etc.). In such an occasion, budget will be brought by from each sector Ministries (ASLMs).

In the aspect of LGA budget, PO-RALG needs to play a key role to promote and secure necessary budget every year.

(2) Format Distribution [V/W, D]

For each month, quarter, and year, district officers should make necessary copies of the VAEO/WAEO blank formats and distribute them to VAEO/WAEO. The district should prepare the copies well in advance so that there is enough time for distribution.

Districts should keep the latest version of the formats at hand, which are readily accessible (and downloadable) from the ARDS Web Portal.

Means of Distribution

- The direct distribution in person is highly recommended rather than passing them through other people/bus.
- If district officers do not visit village/ward and VAEO/ WAEO do not come to the district headquarters, district officer may deliver the format to the WAEO at division center,⁶ who in turn will distribute it to the other VAEO/WAEO in the same division or ask VAEO/WAEO to pick them up there.

Timing of Format Distribution

- Distribution should be completed before the beginning of the month of their usage so that VAEO/WAEO can fill the form as they conduct their normal duties.
 - The Monthly Format should be distributed quarterly (three months together), during the days between 20th and 30th (or 31st) of the last month of previous quarter.
 - The Quarterly Format should be distributed once per quarter at the same time when the monthly format is distributed.
 - The Annual Format should be distributed when the formats for the fourth quarter are distributed (i.e. March).

Number of Blank Formats to be Distributed

- It is important that two copies of the blank forms are distributed to each VAEO / WAEO for each month / quarter / annual.
- Both of them are to be filled: one of them is for submission to the District, and the other for WAEO/VAEO to keep at the ward / village, which can be used for village level planning.

If the blank forms are not distributed on time, Village/Ward Extension Officer should contact the district office.

(3) Data Collection [V/W, D]

The data for the VAEO/WAEO format are to be collected by VAEO/WAEO. Data must be collected every month, quarter and year without interruption and without delay. In data collection, VAEO/WAEO should pay attention to the following.

- Follow the instructions in the Extension Officer's Manual for ARDS (Attachment 2.0).
- The format clearly shows what should be written in the format. Therefore VAEO/WAEO should be clear what kinds of information to be collected.
- The format covers the whole agricultural sector including livestock, cooperatives etc. VAEO should collect all kinds of data on the form, whatever his/her specialty is.
- Amongst the wide range of data, special attention should be given to the crop production data. VAEO/ WAEO should collect not only major food crops such as maize, paddy, or cassava, but other major local crops such as cash crop, oil crop, vegetables and fruits.
- Also VAEO/ WAEO should know that the crop monthly production data (area or

⁶ Division is an administrative unit under District where a few Wards are grouped together. A division center is an office for divisional work where meetings could be held.

production) are those the **data-of-the-month**, not accumulated data. Accumulation is automatically carried out by the ARDS Web Portal once data are entered.

- Careful attention should also be given to the **data of Food Security: Table 2.2** of the monthly format. The data are collected only once per year in the May format. The data are all forecast of production in the next 4 months (June, July, August, and September). This reporting is relevant to the Tanzania national food forecast reports prepared twice per year: June report (Preliminary forecast report) and December report (final forecast report).
- It will be easy to fill out the format if VAEO/WAEO keep a record on their activities every day. It is a good idea to promote the “extension field diary”⁷ among field officers.
- It is very important that VAEO/WAEO cooperate so that they organize themselves in data collection.
- Even if extension officers are arranged under the two lines of command, DAICO and DFLO, the ARDS operation is joint responsibility of all extension officers regardless of their expertise.
- It is recommendable for VAEO/WAEO to have a regular meeting (like once in two weeks or a month) so that they share information and keep cooperation. (see sub-section (4) below)
- It is also important to cooperate with village executive officers (VEOs) in data collection.
- If any villages lack VAEOs, the village executive officers should be relied upon for data collection.
- When a VAEO is on a leave, he/she can ask his/her colleague in a nearby village to write this report. As for WAEO, he/she may ask one of the VAEO in the ward under supervision/ advise from DAICO/ DLFO.

District officers have their own duties of data collection in ARDS (DF02 and DF03). Reference should be made to the “District Officer’s Manual for ARDS” (Attachment 4.0). In the Manual, duties are described for not only district level data collection but also management of VAEO/ WAEO data collection including “target value” and crop selection.

District officers should keep good guidance to, supervision on and feedback to VAEO/WAEO for the data collection work. Especially the data collection method stipulated by the Extension Officer’s Manual for ARDS (Attachment 2.0) needs to be thoroughly observed for the good data quality.

(4) VAEO/WAEO Data Submission/ Reception [V/W, D]

- At the village level, the VAEO submits the report to the WAEO by the end of the month. The VAEO should keep a copy of the report in his/her office.
- At the ward level, a village report is consolidated into a ward report, which is submitted to district office within the first week of the following month. If there are no assigned VAEO in a village, the WAEO in charge of the ward to which village belongs is responsible to collect ward level data. The WAEO should keep a copy of the report in the ward office.
- It is desirable for the district to encourage VAEO/WAEO to form the Ward Data Consolidation Team (WDCT) in each ward. All extension officers in a ward are the members of a WDCT, which is led by a WAEO. It meets every month and jointly fills out the ward level format. In this process, they check data quality each other, which helps improve data quality and the capacity of extension officers in report preparation.
- WAEO should go to the district office to submit the report. In case that he/she is not able to go to the district office, he/she will ask other extension officers to submit the report.

⁷ Extension field diary is a suggestion for VAEO/WAEO. It might be a notebook where extension officers write down their daily activities and observations as memo so that they can keep records of the day-to-day work as well as their collected data.

For district officers, in order to collect filled-in reports on time, follow-up is very important. The district officers should make phone calls to WAEO if they fail to submit the report on time. Especially for quarterly and annual reports, VAEO/WAEO may forget about them as they are not required every month. It is very effective if the district office organizes regular meetings (like monthly meeting) where all VAEO/WAEO are called upon for discussion, and thereby ARDS reports are to be submitted. If data is to be presented to District Executive Director (DED) as reports, VAEO/WAEO should be informed so that they are aware of the importance of duty.

Proper feedback is a key to motivate VAEO/WAEO to fill out the format with reliable information and submit it on time. For details on feedback, see sub-section (6) in this chapter.

(5) Data Quality Check [D, R, N]

■ District Level

When the district officer receives the report from WAEO, or WAEO receives the report from VAEO, he/she should check the data, in particular, in the following points. If there are mistakes or questionable data, he/she should contact WAEO (or VAEO) and clarify the question or provide instruction.

- Are all tables filled (except for those not applicable)?
- Are all data readable (clear writing)?
- Are the data period appropriate in each table (data for the particular month/quarter or cumulative)?
- Are all data submitted according to the guidance? (in particular, check if data are properly that “of-the-month”, not accumulative)
- If the submission is the May monthly data, check if Table 2.2 is properly filled with the Food Security data (forecast production data of the 4 months: June, July, August, and September).
- Are the data using appropriate unit of measurement (i.e. not by bundles, but by Kg)?
- Are the data realistic compared to the following?
 - Previous report data
 - District total or average data
 - Latest National Sample Census Agriculture data (i.e. 2002/03, 2007/08)
 - Your field observation
- It is recommendable to do ‘cross check’ the data with relevant officers at the district: officers in charge of crop, livestock, cooperative, extension, marketing, irrigation, etc.

■ Regional and National Level

- Regional officers should inspect the quality of data once the district submits the report for approval. The quality of data can be assessed by using the “Data Quality Management Sheet” which is provided in Attachment 6.0. Regional officers should give comments and guidance to the district immediately for revising wrong data and improving the data quality. (See sub-section (10) below.)
- Similarly the national level should also inspect the data quality, and give guidance to the region and the district. National level officers (TWG Secretariat and Region-in-Charge members) are strongly recommended to use the Data Quality Management Sheet.

(6) Feedback [D, R, N]

■ District Level

- District should provide feedback to WAEO/ VAEO. If there is a problem, the District officer should ask for clarification or correction. On the other hand, if VAEO/ WAEO needs clarification, they should ask to District officers. If the district has regular (e.g. monthly) meeting for VAEO/WAEO, it is a good opportunity for the feedback.

- Proper feedback is a key to motivate VAEO/WAEO to fill out the format with reliable information and submit it on time. Through feedback, VAEO/WAEO need to see that their reports are read and the information they have provided is well used by the district. The following is some examples of how to give feedback to them.
 - Once the district report is prepared, the district should not only submit it to the District Executive Director and/or the Council, but also post it on a notice board of the district office so that VAEO/WAEO can read it when they visit the office. If possible, the district may send the report to each ward or division.
 - A district officer should visit division/ward centers as often as possible to meet VAEO/WAEO for providing feedback and backstopping for data collection. Such positive engagement by the district increases extension officers' confidence and encourage them to be more serious in filling out the form. Therefore, the quality of data will improve.
 - Based on the data analysis, the district and VAEO/WAEO can provide comments to the village agriculture development plan.
- **Regional and National Level**
- Both regional and national officers should give feedback to the district so that the district understands that the data are effectively monitored by the higher levels. The national level should also give feedback to the region for the same purpose. Both regional and national levels should inquire the district about the status or reasons if the latter fails to submit data/ report on time.

(7) Data Entry to ARDS Web Portal [D]

- Annual Target: Every year, in a beginning of every fiscal year (the beginning of July), the district officer should input and submit Annual Crop Production Targets. Annual Target consists of planted area and expected production of each crop.
- After checking and improving the data collected by VAEO/WAEO, district officers should enter the data into ARDS Web Portal.
- **ARDS Web Portal** is a website for ARDS data entry and data/ report browsing and utilization.
- District officers can open the data entry screen when he/she accesses the ARDS Web Portal:
ARDS Web Portal URL:
<https://ards.kilimo.go.tz/dhis-web-commons/security/login.action>
- The district must keep the **User ID** and the **Password** for the access to the ARDS Web Portal.
- If a district has reasonable internet connectivity, the district should be able to access to the ARDS Web Portal where the data entry screens are seen, and enter data.
- Data entry, including “Annual Target” should be conducted according to the ARDS Web Portal User Manual.

Summary of ARDS Data Entry Forms and Reports in Web Portal

All types of forms and reports of ARDS Web Portal are summarized in the table below.

Rules for the short-hand name of the forms and reports:

- W...Ward, D...District, R...Region, N...National,
- F... Form, I...Integrated, R...Report
- 00...Target (once per year), 01...Monthly, 02...Quarterly, 03...Annual

Table 6: ARDS Data Entry Form

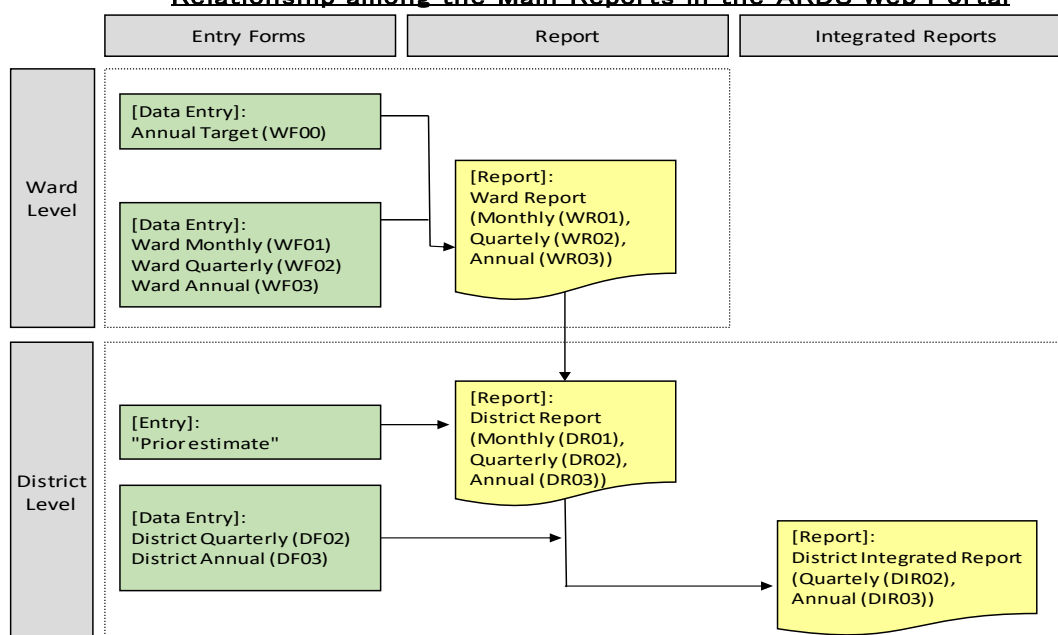
Level	Name of Data Entry Forms	Data source
Ward	WF00 - Ward Annual Target Entry Form	VAEO/WAEO Format (Annual, July)
	WF01 - Ward Monthly Entry Form	VAEO/WAEO Format (Monthly)
	WF02 - Ward Quarterly Entry Form	VAEO/WAEO Format (Quarterly)
	WF03 - Ward Annual Entry Form	VAEO/WAEO Format (Annual)
District	DF02 - District Quarterly Entry Form	District Officers
	DF03 - District Annual Entry Form	District Officers

Table 7: ARDS Printable Reports

Level	Name of Report	Data Contents
Ward Reports	Ward Monthly Report (WR01)	Ward Annual Target Entry Form (WF00) and Ward Monthly Entry Form (WF01)
	Ward Quarterly Report (WR02)	Ward Quarterly Entry Form (WF02)
	Ward Annual Report (WR03)	Ward Annual Entry Form (WF03)
District Reports	District Monthly Report (DR01)	Consolidation of Ward Monthly Report (WR01) across wards
	District Quarterly Report (DR02)	Consolidation of Ward Quarterly Report (WR02) across wards
	District Annual Report (DR03)	Consolidation of Ward Annual Report (WR03) across wards
Integrated Reports (District)	District Quarterly Integrated Report (DIR02)	Consolidation of District Monthly Report (DR01) and District Quarterly Entry Form (DF02)
	District Annual Integrated Report (DIR03)	Consolidation of District Quarterly, Annual Report (DR02 and DR03) and District Annual Entry Form (DF03)
Integrated Reports (Region)	Region Quarterly Integrated Report (RIR02)	Consolidation of District Quarterly Integrated Report (DIR02) across LGAs
	Region Annual Integrated Report (RIR03)	Consolidation of District Annual Integrated Report (DIR03) across LGAs
Integrated Reports (National)	National Quarterly Integrated Report (NIR02)	Consolidation of Regional Quarterly Integrated Report across Regions
	National Annual Integrated Report (NIR03)	Consolidation of Regional Annual Integrated Report across Regions

The relationship among the reports used in ARDS is shown in a diagram below.

Relationship among the Main Reports in the ARDS Web Portal



- The data submitted by the VAEO/WAEO ward formats are entered into the ward entry forms of the ARDS Web Portal (WF00, WF01, WF02, and WF03).
- In addition to the ward data entered above, some data of the Web Portal are to be filled out by district data collection. These are entered into the district entry forms (DF02 and DF03).
- The Web Portal will automatically aggregate ward-level data to get district-level estimates. It is important to double check the ward / district level data after the data are entered in to the ARDS Web Portal.
- The LGA must be aware of the ARDS Web Portal operation, especially the following two points regarding data submission and report creation:
 - All data entry screens have a “Complete” button at the bottom of the screen. When district officers are sure that data entry is complete and is ready for regional approval, press this “Complete” button, which will notify the region and the centre that the data is ready.
 - All reports in the ARDS Web Portal are automatically created except for the District Reports (DR01, DR02, and DR03). These are created by the Web Portal only when the LGA operator clicks the “Create Report” button for those reports. For example, if the LGA has finished entering the last available Monthly Ward Forms (WF01), then the LGA must click the “Create Report” button for the Monthly District Report (DR01) to signal that data entry has finished for that month and for the ARDS Web Portal to generate the relevant district report.
- If it is hard for one officer to enter all data in the Web Portal, it is a good idea to form a team in the district office for entering ward-level data. Actually, it is important that several officials are familiar with ARDS and the ARDS Web Portal just in case key officers are transferred and/or an emergency occurs (injury or health problems).
- **Fiscal Year End Lock Function:** Typically two months after the end of fiscal year (the end of August), the data entry and report creation for the fiscal year will be closed. Thus, the district officers should complete data entry and report creation before end of August of the following fiscal year. The end time may be extended if the data submission and report creation status are not satisfactory. This possible extension must be deliberated and decided only by the Secretariat and the Technical Team jointly with careful considerations.

(8) Monitoring of Data Submission [D, R, N]

All level of officers should make sure that the data is properly entered into the ARDS Web Portal. Even if VAEO and WAEO collected data and submitted it to district, if the data are not entered into the Web Portal, reports could not be created. In the case of the District Quarterly Integrated Report (DIR02), all District Monthly Report (DR01) and District Quarterly Entry Form (DF02) within a quarter are necessary for creating DIR02 (refer to (9) Report production). The procedures below describe how to see submission rates and things to be confirmed in district/region and national levels.

Procedures how to get the submission rate

- 1) Log into the ARDS Web Portal
- 2) Click the following menu items on the top panel: **Report > Submission Status**
- 3) To select the properties of the submission status report: **Administrative unit > Entry form > Period type > Specific period**. The administrative unit can be selected from ward level up to national level. You can get the submission rate as of the day.

At each level of officers, the things to be monitored by using the submission status report are as follows:

ARDS Submission Status Reports (District):

These reports describe whether the ward formats (the VAEO/WAEO format with real data) are submitted by WAEOs. However, it should be noted that submission is confirmed only by entering data in to the ARDS Web Portal and pressing the “Complete” button. Therefore, the LGA should avoid any delay in data entry and must ensure that the “Complete” button is pressed. The submission report is produced for monthly, quarterly and annual data. This report is useful for monitoring the data submission.

The ward formats submission status reports are also reported as a summary for the District, the Region and the National levels.

Table 8: ARDS Submission Status Report (**District**)

Report	Name of Report	Data Contents
ARDS Submission Status Reports (District)	Data Submission Reports (Ward Annual Target Entry Form)	Submission status of Annual Target Entry form from Wards (WF00)
	Data Submission Reports	Submission status of ward data: monthly, quarterly, and annual

ARDS Submission Status Reports (Region and National):

These reports at regional level inform the submission of the data entry forms for both ward-level (WF00, W01, WF02, and W03) and district-level (DF02 and DF03) data, along with the report creation status of the District Reports (DR01, DR02, and DR03). For ward forms, a summary report shows the total number of data entry forms submitted against the total number of expected forms; submission status of individual wards is not shown. That information is shown only at the district level.

At national level, the reports inform the submission of WF00, W01, WF02, and W03, and DF02 and DF03, along with the report creation status of DR01, DR02, and DR03, summarised by region. For details of wards and districts submissions, refer to lower level reports at district and region.

Table 9: ARDS Submission Status Report (**Region and National**)

Report	Name of Report	Data Contents
ARDS Submission Status Reports (Region)	Data Submission Report	Submission status of ward data (by <u>district level</u> summary) (WF00, WF01, WF02, WF03) Submission status of district data (DF02, DF03)
	Report Creation Report	Report creation status of District Reports (DR01, DR02, DR03)
ARDS Submission Status Reports (National)	Data Submission Report	Submission status of ward data (by <u>region level</u> summary) (WF00, WF01, WF02, WF03) Submission status of district data (DF02, DF03)
	Report Creation Report	Report creation status of District Reports (DR01, DR02, DR03)

Points of monitoring at Regional and National Levels

- Check submission status frequently at the district/region where the submission tends to be delayed. Remind the district/region officer in-charge to submit data on time. The regional/national officers should make phone calls to the district and/or regional officers.
- Check if the data is properly submitted into the ARDS Web Portal. Sometimes district officers forget to click the ‘complete button’ and to submit quarterly and annual forms, because there are seven kinds of data entry forms (refer to (8) Data entry to ARDS Web Portal).
- Make sure the Annual target entry form is submitted in the beginning of the fiscal year.

(9) Report Production [D, R, N]

■ District Level

Once necessary data are entered into ARDS Web Portal, the Web Portal automatically processes the data and makes following reports ready for printing or downloading as PDF or Excel file. The reports can be used for different purposes, and the district should be able to utilize them according to their needs. Note that among various reports, two reports: the District Quarterly Integrated Report (DIR02) and the District Annual Integrated Report (DIR03), are comprehensive, covering both VAEO/ WAEO data and District level data. Other reports are equally usable, but are for general consumption.

Table 10: ARDS Printable Reports (at **District**) [Same as Part of Table 7]

Report	Name of Report	Data Contents
Ward Reports	Ward Monthly Report (WR01)	Ward Annual Target Entry Form (WF00) and Ward Monthly Entry Form (WF01)
	Ward Quarterly Report (WR02)	Ward Quarterly Entry Form (WF02)
	Ward Annual Report (WR03)	Ward Annual Entry Form (WF03)
District Reports	District Monthly Report (DR01)	Consolidation of Ward Monthly Report (WR01) across wards
	District Quarterly Report (DR02)	Consolidation of Ward Quarterly Report (WR02) across wards
	District Annual Report (DR03)	Consolidation of Ward Annual Report (WR03) across wards
Integrated Reports (District)	District Quarterly Integrated Report (DIR02)	Consolidation of District Monthly Report (DR01) and District Quarterly Entry Form (DF02)
	District Annual Integrated Report (DIR03)	Consolidation of District Quarterly, Annual Report (DR02 and DR03) and District Annual Entry Form (DF03)

Characteristics of each type of reports are described below.

Ward Reports (WR01, 02, 03):

Individual ward has its own report after data entry.

These reports are useful for checking data entry mistakes. It is also good for data saving. It has three kinds: Monthly, Quarterly and Annual (WR01, WR02 and WR03).

District Reports (DR01, 02, 03):

These reports simply aggregate all ward-level data to the district level. These District Reports can be used for LGA's general purposes. It has three kinds: Monthly, Quarterly and Annual (DR01, DR02 and DR03).

Integrated Reports (District) (DIR02, 03):

These reports are produced by combining both ward-level and district-level data. District Integrated Report is a comprehensive report to be referred to by the region and the national levels. It has only two kinds: Quarterly and Annual (DIR02 and DIR03).

The district should be aware of the difference among the reports and make the best use of them. It is expected that these reports help the district to respond rather easily to any inquiries about district's on-going agricultural status.

■ **Regional Level**

The region can see and produce the following two types (District and Regional levels) of reports. The reports are tabulated below.

Table 11: ARDS Reports (at **Region**) [Same as Part of Table 7]

Report	Name of Report	Data Contents
Integrated Reports (District)	District Quarterly Integrated Report (DIR02)	Individual LGA's District Quarterly Integrated Report
	District Annual Integrated Report (DIR03)	Individual LGA's District Annual Integrated Report
Regional Reports	Regional Monthly Report (RR01)	Consolidation of District Monthly Report (DR01) across districts
	Regional Quarterly Report (RR02)	Consolidation of District Quarterly Report (DR02) across districts
	Regional Annual Report (RR03)	Consolidation of District Annual Report (DR03) across districts
Integrated Reports	Region Quarterly Integrated Report (RIR02)	Consolidation of District Quarterly Integrated Report (DIR02) across LGAs

(Region)	Region Annual Integrated Report (RIR03)	Consolidation of District Annual Integrated Report (DIR03) across LGAs
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Characteristics of each type of reports are described below.

Integrated Reports (District) (DIR02, 03):

The region can see individual LGA's Integrated Reports. It has two types: Quarterly and Annual (DIR02 and DIR03).

Regional Reports (RR01, 02, 03):

The region can see a regionally summarized (consolidated) District Reports. It has three types: Monthly, Quarterly, and Annual (RR01, RR02, and RIR03).

Integrated Reports (Region) (RIR02, 03):

The region also can see a regionally summarized (consolidated) District Integrated Reports. It has again two types: Quarterly and Annual (RIR02 and RIR03).

The region should utilize these four types of reports according to their needs.

■ **National Level**

The national level can see and produce the following three (District, Regional and National levels) types of reports.

Table 12: ARDS Reports (at **National**) [*Same as Part of Table 7*]

Report	Name of Report	Data Contents
Integrated Reports (District)	District Quarterly Integrated Report (DIR02)	Individual LGA's District Quarterly Integrated Report
	District Annual Integrated Report (DIR03)	Individual LGA's District Annual Integrated Report
Integrated Reports (Region)	Region Quarterly Integrated Report (RIR02)	Consolidation of District Quarterly Integrated Report (DIR02) across LGAs
	Region Annual Integrated Report (RIR03)	Consolidation of District Annual Integrated Report (DIR03) across LGAs
Integrated Reports (National)	National Quarterly Integrated Report (NIR02)	Consolidation of Regional Quarterly Integrated Report across Regions
	National Annual Integrated Report (NIR03)	Consolidation of Regional Annual Integrated Report across Regions

Characteristics of each type of reports are described below.

Integrated Reports (District) (DIR02, 03):

The center can see individual LGA's Integrated Reports. It has two types: Quarterly and Annual (DIR02 and DIR03).

Integrated Reports (Region) (RIR02, 03):

The center can see individual Region's Integrated Reports. It has two types: Quarterly and Annual (RIR02 and RIR03).

Integrated Reports (National) (NIR02, 03):

The center can see nationally summarized District Integrated Reports. It has two types: Quarterly and Annual (NIR02 and NIR03).

The national level should utilize these three types of reports according to their needs.

(10) Data Transmission and Submission [D]

For the region or the national level to be able to see the data, the district should enter their data into the ARDS Web Portal. With the ARDS Web Portal, as long as a district has reasonable level of internet connectivity, data is immediately transmitted to the central server as soon as it is entered to the cell of a table of the Web Portal.

- Although data transmission could be done anytime as far as internet connection is

available, data/ reports are officially considered submitted only by pressing the “complete” button at the bottom of a data entry form.

- For the official submission (i.e. pressing the button), the data must be observed and approved by DAICO/ DLFO.
- The data/ report submission must be done by 15th day of the following month. (See the “(0) Operation Cycle of ARDS”)
- Data is transmitted to the central server as soon as data is entered when the network is online. If network is offline, data is temporarily stored at the computer but sent to the server as soon as network comes back.
- The district should inform (by mobile or email) to the region for approval that the data/ reports are entered and ready for peruse.

(11) Data Approval, Cancellation of Approval and Re-Approval [D, R]

As stipulated above, the data/ reports need to be approved by DAICO/ DLFO before officially submitted to the central server.

Apart from the District, Regional officers are in charge of approving or rejecting (with comments) the data submitted by the districts. The approval must be done within 25 days of the following month of a quarter. (See the “(0) Operation Cycle of ARDS”) Noting the deadline for approval, regional officers should make inquiry to the districts if they have completed the data entry and submission.

- Go over the data and check whether they are appropriate by comparing them with data in other districts and/or previous quarters/years.
- If data are inappropriate, have anomaly or inconsistency, regional officers should give proper comments so that the district can amend them.

The way for regional officers to receive and comment the district level data is as follow.

- Regional officers obtain the data by viewing the ARDS Web Portal where all data/ reports of the districts within the region are accessible.
- The ARDS Web Portal has a feature that allows regional officers to write comments in reports directly in the ARDS Web Portal and/or approve the data/reports. Because ARDS is an Internet-based web system, district officers are able to see the comments as soon as they are written.

There are occasions where collected and approved data are found not correct. In such occasions, data must be revised. However, as a routine process, data will have been locked once they are approved by Regional officers, and not able to be modified. Therefore in order to correct data, Regional officer and District officers need to collaborate as follows.

- When some data are found necessary for correction, Regional officers must be informed that he/she cancels the approval of the data (or relevant report as a whole).
- Regional officer then cancels the Approval and informs District officers the data are now modifiable. Then district officer will modify the data.
- After district officer modified the data, he/she informs Regional officer that the modification has been done. Then Regional officer will re-approve the data.

(12) Fiscal Year End Lock (Annual Data Lock) [N]

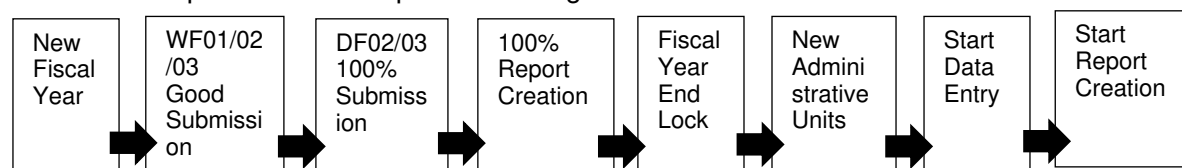
As explained in Section (0) Operation Cycle, at the end of every fiscal year, ARDS data and reports must be secured and kept intact afterward by locking the data entered in that particular fiscal year. This operation is very critical for smooth operation of ARDS. At the centre, both the Secretariat and the Technical Team should work closely for this in a timely manner. Typically the locking time is at the end of August. However, depending upon the actual status of data submission and report creation, the Secretariat and the Technical Team may consider the extension of this deadline, may be till the end of September. The extension

must be accompanied with rigorous demand and push to LGAs to improve the submission and creation. Also the extension must be limited within a short period. It is useless and ineffective to keep extending the deadline if no sufficient improvement is observed. The outline of the procedure is as follows (details should be referred to the ARDS Maintenance Manual Simple Version, Ver1.2, October 2019, pp. 45 – 55)

Outline of the procedure is as follows:

- To begin checking the status of data submission and report creation as follows **in July** (first month of a new fiscal year)
 - Sufficient or not of the submission of WF01, 02, and 03.
 - All (100%) submission of DF02 and 03.
 - All (100%) report creation of DIR/RIR/NIR02 and 03.
 - If data values of the Static Report are properly inserted and the values are appropriate.
- If the submission and report creation are not enough or appropriate, demand/ instruct LGAs to submit data or create report. Repeat this status check, instruction and LGAs' actions until the submission and creation become acceptable.
- Once the submission and creation become acceptable, do the following.
 - Data Closure: Forceful submission of DF02 and 03, and forceful report creation of DIR/RIR/NIR02 and 03.
 - Data Entry Lock.
- Only after this "Lock", if there are changes in administrative units, please make changes accordingly.

Schematic explanation of the procedure is given below.



(13) Data Analysis and Utilization (Benefit of ARDS) [D, R, N]

■ District Level

The data obtained through ARDS is comprehensive in the sense that it covers all areas of the district, and it encompassed a broad range of sub-sectors: crop production, crop health, livestock production, livestock health, inputs, extension services, food security, machine and infrastructure. Because of this broadness, if data are collected properly and long enough, it can reveal overall changes of the district agriculture (similarly of region and nation). This is contrasted to progress reports of individual project, which shows outputs of a particular project only.

In this sense, the ARDS report could be helpful in overall monitoring of district agriculture where multiple projects are being implemented. The report is also beneficial to district planning, serving as a basis for all kinds of planning. In addition, it could be applicable to the grass root level as well, because the district and VAEO/WAEO can provide suggestions to planning at village-level by referring to the data of particular villages.

It is also possible for district officers to obtain ARDS data of the other districts / regions or the nation as a whole by using a web application specifically developed for ARDS. With the application, he/she can easily obtain data of interests by specifying the periods, areas and data items.

ARDS is also useful for many other purposes such as agricultural GDP estimation by NBS and regular inquiry of food security situation.

■ **Regional Level**

ARDS data can also be used at the regional level by operating the ARDS Web Portal. Data can be analysed to find out, for example areal characteristics of production by district within the region, with which the region can construct a regional development plan. It is also possible for a region to produce regional comparison (comparison among regions) of a specific commodity by working on regional data of the entire country. By doing this the region can identify its own strength or weakness in agriculture.

■ **National Level**

ARDS data is also useful at the national level. ARDS produces nationally consolidated data together with regional and district level data. Similar to the regional data use, the central offices can study on the data to produce, for example national trend of a particular crop, or regional variation of a particular commodity. In various ways, ARDS data is helpful for the national level to analyse the nation's agriculture in general. ARDS data are also very complementary to the data from the annual agricultural sample surveys and the national sample census of agriculture which are more rigorous with respect to data quality. Close collaboration with NBS is necessary.

(14) Data Management [D, N]

■ **District Level**

With the ARDS Web Portal, it is easy to manage data because they are kept in one place in the web portal. For VAEO/WAEO, it is also easy to keep records as long as they keep a copy of the filled-in VAEO/WAEO format. They will be used for VADPs and other purposes.

- ARDS Web Portal will be an important database for district. Whenever data are needed, access to the ARDS Web Portal where data are stored, and check the data you look for.
- For this purpose, it is important to keep the computers (for the use of ARDS operation) from crashing or virus contamination. Give specific designation to the officers who are authorized to use the computer with ARDS. Keep anti-virus software effective all the time.
- If any mistake or error are found in reports, the district officers are required to go back to WAEO forms to correct errors to reflect that to various reports.

■ **National Level**

As to the national level data management, the major issue is the maintenance of the ARDS central server. Since all ARDS data are submitted and stored at the central server and the server is under the management of MOA their responsibility is particularly important. The TWG and the IT sections need to make sure that data backups are regularly done and the server is properly protected from disturbances and damages.

When ARDS will be operated long enough and the server becomes obsolete with respect to the data storage capacity and functionality, it is national level responsibility to upgrade the system with replacement of proper facilities.

(15) Campaign and Promotion of ARDS [D, R, N]

■ **All Levels**

At all levels, ARDS should be promoted and made to known to as many stakeholders as possible. The best way for this is to collect proper data regularly, use the data and show results (either raw data or analytical results) to broader audience. In addition, the district, region and the national centers should do the following.

- To explain to high ranking officers including political members the importance of the "evidence-based discussion", i.e. to use data in reporting, planning and any policy

analysis.

- To take every opportunity to high ranking officers in explaining the benefit of ARDS.
- To explain that ARDS is a standardized and formally authorized data collection system for the agricultural sector.
- To explain what kinds of data and how often they are collected.
- To use ARDS data for any meeting and presentation occasions: administrative meeting, council meeting, discussion with private sector, discussion with experts and study teams, explanation to farmers and general households, etc.
- To make ARDS data accessible to general public through reports and other means.

(16) Maintenance and Improvement of ARDS [D, R, N]

■ District and Regional Levels

For the district and the region, the major maintenance tasks of ARDS are data entry/ storage and computer protection.

- Data storage: As soon as data is entered into ARDS Web Portal, they are electronically stored in the central server if network is online. If the connection is disrupting, the entered data is temporarily stored at the computer in use, and is transmitted to the server whenever the network resumed. Hence, as long as the computer is properly functional and there is reasonable network connection, one can send and retrieve any data any time. However, it is also important for the district to keep original data (data on paper). The district should store the submitted filled-in VAEO/WAEO formats for at least three years. This action is necessary for both data backup and data checking if any inquiries arise in future.
- Computer protection and network connection: As described above, all data are stored in the central server. Therefore, the maintenance of the computer and network connection are of the utmost importance. The computer must be protected from crashing or virus contamination. The district should make resources available for anti-virus software and its regular updating. The district should also secure enough airtime for internet connection. It is also recommendable for the district to designate particular officers for the use of the computer with ARDS. Should the computer be crashed, it is LGA's responsibility to restore or replace the computer.
- The same applies to the region. The region must keep the computer clean from virus and any other damages. Also, secure stable internet connection.

For the sake of further improvement of ARDS, the district and the region should be encouraged to inform the center about any suggestion on modifications which seem to improve the use of ARDS. This is particularly relevant in the contents and use of the VAEO/WAEO formats. The formats may need to be adjusted to local conditions. In such a case, the district should communicate with the center about possible modifications of the formats.

The VAEO/WAEO formats need to be maintained at the latest version. The latest version is available through document section of ARDS Web Portal.

Also, it is highly recommended for the district and the region to inform and share among themselves about good practices and/or better examples of ARDS utilization including data use.

■ National Level

The M&E TWG is responsible for the entire setting and operation of ARDS. Therefore, the TWG should actively engage in the maintenance and improvement of ARDS. In the areas of information technologies (IT), the TWG and the Technical Team should work closely with the IT sections of ASLMs.

The details of the responsibilities and tasks at National level are described in Section 3.3 (2) in relation to the responsibilities of the TWG.

(17) Communications among LGAs, Regions and National Level (M&E TWG)

Communication among LGAs, Regions and the National level must be actively promoted.

First the regions should closely work with LGAs in the ARDS operation. Whenever LGAs have challenges and problems, the regional officers either respond themselves or bridge them to the national level. In turn the national level should keep close communication with the region to monitor operation of ARDS and ARDS Web Portal, and should keep record of technical issues for future improvement.

Technical communications with respect to ARDS Web Portal has importance because it may require experts' support. Any information either problems of ARDS Web Portal should be shared with regions (including regional IT staff) and the national level. Technical Team of TWG keeps records of such problem for easy solution of same/ similar troubles and for further improvement.

Communications and consultations should also be enhanced horizontally. LGAs should discuss and compare their operations and problems with neighbouring LGAs. Regions should communicate with other regions about good use as well as issues on ARDS and ARDS Web Portal. The contacts of all stakeholders must be collected and circulated back to all stakeholders with regular updates.

Contacts on ARDS Issues

The Officer in-charge of Region in ASDP M&E Thematic Working Group (TWG) respond to the general inquiry of ARDS. Please contact officer in-charge for your Region. List of officers should be available through ARDS Web Portal.

For other queries, general opinion/ suggestion please refer to ARDS or contact through e-mail below.

ARDS official E-mail:	ards@kilimo.go.tz
ARDS Web Portal Homepage:	https://ards.kilimo.go.tz/dhis-web-commons/security/login.action
ARDS M&E Homepage:	http://www.kilimo.go.tz/m&e.html

Other materials relevant to ARDS

This Guide has eight (8) Attachments as follows:

- 1) The letter “MFUMO WA UPATIKANAJI WA TAARIFA ZA SEKTA YA KILIMO NCHINI (AGRICULTURAL ROUTINE DATA SYSTEM - ARDS)” issued from PMO-RALG on 09/25/2014
- 2) Extension Officer s Manual
- 3) VAEO/ WAEO Formats
- 4) District Officer’s Manual
- 5) Budget table
- 6) Data Quality Management Sheet
- 7) Crop List and Definition
- 8) Conversion table

Other learning and reference materials on ARDS and ARDS Web Portal are as follows. These are available in the ARDS Web Portal or obtainable from the M&E TWG Secretariat.

- (i) ARDS User Manual
- (ii) ARDS Maintenance Manual
- (iii) ARDS User Manual Simplified Version
- (iv) ARDS Maintenance Manual Simplified Version
- (v) ARDS Video Learning Material

AGRICULTURAL ROUTINE DATA SYSTEM
(ARDS)

OPERATION GUIDE
(Ver. 12)

Final

Attachment

Attachment 1.0

ARDS Official Letters

1) TAMISEMI Letter, 20140925

2) TAMISEMI Letter, 20190709

JAMHURI YA MUUNGANO WA TANZANIA
OFISI YA WAZIRI MKUU

Anwani ya Simu "RALG"

Simu Nambari:
026-2322848/2321607
Nukushi: 026 2322116/2322168
E-mailaddress: ps@pmoralg.go.tz



Tawala za Mikoa na Serikali za
Mitaa,
S.L.P. 1923,
DODOMA.

Unapojibu Tafadhali Taja:

Kumb. Na.AH.9/275/01B/51

25/09/2014

Makatibu Tawala (M).
TANZANIA BARA.

**Yah: MFUMO WA UPATIKANAJI WA TAARIFA ZA SEKTA YA
KILIMO NCHINI (AGRICULTURAL ROUTINE DATA
SYSTEM - ARDS)**

1. Kwa kipindi kirefu suala la upatikanaji, utunzaji, utumiaji na usambazaji wa Takwimu za Sekta ya Kilimo limekuwa ni tatizo katika ngazi zote kuanzia ngazi za kijiji hadi Wizara za Sekta ya Kilimo. Utafiti uliofanyika umeonesha kwamba zaidi ya taarifa kumi na sita (16) za Sekta ya Kilimo kila mwezi huandaliwa katika kila Halmashauri na kuwasilishwa Wizara za Sekta ya Kilimo (Wizara ya Kilimo, Chakula na Ushirika, Wizara ya Maendeleo ya Mifugo na Uvuvi, Wizara ya Viwanda na Biashara na OWM-TAMISEMI). Hali hii imesababisha wataalam wa Sekta ya Kilimo waliopo katika Mamlaka za Serikali za Mitaa kutumia muda mwingi katika kuandaa taarifa hizi na mara nyingine kuwasilisha taarifa zenye takwimu tofauti na zisizo na uhalisia.

Tatizo hili limesababishwa na mambo yafuatayo:

- a) Kutokuwepo kwa mfumo wa pamoja (*format*) wa ukusanyaji, uchambuzi na utunzaji wa Taarifa na takwimu katika ngazi zote kuanzia Kijiji/Mtaa, Kata, Halmashauri, Mkoa na Wizara.
- b) Kutofautiana mpangilio wa uandishi wa Takwimu katika Mamlaka za Serikali za Mitaa kunatokana na maelekezo tofauti na

ya mara kwa mara na hatimaye kusababisha Halmashauri kushindwa kukidhi mahitaji ya Wizara za Sekta ya Kilimo.

2. Kutokana na Mapungufu hayo Wizara za Sekta ya Kilimo chini ya Programu ya kuendeleza Sekta ya Kilimo nchini (ASDP) kupitia kikundi kazi cha ufuatiliaji na tathmini chenye wataalam toka Wizara zote za Sekta ya Kilimo kimeboresha mfumo wa pamoja wa upatikanaji wa taarifa za maendeleo ya Sekta ya Kilimo nchini (*Agricultural Routine Data System-ARDS*) kutoka ngazi ya Kijiji/Mtaa, Kata, Halmashauri, Mkoa na Wizara.
3. Mfumo huu unahusisha maeneo makuu matatu ambayo ni fomu ya kukusanyia taarifa za Kilimo za vijiji/Kata (*VAEO/WAEO format*), fomu kwa ajili ya kuweka pamoja taarifa za Vijiji, Kata na Wilaya (*Intergrated Data Collection Format*), na mfumo wa kompyuta unaowezesha kutawanya taarifa za kilimo kutoka ngazi ya Halmashauri kwenda kwa wadau mbalimbali kupitia Mikoa.
4. Mwaka 2009/2010, mfumo huu ulifanyiwa majaribio katika Halmashauri nne za Mikoa ya Morogoro (Halmashauri za Wilaya Morogoro na Mvomero) na Dodoma (Halmashauri za Wilaya Mpwapwa na Kondoa) na kuonyesha mafanikio makubwa. Baadaye mfumo huu ulisambazwa kwa majaribio zaidi katika Mikoa na Halmashauri zote nchini. Kazi hii imekamilika mwezi Machi, 2014.
5. Serikali kwa kushirikiana na wadau wengine wa maendeleo (DFID na JICA) ilitoa mafunzo kwa maafisa ugani wote kwa vijiji na kata pamoja na maafisa wawili wa Halmashauri na Mikoa ya jinsi ya kukusanya, kutunza na kuandaa taarifa mbalimbali za Kilimo kwa kutumia mfumo huu. Pamoja na mafunzo haya Serikali pia imetoa vifaa (Kompyuta, Pikipiki na Ving'amuzi) kwa Halmashauri na Mikoa yote nchini kwa ajili ya kazi hii.
6. Pamoja na kuwajengea uwezo maafisa ugani wa kukusanya taarifa za Sekta ya Kilimo, mfumo huu pia umerahisisha upatikanaji wa taarifa hizo katika mtindo unaofanana kwa Halmashauri zote nchini. Lengo la uboreshaji wa mfumo huu ni kuwezesha upatikanaji wa takwimu zote katika *Database* iliyoko kwenye *Server* iliyoko Makao makuu ya Wizara za Sekta ya Kilimo na wadau wengine wa Sekta.

7. Kutokana na umuhimu wa suala hili, na jitihada zote hizi kubwa zilizofanyika, naelekeza kuwa Mamlaka za Serikali za Mitaa zianze rasmi kutumia mfumo huu katika kutoa taarifa za kila mwezi za sekta ya kilimo.

Nawatakia kazi njema.


J. A. Sagini
KATIBU MKUU

Nakala: Katibu Mkuu,
Wizara ya Kilimo Chakula na Ushirika
S.L.P 9192
DAR-ES-SALAAM.

Katibu Mkuu,
Wizara ya Maendeleo ya Mifugo na Uvuvi
S.L.P 9253
DAR-ES-SALAAM.

Katibu Mkuu,
Wizara ya Viwanda na Biashara,
S.L.P 9503
DAR-ES-SALAAM

**JAMHURI YA MUUNGANO WA TANZANIA
OFISI YA RAIS**

Anuani ya Simu "TAMISEMI" DODOMA
Simu Na: (026) 2322848, 2321607,
2322853, 2322420,
Nukushi: (026) 2322116, 2322146,
2321013,
Barua pepe: ps@tamisemi.go.tz
Unapojibu tafadhali taja:-



Tawala za Mikoa na Serikali za Mitaa
(TAMISEMI),
Mji wa Serikali - Mtumba,
S.L.P 1923,
41185 DODOMA.

Kumb. Na. AH. 9/275/02/64

09/07/2019

Makatibu Tawala Mikoa,
TANZANIA BARA.

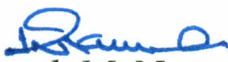
**YAH: MUENDELEZO WA MAFUNZO YA KUIMARISHA MFUMO
WA KUKUSANYIA TAKWIMU ZA KILIMO (ARDS)**

1. Mtakumbuka kuwa Ofisi ya Rais Tawala za Mikoa na Serikali za Mitaa iliandika barua yenye Kumb. Na. AH.9/275/01B/51 tarehe 25 Septemba, 2014 kuelekeza kuwa Mamlaka za Serikali za Mitaa zianze rasmi kutumia mfumo wa pamoja wa uandaaji wa takwimu za kilimo (Agricultural Routine Data System-ARDS) katika kutoa taarifa za kila mwezi za sekta ya kilimo. Katika kutekeleza maelekezo hayo tumebaini kuwepo kwa mapungufu mbalimbali. Baadhi ya mapungufu yaliyobainika ni pamoja na:- Mamlaka za Serikali za Mitaa kushindwa kutenga fedha za uendeshaji mfumo huu toka katika vyanzo vya ndani; Mamlaka za Serikali za Mitaa kushindwa kusambaza miongozo na kutoa mafunzo kwa Maafisa kilimo ngazi ya Kata/Vijiji (WAEO/VAEO); Mamlaka za Serikali za Mitaa kutowasilisha taarifa kwa wakati kwenye mfumo (**kabla ya tarehe 15 ya kila mwezi**); taarifa zilizopo kwenye mfumo kukosa ubora na uhalisia unaokusudiwa; Sekretarieti za Mikoa kushindwa kupitia, kuhakiki, na kuidhinisha taarifa kwenda kwenye mfumo kwa wakati (**kabla ya tarehe 25 ya kila mwezi**).
2. Moja ya jitihada za kuhakikisha kuwa mapungufu haya hayajitokezi tena katika siku za usoni, Serikali kupitia Wizara za Sekta ya Kilimo imeandaa mafunzo rasmi yatakayowahusisha Wakuu wa Idara za Kilimo na Mifugo na Uvuvi (DAICOs na DLFOs) katika Halmashauri

zote nchini pamoja na Maafisa Kilimo na Maafisa Mifugo mmoja mmoja kutoka katika ngazi ya Mkoa. Aidha, kati ya Maafisa hao wawili wa Mkoa awepo, Afisa aliyeteuliwa kusimamia masuala ya ARDS katika ngazi ya Mkoa. Mafunzo haya yatalenga kuweka uelewa wa jinsi Mfumo unavyofanya kazi na namna ya kuutumia, ili waweze kuusimamia na kufuatilia ubora wa takwimu zinazoingizwa kwenye mfumo huo. **Maafisa hao watalazimika kushiriki wao wenyewe bila kutuma wawakilishi.** Kila mshiriki aje na kompyuta mpakato (laptop computer).

3. Kwa barua hii, mnaombwa kuwaruhusu maafisa tajwa ili waweze kushiriki katika mafunzo hayo muhimu yanayotarajiwa kufanyika kulingana na ratiba iliyoambatanishwa pamoja na barua hii. Gharama za mafunzo na posho za kujikimu pamoja usafiri wa umma kwa washiriki zitagharamiwa na Shirika la Maendeleo la Japani (JICA).

Nawashukuru kwa ushirikiano wenu.


Eng. Joseph M. Nyamhanga
KATIBU MKUU

Nakala: Katibu Mkuu,
Wizara ya Kilimo,
S. L. P 2182,
Kilimo IV,
DODOMA.

Group 1: Mara, Geita&ShinyangaCentres

Day	Date (all July 2019)	Regions	Total LGAs	Participants	Venue
Thursday -Friday	18 th - 19 th	Mara, Simiyu	15	DAICO & DLFO (LGAs) & RS agricultural & livestock officers in charge of ARDS	Mara RS/hired venue
Monday -Tuesday	22 nd - 23 rd	Geita, Kagera	14	DAICO& DLFO (LGAs) & RS agricultural & livestock officers in charge of ARDS	Geita RS/ hired venue
Thursday -Friday	25 th -26 th	Mwanza, Shinyanga	14	DAICO& DLFO (LGAs) & RS agricultural & livestock officers in charge of ARDS	Shinyanga RS/hired venue

Group 2: Kilimanjaro, Tanga&MorogoroCentres

Day	Date (all July 2019)	Regions	Total LGAs	Participants	Venue
Thursday -Friday	18 th - 19 th	Arusha, Manyara	14	DAICO& DLFO (LGAs) & RS agricultural & livestock officers in charge of ARDS	ManyaraRS/ hired venue
Monday -Tuesday	22 nd - 23 rd	Kilimanjaro, Tanga	18	DAICO& DLFO (LGAs) & RS agricultural & livestock officers in charge of ARDS	Tanga RS/ hired venue
Thursday -Friday	25 th -26 th	Morogoro, Dodoma	17	DAICO& DLFO (LGAs) & RS agricultural & livestock officers in charge of ARDS	Morogoro RS/ hired venue

Group 3: Njombe, Songwe&TaboraCentres

Day	Date (all July 2019)	Regions	Total LGAs	Participants	Venue
Thursday -Friday	18 th - 19 th	Njombe, Iringa, Ruvuma	19	DAICO& DLFO (LGAs) & RS agricultural & livestock officers in charge of ARDS	Njombe RS/ hired venue
Monday -Tuesday	22 nd - 23 rd	Mbeya, Songwe, Rukwa	16	DAICO& DLFO (LGAs) & RS agricultural & livestock officers in charge of ARDS	Songwe RS/ hired venue
Thursday -Friday	25 th -26 th	Tabora, Singida	15	DAICO& DLFO (LGAs) & RS agricultural & livestock officers in charge of ARDS	Tabora RS/ hired venue

Group 4: Kigoma, Mtwara, &DSM Centres

Day	Date (all July 2019)	Regions	Total LGAs	Participants	Venue
Thursday -Friday	18 th - 19 th	Kigoma, Katavi	14	DAICO& DLFO (LGAs) & RS agricultural & livestock officers in charge of ARDS	Kigoma RS/ hired venue
Monday -Tuesday	22 nd - 23 rd	Linidi, Mtwara	15	DAICO& DLFO (LGAs) & RS agricultural & livestock officers in charge of ARDS	Mtwara RS/ hired venue
Thursday -Friday	25 th -26 th	DSM, Pwani	14	DAICO& DLFO (LGAs) & RS agricultural & livestock officers in charge of ARDS	DSM RS/ hired venue

Attachment 2.0

Extension Officer's Manual

Kiambatisho Na. 2 cha utendaji kazi wa MUTAKI (ARDS)

Mwongozo wa Wagani

**Mfumo wa Ukusanyaji Takwimu za Kilimo
(ARDS)**

Kikundi Kazi cha Ufuatiliaji na Tathmini cha Programu ya Kuendeleza Sekta ya Kilimo

July 2018

[1] Utangulizi -----

1.1 Lengo la mwongozo wa wagani

Lengo la mwongozo ni kutoa maelekezo kwa maafisa ugani wa vijiji na kata katika ukusanyaji wa takwimu za kilimo na mifugo kama ifuatavyo:

- Kuwa na uelewa wa pamoja wa jinsi ya kujaza taarifa za vijiji na kata
- Kuwaonyesha mbinu mbalimbali za jinsi ya kukusanya kwa ubora takwimu na taarifa za sekta ya kilimo
- Kuwezesha kuwa na takwimu zenye ubora ili zitumike katika kupanga mipango bora ya sekta ya kilimo
- Kuwezesha kubadilishana mawazo kuhusu umuhimu wa takwimu
- Kuonyesha jinsi ya kukusanya taarifa (za mwezi, robo mwaka na mwaka) ikiwa ni pamoja na maelekezo ya namna ya kujaza fomu husika

*Katika mwongozo huu, neno “Wilaya” limetumika kumaanisha wilaya zote, miji, manispaa na majiji¹

1.2 Hatua za kuandaa taarifa

1) Ukusanyaji wa Takwimu:

- Fomu za ngazi ya vijiji/kata zinaonyesha kwa usahihi aina ya taarifa zinazotakiwa kukusanywa. Hivyo basi wagani wana ufahamu wa taarifa zinazohitajika pamoja na kuwa fomu zina taarifa ya sekta nzima ya kilimo pamoja na mifugo, imwagiliaji n.k.
- Wagani watajaza takwimu hizi kwa urahisi kama wanaweka kumbukumbu ya shughuli zao za kila siku wanapowatembelea wakulima.
- Inategewewa wagani wa vijiji na kata watashirikiana kwa pamoja katika kutekeleza ukusanyaji wa takwimu.

¹ Hii ni kuondoa mkanganyiko wa kutumia neon “Mamlaka ya Serikali za Mitaa” inayojumuisha kata na vijiji, au neon “halmashauri” ambapo halmashauri zaidi ya moja kwa pamoja zinakuwa na Afisa Kilimo mmoja.

- Ni vyema pia kuwashirikisha na Watendaji wa vijiji, ushirikiano ukiwa si wa kuridhisha, inashauriwa kuwatumia wenyeviti wa vitongoji

2) Uwasilishaji wa taarifa

- Kwa ngazi ya kijiji, taarifa zitawasilishwa kwa mgani wa kata wiki ya mwisho ya mwezi husika. Kujaza taarifa hizi, mgani atatumia kumbukumbu alizokusanya wakati anatembelea wakulima.
- Kwa ngazi ya kata, taarifa itawasilishwa wilayani ndani ya wiki ya kwanza ya mwezi unaofuata. Ni muhimu vilevile wagani wa kata washirikiane na wale wa vijijini kuandaa taarifa.

[2] Fomu ya Taarifa ya Mwezi (WF01) -----

1. Utangulizi

1.1 (a) Hali ya hewa

Mvua: Andika idadi ya siku mvua ilinyesha, au kiasi cha mvua kama ilivyoelezwa hapa chini (1) or (2).

(1) Kama kijiji chako kina kipima mvua, jaza kiasi cha mvua (milimita) katika safu wima ya pili.

(2) Kama kijiji chako hakina kipima mvua, jaza idadi ya siku na safu wima ya tatu.

Idadi ya siku	Kiasi cha mvua (milimita)	Maelezo (Nyingi/ Wastani/ Kidogo/Hakuna)

Kama kuna kipima mvua katika kata yako, itabidi kuwasilina na kituo hicho ili kupata takwimu ya mvua iliyonyesha. Jaza sifuri "0" iwapo hakuna mvua iliyonyesha.

Kama kijijini hakuna kipima mvua, acha kisanduku wazi, na uruke kabisa safu wima hii.

Kwa mujibu wa uzoefu wako wa zamani, chagua "nyingi", "wastani", "kidogo" au "hakuna mvua", kwa jinsi wewe unavyoona kwa uchunguzi wa jicho lako, unaweza kuwa unafananisha hali iliyopo sasa na mwaka uliokuwa na mvua za kawaida tu.

1.1 (b) Matukio:

Tafadhali eleza matukio, kama yapo, mfano (ukame, mafuriko, njaa, mlipuko wa magonjwa ya mimea/mifugo n.k.) yaliyojitokeza mwezi huu.

Kwa ngazi ya kata, utaje hapa majanga yote yaliyotokea katika kila kijiji. Kama takwimu zinapatika pia ziambatanishe.

Kwa mfano, kama kuna ukame, ripoti ieleze ni kiasi gani cha kaya zimepata madhara kutokana na ukame.

1.2 Kazi zilizofanyika

Tafadhali ainisha shughuli kuu zilizotekelezwa na afisa ugani kwa sekta ya kilimo/mifugo kwa mwezi huu.

Unatakiwa uweke na takwimu ili pawe na urahisi wa kuchambua taarifa husika.

1.3 Mafanikio na Changamoto

Mafanikio:	
Changamoto/ Matatizo:	

Usitoe ripoti ya changamoto tu bali pia ueleze nini kimefanyika kutatua changamoto husika kupelekea mshindi chanya kwa walengwa.

2. Malengo, Utekelezaji na Bei za Mazao

2.1(a) Malengo

Malengo ya mwaka ya eneo litakalopandwa yaandaliwe mwanzo wa mwaka wa fedha (JULAI). Kwa mujibu wa maelekezo ya Afisa Kilimo wa Wilaya, afisa ugani wa kata atatarisha malengo ya ngazi ya kijiji kwa eneo litakalopandwa na tija kwa kushauriana na wagani wa vijiji na ataunganisha malengo ya vijiji vyote kupata malengo ya kata yake. Baada ya Afisa Kilimo kuridhia malengo kwa kila kata, mgani wa kata atawafahamisha wagani na watendaji katika vijiji vyote haya malengo mapya.

Aina ya mazao	Malengo kwa mwaka		
	Eneo litakalopandwa (ha) (i)	Uzalishaji /tija (tani/ha) (ii)	Matarajio ya mavuno (tani) (iii) = (i) x (ii)
Mahindi			
Mpunga			
Mtama			
Uwele			
Ulezi			
Ngano			
Mihogo			
Viazi vitamu			
Viazi mviringo			
Kunde			
Maharage			
Ndizi mbivu (Sweet Banana)			
Ndizi mbichi (Plantain)			

Malengo ya mwaka yanatarishwa kwa mashirikiano kati ya maafisa ugani na Afisa Kilimo wa Wilaya kutokana na uzoefu na/au uchunguzi. Afisa ugani wa kata/kijiji anaweza kupendekeza malengo ya eneo litakalopandwa na tija, hata hivyo Afisa Kilimo wa Wilaya anaweza kubadilisha mapendekezo hayo baada ya kushauriana na Afisa Kilimo wa Mkoa au wadau wengine wa kilimo.

2.1(b) Utekelezaji katika msimu wa Kilimo

Tembelea wakulima na kuwaelewesha taarifa za kukusanywa, ukimshirikisha mtendaji wa kijiji. Utaratibu kwa kina umeelezwa katika ukurasa wa 5 na 6. Tafadhali soma kwa uangalifu.

Mazao kwenye orodha hii takwimu zake zijazwe hapa.	Utekelezaji				Bei ya soko (Tsh / Kg) (vi)	Maelezo (Zisizidi herufi hamsini) (vii)
	Eneo lililopandwa (ha) (ii)	Eneo lililovunwa(ha) (iii)	Uzalishaji/ tija (tani/ha) (iv)	Mavuno (tani) (v=iii*iv)		
Mahindi						
Mpunga						
Mtama						
Uwele						
Ulezi						
Ngano						
Mihogo						
Viazi vitamu						
Viazi mviringo						
Kunde						
Maharage						
Ndizi mbivu (Sweet Banana)						
Ndizi mbichi (Plantain)						

Kwa eneo lenye mazao yaliyopandwa kwa mchanganyiko, kadiria asilimia za kila zao na kwa kutumia asilimia hizo kokotoa kwa uangalifu mkubwa eneo la kila zao,

Bei ya soko imebeba maana ya pamoja. Masoko bei zinapopatikana yamegawanyika makundi matatu: (1) bei za vijijini, (2) zilizochanganyika, za mjini na bei za kijijini na (3) bei za mijini. Bei za mazao kutoka (1) bei za masoko ya vijijini ni sawa na bei ya shambani, bei za mazao kwa eneo la (2) na (3) ni mchanganyika wa bei ya shambani na bei za rejareja.

Kwa ujumla, bei inayotakiwa ni ile anayopokea mkulima katika eneo la shamba au bei mkulima anauza mazao yake kama muuzaji wa kwanza kabisa. Hivyo basi, wakati ukimtembelea mkulima ulizia bei aliyouzia mazao, pia unaweza kutembelea magulio na kuuliza bei mkulima amepokea, usiulize wafanyabiashara.

Pia ieleweka kabisa kwamba bei inayokusanywa ni ile ambayo imejitokeza kwa mara nyingi zaidi kwa mwezi husika. Kama magulio yapo mengi katika eneo hilo, kokotoa bei ya wastani kwa kujumlisha tarakimu za bei na kugawanya kwa idadi ya magulio au idadi ya mara ambazo magulio yanafanyika.

Eleza hatua ambayo mazao yamefikia (mfano: wakati wa kupalilia, mazao kutoa maua na pia andika sababu ya mazao kuwa mengi au pungufu ya malengo.

Afisa Kilimo wa Wilaya ataongeza mazao mengine muhimu katika orodha kama yanajitokeza katika Wilaya yake na kuwafahamisha maafisa ugani. Orodha ya mazao imeambatishwa katika mwondozo wa uendeshaji wa MUTAKI wa Wilaya

(Inaendelea...)

Aina ya mazao (i)	Utekelezaji				Bei ya soko	Maelezo (Zisizidi herufi hamsini) (vii)
	Eneo lililopandwa (ha) (ii)	Eneo lililovunwa(ha) (iii)	Uzalishaji/ tija (tani/ha) (iv)	Mavuno (tani) (v)	(Tsh / Kg) (vi)	

* Kipaumbele kikubwa ni zao la mahindi kwa kutumia njia hii. Kwa mazao mengine tumia makadirio.

[Matayarisho: Kutumia njia ya Sampuli kwa takwimu ya Mavuno ya MAHINDI]

Kabla ya kukusanya takwimu, unatakiwa utambue eneo litakalovunwa na kiasi cha mavuno ya mahindi*,

- 1) Tayarisha orodha ya wakulima wote katika kijiji. Kwenye orodha usiweke wafugaji wasiokuwa na mashamba ya mazao. Kama wewe ni afisa ughani wa kata na hakuna maafisa ughani wa kijiji, wasiliana na watendaji wa vijiji na watake wakupatie orodha ya wakulima wote katika kijiji.
- 2) Chagua wakulima 10 kutoka orodha ya wakulima kama ifuatavyo:-
 - i) Gawanya idadi ya wakulima kwa 10 (mfano $300/10=30$).
 - ii) Chagua namba ya kuanzia kati ya moja na namba uliyopata hapo juu (mfano: 1 hadi 30).
 - iii) Chagua mkulima mmoja kila baada ya namba uliyopata (ii) hapo juu (mfano ukianza na namba 3, utachagua 33, 63, 93, 123...na kuendelea).
- 3) Kabla kuanza msimu mpya (June), tembelea wakulima waliochaguliwa kwa utaratibu hapo juu na ueleze aina ya takwimu ambazo utahitaji kukusanya.
- 4) Kila mwezi, uliza hawa wakulima 10 kupata takwimu ya eneo lililovunwa (ha) na kiasi cha uzalishaji (Tani).
- 5) Inashauriwa kuhakiki hizi takwimu ulizopata kwa mtendaji wa kijiji/kata kabla ya kuwasilisha kwa Afisa Kilimo wa Wilaya.
- 6) Ikitokea mmoja katika sampuli shamba lake au yeye mwenyewe akapotea, unaendelea na wakulima waliobakia katika sampuli. Usiongeze mwingine kutoka nje ya sampuli iliyopo.

(Inaendelea...)

[Ukusanyaji wa Takwimu]

Ili kukusanya takwimu za eneo lililopandwa, eneo lililovunwa, tija na kiasi cha uzalishaji, ufafanuzi ni kama ifuatavyo:

1. Eneo la kijiji/kata lililolimwa

- (1) Mazao ya Muda/Mazao ya Mwaka (pamoja na Misimu Miwili): Kusanya takwimu ya eneo linaloongezeka na uwasilishe kama takwimu ya mwezi huo.
- (2) Mazao ya Kudumu na Miti ya Matunda: (Julai) eneo lote lililopandwa, (Miezi Mingine) eneo jipya na ongezeko la eneo lililopandwa tu [Kipimo] Jinsi unavyoona kwa uchunguzi wa jicho/kuona kwa jicho lako, na kuthibitisha kwa kumshirikisha mtendaji wa kijiji

2. Eneo la Kijiji Lililovunwa

Mazao yote ya kudumu na miti ya Matunda isipokuwa mazao hapo chini: Kusanya takwimu kwa kila mwezi kama takwimu ya mwezi. Mazao yenye kuvunwa mara zaid ya moja kwa msimu (mfano mbogamboga kama nyanya, bamia): takwimu ikusanywe mwezi ule ambao shughuli ya kuvuna imekamilika. [Kipimo] Jinsi unavyoona kwa uchunguzi wa jicho/kuona kwa jicho lako, na kuthibitisha kwa kumshirikisha mtendaji wa kijiji

3. Eneo la Kata Lililovunwa

Jumla ya eneo la kata lililovunwa linapatikana kwa kujumlisha eneo lililovunwa kwa kila kijiji, na kijiji ambacho hakikuwasilisha takwimu yake ipatikane kwa kumshirikisha mtendaji wa kijiji.

4. Kiasi cha Uzalishaji katika Kijiji

Kwa mahojiano au kudodosa, na kuthibitisha takwimu kwa kumshirikisha mtendaji wa kijiji. Kwa mazao yenye kuvunwa mara zaidi ya moja kwa msimu (mfano nyanya, bamia): Kusanya na wasilisha takwimu ya mwezi ule ambao uvunaji umekamilika.

Kwa zao la Mahindi:

- (1) Unajumlisha kiasi cha uzalishaji kwa wakulima wote 10 wa sampuli na unaigawanya kwa jumla ya eneo la sampuli lililovunwa. Hii itakusaidia kupata tija ya sampuli katika kijiji.
- (2) Uzalishaji wa kijiji utapatikana kwa kukokotoa eneo la kijiji lililovunwa kwa kuzidisha na tija ya sampuli katika kijiji.

5. Kiasi cha Uzalishaji katika Kata

Uzalishaji katika Kata unapatikana kwa kujumlisha kiasi cha Uzalishaji kwa vijiji vyote.

6. Tija katika ngazi ya Kijiji [inapatikana kwa kugawa jumla ya uzalishaji (Tani) na jumla ya eneo lililovunwa (Ha)]

7. Tija ya Kata

Tija kwa ngazi ya kata inakotolewa kwa kugawa jumla ya uzalishaji kwa kata (Tani) kwa jumla ya eneo lililovunwa (Ha).

(Inaendelea...)

	Muhtasari	
Eneo Lililopandwa	a) Mazao ya Muda/Mazao ya Mwaka (pamoja na Misimu Miwili): Takwimu ya mwezi huo. b) Mazao ya Kudumu na Miti ya Matunda: (i) Julai: eneo lote lililopandwa, (ii) miezi mingine: <u>eneo jipya na ongezeko la eneo litakalopandwa tu</u>	
	[Ngazi ya Kijiji] Uchunguzi wa jicho/kuona kwa jicho, na kuthibitisha kwa kumshirikisha mtendaji wa kijiji	[Ngazi ya Kata] Jumla ya eneo la kata lililopandwa ni kukokotoa kwa kujumlisha maeneo yaliyopandwa katika kila kijiji.
Eneo Lililovunwa	Takwimu ya Mwezi huo	
	[Ngazi ya kijiji] Uchunguzi wa jicho/kuona kwa jicho, na kuthibitisha kwa kumshirikisha mtendaji wa kijiji	[Ngazi ya Kata] Jumla ya eneo la kata lililovunwa ni kukokotoa kwa kujumlisha maeneo yaliyovunwa katika kila kijiji, takwimu ya kijiji ambacho hakikuwasilisha ipatikane kwa mashauriano na mtendaji wa kijiji.
Tija	Takwimu ya Mwezi huo	
	[[Ngazi ya Kijiji]- hatua(1) a) Mahindi: Sampuli ya wakulima 10 (Juni) Tija ya Sampuli = $\frac{\Sigma(\text{Uzalishaji wa Sampuli})}{\Sigma(\text{Eneo la Sampuli lililovunwa})}$ b) Mazao mengine: Hakuna sampuli	[Ngazi ya Kata]- hatua(4) <i>Tija ya kata inakotolewa kwa njia ifuatayo:</i> <i>Jumla ya Uzalishaji gawanya kwa Jumla ya eneo lililovunwa</i>
Kiasi cha Uzalishaji	Takwimu ya Mwezi huo	
	[[Ngazi ya Kijiji]- hatua(2) a) Mahindi: Uzalishaji wa Kijiji unapatikana kwa kuzidisha Eneo la Kijiji Lililovunwa na Tija ya Sampuli (ya wakulima 10) Kiasi cha Uzalishaji kwa kijiji = Eneo la Kijiji Lililovunwa x Tija ya Sampuli b) Mazao mengine: Kwa mahojiano au kuona kwa jicho na kuhakiki kwa kumshirikisha mtendaji wa kijiji	[Ngazi ya Kata]- hatua(3) Kokotoa kwa njia ifuatayo: Kiasi cha Uzalishaji ni jumala ya Uzalishaji wa vijiji vyote katika Uzalishaji wa Kata = $\Sigma(\text{Uzalishaji wa Vijiji})$
Maelezo	Kwa Mazao ya Kudumu na Miti ya Matunda; kwenye ripoti, kiasi cha mkusanyiko kwa Eneo Lililovunwa inaweza kuwa kubwa zaidi ya Eneo Lililopandwa.	

(Inaendelea...)

Jumla katika kata inapatikana kwa kujumlisha takwimu za ngazi ya kijiji.

Hata hivyo, kama kuna mgani wa kijiji **hakuwasilisha** fomu zilizojazwa, afisa ugani wa kata lazima achukue hatua za haraka. Kwanza awasiliane na mgani na mtendaji wa kijiji husika, akiwataka wawasilishe taarifa hiyo mara moja. Ikitokea hakuna majibu ya kuridhisha, tumia utaratibu wa dharura kama ilivyoonyeshwa kwenye Kisanduku Na. 1 hapo chini.

Kisanduku Na 1. Vidokezo kama Mgani wa Kijiji hakuwasilisha fomu iliyojazwa takwimu

<Maagizo kwa Mgani wa Kata> namna ya kujaza eneo lililovunwa, tija na kiasi cha uzalishaji kama tawimu za kijiji husika haikujazwa.

Kama kuna takwimu za kijiji haikujazwa, kadiria kwa njia zifuatazo:

(1) Tija ya awali ya kata itakokotolewa kwa kiasi cha takwimu zilizopo kama ifuatavyo:

Takwimu zilizopo za “kiasi cha Uzalishaji” gawanya kwa “Jumla ya eneo la kata lililovunwa”.

(2) Takwimu za “eneo la kijiji lililovunwa” zitapatikana kwa mashirikiano na mtendaji wa kijiji.

(3) Takwimu ya kijiji ya kiasi cha uzalishaji itakokotolewa kwa (2) “eneo la kijiji lililovunwa” ambalo halikuwasilishwa **zidisha** kwa “Tija ya awali” ya kata.

<Mfano>

Tuseme Kata Z ina vijiji (3) vitatu. Kijiji A and B wamewasilisha takwimu, lakini kijiji C hakijawasilisha.

	Hali ya Uwasilishaji	Eneo Lililovunwa	Kiasi cha Uzalishaji	Tija
<i>Kijiji A</i>	Wamewasilisha	2	6	
<i>Kijiji B</i>	Wamewasilisha	3	10	
<i>Kijiji C</i>	<i>Hawajawasilisha</i>	4		<u>3.2</u>

(1) Tija ya Kijiji C inapatikana kwa $(6+10) / (2+3)$

(2) Tuseme eneo la Kijiji C Lililovunwa tumeulizia na kuambiwa ni kiasa cha jumla Heka 4 (4ha).

	Hali ya Uwasilishaji	Eneo Lililovunwa	Kiasi cha Uzalishaji	Tija
<i>Kijiji A</i>	Wamewasilisha	2	6	
<i>Kijiji B</i>	Wamewasilisha	3	10	
<i>Kijiji C</i>	<i>Hawajawasilisha</i>	4	<u>12.8</u>	<u>3.2</u>

(3) Uzalishaji wa Kijiji C unakokotoa kwa $4 \times 3.2 = 12.8$

Mwisho, uzalishaji wa Kata Z unakokotolewa kama

$$6 \text{ (ton)} + 10 \text{ (ton)} + \mathbf{12.8} \text{ (ton)} = 28.2 \text{ (ton)}$$

2.2 Utabiri wa usalama wa chakula

Kwa jedwali hii utaratibu wa kawaida kama takwimu zingine utafuatwa. Kwa mfano, kama ilivyo kwa takwimu zingine, takwimu hizi pia lazima ziwasilishwe kufikia tarehe 15th Juni.

Ukusanyaji wa takwimu za utabiri wa hali ya chakula utazingatia maelekezo yanayotolewa na idara ya usalama wa chakula.

Kumbuka hili ni jedwali la kipekee litakaloonekana tu mara moja kwa mwaka hasa **mwezi Mei kipindi cha kuingiza takwimu hizo**.

Mwisho wa mwezi “Mei”, unatengeneza muhtasari wa takwimu za utabiri ulizowauliza wakulima jumla ya eneo litakalovunwa na kiasi cha uzalishaji unaotarajiwa kwa kipindi cha kuanzia mwezi Juni hadi Septemba kwa kufuata mfumo wa mwaka wa kilimo. Kwa kipindi hicho, utatakiwa kuwatembelea wakulima, na utaona hali ya chakula na utakusanya takwimu baada ya majadiliano na wahusika.

Aina ya mazao	Utabiri wa Usalama wa Chakula (Jumla <u>Juni hadi Septemba</u>)	
	Matarajio eneo lililopandwa (ha)	Matarajio ya mavuno (tani)
Mahindi		
Mpunga		
Mtama		
Uwele		
Ulezi		
Ngano		
Mihogo		
Viazi vitamu (Sweet potatoes)		
Viazi mviringo (Irish potatoes)		
Kunde (Cow pea)		
Maharage		
Ndizi mbivu (Sweet Banana)		
Ndizi mbichi (Cooking Banana)		

Takwimu hizi sio halisia ni utabiri. Ikumbukwe kuwa takwimu hizi zinajumuisha kiasi cha jumla kwa miezi minne (4) ya mbele yaani mwezi Juni, Julai, Agosti and Septemba.

Matarajio eneo lililopandwa: Uchunguzi wa jicho/kuona kwa jicho

Matarajio ya Kiasi cha Uzalishaji: Kwa mahojiano au kudodosa, na kuthibitisha takwimu kwa kumshirikisha

3. Afya ya mimea

3.1 Kuzuia/ kutibu/ kudhibiti magonjwa/ visumbufu kwa kutumia kemikali.

Takwimu zinazotakiwa kutolewa hapa sio zile huduma zitolewazo na Afisa ugani tu, bali hata zili zilizotolewa na wakulima wenyewe. Tafadhali andika taarifa husika za mwezi huu tu.

Andika jina la kisumbufu/ugonjwa ulioliipuka katika kipindi cha mwezi husika.	Andika jina la zao lililoshambuliwa na kisumbufu /ugonjwa, (tumia safu mlalo moja kwa kila zao.	Andika kiasi cha uharibifu wa kisumbufu/ugonjwa kwa kuzingatia eneo la shamba ililoathirika (kubwa: ni ukubwa wa zaidi ya 50% ya ENEO LILILOPANDWA , wastani: 10%-50%, dogo: chini ya 10%	Andika jina la kisayansi la kiuadudu kilichotumia. Kumbuka kuchagua kwa usahihi	Kiasi halisi cha kiuadudu kilichotumia kiandikwe kwa usahihi. Kipimwe kwa kuzingatia viwango vya kimataifa mfano” kg” au “lita” na sio kutumia ukubwa tu wa chupa ambamo dawa imewekwa.							
Jina la ugonjwa / kisumbufu (i)	Zao lililoathirika (ii)	Kiasi cha uharibifu (kubwa, wastani, kidogo) (iii)	Eneo lililoathiriwa (ha) (iv)	Idadi ya vijiji vilivyoathirika (v)	Dawa iliyotumika (vi)	Kiasi kilichotumika (vii)	Kipimo (kg, lt) (viii)	Idadi ya vijiji vilivyo hudumiwa (ix)	Idadi ya kaya zilizohudumiwa (x)	Eneo lililookolewa (ha) (xi)	Maelezo (xii)
Jumla											

Andika jumla ya eneo lililookolewa kati ya eneo lililoathirika. Eneo lililookolewa likadiriwe kwa kuzingatia idadi ya kaya zilizohudumiwa.

Kumbuka, nija za kibiolojia/asili zitaripotiwa katika taarifa ya robo jedwali Na. 4.1 (WF02).

4. Mifugo iliyochinjwa

Kumbuka takwimu inayoandikwa hapa ni ya mifugo tu iliyochinjwa katika machinjio rasmi au sehemu vyingine ambayo mgani wa kata/kijiji amekagua mifugo iliyochinjwa na kuweka kumbukumbu kwa usahihi. Kwa maana nyingine, takwimu hii ni rasmi kutoka kwenye machinjio au ukaguzi umefanyika. Mgani atatembelea eneo husika na kufanya mahojiano na wahusika ili kupata taarifa. Usijumuishe takwimu za mifugo iliyochinjwa na kuliwa katika kaya na ukaguzi haukufanyika.

Mgani wa kata ambayo machinjio ipo au ukaguzi umefanyika ndio tu atawajibika kuandika takwimu hii katika jedwali hii. Kumbuka kuna wafugaji wanatumia machinjio za kata za jirani.

Aina ya mifugo	Idadi ya waliochinjwa (mwezi huu)	Bei ya wastani kwa Kg (Tsh)
Ng'ombe		
Kondoo		
Mbuzi		
Nguruwe		
Kuku wa asili		
Kuku wa kisasa		
Mengineyo (Taja)		

“Bei ya wastani” hapa inamaanisha bei iliyotumika mara nyingi zaidi mwezi huu.
Kama kuna maeneo mengine ya machinjio, kokotoa wastani kwa kujumlisha bei za maeneo yote na kugawanya kwa idadi ya maeneo.

(Inaendelea...)

Jumla ya kata inapatikana kwa kujumlisha takwimu za ngazi ya kijiji.

Kama taarifa ya kijiji haijawasilishwa fanya kama inavyoonyeshwa kwenye kisanduku kifuatacho (Namba 2)

Hata hivyo, kama kuna afisa ugani wa kijiji **hajawasilisha** fomu iliyojazwa, afisa ugani wa kata lazima achukue hatua za haraka. Kwanza awasiliane na mgani na mtendaji wa kijiji husika, akiwataka wawasilishe taarifa hiyo mara moja. Ikitokea hakuna majibu ya kuridhisha, tumia utaratibu wa dharura wa kukadiria takwimu hizo kama ilivyoonyeshwa kwenye Kisanduku Na. 2 hapo chini.

Kisanduku Na 2. Vidokezo kama Mgani wa Kijiji hakuwasilisha fomu iliyojazwa takwimu

<Maagizo kwa Mgani wa Kata> namna ya kujaza “Jumla ya wanyama waliochinjwa” na “Wastani wa bei” kama takwimu za kijiji husika hazikujazwa.

Kama kuna takwimu ya kijiji haikujazwa, kadiria kwa njia zifuatazo:

- (1) “Jumla ya wanyama waliochinjwa” na “wastani wa bei” ipatikane kwa kumshirikisha mtendaji wa kijiji.
- (2) Ikiwa ni vigumu kuwasiliana na mtendaji wa kijiji kuulizia takwimu, au majibu ya mtendaji sio ya kuridhisha, tafadhali kadiria takwimu kwa kuchukua wastani wa miezi mitatu (3) iliyopita kwa taarifa ambazo ziliwasilishwa awali.
- (3) Kama hakuna takwimu zilizowasilishwa miezi iliyopita, kadiria takwimu za mwezi huo kwa kuangalia takwimu zilizowasilishwa na kijiji cha jirani. Ni muhimu kufikiria uwiano wa takwimu kati ya taarifa uliyokadiria na takwimu za kijiji cha jirani.

5. Ukaguzi wa Nyama

Kumbuka takwimu inayoandikwa hapa ni ya mifugo tu iliyochinjiwa katika machinjio rasmi au sehemu vyingine ambayo mgani wa kata/kijiji amekagua mifugo iliyochinjwa na kuweka kumbukumbu kwa usahihi. Mgani atatembelea eneo husika na kufanya mahojiano na wahusika ili kupata taarifa.

5(a) Wanyama Walioathirika

Kumbuka mifugo iliyoathirika katika safu wima ya (iii) [jedwali 5(a)] inatakiwa kuwa sawa au kidogo ukilinganisha na “JUMLA ya matukio” ya safu wima ya (iv) katika jedwali [5(b)].

Hapa (ii) andika aina ya mfugo ulioathirika (mfano: ngo'mbe, kondoo, mbuzi, au nguruwe)

Jina la machinjio/ukaguzi (i)	Aina ya mfugo (ii)	Idadi ya wanyama walioathirika (iii)

Safu wima hii (iii) andika idadi ya mifugo iliyoathirika kulingana na aina ya mfugo katika safu wima (ii).

5(b) Sehemu ya mnyama iliyoathirika

Andika aina ya mfugo ulioathirika (mfano: ngo'mbe, kondoo, mbuzi, au nguruwe)

Aina ya mfugo (i)	Kilichotupwa (ii)	Kilichotupwa	
		Sababu ya kutupa viungo / mzoga mzima (iii)	Idadi ya matukio kwa kila sababu (iv)

iv) Andika idadi ya matukio kwa kila sababu ya kutupa kiungo au mnyama mzima.

Jaza takwimu kwa safu ulalo moja kwa kila ugonjwa/hali na kwa aina moja ya mfugo. Kama kuna sababu zaidi ya moja, tumia safu ulalo ingine, na uache wazi safu wima zilizoitangulia safu wima hii. Hii ni katika ujazaji kwenye fomuu. Wakati wa kuingiza katika ARDS Web-portal, afisa wa Wilaya atatakiwa kurudia kuingiza takwimu kwa safu wima zote.

6. Mazao yatokanayo na mifugo

6.1 Maziwa

Kwa ukusanyaji wa takwimu hii, tembelea sehemu za kukusanyia maziwa, na/au upate takwimu kutoka vyanzo vingine vya kuaminika.

Hiki ni kiasi cha jumla ya maziwa yaliyozalishwa kwa mwezi huu. Tafadhali jumlisha takwimu kutoka vtuo vyote vya kukusanyia maziwa.

“Kiasi cha uzalishaji maziwa kwa mfugo/siku” hapa inamaanisha ni kiasi kile kimetajwa mara nyingi zaidi kwa siku. Kokotoa wastani kama kuna maeneo mengi na viwango vya tofauti vingi.

“Bei ya wastani” hapa inamaanisha ni bei iliyotumika kununulia ngozi mara nyingi zaidi mwezi huu.

Kama kuna maeneo mengi ya kukusanyia maziwa, kokotoa wastani kwa kujumlisha bei za maeneo yote na kugawanya kwa idadi ya maeneo.

Aina ya mazao	Kiasi cha maziwa (Whole milk) Mwezi huu	Wastani wa maziwa yaliyozalishwa (kwa mfugo/siku)	Bei ya maziwa (kwa lita)
Maziwa ya ng'ombe wa asili (lita)			
Maziwa ya ng'ombe wa kisasa (lita)			
Aina ya bidhaa	Uzalishaji (mwezi huu)		
Jibini (Cheese) (kg)			
Siagi (Butter) (kg)			
Samli (Ghee) (kg)			

6.2(a) Ngozi

Kwa ukusanyaji wa takwimu hii, tembelea sehemu za machinjio, na ufanye mahojiano na wahusika.

Aina ya Mazao	Zisizosindikwa (vipande) kwa mwezi huu		Zilizosindikwa (vipande) kwa mwezi huu	Maelezo
	Ngozi zilizokaushwa kwa jua	Zilizokaushwa kwa chumvi	Wet Blue	
Ngozi za ng'ombe				
Ngozi za mbuzi				
Ngozi za kondoo				

6.2(b) Bei ya Ngozi

Kwa ukusanyaji wa takwimu hii, tembelea machinjio, na ufanye mahojiano na wahusika.

“Bei ya wastani” hapa inamaanisha ni bei iliyo tumika kununulia ngozi mara nyingi zaidi mwezi huu.

Kama kuna maeneo mengine ya machinjio, kokotoa wastani kwa kujumlisha bei za maeneo yote na kugawanya kwa idadi ya maeneo.

Aina ya Mazao	Bei ya wastani ya machinjioni		Bei ya wastani ya kiwandani
	Ngozi zilizokaushwa kwa jua	Zilizokaushwa kwa chumvi	Wet Blue
Ngozi za ng'ombe (Tsh / kg)			
Ngozi za Mbuzi (Tsh / kipande)			
Ngozi za kondoo (Tsh / kipande)			

Kipimo cha bei za ngozi: kwa ng'ombe ni Tsh/kg, na mbuzi/kondoo ni Tsh/ngozi moja.

6.3 Mayai

Takwimu ya kujaza hapa ni ile ya mayai ambayo yamezalishwa kwa ajili ya soko tu. Kwa ukusanyaji wa takwimu hii, tembelea mashamba ya ufugaji wa kuku wa mayai, na ufanye mahojiano kupata takwimu.

Mayai	Kiasi cha mayai yaliyokusanywa kwa mwezi huu
Mayai ya kuku wa kienyeji	
Mayai ya kuku wa kisasa	
Jumla	

Hii ni jumla ya mayai kwa mwezi husika. Tafadhali jumlisha takwimu zote kutoka kwa wazalishaji.

7. Afya ya Mifugo

7.1 Tiba

Kwa ukusanyaji wa takwimu hii, tembelea wamiliki wa mifugo, na ufanye mahojiano. Kama ni hatua ya kuzuia minyoo (deworming), tafadhali chukulia tukio la mfugo kufanyiwa uchunguzi wa ugonjwa unaohusiana na minyoo. Hata hivyo kwa huduma za kawaida za kila siku za kukinga minyoo kwenye mifugo, takwimu yake itaingizwa katika jedwali Na. 7.2 hapo chini.

Angalizo: kama dawa nyingi tofauti zinatumiwa, tafadhali andika dawa ambayo imetumika zaidi.

Aina ya mifugo	Aina ya ugonjwa/ hali	Idadi ya walioathirika	Idadi ya waliotibiwa	Idadi ya waliopona	Idadi ya waliokufa	Matibabu/ Dawa iliyotumika

7.2 Uogeshaji, Kunyunyizia, Chanjo and Kinga

Kwa ukusanyaji wa takwimu hii, tembelea mtendaji wa kijiji, na ufanye mahojiano. Tumia safu mlalo moja kwa aina moja ya mfugo. Kama huduma ya kuuza minyoo imefanyika kama kinga, jaza takwimu katika jedwali hii. Toa ripoti ya kawaida ya kinga kwa usahihi, bila kujali kiasi cha maambukizi.

Aina ya mfugo	Idadi walioogeshwa	Dawa iliyotumika	Idadi walionyunyiziwa	Dawa iliyotumika	Idadi waliochanjwa/ / kingwa	Chanjo/kinga iliyotumika

7.3 Huduma za Mifugo

Takwimu zinazotakiwa hapa ni kwa huduma zilizotolewa sio na maafisa ugani tu bali hata huduma ambayo mkulima mwenyewe ametoa. Tafadhali andika idadi ya huduma kwa mwezi husika.

Aina ya mifugo	Kukata kwato	Kuhasi	Kuhamilisha (AI)	Kukata pembe	Kuweka alama	Kukata mikia	Kukata meno	Kukata midomo	Hereni ya puani (Bull ring)	Upimaji wa mimba (Pregnancy diagnosis)	Sindano ya kuchochea joto	Sindano ya madini chuma (Iron injection)
Ng'ombe				Sindano ya kuchochea joto								
Mbuzi												
Kondoo												
Nguruwe												
Kuku												
Bata												

8. Ufugaji wa Samaki

Kilimo cha kwenye maji ni kitendo cha kuruhusu viumbe kuzaliana katika mazingira ya maji yaliyodhibitiwa.

Kilimo-majini kinahusisha ufugaji wa samaki wa maji baridi na wa baharini. Kilimo cha maji baridi ni ufugaji wa samaki katika maji baridi ikiwa ni pamoja na *crustaceans* wa maji baridi, *bivalves*, na makolusi (*molluscs*) wengine na viumbe wengine wa maji baridi. Wakati huohuo, kilimo cha baharini ni ufugaji wa samaki katika bahari, hii ni pamoja na uzalishaji wa *lobsters*, *shrimp*, *fish fry* na vifaranga vya samaki, pia ufugaji wa *crustaceans*, *bivalves*, jamii ya *molluscs* na viumbe wengine wa baharini.

8.1 Mfumo wa ufugaji

Ufugaji wa samaki ni aina kuu ya kilimo-majini hasa kwa maji baridi, wakati njia zingine zipo katika kundi la ufugaji wa baharini. Hii inahusisha uzalishaji wa samaki kibiashara katika matanki au sehemu zilizofungwa, mara nyingi ni kwa ajili ya chakula.

Njia zinahusisha ufugaji katika maji baridi na maji ya bahari, Afisa ugani wa kata/kijiji atatembelea wafugaji wadogo wadogo na wanaofuga kibiashara katika kata/kijiji, na kukusanya takwimu za jedwali hii kwa kufanya mahojiano na wamiliki wa mashamba. Wafugaji wa kibiashara wanaendesha ufugaji wa kiwango kikubwa kwa kutumia mitaji mikubwa kwa ajili kupata faida kubwa kutokana na uwekezaji unaofanyika. Wakati ambapo, wafugaji wadogo wadogo ni wanaendesha mabwawa ambayo yameingiziwa au hayajaingizwa vifaranga. Takwimu ya wale watu binafsi ambao wanafuga tu kwa ajili ya kupata lishe kwa familia zao haitaingizwa hapa.

Njia ya ufugaji: Chagua njia mojawapo kati ya hizi; "mabwawa", "vizimba", "matanki" or "chelezo". Chelezo ni njia ya ufugaji wa samaki kwa kutumia makingio (*rafts*) mara nyingi hii hufanyika kwenye maji ya baharini.

(ii) na (iv) inahusisha mabwawa yaliyoingizwa vifaranga na ambayo hayajaingizwa.

Katika safu wima ya (v) unaweza kutaja aina moja ya samaki au aina mbili kwa pamoja kama wanafungwa kwenye bwawa moja (mfano: kambamiti na mwatiko; perege na kambale). Kama kwenye eneo lako kuna aina za pamoja zaidi ya hizi andika katika wengineo.

Njia ya ufugaji (i)	Idadi ya mabwawa (ii)	Idadi yenye vifaranga (iii)	Ukubwa eneo la mashamba (m ²) (iv)	Aina ya samaki pandwa (v)	Uzito wa samaki vuliwa (Kg) (vi)	Bei ya samaki vuliwa (TSh / Kg) (vii)	Thamani (TSh) (viii)

(iii) na (viii) inahusiana tu na mabwawa yaliyopandwa samaki.

9. Wageni waliotembelea Kijiji/Kata kwa shughuli za kilimo au ufugaji

Jedwali hii siyo takwimu bali ni kumbukumbu ya kazi zako za kila siku. Tafadhali wasilisha taarifa hizi kwa afisa wa wilaya kama sehemu ya uwajibikaji.

Tarehe	Jina la Mgeni	Anuani	Shughuli iliyomleta

Jedwali ya kusaidia kubadilisha vipimo na kufanyia nukuu muhimu za takwimu

[Vipimo vya Uzito na Urefu]

Hekta 1 = mita za mraba 10,000 (mita100x100) / hekta 1 = ekari 2.47

Ekari 1 = mita za mraba 4,050 / ekari 1 = hatua 70 mara 70

Hatua 1 = futi 3

Mguu 1 = sentimita 30.48

Tani 1 = kilogramu (kg) 1,000

[3] Taarifa za Robo Mwaka -----

1. Hali ya Chaula Kijijini/ Kata

	Weka alama	Maelezo
Nzuri		
Wastani		
Mbaya		

Afisa ugani wa kijiji kukadiria hali ya chakula kwa uchunguzi wa kuona. Kama hali ya chakula kijijini ni ya kawaida tu, chagua “wastani”. Kama hali ya chakula ni nzuri ukilinganisha na mwaka wa kawaida chagua “nzuri”, na chagua mbaya kama hali ni mbaya zaidi ya mwaka wa kawaida.

Afisa ugani wa kata atakadiria hali ya chakula kwa kuangalia ujumla wa hali ya chakula iliyoripotiwa katika vijiji vyote.

Elezea hali ya upatikanaji wa chakula kipindi cha kwa robo mwaka hii

Eleza sababu ya kuchagua hali ya chakula kwa kuhusisha na bei za vyakula, kiasi cha chakula cha msaada kilichotumika n.k.

Afisa ugani wa kijiji anakusanya takwimu ya hali ya chakula kwa mahojiano na viongozi wa vitongoji.

Maana ya kila kundi imefafanuliwa kama ifuatavyo:

- Kaya isiyo na chakula: kaya ambayo haiwezi kumudu hata mlo mmoja kwa siku.
- Kaya yenye chakula kisichotosheleza: kaya ambayo bado haijaweza kumudu milo mitatu kwa siku.
- Kaya yenye chakula cha kutosha: kaya yenye chakula kukidhi milo mitatu kwa siku.
- Kaya yenye chakula cha ziada: kaya inayoweza kumudu milo mitatu kwa siku na zaidi

Kaya isiyo na chakula	Kaya yenye chakula hafifu-hakitoshi	Kaya yenye chakula cha kutosha	Kaya yenye chakula cha ziada

Jaza hapa takwimu ya huduma za ugani zinatolewa na serikali na zile zinatolewa watu au taasisi binafsi.

3. Huduma za ugani

3.1 Mafunzo kwa wakulima kwa kutumia njia mbalimbali nje ya shamba darasa

Andika hapa mafunzo yanayotolewa na MATI, LITI, FETA na taasisi zingine, NGOs, CBOs, VICOBA, Benk n.k. au mafunzo yaliyotolewa na ofisi ya wilaya na hayahusiani na shamba darasa. Afisa ugani wa kijiji anatakiwa aweke kukmbukumbu katika kitabu chake pale mafunzo kama haya yanapofanyika.

Mada ya mafunzo katika (i)	Idadi ya wakulima waliopata mafunzo		Idadi ya wakulima waliopata mafunzo kwa muda		Njia iliyotumika kutoa mafunzo	Mtoa mafunzo/ Mwezesaji wa mafunzo	Maelezo
	Wanaume	Wanawake	Sawa au pungufu ya wiki moja	Zaidi ya wiki moja			
Mazao							
Ufugaji							
Uvuvi							
Masoko na Usindikaji							
Umwagiliaji							

Andika mada iliyofundishwa kwa wakulima.
Kwa mfano, mada za mafunzo ni kama “kilimo bora cha mahindi” “utayarishaji wa shamba” n.k.

[Mfano]
Njia ya kufundishia: semina, waksha, kozi, au ziara ya mafunzo n.k.
Mtoa mafunzo: MATI, LITI, FETA, na vyuo vingine, NGOs, CBOs, VICOBA n.k.

4. Afya ya mimea

Takwimu ya afya ya mimea inapatikana kwa maafisa ugani ambao wametoa huduma au hata kama mkulima ameshughulikia tatizo mwenyewe, na afisa ugani atakuwa amesaidia kutoa ushauri.

4.1 Kuzuia magonjwa/visumbufu kwa njia za kibaiologia/ njia za asili

Toa taarifa ya njia za kibaiologia au za asili ambazo zimetumika kudhibiti magonjwa. **Usiandike** njia za kikemikali katika jedwali hii. Njia za kudhibiti magonjwa kwa kutumia kikemikali itajazwa katika jedwali Na. 3 ya Taarifa ya mwezi, sio hapa.

Aina ya ugonjwa/ kisumbufu	Aina ya zao	Njia zilizotumika	Eneo lililodhibitiwa (ha)	Kaya zilizohusika	Maelezo

Andika jina la mdudu/ugonjwa ambao umedhibitiwa kwa robo hii

Andika eneo lote lililookolewa. Kadiri eneo hapa kwa kuzingatia idadi kaya zilizohusika

Andika jina la zao ambalo ugonjwa uliojitokeza kwake unadhhibitiwa (tumia safu ulalo moja kwa zao moja).

Mfano wa njia za kibaiologia au asili za kudhibiti magonjwa au wadudu ni hizi zifuatazo:

1. Kuwatumia wadudu rafiki
2. Vimeleatilifu vitokanavyo na mimea asilia
3. Tumia mbegu bora zenye ukinzani.
4. Kupanda na kuvuna kwa wakati
5. Panda mazao kwa mzunguko
6. Palilia kwa wakati
7. Tifua udongo kwa kina
8. Ngoa na choma moto mimea iliyoathirika

5.Umwagiliaji

5.1 Mazao yanayolimwa katika eneo la umwagiliaji

Skimu ni eneo lenye miundombinu ya umwagiliaji (kisasa au asili) na linalotumika kwa shughuli za umwagiliaji ili kuzalisha mazao.

Kusanya takwimu ya uzalishaji wa mazao kwenye skimu ambayo kuna umoja wa wamwagiliaji (IO). Takwimu zinapatikana katika umoja wa wamwagiliaji (IO). Kumbuka skimu inaweza kuwa eneo kubwa hadi nje ya mipaka ya kijiji ambapo afisa ugani anayo mamlaka ya kukusanya takwimu. Kwa mazingira kama haya, afisa ugani wa kijiji ambapo umoja wa wamwagiliaji upo atalazimika kukusanya takwimu ya skimu nzima, kwa kufanya mahojiano na meneja wa skimu au uongozi husika.

Maeneo yaliyolimwa ni mkusanyiko wa maeneo kwa msimu wa mvua au kiangazi, kumaanisha mkusanyiko wa eneo msimu wa mvua na mkusanyiko wa eneo msimu wa kiangazi. Kiasi cha uzalishaji pia ni mkusanyiko kwa msimu wa mvua na kiangazi.

Aina ya mazao	Eneo lililopandwa (ha) (i)		Uzalishaji/Tija (tani/ha) (ii)		Mavuno (tani) (iii) = (i) x (ii)	
	Masika/vuli (iv)	Kiangazi (v)	Masika/vuli (vi)	Kiangaz (vii)	Masika/vuli (viii)	Kiangaz (ix)

Msimu wa mvua (iv) (vi) (viii) – Ni kwa kila zao lililovunwa kupitia umwagiliaji kwa kipindi cha msimu wa mvua ndefu (masika) na msimu wa mvua fupi (vuli).

Msimu wa kiangazi (v) (vii) (ix) – Ni kwa kila zao lililovunwa kupitia umwagiliaji kipindi cha kiangazi.

6. Mmomonyoka wa ardhi

Andika majina ya mmomonyoko lugha kwa kiingereza. Unaweza kuandika Gully erosion, Rill erosion au Sheet erosion.

Aina ya mmomonyoko (i)	Jina la kijiji/vijiji vilivyhusika	Eneo lililoharibiwa (ha)	Mbinu zilizotumika	Eneo lililokarabatiwa (ha)	Maelezo

Andika njia iliyotumika kudhibiti mmomonyoko

7. Eneo la uzalishaji katika kijiji/kata na njia iliyotumika kulima

Usihesabu mara mbili kama ardhi ileile imelimwa zaidi ya mara moja katika msimu.

7.1 Vuli

Eneo	Kwa trekta (ha) (i)	Kwa kutumia wanyamakazi (ha) (ii)	Kwa jembe la mkono/ mkono (ha) (iii)	Kupanda bila kulima (ha) (iv)	Jumla ya eneo (ha) (v) = (i)+(ii)+(iii)+(iv)
Lililolimwa					
Lililopandwa					
Lililopaliliwa					
Lililovunwa					

7.2 Masika

Eneo	Kwa trekta (ha) (i)	Kwa kutumia wanyamakazi (ha) (ii)	Kwa jembe la mkono/ mkono (ha) (iii)	Kupanda bila kulima (ha) (iv)	Jumla ya eneo (ha) (v) = (i)+(ii)+(iii)+(iv)
Lililolimwa					
Lililopandwa					
Lililopaliliwa					
Lililovunwa					

Eneo lililovunwa linaweza kutumia vifaa zaidi ya vilivyotajwa, mfano combine harvester, kisu nk.

Takwimu hizi zinapatikana kutoka kwenye Serikali ya Kijiji na baadhi kutoka kwa wamiliki wa trekta na vifaa vingine.

Unatembelea na kuona kwa jicho na baadae kuthibitisha kwa mtendaji wa kijiji.

Andika takwimu kama wakulima wanatumia viua-gugu kama mbadala wa kupalilia.

[4] Taarifa za Mwaka -----

1. Utangulizi, Taarifa za Msingi za Kijiji/ Kata

Unatembelea ofisi ya Serikali ya Kijiji, na kukusanya takwimu hii. Fuata utaratibu ufuatao:

- 1) Kama Serika ya Kijiji inasasisha (*update*) takwimu hizi kila mwaka, tumia taarifa hiyo.
- 2) Kama Serikali ya Kijiji hawana utaratibu wa kusasisha takwimu hizi, tumia takwimu za sense ya hivi karibuni. Usikadirie idadi ya watu kwa kutumia njia zako binafsi.

Kumbuka inaruhusiwa kuhesabu mara mbili kwa kaya/ mtu yuleyule. Hii inamaanisha takwimu inaonyesha tu jumla wanaoshiriki kwa mtiririko huo.

	Zinazoongozwa na wanaume	Zinazoongozwa na wanawake	Jumla	Zinazoshiriki kazi za kilimo mazao	Zinazoshiriki ufugaji mifugo	Zinazoshiriki ufugaji samaki
Idadi ya kaya						
	Wanaume	Wanawake	Jumla	Watu wanao shiriki kazi za kilimo mazao	Watu wanao shiriki ufugaji mifugo	Watu wanao shiriki ufugaji samaki
Idadi ya watu						

2. Idadi ya kaya za wakulima wadogo zinazoshiriki Kilimo cha Mkatoba wa Soko na Makubaliano ya Soko

Mkulima mdogo hapa ni yule angalau mwenye shamba lenye ardhi iliyolimwa yenye ukubwa wa 25 m² na/ au ngo'mbe mmoja (1), mbuzi/kondoo/nguruwe watano (5), kuku/bata/njiwa/sungura 50.

Takwimu hii inapatikana katika serikali ya kijiji.

Mkatoba wa soko unatafsiriwa kama makubaliano kati ya kaya/ kikundi na kampuni katika kuzalisha mazao ya biashara kwa mkatoba maalum wa kisheria. Makubaliano ya soko yanatafsiriwa kama makubaliano kati ya kaya/ kikundi na kampuni ya kilimo katika kuzalisha mazao ya biashara ambayo HAYAHUSISHI mkatoba.

Aina ya shughuli	Mkatoba wa soko (Contract farming) (i)		Makubaliano ya soko (Out-growers) (ii)			
	Idadi ya kaya zinazoshiriki (iii)	Idadi ya makampuni yaliyohusika (iv)	Zao kuu/ bidhaa (v)	Idadi ya kaya zinazoshiriki (vi)	Idadi ya makampuni yaliyohusika (vii)	Zao kuu/ bidhaa (viii)
Kilimo						
Ufugaji						
Uvuvi						

Andika jina la zao kuu hapa

3. Umwagiliaji

3.1 Skimu ya umwagiliaji

Skimu ni eneo lenye miundombinu ya umwagiliaji (kisasa na asili) na linatumika kwa shughuli za umwagiliaji ili kuzalisha mazao.

Kusanya takwimu ya uzalishaji wa mazao kwenye skimu ambayo kuna umoja wa wamwagiliaji (IO). Takwimu zinapatikana katika umoja wa wamwagiliaji (IO). Kumbuka skimu inaweza kuwa eneo kubwa hadi nje ya mipaka ya kijiji ambapo afisa ugani anayo mamlaka ya kukusanya takwimu.

Kwa mazingira kama haya, afisa ugani wa kijiji ambapo umoja wa wamwagiliaji upo atalazimika kukusanya takwimu ya skimu nzima, kwa kufanya mahojiano na meneja au uongozi wa skimu.

Jina la skimu (i)	Chanzo cha maji (mfano; mto rufiji) (ii)	Eneo linalofaa kwa umwagiliaji (ha) (iii)	Eneo lililomwagiliwa (ha) (iv)	Msimu wa umwagiliaji (1=muda wote, 2=masika/vuli, 3=kiangazi)	Hali ya skimu (1=nzuri, 2=inaridhisha, 3=inahitaji marekebisho, 4=hajjulikani)	Idadi ya wanachama katika chama cha wamwagiliaji (IO)		Idadi ya wamwagiliaji (wanachama na wasiowanachama)	
						Wanaume	Wanawake	Wanaume	Wanawake
Skimu iliyoendelezwa									
Skimu ya asili									

Skimu ya umwagiliaji **iliyoendelezwa** inahusisha miundombinu ya kisasa iliyojengwa kama mifereji, banio kwa kutumia sementi au mawe n.k. Usihesabu eneo ambalo miundombinu ya umwagiliaji haijakamilika.

Skimu ya umwagiliaji ya **asili** ni ile ambayo miundo mbinu yake imetengenezwa kiasili zaidi, kwa mfano kutumia mifereji isiyo ya kudumu.

4. Mashine, zana na vifaa vya kilimo, ufugaji na uvuvi

Hapa mashine/vifaa ni vile vinapatikana katika kijiji husika. Kumbuka mashine/vifaa vimekodishwa kutoka kijiji jirani havihusiki na jedwali hii. Kupata takwimu hii, unatembelea serikali ya kijiji, na kumwuliza afisa mtendaji wa kijiji.

4.1 Idadi ya mashine/vifaa vya kilimo, ufugaji na uvuvi

Hesabu mashine zote zinazomilikiwa na wanakijiji tu. Usihesabu mashine zinazotumika kijijini au katani lakini zinakuja kutoka vijiji au kata za jirani.

Andika mashine zinazomilikiwa na watu binafsi au vikundi. Zile zinamilikiwa na serikali au taasisi (kampuni binafsi) ziandikwe kwenye umiliki wa vikundi.

Aina ya mashine/ vifaa (i)	Nzima		Mbovu		Sababu ya ubovu wa mashine/kifaa (vi)
	Binafsi (ii)	Kikundi (iii)	Binafsi (iv)	Kikundi (v)	
Trekta (Tractor)					
Trekta la mkono (Power tiller)					
Mashine ya kuvunia (Combine harvester)					
Mashine ya kufyeka nyasi (Mower)					
Mashine ya kutengenezea nyasi (Bailer)					
Vifaa vya chakula (Feeder)					
Vifaa vya maji (Drinker)					
Mashine ya kukamulia maziwa (Milking machine)					
Mashine ya kupoozea (Chillers)					
Mashine ya umeme ya kukatia nyama (Electric meat cutter)					
Mitumbwi ya ulinzi yenye injini (Patrol boat)					
Mitumbwi ya uvuvi yenye injini (Fishing boat with engine)					
Mitumbwi ya uvuvi (Fishing boat without engine)					
Mengineyo (Taja)					

Andika jina la mashine inapatikana kijijini lakini haijatajwa katika orodha kwenye jedwali hii.

4.2 Idadi ya zana za kilimo

Tembelea mmiliki wa zana katika kijiji, na ufanye mahojiano ili kupata takwimu.

a) Zana zinazokotwa na trekta/ trekta la mkono

Aina ya zana	Nzima	
	Binafsi	Kikundi
Jembe la kusawazisha (Harrow)		
Mashine ya kupanda (Planter)		
Jembe la kulima (Disk plough)		
Jembe la kutifua (Sub-soiler)		
Jembe la kupalilia (Weeder)		
Mashine ya kupuliza dawa za mimea (Boom sprayer)		
Jembe la kukatua (Ripper)		
Reki ya kukusanyia nyasi (Rake for Hay Making)		
Tela (Trailer)		
Mengineyo (Taja)		

Andika mashine zinazomilikiwa na watu binafsi au vikundi.
Zile zinamilikiwa na serikali au taasisi (kampuni binafsi)
ziandikwe kwenye umiliki wa vikundi.

b) Zana zinazokotwa na wanyamakazi

Aina ya zana	Nzima	
	Binafsi	Kikundi
Jembe la kusawazisha (Harrow)		
Mashine ya kupanda (Planter)		
Jembe la kulima (Moldboard plough)		
Jembe la kutifua (Sub-soiler)		
Jembe la kupalilia (Weeder)		
Jembe la kukatua (Ripper)		
Jembe la matuta (Ridger)		
Mkokoteni (Cart)		
Mengineyo (taja)		

4.3 Idadi ya vifaa vinavyotumiwa kwa mkono

Jembo la mkono	Pampu ya kupulizia dawa (mimea/mifugo)	Visu vya kuchunia	Nyavu za kuvulia	Vyuma vya kuwekea alama	Njia nyingine (taja)

Hiki ni kifaa cha kuwekea chapa mifugo kwa ajili ya utambuzi.

4.4 Mashine za kusindika mazao ya kilimo/ mifugo/ uvuvi

Hesabu idadi ya mashine katika kiwanda au mtambo katika kijiji chako tu.

Aina ya mashine (i)	Nzima		Mbovu		Sababu ya ubovu wa mashine (vi)
	Binafsi (ii)	Kikundi (iii)	Binafsi (iv)	Kikundi (v)	
Kusaga unga					
Kupukuchua					
Kukamulia mafuta					
Kupasua mbegu za mafuta					
Kubangulia (Pulperies)					
Kusindika pamba					
Kuondoa maganda (Shelling)					
Kutengenezea hei					
Kusindika mazao yatokanayo na maziwa					
Kutotoleshea vifaranga					
Kusindika nyama					
Kusindika ngozi					
Gari la kubebea nyama					
Gari la kubebea maziwa					
Kutengenezea barafu					
Kusindika mazao yatokanayo na samaki					
Mengineyo (Taja)					

Andika jina la mashine inapatikana kijijini lakini haijatajwa katika orodha kwenye jedwali hii.

5. Huduma za ugani

Huduma za ugani zile zinazotolewa na serikali au sekta binafsi **ziandikwe hapa**

5.1 Mafunzo ya wakulima kupita shamba darasa (FFS)

Lengo la shamba darasa (i)	Idadi ya shamba darasa (ii)	Idadi ya walioanza (iii)		Muda wa mafunzo (siku)	Idadi ya waliohitimu		Idadi ya vijiji vilivyohudumiwa	Idadi ya wakulima wanaotumia elimu ya mafunzo yaliyotolewa	Maelezo
		Wanaume	Wanawake		Wanaume	Wanawake			
Mazao									
Ufugaji									
Uvuvi									
Masoko na Usindikaji									
Mengineyo									

Lengo la shamba darasa liwe pana mfano “kilimo bora cha mahindi” ikihusisha matumizi ya mbegu bora, kuandaa shamba, matumizi ya mbolea, n.k.

Wakulima waliohitimu ni wale ambao walihudhuria mafunzo angalau kwa 75%
Mafunzo yaliyofanyika na kukamilika mwaka huo tu ndio ripoti yake iandikwe hapa.

Idadi ya wakulima wanaotumia elimu ya mafunzo, yaani wanaotumia elimu katika shughuli zao za kilimo waandikwe hapa.

6. Pembejeo

6.1 Mbolea za viwandani

Andika hapa mbolea iliyotumika kuzalisha nyasi za malisho kwa mifugo.

Aina ya mbolea	Mahitaji kwa mwaka (tani)	Matumizi kwa mwaka (tani)	Maelezo	
SA				
CAN				
UREA	<p>Mahitaji kwa mwaka (malengo) ni kwa mwaka huu wa taarifa, <u>SIO ya mwaka unaokuja</u>.</p> <p>Awali ya yote, tengeneza malengo haya mwanzo wa mwaka wa fedha, hapo kijijini shirikiana na wakulima na wafugaji wakati wa kuandaa malengo. Andika takwimu hapa mwisho wa mwaka wakati ukijaza fomu hii.</p>	<p>Takwimu za kiasi cha matumizi zinapatikana kwa wauzaji wa mbolea kijijini au kumbukumbu ya huduma ambayo mgani alitoa.</p>		
TSP				
DAP				
NPK 10:10:10				
NPK 25:5:5				
NPK 6:20:18 / 10:18:24				
NPK 4:17:15				
NPK 17:17:17				
MRP (Minjingu Rock Phosphate)				
MOP				
Nyingine (taja)				

6.2 Viuadudu

Andika aina (brand) au jina la kibiashara linalotumika zaidi kwa kila kundi (category).

Andika kipimo cha kemikali kama ni kg au lita.

Takwimu za kiasi cha matumizi zinapatikana kwa wauzaji wa mbolea kijijini au kumbukumbu ya huduma mgani alitoa.

Aina ya kiatilifu/ kiuadudu	Jina la kiatilifu/ kiuadudu *	Kipimo (kg/ lita)	Matumizi kwa mwaka	Maelezo
A: Viuadudu				
A: Viuadudu				
B: Viuakuvu				
B: Viuakuvu				
C: Viuapanya				
C: Viuapanya				
D: Viuapanya				
D: Viuapanya				
E: Viuandege				
E: Viuandege				
F: Viuaminyoo				
F: Viuaminyoo				

6.3 Mbegu bora

Takwimu za kiasi cha matumizi zinapatikana kwa wauzaji wa mbolea kijijini au kumbukumbu ya huduma mgani ametoa.

Aina ya zao	Mahitaji kwa mwaka (kg)	Aina ya mbegu bora (Orodhesha)	Matumizi kwa mwaka (kg)		Maelezo
			Mbegu zenye ubora unaotambulika (Quality Declared Seed)	Mbegu zenye ubora uliothibitishwa (Certified seed)	
Mahindi	<p>Mahitaji kwa mwaka (malengo) ni kwa mwaka huu wa taarifa, <u>SIO ya mwaka unaokuja</u>.</p> <p>Awali ya yote, tengeneza malengo haya mwanzo wa mwaka wa fedha, hapo kijijini shirikiana na wakulima na wafugaji wakati wa kuandaa malengo. Andika takwimu hapa mwisho wa mwaka wakati ukijaza fomu hii.</p>				
Mahindi					
Mahindi					
Mpunga					
Mpunga					
Mpunga					
Maharage					
Maharage					
Maharage					
Mtama					
Mtama					
Mtama					
Ngano	<p>Andika jina la aina ya mbegu bora inatumika zaidi kwa kila zao.</p>				
Ngano					
Ngano					
Alizeti					
Alizeti					
Alizeti					
Mengineyo (taja)					

Mbegu zenye ubora unaotambulika (QDS) zinazalishwa na wakulima waliopata mafunzo na kuruhusiwa kuzalisha na kuuza ndani ya kata.

Mbegu zenye ubora uliothibitishwa ni zile zinazozalishwa na taasisi za utafiti wa kilimo (kwa mfano ASA).

7. Idadi ya mifugo

Takwimu zinapatikana Serikali ya Kijiji na baadhi kutoka kwa wafugaji.

Hesabu mifugo yote ISIPOKUWA inayomilikiwa na wakulima wakubwa.

Mkulima mkubwa anatafsiriwa kama mkulima mwenye zaidi ya ng'ombe 50, na/ au zaidi ya kondoo/mbuzi/nguruwe 100, na/ au zaidi ya kuku/bata/njiwa/sungura 1000, na ana shamba la kudumu, anatumia mashine/vifaa kama mashine ya kukamulia maziwa, n.k. anaendesha ufugaji wa kibiashara (kwa mashine za kisasa) na mara nyingi anamiliki ardhi kisheria.

Ng'ombe dume ni ambaye hajahasiwa na anatumika kuzalisha mbegu

Ng'ombe jike ni ambaye amewahi kuzaa angalau mara moja.

Ng'ombe dume aliyehasiwa mwenye umri wa zaidi ya mwaka mmoja.

Mtamba ni ng'ombe jike mwenye umri miaka kati ya mmoja na miwili ambaye hajazaa.

Ndama dume ni ng'ombe chini ya mwaka mmoja ambaye bado hawezi kuzalisha mbegu

Aina ya mifugo	Idadi wa asili	Idadi wa kisasa		Jumla	Jumla waliosajiliwa
		Nyama	Maziwa		
1. Ng'ombe					
Ng'ombe dume*					
Ng'ombe jike**					
Maksai***					
Mtamba****					
Ndama dume*****					
Ndama jike					
Maksai wa kulima					
Haijulikani					
Jumla ndogo ng'ombe					

Aina ya mnyama	Idadi wa asili	Idadi wa kisasa		Jumla	Jumla ya waliosajiliwa
		Nyama	Maziwa		
2. Kondoo					
Kondoo dume					
Kondoo Jike					
Haijulikani*****					
Jumla ndogo kondoo					
3. Mbuzi					
Mbuzi dume					
Mbuzi jike					
Haijulikani*****					
Jumla ndogo mbuzi					
4. Mifugo Mingine					
Nguruwe					
Nyati maji					
Punda					
Farasi					
Ngamia					
Mbwa					
Paka					
Sungura					
5. Ndege	Idadi ya wa asili	Wa nyama	Wa Mayai	Jumla	
Kuku					
Bata					
Bata mzinga					
Kanga					

8. Miundombinu katika kilimo na mifugo

Kadiria hapa mahitaji ya miundombinu ya mifugo. Jadiliana na afisa mtendaji wa kijiji ili ujaribu kukadiria takwimu za uhalisia kulingana na mazingira yaliyopo sasa.

Aina ya miundombinu	Nzima	Mbovu	Mahitaji halisi	Idadi ya zilizosajiliwa	Sababu ya ubovu wa miundombinu
Karo (Slaughter Slab)					
Bucha ya ng'ombe/mbuzi/kondoo					
Bucha ya nguruwe					
Bucha ya samaki					
Banda la ngozi					
Banio la kudumu (Permanent crush)					
Lambo					
Birika la kunywea maji (Water Trough)					
Josho la wanyama wakubwa (Ng'ombe, Punda)					
Josho la wanyama wadogo (Mbuzi, Kondoo, Mbwa)					
Sehemu ya kunyunyuzia dawa mifugo (Spray Race)					
Mengineyo (Taja)					

Karo linatafsiriwa kama mahali pa kuchinjia wanyama kwenye sakafu katika eneo la wazi.

Lambo ni sehemu iliyochimbwa lakini ni ndogo ukilinganisha na bwawa.

Andika jina la miundombinu kama ipo mingine zaidi ya iliyotajwa kwenye orodha

9. Eneo la malisho

Takwimu hii inapatika serikali ya kijiji kwa kuwa ndio wenye jukumu la kusajili ardhi. Kama takwimu haitaweza kuipatikana, tafadhali kadiria kwa kutumia uchunguzi wa jicho au kuona kwa jicho.

Aina ya mfugo (i)	Jumla ya eneo la kulishia lililopo	Kiasi cha eneo linalotumiaka kulishaia	Ukubwa wa eneo lililopimwa kwa ajili ya malisho (ha) (v)	Eneo rasmi la kijiji lililokodishwa kwa watu bonafsi au vikundi na kuthibitishwa na Wizara ya Ardhi.
	Ukubwa wa eneo la kulishia wanyama kijijini/ kata (ha) (iii)	Eneo linalotumika (ha) (iv)		Ukubwa wa eneo linalomilikiwa kisheria (ha) (vi)
Ng'ombe				
Mbuzi				
Kondoo				
Punda				

10. Malisho ya Mifugo

10.1 Malisho ya mifugo yaliyopandwa na kuendelezwa

Takwimu inapatikana kijijini kwa wafugaji, tembelea wafugaji, na fanya mahojiano ili kupata takwimu hii.

Idadi ya mashamba	Eneo (ha)	Uzalishaji wa mbegu (kg)	Idadi ya marobota au bandali (Bundles) zilizozalishwa (Hei)	Maelezo

Jumla ya eneo la kijiji lililoendelezwa kuzalisha malisho ya mifugo.

Robota moja linakadiriwa kuwa na uzito wa 20kg.

10.2 Masalia ya mazao

Takwimu inapatikana kijijini kwa wafugaji, tembelea wafugaji, na fanya mahojiano ili kupata takwimu hii.

Aina ya zao	Idadi ya marobota au bandali (Bundles) zilizozalishwa (Hei)	Eneo la mashamba yaliyotumika kwa malisho (grazed in situ) (ha)	Maelezo

11. Njia mbalimbali za mawasiliano (TV, radio na simu)

11.1 TV and radio

Kituo cha TV kinachopatikana	Idadi ya vijiji vinavyofikiwa na huduma
TBC	
ITV	
Star TV	
Vituo vya TV vya kijamii, taja:	

Kituo cha Radio kinachopatikana	Idadi ya vijiji vinavyofikiwa na huduma
Radio 1	
TBC Taifa	
Radio Free Africa	
Vituo vya Radio vya kijamii, taja:	

Kama kijijini au katani kuna kituo cha TV au Radio cha kijamii kinachorusha vipindi vya kilimo au mifugo, tafadhali andika takwimu hapa.

Jina la chombo cha habari	Jina la kipindi	Mara ngapi kwa wiki	Aina ya taarifa

11.2 Simu

Jina la kampuni ya simu	Idadi ya vijiji vinavyofikiwa na huduma
Sasatel	
Tigo	
TTCL	
Vodacom	
Airtel	
Zantel	
Nyingine, taja.	

Andika jina la kipindi cha kilimo, mifugo na uvuvi kilichorushwa na TV au radio ya kijamii kama unaweza kuangalia au kusikiliza kijijini au katani kwako.

[Mwisho]

Attachment 3.0

ARDS VAEO/ WAE0 Format

OFISI YA RAIS - TAWALA ZA MIKOA NA SERIKALI ZA MITAA (OR-TAMISEMI)
FOMU YA TAARIFA YA MWEZI YA MPANGO WA MAENDELEO YA KILIMO WA KIJIKI/KATA

MWEZI

Toleo la Julai 2018 v2

Jina la Kijiji/ Mtaa/ Kata _____
Jina la Afisa Ugani _____ Namba ya simu _____
Mwezi _____ Mwaka wa Fedha _____
(Wasilishwe kwenye kata kabla ya mwisho wa mwezi kutoka kwenye kijiji, na wilayani mwisho wa wiki ya kwanza ya mwezi unaofuata kutoka kwenye kata)

ANGALIZO

- 1) Iwapo kitu kinachoulizwa hakipo kwenye kijiji/kata yako, andika "0" (sifuri).
- 2) Iwapo kitu kinachoulizwa kipo kwenye kijiji/kata yako, andika makadirio kwa takwimu/idadi.
- 3) Tumia vipimo vya kitaifa kwa kila jedwali vinapo hitajika.
- 4) Soma kwa makini maelezo katika kila jedwali kabla ya kuanza kujaza.

1. Utangulizi

1.1 (a) Hali ya hewa

Mvua: Jaza idadi ya siku ambazo mvua imenyeshwa na kiasi cha milimita zilizokusanywa

Idadi ya siku	Kiasi cha mvua (milimita) (i)	Maelezo (Nyingi/ Wastani/ Kidogo/Hakuna) (ii)

- (i) Kama kijiji chako kina kipima mvua, jaza kiasi cha mvua (milimita) katika safu wima ya pili.
(ii) Kama kijiji chako hakina kipima mvua, jaza idadi ya siku na safu wima ya tatu.

1.2 Kazi zilizofanyika

Tafadhali eleza shuguli za sekta ndogo za kilimo, mifugo na uvuvi zilizofanywa na afisa ugani katika kipindi cha mwezi huu.

--

1.3 Mafanikio na Changamoto

Tafadhali eleza kwa kifupi mafanikio na changamoto/matatizo katika sekta ya kilimo kwa mwezi huu.

Mafanikio:

Changamoto/ Matatizo:

1.1(b) Matukio:

Tafadhali eleza matukio muhimu (ukame, mafuriko, njaa, migogoro magonjwa ya mimea na mifugo n.k.) yaliyojitokeza kwa kipindi cha mwezi huu.

--

3. Afya ya mimea

3.1 Kuzuia/ kutibu/ kudhibiti magonjwa/ visumbufu kwa kutumia kemikali

Jina la ugonjwa / kisumbufu (i)	Zao lililoathirika (ii)	Kiasi cha uharibifu (kubwa, wastani, kidogo) (iii)	Eneo lililoathirika (ha) (iv)	Idadi ya vijiji vilivyoathirika (v)	Dawa iliyotumika (vi)	Kiasi kilichotumika (vii)	Kipimo (kg, lt) (viii)	Idadi ya vijiji vilivyo hudumiwa (ix)	Idadi ya kaya zilizohudumiwa (x)	Eneo lililookolewa (ha) (xi)	Maelezo (xii)
Jumla											

i) Andika jina la visumbufu vya mimea/magonjwa yaliyolipuka katika kipindi cha mwezi husika.

ii) Andika jina la zao lililoshambuliwa na visumbufu vya mimea/magonjwa tumia mstari (row) moja kujaza zao moja

iii) Chagua ukubwa wa eneo lililoathirika na visumbufu vya mimea/magonjwa shambani; Ukubwa (kubwa kuliko asilimia 50) Wastani (asilimia10-50) au dogo (chini ya asilimia 10).

iv) Andika jina la dawa iliyotumika mara kwa mara katika kukabiliana na visumbufu vya mimea/magonjwa

v) Eneo lililookolewa linategemea na idadi ya kaya zilizopata huduma ya visumbufu vya mimea/magonjwa.

4. Mifugo iliyochinjwa

Aina ya mifugo	Idadi ya waliochinjwa kwa mwezi huu	Bei ya wastani kwa kg (Tsh)
Ng'ombe		
Kondoo		
Mbuzi		
Nguruwe		
Kuku wa asili		
Kuku wa kisasa		
Mengineyo (Taja)		

5. Ukaguzi wa nyama**5(a) Wanyama walioathirika**

Jina la machinjio/ukaguzi(i)	Aina ya mfugo (ii)	Idadi ya wanyama walioathirika (iii)

Maelezo: (i) Andika aina ya mifugo walioathirika(Ng'ombe,Kondoo,Mbuzi,Nguruwe n.k)

(ii) Hesabu kila mnyama mara kwa mara .Acha kisanduku kilichobaki wazi kwa mnyama wa aina moja

5(b) Sehemu ya mnyama iliyoathirika

Aina ya mfugo (i)	Kilichotupwa (ii)	Viungo vilivyotupwa (Mzoga mzima/ Moyo/ Mapafu/ Maini nk.)	
		Sababu ya kutupa viungo / mzoga mzima (iii)	Idadi ya matukio kwa kila sababu (iv)

Maelezo: i) Andika aina ya mfugo walioathirika (Ng'ombe, Kondoo, Mbuzi, Nguruwe n.k).

iii) Andika kila ugonjwa / hali moja iliyojitokeza kwa kila mstari (row).

iv) Andika idadi ya matukio kwa kila sababu.

6. Mazao yatoakanayo na mifugo**6.1 Maziwa**

Aina ya mazao	Kiasi cha maziwa (Whole milk) na mazao yake kwa mwezi huu	Wastani wa maziwa yaliyozalishwa (kwa mfugo/siku)	Bei ya maziwa (kwa lita)
Maziwa ya ng'ombe wa asili (lita)			
Maziwa ya ng'ombe wa kisasa (lita)			
Jibini (Cheese) (kg)			
Siagi (Butter) (kg)			
Samli (Ghee) (kg)			

Maelezo: Hesabu kiasi cha maziwa yaliyozalishwa kwa ajili ya kuza tu. Matumizi ya nyumbani hayahusiani na takwimu hizi.

6.2a Ngozi

Aina ya mazao	Zisizosindikwa (vipande) kwa mwezi huu		Zilizosindikwa (vipande) kwa mwezi huu	Maelezo
	Ngozi zilizokaushwa kwa jua	Zilizokaushwa kwa chumvi	Wet Blue	
Ngozi za ng'ombe				
Ngozi za mbuzi				
Ngozi za kondoo				

6.2b Bei ya ngozi

Aina ya mazao	Bei ya wastani ya machinjioni		Bei ya wastani kiwandani
	Ngozi zilizokaushwa kwa jua	Zilizokaushwa kwa chumvi	Wet Blue
Ngozi za ng'ombe (Tsh/kg)			
Ngozi za mbuzi (Tsh/kipande)			
Ngozi za kondoo (Tsh/kipande)			

Maelezo: Ngozi za ng'ombe "Tsh/kg", Ngozi za mbuzi/ kondoo "Tsh/piece"

6.3 Mayai

Mayai	Kiasi cha mayai yaliyokusanywa kwa mwezi huu
Mayai ya kuku wa kienyeji	
Mayai ya kuku wa kisasa	
Jumla	

Maelezo: Andika mayai yaliyozalishwa kibiashara tu

Takwimu zinaweza kupatikana katika mashamba ya ufugaji wa kuku.

7. Afya ya Mifugo**7.1 Tiba**

Aina ya mifugo	Aina ya ugonjwa/ hali	Idadi ya walioathirika	Idadi ya waliotibiwa	Idadi ya waliopona	Idadi ya waliokufa	Matibabu/ Dawa iliyotumika

Maelezo: Taarifa zifuatazo ziandikwe pia katika safu wima va ii: utoaii kondo la nvuma (Distokia), utoaii desi (Bloat), utokaii mimba (abortion), kuumwa nyoka (Snakebite) na milk fever.

7.2 Uogeshaji, kunyunyizia, chanjo na kinga

Aina ya mifugo	Idadi ya walioogeshwa	Dawa iliyotumika	Idadi ya walionyunyiziwa	Dawa iliyotumika	Idadi ya waliochanjwa / kinga	Chanjo/Kinga iliyotumika

7.3 Huduma za mifugo

Aina ya mifugo	Kukata kwato	Kuhasi	Kuhamilisha (AI)	Kukata pembe	Kuweka alama	Kukata mikia	Kukata meno	Kukata midomo	Hereni ya puani (Bull ring)	Upimaji wa mimba (Pregnancy diagnosis)	Sindano ya kuchochea joto	Sindano ya madini chuma (Iron injection)
Ng'ombe				Sindano ya kuchochea joto								
Mbuzi												
Kondoo												
Nguruwe												
Kuku												
Bata												

Maelezo: Utekelezaji kufikia mwezi huu

8. Ufugaji wa samaki**8.1 Mfumo wa ufugaji**

Mfumo wa ufugaji	Idadi	Idadi yenye vifaranga	Eneo (M ²)	Aina ya samaki pandwa	Samaki vuliwa		
					Uzito (Kg)	Bei (TSh/Kg)	Thamani (TSh)

Maelezo: Column ii idadi ya mabwawa yote (yaliyopandikizwa vifaranga na yasiyopandikizwa vifaranga) yaliyopo (mapya na ya zamani)

Taarifa za column iii, v, vi, vii na viii zinahusu mabwawa yaliyopandikizwa vifaranga tu. Column ya iv inahusu (yaliyopandikizwa vifaranga na yasiyopandikizwa vifaranga)

Mfumo wa ufugaji unaweza kuwa mabwawa, vizimba, matanki na chelezo

9. Wageni waliotembelea kijiji/kata kwa shughuli za Kilimo au ufugaji

Tarehe	Jina la mgeni	Anuani	Shughuli iliyomleta

**OFISI YA RAIS - TAWALA ZA MIKOA NA SERIKALI ZA MITAA (OR-TAMISEMI)
FOMU YA TAARIFA YA ROBO MWAKA YA MPANGO WA MAENDELEO YA KILIMO WA KIJIKI/KATA**

ROBO MWAKA

Toleo la Julai 2018 v2

Jina la Kijiji/ Mtaa/ Kata:

Jina la Afisa Ugani:

Namba ya simu _____

Robo: _____ (Mwezi: _____ mpaka _____) Mwaka wa Fedha: _____ Tarehe ya kuwasilisha: _____

(Iwasilishwe kwenye kata kabla ya mwisho wa robo mwaka kutoka kwenye kijiji, na wilayani mwisho wa wiki ya kwanza ya mwezi unaofuata kutoka kwenye kata)

ANGALIZO

- 1) Iwapo kitu kinachoulizwa hakipo kwenye kijiji/kata yako, andika "0" (sifuri).
- 2) Iwapo kitu kinachoulizwa kipo kwenye kijiji/kata yako, andika makadirio kwa takwimu/idadi.
- 3) Tumia vipimo vya kitaifa kwa kila jedwali vinapo hitajika.
- 4) Soma kwa makini maelezo katika kila jedwali kabla ya kuanza kujaza.

1. Hali ya chakula kijiji/ kata

	Weka alama	Maelezo
Nzuri		
Wastani		
Mbaya		

Eleza hali ya upatikanaji wa chakula kwa kipindi cha robo mwaka.

idadi ya kaya zisizokuwa na chakula	Idadi ya kaya zenye chakula pungufu	Idadi ya kaya zenye chakula cha kutosha	Idadi ya kaya zenye chakula na ziada

2. Vikundi/Ushirika wa wakulima

2.1 Vyama vya kuweka na kukopa (SACCOs)

Jedwali 2.1 Vyama vya kuweka na kukopa (SACCOs) huhamishwa

2.2 Vikundi vingine vya wakulima

Jedwali 2.2 Vikundi vingine vya wakulima wamehamia

3. Huduma za ugani.

3.1 Mafunzo kwa wakulima kwa kutumia njia mbalimbali nje ya shamba darasa

Mada ya mafunzo katika (i)	Idadi ya wakulima waliopata mafunzo		Idadi ya wakulima waliopata mafunzo kwa muda		Njia iliyotumika kutoa mafunzo	Mtoa mafunzo/ Mwezesaji wa mafunzo	Maelezo
	Wanaume	Wanawake	Sawa au pungufu ya wiki moja	Zaidi ya wiki moja			
Mazao							
Ufugaji							
Uvuvi							
Masoko na Usindikaji							
Umwagiliaji							

Maelezo: i) Orodhesha mada zilizofundishwa kwa wakulima.

6. Mmomonyoko wa ardhi

Aina ya mmomonyoko (i)	Jina la kijiji/ vijiji vilivyohusika	Eneo lililoharibiwa (ha)	Mbinu zilizotumika	Eneo lililokarabatiwa (ha)	Maelezo

i) Aina ya mmomonyoko iandikwe kwa lugha ya Kiingereza

7. Eneo la uzalishaji katika kijiji/ kata na njia iliyotumika kulima**7.1 Vuli**

Eneo	Kwa trekta (ha) (i)	Kwa kutumia wanyamakazi (ha) (ii)	Kwa jembe la mkono/ mkono (ha) (iii)	Kupanda bila kulima (ha) (iv)	Jumla ya eneo (ha) (v) = (i)+(ii)+(iii)+(iv)
Lililolimwa					
Lililopandwa					
Lililopaliliwa					
Lililovunwa					

Maelezo: Usihesabu mara mbili kama ardhi ileile imelimwa zaidi ya mara moja katika msimu mmoja

7.2 Masika

Eneo	Kwa trekta (ha) (i)	Kwa kutumia wanyamakazi (ha) (ii)	Kwa jembe la mkono/ mkono (ha) (iii)	Kupanda bila kulima (ha) (iv)	Jumla ya eneo (ha) (v) = (i)+(ii)+(iii)+(iv)
Lililolimwa					
Lililopandwa					
Lililopaliliwa					
Lililovunwa					

Maelezo: Usihesabu mara mbili kama ardhi ileile imelimwa zaidi ya mara moja katika msimu mmoja

OFISI YA RAIS - TAWALA ZA MIKOA NA SERIKALI ZA MITAA (OR-TAMISEMI)
FOMU YA TAARIFA YA MWAKA YA MPANGO WA MAENDELEO YA KILIMO WA KIJIKI/KATA

MWAKA

Toleo la Julai 2018 v2

Jina la Kijiji/ Mtaa/ Kata: _____

Jina la Afisa Ugani: _____ Namba ya simu _____

Mwezi: _____ Mwaka wa Fedha: _____ Tarehe ya kuwasilisha: _____

(Iwasilishwe kwenye kata kabla ya mwisho wa mwaka kutoka kwenye kijiji, na wilayani mwisho wa wiki ya kwanza ya mwaka unaofuata kutoka kwenye kata)

ANGALIZO

- 1) Iwapo kitu kinachoulizwa hakipo kwenye kijiji/kata yako, andika "0" (sifuri).
- 2) Iwapo kitu kinachoulizwa kipo kwenye kijiji/kata yako, andika makadirio kwa takwimu/idadi.
- 3) Tumia vipimo vya kitaifa kwa kila jedwali vinapo hitajika.
- 4) Soma kwa makini maelezo katika kila jedwali kabla ya kuanza kujaza.

1. Utangulizi, Taarifa za msingi za Kijiji/ Kata

	Zinazoongozwa na wanaume	Zinazoongozwa na wanawake	Jumla	Zinazoshiriki kazi za kilimo mazao	Zinazoshiriki ufugaji mifugo	Zinazoshiriki ufugaji samaki
Idadi ya kaya						
	Wanaume	Wanawake	Jumla	Watu wanao shiriki kazi za kilimo mazao	Watu wanao shiriki ufugaji mifugo	Watu wanao shiriki ufugaji samaki
Idadi ya watu						

2. Kilimo cha mkataba na makubaliano ya soko

Aina ya shughuli	Mkataba wa soko (Contract farming) (i)			Makubaliano ya soko (Out-growers) (ii)		
	Idadi ya kaya zinazoshiriki (iii)	Idadi ya makampuni yaliyohusika (iv)	Zao kuu/ bidhaa (v)	Idadi ya kaya zinazoshiriki (vi)	Idadi ya makampuni yaliyohusika (vii)	Zao kuu/ bidhaa (viii)
Kilimo						
Ufugaji						
Uvuvi						

Maelezo: i) Mkataba wa soko unatafsiriwa kama makubaliano kati ya kaya/kikundi na kampuni katika kuzalisha mazao ya biashara kwa mkataba maalum wa kisheria.

ii) Makubaliano ya soko yanatafsiriwa kama makubaliano kati ya kaya/kikundi na kampuni ya kilimo katika kuzalisha mazao ya biashara ambayo hayahusishi mkataba. Kampuni inaweza kutoa huduma kwa kaya/kikundi husika kama mikopo ya pembejeo, madawa ya kunyunyizia mimea na vifaa vya kuhifadhia mavuno.

v), viii) Andika jina la zao kuu/bidhaa katika maelezo.

3. Umwagiliaji

3.1 Skimu ya umwagiliaji

Jina la skimu (i)	Chanzo cha maji (mfano; mto rufiji) (ii)	Eneo linalofaa kwa umwagiliaji (ha) (iii)	Eneo lililomwagiliwa (ha) (iv)	Msimu wa umwagiliaji (1=muda wote, 2=masika/vuli, 3=kiangazi)	Hali ya skimu (1=nzuri, 2=inaridhisha, 3=inahitaji marekebisha, 4=hajjulikani)	Idadi ya wanachama katika chama cha umwagiliaji (IO)		Idadi ya wamwagiliaji (wanachama na wasiowanachama)	
						Wanaume	Wanawake	Wanaume	Wanawake
Skimu iliyoendelezwa									
Skimu ya asili									

Note: (iii) "Eneo linalofaa kwa umwagiliaji" ni eneo ambalo linalimwa au halilimwi lakini linafaa kwa kilimo cha umwagiliaji katika skimu inayohusika.

(iv) "Eneo lililomwagiliwa" ni eneo ambalo limeendelezwa kwa ajili ya kilimo cha umwagiliaji katika skimu iliyotajwa.

4. Mashine, zana na vifaa vya kilimo/ ufugaji na uvuvi

Katika kipengele hiki, orodhesha mashine, zana au vifaa vinavyopatikana katika kijiji/ kata. Mashine, zana au vifaa ambavyo wakulima wameazima kutoka vijiji jirani havitahusika katika jedwali hili.

4.1 Idadi ya mashine/vifaa vya kilimo, ufugaji na uvuvi

Aina ya mashine/ vifaa (i)	Nzima		Mbovu		Sababu ya ubovu wa mashine/kifaa (vi)
	Binafsi (ii)	Kikundi (iii)	Binafsi (iv)	Kikundi (v)	
Trekta (Tractor)					
Trekta la mkono (Power tiller)					
Mashine ya kuvunia (Combine harvester)					
Mashine ya kufyeka nyasi (Mower)					
Mashine ya kutengenezea nyasi (Bailer)					
Vifaa vya chakula (Feeder)					
Vifaa vya maji (Drinker)					
Mashine ya kukamulia maziwa (Milking machine)					
Mashine ya kupoozea (Chillers)					
Mashine ya umeme ya kukatia nyama (Electric meat cutter)					
Mitumbwi ya ulinzi yenye injini (Patrol boat)					
Mitumbwi ya uvuvi yenye injini (Fishing boat with engine)					
Mitumbwi ya uvuvi (Fishing boat without engine)					
Mengineyo (Taja)					

Maelezo: (i) Andika jina la mashine ambayo haijatajwa kwenye orodha iliyo kwenye jedwali juu.

(ii)-(v) Andika idadi ya mashine ambayo inamilikiwa na mtu binafsi au kikundi. Hesabu zile zinazomilikiwa na serikali au taasisi (kampuni binafsi) zihesabiwe katika orodha ya vikundi.

4.2 Idadi ya zana za kilimo**a) Zana zinazokotwa na trekta/ trekta la mkono**

Aina ya zana	Nzima	
	Binafsi	Kikundi
Jembe la kusawazisha (Harrow)		
Mashine ya kupanda (Planter)		
Jembe la kulima (Disk plough)		
Jembe la kutifua (Sub-soiler)		
Jembe la kupalilia (Weeder)		
Mashine ya kupuliza dawa za mimea (Boom sprayer)		
Jembe la kukatua (Ripper)		
Reki ya kukusanyia nyasi (Rake for Hay Making)		
Tela (Trailer)		
Mengineyo (Taja)		

b) Zana zinazokotwa na wanyamakazi

Aina ya zana	Nzima	
	Binafsi	Kikundi
Jembe la kusawazisha (Harrow)		
Mashine ya kupanda (Planter)		
Jembe la kulima (Moldboard plough)		
Jembe la kutifua (Sub-soiler)		
Jembe la kupalilia (Weeder)		
Jembe la kukatua (Ripper)		
Jembe la matuta (Ridger)		
Mkokoteni (Cart)		
Mengineyo (taja)		

Maelezo: Andika jina la zana ambazo hazijatajwa kwenye orodha iliyo kwenye jedwali juu.

4.3 Idadi ya vifaa vinavyotumiwa kwa mkono

Majembe ya mkono	Pampu ya kupuliza dawa (mimea/mifugo)	Visu vya kuchunia	Nyavu za kuvulia	Vyuma vya kuwekea alama*	Nyingine (taja)		

Maelezo: *Kwa ajili ya utambuzi wa mifugo

4.4 Mashine za kusindika mazao ya Kilimo/ Mifugo/ Uvuvi

Aina ya mashine (i)	Nzima		Mbovu		Sababu ya ubovu wa mashine (vi)
	Binafsi (ii)	Kikundi (iii)	Binafsi (iv)	Kikundi (v)	
Kusaga unga					
Kupukuchua					
Kukamulia mafuta					
Kupasua mbegu za mafuta					
Kubangulia (Pulperies)					
Kusindika pamba					
Kuondoa maganda (Shelling)					
Kutengenezea hei					
Kusindika mazao yatokanayo na maziwa					
Kutoteleshea vifaranga					
Kusindika nyama					
Kusindika ngozi					
Gari la kubebea nyama					
Gari la kubebea maziwa					
Kutengenezea barafu					
Kusindika mazao yatokanayo na samaki					
Mengineyo (Taja)					

Maelezo: Hesabu idadi ya mashine zilizopo kijijini/ kwenye kata.

(i) Andika jina la mashine kama haijatajwa kwenye orodha iliyopo juu kwenye jedwali.

(ii)-(v) Andika idadi ya mashine ambayo inamilikiwa na mtu binafsi au kikundi. Kwa zile zinazomilikiwa na serikali na taasisi (kampuni binafsi) ziwekwe katika umiliki wa vikundi.

5. Huduma za ugani.

5.1 Mafunzo ya wakulima kupitia shamba darasa

Lengo la shamba darasa (i)	Idadi ya shamba darasa (ii)	Idadi ya walioanza (iii)		Muda wa mafunzo (siku)	Idadi ya waliohitimu		Idadi ya vijiji vilivyohudumiwa	Idadi ya wakulima wanaotumia elimu ya mafunzo yaliyotolewa	Maelezo
		Wanaume	Wanawake		Wanaume	Wanawake			
Mazao									
Ufugaji									
Uvuvi									
Masoko na Usindikaji									
Mengineyo									

Maelezo: i) Orodhesha malengo ya mashamba darasa kwa kila sekta.

ii) Andika idadi ya mashamba darasa yaliyotumika kutimiza lengo husika.

iii) Andika idadi ya wakulima walioanza shamba darasa.

6. Pembejeo**6.1 Mbolea za viwandani**

Aina ya mbolea	Mahitaji kwa mwaka (tani)	Matumizi kwa mwaka (tani)	Maelezo
SA			
CAN			
UREA			
TSP			
DAP			
NPK 10:10:10			
NPK 25:5:5			
NPK 6:20:18 / 10:18:24			
NPK 4:17:15			
NPK 17:17:17			
MRP (Minjingu Rock Phosphate)			
MOP			
Mengineyo (Taja)			

Maelezo: Pia kiasi cha mbolea inayotumika katika kuzalisha malisho ya mifugo ijumuishwe.

6.2 Viatilifu

Aina ya kiatilifu/ kiuadudu	Jina la kiatilifu/ kiuadudu *	Kipimo (kg/ lita)	Matumizi kwa mwaka	Maelezo
A: Viuadudu				
A: Viuadudu				
A: Viuadudu				
A: Viuadudu				
B: Viuakuvu				
B: Viuakuvu				
B: Viuakuvu				
B: Viuakuvu				
C: Viuapanya				
C: Viuapanya				
C: Viuapanya				
C: Viuapanya				
D: Viuapanya				
D: Viuapanya				
D: Viuapanya				
D: Viuapanya				
E: Viuandege				
E: Viuandege				
E: Viuandege				
E: Viuandege				
F: Viuaminyoo				
F: Viuaminyoo				
F: Viuaminyoo				
F: Viuaminyoo				

Maelezo: * Andika jina la bidhaa.

6.3 Mbegu bora

Aina ya zao	Mahitaji kwa mwaka (kg)	Aina ya mbegu bora (Orodhesha)	Matumizi kwa mwaka (kg)		Maelezo
			Mbegu zenye ubora unaotambulika (Quality Declared Seed)	Mbegu zenye ubora uliohibitishwa (Certified seed)	
Mahindi					
Mahindi					
Mahindi					
Mahindi					
Mahindi					
Mpunga					
Mpunga					
Mpunga					
Mpunga					
Mpunga					
Maharage					
Maharage					
Maharage					
Maharage					
Maharage					
Mtama					
Mtama					
Mtama					
Ngano					
Ngano					
Ngano					
Alizeti					
Alizeti					
Alizeti					
Mengineyo (taja)					
Mengineyo (taja)					
Mengineyo (taja)					

7. Idadi ya mifugo

Aina ya mnyama	Idadi wa asili	Idadi wa kisasa		Jumla	Jumla ya waliosajiliwa
		Nyama	Maziwa		
1. Ng'ombe					
Ng'ombe dume*					
Ng'ombe jike**					
Maksai***					
Mtamba****					
Ndama dume					
Ndama jike					
Maksai wa kulima					
Hajjulikani*****					
Jumla ndogo ng'ombe					
2. Kondoo					
Kondoo dume					
Kondoo Jike					
Hajjulikani*****					
Jumla ndogo kondoo					
3. Mbuzi					
Mbuzi dume					
Mbuzi jike					
Hajjulikani*****					
Jumla ndogo mbuzi					
4. Mifugo Mingine					
Nguruwe					
Nyati maji					
Punda					
Farasi					
Ngamia					
Mbwa					
Paka					
Sungura					
5. Ndege	Idadi ya wa asili	Wa nyama	Wa Mayai	Jumla	
Kuku					
Bata					
Bata mzinga					
Kanga					

Maelezo:

* Ng'ombe dume ni ambaye hajahasiwa anatumiwa kwa kuzalisha mbegu.

** Ng'ombe jike ni ambaye amewahi kuzaa angalau mara moja.

*** Maksai ni ng'ombe dume aliyehasiwa mwenye umri zaidi ya mwaka mmoja.

**** Mtamba ni ng'ombe jike mwenye umri wa miaka kati ya mmoja na mitatu ambaye hajazaa.

***** Kama ni vigumu kufahamu mchanganuo katika kundi la ng'ombe, kondoo na mbuzi, andika idadi ya jumla katika kila safu mlalo ya "Hajjulikani".

Maelezo: Hesabu idadi ya wanyama wote kasoro inayomilikiwa na wakulima wakubwa (large scale farmers) ambao wanafuga ng'ombe zaidi ya 50, mbuzi/kondoo/nguruwe zaidi ya 100 kwa pamoja au mmojammoja, kuku/bata/bata mzinga/sungura zaidi ya 1000, wanaweza pia kuwa wenye makazi ya kudumu/shamba la kudumu, wanatumia mashine (mfano za kukamulia, kunyuweshia maji nk), na wanafanya ufugaji wa kibiashara (mbinu za kisasa katika ufugaji), na wana hati ya kumiliki ardhi.

8. Miundombinu katika mifugo

Aina ya miundombinu	Nzima	Mbovu	Mahitaji halisi	Idadi ya zilizosajiliwa	Sababu ya ubovu wa miundombinu
Karo (Slaughter Slab) *					
Bucha ya ng'ombe/mbuzi/kondoo					
Bucha ya nguruwe					
Bucha ya samaki					
Banda la ngozi					
Banio la kudumu (Permanent crush)					
Lambo					
Birika la kunywea maji (Water Trough)					
Josho la wanyama wakubwa (Ng'ombe, Punda)					
Josho la wanyama wadogo (Mbuzi, Kondoo, Mbwa)					
Sehemu ya kunyunyuzia dawa mifugo (Spray Race)					
Mengineyo (Taja)					

Maelezo: i) Andika jina la miundo mbinu kama ipo zaidi ya hiyo iliyotajwa hapo juu

* Karo ni mahali pa kuchinja wanyama, kwenye sakafu katika eneo la wazi

9. Eneo la malisho (Grazing land)

Aina ya mfugo (i)	Ukubwa wa eneo la kulishia wanyama kijijini/ kata (ha) (iii)	Eneo linalotumika (ha) (iv)	Ukubwa wa eneo lililopimwa kwa ajili ya malisho (Total Demarcated Area) (ha) (v)	Ukubwa wa eneo linalomilikiwa kisheria (Total Area Leased) (ha) (vi)
Ng'ombe				
Mbuzi				
Kondoo				
Punda				

Maelezo:

(iii) Eneo linalofaa na linajumlisha linalotumika na lisilotumika.

(iv) Eneo halisi ambalo linatumika kulishia wanyama.

(vi) Eneo lililopewa hati.

10. Malisho ya mifugo**10.1 Malisho ya mifugo yaliyopandwa na kuendelezwa**

Idadi ya mashamba	Eneo (ha)	Uzalishaji wa mbegu (kg)	Idadi ya marobota/ bandali (bundle) yaliyozalishwa (Hei*)	Maelezo

* Robota moja la hei lina uzito wa kilo 20.

10.2 Masalia ya mazao

Aina ya zao	Idadi ya marobota*/ bandali (bundle) yaliyozalishwa	Eneo la mashamba yaliyotumika kwa malisho (grazed in situ) (ha)	Maelezo

* Robota moja lina uzito wa kilo 20.

11. Njia mbalimbali za mawasiliano (TV, radio, simu, nk.)**11.1 TV na Radio**

Kituo cha TV kinachopatikana	Idadi ya vijiji vinavyofikiwa na huduma
TBC	
ITV	
Star TV	
Vituo vya TV vya kijamii, taja:	

Kituo cha Radio kinachopatikana	Idadi ya vijiji vinavyofikiwa na huduma
Radio 1	
TBC Taifa	
Radio Free Africa	
Vituo vya Radio vya kijamii, taja:	

Kama kituo cha TV / Radio cha **kijamii** kipo na kinarusha kipindi cha kilimo na ufugaji hewani, jaza jedwali hili.

Jina la chombo cha habari	Jina la kipindi	Mara ngapi kwa wiki	Aina ya taarifa

11.2 Simu

Jina la kampuni ya simu	Idadi ya vijiji vinavyofikiwa na huduma
Sasatel	
Tigo	
TTCL	
Vodacom	
Airtel	
Zantel	
Mengineyo, taja	

Attachment 4.0

District Officer's Manual

**District Officer's Manual for
Agricultural Routine Data System (ARDS)**

ASDP M&E Thematic Working Group

July 2018

1. Introduction

1.1 Purpose of the District Officers' Manual

The purpose of this District Officers' Manual is to give clear instructions to district officers involved in data collection and entry, particularly to both District Statisticians (DS) and M&E Officers (DMEO), on:

- How to prepare for VAEO/WAEO Form (WF00/WF01) before its distribution,
- How to collect and input data for District Entry Form (Quarterly and Annual),

In this document, the term “district” is used to refer to all districts, municipalities, towns and cities¹.

There is another important document “Extension Officer’s Manual for ARDS”, related to the activities on how to fill the VAEO/WAEO forms. DS/DMEO are recommended to refer to both Manuals. National and Regional officers can also utilize these documents for data check and feedback at their levels.

1.2 Role of District Officers

At all levels of administration, including village, ward, district, region, and national, agricultural data is important for understanding the situation on the ground, making decisions, and taking necessary actions. In the data flow of the Agricultural Routine Data System (ARDS), the role of district is particularly important because districts oversee data collection at village and ward levels, while WAEO consolidate the data collected from VAEO.

District officers' role is not limited to data collection and provision. Followings are six major roles DS/DMEO need to play.

1. VAEO/WAEO Form's Distribution and Collection
2. Data check and revision
3. Data input to the Web Portal system
4. Give feedback to WAEO on collected data
5. The refresher training/workshop provided for experienced extension officers as well as newly recruited ones
6. Sharing information within/between DAICO and DLFO Office

¹ This is to avoid confusion by using the term “LGA” which includes ward and village, or the term “council” where some councils share one DAICO office.

2. Preparation for VAEO/WAEO Report Format (WF00/WF01)

1. Setting up “Key Crops” [WF00/01 Table2.1]

The 13 crops highlighted in the list below are “key crops”. You have to collect data for all of them. In addition, DAICO can add any other crops produced in your district. Choose any additional crops from the list. Then give the direction/instruction to Extension officers.

Na.	Sub category	Items											
1	Nafaka	Mahindi	Mpunga	Mtama	Uwele	Ulezi	Ngano	Shayiri					
2	Mazao yatokanayo na mizizi	Mihogo	Viazi vitamu	Viazi mviringo	Viazi vikuu	Gimbi							
3	Mazao ya viwandani	Pamba	Tumbaku	Kahawa	Chai	Pareto	Kakao	Mpira	Miwati (Wattle)	Miwa	Jute	Katani	Korosho
4	Mazao ya mafuta	Alizeti	Ufuta	Karanga	Mawese	Nazi	Maharage ya Soya	Mbegu za Nyonyo	Mibono				
5	Mazao ya jamii ya kunde	Kunde	Mbaazi	Choroko	Njegere	Dengu	Njugu mawe	Maharage					
6	Viungo	Tangawizi	Pilipili manga	Giligiliani	Mdalasini	Binzari	Vanilla	Pilipili kali	Karafuu	Vitunguu swaumu	Iliki	Paprika	
7	Mbogamboga	Matango	Uyoga	Cauliflower	Kabichi	Mchicha	Spinachi	Kabichi china (Chinese cabbage)	Nyanya	Biringanya	Vitunguu	Pilipili hoho	Karoti
		Nyanya chungu	Mnafu	Figiri	Leek	Saladi	Bamia						
8	Matunda	Ndizi mbivu (Sweet Banana)	Ndizi mbich (Plantain)	Embe	Papai	Chungwa	Chenza	Pera	Apple	Nanasi	Parachichi	Tikiti maji	Limau
		Ndimu	Tunda damu	Mapeasi (Pear)	Mapesheni (Passion fruit)								
9	Maua	Waridi (Rose)	Chrysanthemum	Carnation	Aster	Gypsophylla	Ginger rose	Helianthus					
10	Mengineyo	Choya (Rozella)											

District Officers need to make sure VAEO/WAEO fill the data for these 13 crops highlighted here.

2. Setting up “Target” for Key Crops and Other Added Crops [WF00]

DAICO have to set Annual Target for all of 13 “key crops” and any other crops added on table 2. The timing for setting the target is at the beginning of fiscal year (in JULY). Note that Annual Target is NOT a forecast, but a goal to be achieved in the year.

In preparing annual target, the steps for setting the key crops’ figures is as follows:

Step 1: DAICO consults with Regional Agriculture Adviser (RAA), and then take their guidance into account.

Step 2: DAICO should check previous data in last agricultural year and the past, based on ward level. Especially, DAICO should be **aware of annual ward level productivity in June.**

Step 3: DAICO makes WAEO set the village level target for only annual total “planted area”. DAICO should also make WAEO set the target for all villages. then request to aggregate all the targets to the ward level target.

Step 4: DAICO, receiving ward level targets, finalizes the annual target of the district as well as ward level, then gives the instructions to WAEOs as well as DS/DMEO. So that WAEO inform both VAEO and VEO of each target’s figures.

Annual Target		
Planted Area (ha) (i)	Productivity (ton/ha) (ii)	Expected Production Qty (ton) (iii)=(i)x(ii)

DAICO should provide the figures to DS/DMEO on both annual planted area and annual productivity of key crops/any other crops added, in order to enter the target data for each ward. DS/DMEO calculate Expected Production Qty based on both figures, and then enter the data to Web Portal system.

3. Method for Estimating Missing Ward Data [WF01 Table2.1, 4]

District total needs to be computed by summing up the ward level data.

However, if there are WAEOs who have **not submitted** the filled-in forms, it is important to take actions to address it. At first you quickly contact with WAEO and WEO, then remind them of submitting data right now. Nevertheless, in case of no response, you can apply the temporary measures shown in the box 1 below.

Box 1. Tips when there are *WARDS* which have not submitted the filled-in form

<Instruction for Table2> how to impute harvested area, productivity, and production QTY when their ward data are missing.

In case of missing ward data, estimate by following method:

- (1) The missing ward's harvested area is obtained through consultation with WAEO, acting WAEO or WEO of the concerned ward.
- (2) You ask the nearest neighbouring ward's WAEO the productivity of the month there.
- (3) The missing ward's production QTY is calculated by the ward harvested area obtained through the inquiry or consultation times neighbouring ward productivity.

<Instruction for Table4> how to impute "Total number slaughtered" and "Average price" when the ward data are missing.

In case of missing ward data, estimate by following method:

- (1) The missed data of ward's "Total number slaughtered" and "Average price" are obtained through inquiry or consultation to WAEO, acting WAEO or WEO of the concerned ward.
- (2) If you cannot contact the WAEO/WEO of missing data's ward or they cannot answer it properly, you refer to the average of previous 3 months' data which you had obtained, and then estimate the figure.
- (3) If there is no data in previous months, you check the other neighbouring wards' data of the month, and then estimate it. It is important to consider the proportion between estimated data and the other wards' figures.

4. Keeping consistency between ARDS and “National Account Data of NBS”, and “Early Warning with Crop Forecasting Data” [WF01 Table 2.1, 2.2, 4]

(1) ARDS and National Accounts [WF01 Table 2.1, and Table 4]

The National Bureau of Statistics (NBS), Department of Agriculture has its own form to collect data on agricultural production for the National Accounts. Data is collected by the monthly production figures for each district and the average producer prices (as a proxy of the farmgate prices) for each quarter, as it is applicable for the crops and livestock productions used in the National Accounts. The form is filled by the VAEOs/WAEOs directly, and then aggregated at District level to allow for data editing and supplementation. After that, they are sent to the Regional Statistical Managers (RSMs) of NBS to complete. The RSMs send the questionnaire with data to NBS, Department of Agriculture.

However, the district officers (*i.e.* DAICOs, DS and/or DMEO) responsible for data collection and the operation of the ARDS system, report this National Accounts’ information to the district office, but often do not do so to the Ministry. As a result, there is a concern that data inconsistency between ARDS and National Accounts could take place. The district officers should make sure that both data are mutually consistent. It means that, at least, crops and livestock production data of both ARDS and NBS’s National Accounts must be the same in figure.

(2) ARDS and Early Warning with Crop Forecasting [WF01 Table 2.1 and Table 2.2]

The Ministry of Agriculture, Division of National Food Security and Nutrition, Crop Monitoring and Early Warning (CMEW) Section, is responsible for providing a forecast of crop production for Tanzania Mainland. CMEW section operates its own data collection method (*i.e.* forms of WRS 1-5 and RRS1) which uses the same reporting procedure to be relied on VAEOs/WAEOs for data collection, while responsibility for completion of the forms is borne by the DAICOs. The data to complete the form comes from the VAEOs/WAEOs and is compiled by DAICOs. This compiled report for each district is sent to the Ministry’s CMEW section through Regional Agriculture Advisor. District officers should assure that data between ARDS and Early Warning with Crop Forecasting are mutually consistent. It means that both data must be same in figure. So that district officers have to avoid discrepancies.

Meanwhile, one of the main products of Early Warning with Crop Forecasting data is the “Preliminary Forecast of Food Crop Production” issued in June. This report provides actual crop production data based on the situation up to the end of May. The Food Security forecast data is calculated by using the data from previous-year October to the immediate May, and by estimating the production during the subsequent months from June to September. Table 2.2 of WF01 “Food Security Forecast” is specifically inserted in the VAEO/WAEO Format of ARDS for this purpose. Note that these data are NOT actual production figures but forecasting ones, as figures are total amount of the four months, *i.e.* June, July, August and September.

3. District Data Entry

3.1 District Quarterly Data Entry Form (DF02)

Note that there are no specific data forms for the district data collection. If forms are necessary, please print out from the ARDS Web Portal. Otherwise, collect data and record them on any types of paper, then enter them to the Web Portal.

SUMMARY 1 below shows data source for tables of the District Quarterly Data Entry Form in ARDS Web Portal system whose data are to be collected by district (not by VAEO/WAEO). Data of other tables are generated by the system based on the data from ward.

SUMMARY 1: Table of District Quarterly Data Entry Form and Data/ Information Source

Table Name (Number and Title)	Data/ Information Source
3. Livestock Products Movement, (a) Livestock Movement (c) Livestock Auction	DLFO
6. Marketing of Livestock Products, (a). Meat from Commercial Farms	DLFO
7 (a). Animal Feeds, Acaricides, Vaccines and Treatment 7 (b). Inputs for reproduction of improved livestock	DLFO
9. Farmers groups/associations, (a) SACCOs (b) Other Farmer groups	DAICO / DLFO / DCDO

3. Livestock/ Products Movement

3 (a) Livestock Movement

You write the number of animals down here. It is defined as the number of official “permissions/authorizations” issued by DLFO in the quarter.

The term of “Non-trade” (ii), (v) and (viii) is defined as non-commercial transaction such as gifts, inheritance or dowry *etc*, included the movement of animals looking for pasture/ranch.

Both column (viii) and (ix) are applied to the movement of animals from one place to another in the same district only.

Type of Livestock	Animals moved into the district from other areas (number)		Animals moved to other areas from the districts (number)		Animals translocated within the district (number)	
	Non-trade	Trade	Non-trade	Trade	Non-trade	Trade
(i)	(ii)	From other LGAs in Tanzania (iii)	(iv)	To other LGAs in Tanzania (v)	(vi)	(vii)
Cattle						
Sheep						
Goat						
Pig						
Other (specify)						

DLFO can decide to add any other livestock supervised in your district office. Note that column (i) should be entered by only capital letter, due to data aggregation manner.

3 (c) Livestock Auction

You visit major auction markets in your district, and then collect data/information from auction dealers through interviews.

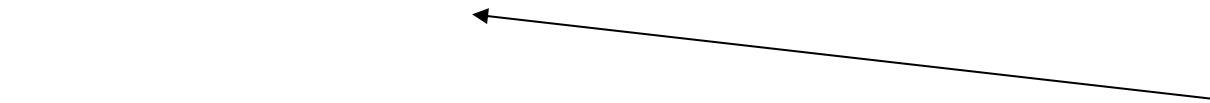
Auction name	Type of livestock	Number of livestock brought	Number of livestock sold	Average price (Tsh)

“Average price” here is defined as the most frequently answered price in the auction during this quarter.

If one auction has traded different type of animals (e.g. cattle and sheep), you have to repeat entering auction name in the next row. Otherwise it will not be aggregated in report. Remember to enter the auction names in CAPITAL letters.

6. Marketing of Livestock Products

6 (a) Meat from Commercial Farms



Type of Product	Volume Handled			Comments
	Warm	Chilled	Frozen	
(i)	This Quarter (ii)	This Quarter (iv)	This Quarter (vi)	(viii)
Beef (kg)				
Goat Meat (kg)				
Mutton (kg)				
Pork (kg)				
Indigenous Chicken Meat (kg)				
Improved Chicken Meat (kg)				

Commercial farm here is defined as the farm which is officially licensed and registered for LGA. DLFO should keep and provide such a farm list.

7 (a) Animal Feeds, Acaricides, Vaccines and Treatment

Generic Name (i)	Source (ii)	Measurement Unit (iii)	Quarterly Requirement (iv)	Quarterly Amount Used (v)	Low Price (vi)	High Price (vii)	Remarks (viii)
Animal Feeds							
		Kg					
		Kg					
Acaricides							
		Litre					
		Litre					
Vaccines							
		Dose					
		Dose					
Treatment (Drugs)							
		Dose					
		Dose					

(i) You write the generic names in each category. Animal feeds include hay, silage, concentrates etc. Enter the name in all capital letters (e.g. HAY).

(ii) Source: You choose either “government subsidy” or “privately acquired”. If you fill (ii), (iii) row, do not leave (i) blank. You need to repeat entry in row (i).

(iii) Measurement Unit: You must use standard unit – “kg”, “litre” or “dose” etc.

(v) You estimate the amount used, based on subsidies and VAEO/WAEO Monthly report, table 7.1~7.2 for Livestock Health.

(vi)~(vii) Low and high prices are based on retail prices per measurement unit. You check it up with procurement officer, and then collect the data.

This quarterly requirement is for the reporting quarter period, NOT for the coming quarter.

Firstly, you should set these figures at the beginning of the period, while you estimate the requirement based on the respective amount of the last four quarters.

7 (b). Inputs for reproduction of improved livestock

You fill in the number of doses for semen of (i), and just the numbers for bulls and heifer of (i).

Type of input (i)	Breed (ii)	Amount required in the quarter (doses or number) (iii)	Amount available in the quarter (doses or number) (iv)	Remarks (v)
Semen				
Bulls				
Heifer				

This amount required is for the reporting quarter period, NOT coming one.

Firstly, you should set these figures at the beginning of the period, while you estimate the requirement based on the amount of the last four quarter's records respectively.

9. Farmers groups/Associations

You go to Cooperative officers in your district offices and get these data from them.

9 (a) SACCOs

Number of SACCOs	Number of Members				Amount of Loans (Tsh)				
	Individual members		Group	Total	Crop	Livestock	Fishery	Marketing	Total
	Male	Female							

One group should be counted as one.

“Amount of loans” is defined as the total of initial loan given for running business in the following agricultural sub sectors.

9 (b) Other Farmer groups

Type of Associations/Groups		Number of Associations/Groups	Number of Members			Total number Registered	Total number with Bank Account
			male	Female	Total		
Crop	Production						
	Processing						
	Marketing						
Livestock	Production						
	Processing						
	Marketing						
Fisheries	Production						
	Processing						
	Marketing						

You write the number of Associations and Groups which are registered by either the Ministry of Home Affairs or districts.

3.2 Annual Data Entry Form (DF03)

Note that there is no specific data forms for the district data collection. If forms are necessary, please print out from the ARDS Web Portal. Otherwise, collect data and record them on any types of paper, then enter them to the Web Portal.

SUMMARY 2 below shows data source for tables of the District Annual Data Entry Form in ARDS Web Portal system whose data are to be collected by district (not by VAEO/WAEO). Data of other tables are generated by the system based on the data from ward.

SUMMARY 2: Table of District Annual Data Entry Form and Data/ Information Source

Table Name (Number and Title)	Data/ Information Source
1. Food Situation	DAICO
3. Agricultural Mechanization, (g) Number of Oxenization Centres and Tractor Hiring Services	DAICO
5. Extension Services, (a) Number of Extension Officers (b) Level of Education (c) Working Facilities / Equipment (e) Number of Extension Officers Trained (h) Non-Government Agricultural Extension Service Providers	DAICO / DLFO
9. Livestock Population (Large scale farmers)	DLFO
11. Livestock Products Processing Plants / Units	DLFO
12. Livestock Infrastructure and Status	DLFO
13. Grazing land	DLFO
14. Pasture, (b) Crop residues	DAICO / DLFO
16. Number of Ward Agricultural Resource Centres	DAICO

Population should be brought from projected population for the following year. Because SSR is for the next year, while the production is for the current year. Please read “Sub-Divisional Population Projection based on 2012 Population and Housing Census”, which issued by National Bureau of Statistics. It can be downloaded from NBS Web site.

1. Food Situation

District's projected population: [_____]

You should refer this figure in the column of “Implementation / Aggregated Production QTY (ton)” of the same crop in table 2, District Monthly Report (DR01)

Food type	Food crops	Total production(ton)	Factor	Grain Equivalent (Ton)	Other uses (%)	Grain Equivalent for other uses(Ton) = (v)x(vi)	Grain equivalent available for human consumption (Ton)	Total grain equivalent for human consumption (Ton)	Requirement of Grain Equivalent (Ton)	Surplus /Deficit	SSR
(i)	(ii)	(iii)	(iv)	(v)=(iii)x(iv)	(vi)	(vii)	(viii)=(v)-(vii)	(ix)=sum of (viii)	(x)	(xi)=(ix)-(x)	(xii)=(ix)/(x)x100
Cereal	Maize		1		16.4						
	Paddy		0.65		6.8						
	Sorghum		1		10.6						
	Millet		1		10.6						
Non Cereal	Banana		1/3		0						
	Cassava		1/3		0						
	Potatoes		1/3		0						
	Pulses		1		10						

Surplus/Deficit is calculated by (ix) – (x)

Millet includes both finger and bulrush millet. Total production of millet is the sum of both finger millet and bulrush millet

Banana includes both sweet and cooking banana.

Potato includes both sweet potatoes and Irish potatoes.

Maize: 16.4 (seeds =1.3, feed=2, losses=8.7, trade=4.4)

Paddy:6.8 (seeds=2.5, feed=0, losses=2.5, trade=1.8)

Sorghum:10.6 (seeds=1.5, feed=0.6, losses=8.5, trade=0)

Millet:10.6 (seeds=2.3, feed=0.6, losses=7.7, trade=0)

Pulses:10 (seeds=5, feed=0, losses=2.5, trade=2.5)

Banana, Cassava, and potatoes =0

Grain equivalent is calculated by: Total production x factor

Total grain equivalent for human consumption (Ton) is the sum of the grain equivalent available for human consumption (Ton) of each food crop

Requirement of grain equivalent (Ton) is calculated by 0.65 x population x365/1000

Self Sufficiency Ratio (SSR) is expressed in percent.

3. Agricultural Mechanization

3 (g) Number of Oxenization Centres and Tractor Hiring Services (*No new instruction for this table.)

Type of Centres (i)	Working (ii)	Not working (iii)	Reasons for not working (iv)
Oxenization Centre			
Tractor Hiring Service			

5 Extension Services

5 (a) Number of Extension Officers

Area of Specialization (i)	Number of Extension Officers Available						Total (viii)	Total Registered/ Enlisted (ix)
	District HQ		Wards		Villages			
	Male (ii)	Female (iii)	Male (iv)	Female (v)	Male (vi)	Female (vii)		
Crop								
- Crop Production								
- Land Use								
- Irrigation								
- Nutrition								
- Horticulture								
- Agro Mechanization								
- Others (Specify)								
Livestock								
- Animal Production								
- Animal Health								
- Veterinarians								
- Livestock officers								
- Others (Specify)								
Agro Vet								
Cooperatives								
Fishery								
Total								

Report number of officers in specialization.
If LGA has other specialization, please report it under others for both Crop and Livestock sector

You do not need to report this.

5 (b) Level of Education (*No new instruction for this table.)

Level of Education (i)	Number of Extension Officers						Total (viii)
	District HQ		Ward		Village		
	Male (ii)	Female (iii)	Male (iv)	Female (v)	Male (vi)	Female (vii)	
Non-Certificate							
Certificate							
Diploma							
1 st Degree							
2 nd Degree							
Ph D							

5 (c) Working Facilities/ Equipment

Note: You write the number of "available" facilities/equipment which are "in operation" or "not in operation but repairable".

Station (i)	Vehicle		Motorcycle		Bicycle		Housing	
	Required (ii)	Available (iii)	Required (iv)	Available (v)	Required (vi)	Available (vii)	Required (viii)	Available (ix)
District HQ								
Ward								
Village								
Total								
Station (i)	Extension Kit		Photocopier		Computer		Other (specify)	
	Required (ii)	Available (iii)	Required (iv)	Available (v)	Required (vi)	Available (vii)	Required (viii)	Available (ix)
District HQ								
Ward								
Village								
Total								

You estimate the total number of "Required" facilities/equipment including "Available", related to the extension services activities. DAICO, discussing with DLFO, fix the realistic figures based on the minimum requirement for WAEO/VAEOs.

5 (h) Non-Government Agricultural Extension Service Providers

Name of Service Provider (i)	Type of Service Providers (ii)	Type of Service (iii)	Number of Villages Served by Providers (iv)

You write the number of villages which received extension service from service providers

Type of service providers: You write “NGOs”, “Religious organizations”, “Private companies”, or “Individuals (e.g. stockist)” etc.

Type of service: You write “Crop”, “Livestock”, “Cooperatives”, or “Financial services” etc.

9. Livestock Population (Large Scale Farmers) (on June 30th)

Large scale farmers should fulfil all of the following four conditions:

- 1) Greater part of the produce should go to the market,
- 2) Operation of farm should be continuous,
- 3) There should be an application of machinery/implements on the farm,
- 4) Should have at least one permanent employee.

In addition to this, they should fulfil at least one following requirement:

- 1) minimum 20 hectares of cultivated land,
- 2) minimum 50 heads of cattle,
- 3) more than 100 heads of sheep/ goats/pigs,
- 4) more than 1,000 chickens.

The type of ownership: You write "Public", "CBO", "NGO", "Individual", or "Private".

If there are important livestock other than listed here, please write their names in Remarks.

Name of Farm /Farmer (i)	Type of Ownership (ii)	Registration Number (iii)	Number of Livestock						Remarks (x)
			Cattle (iv)	Sheep (v)	Goats (vi)	Pigs (vii)	Layers (viii)	Broilers (ix)	

11. Livestock Products Processing Plants / Units

Livestock Products Processing Plants / Units are defined as factories for processing the products such as milk, meat, hide/skin or animal feed.

DLFOs visit such plants/units, and then ask these question through interview.

Write the registration number of national livestock registry for traceability.

If there are more than one product, please use one row for each product.

In such case, please make sure to fill column (i).

Name of Business/ Owner (i)	Registration Number (ii)	Type of Product (iii)	Measurement unit (piece, kg, litre, ton, number etc.) (iv)	Installed Production Capacity per year (v)	Utilized Production Capacity per year (vi)
Milk and Milk Product					
Meat and Meat Product					
Hide and Skin					
Animal Feed					

Installed Production Capacity means the maximum plants/units capacity. Utilized Production Capacity does the actual capacity to be operated this year.

12. Livestock Infrastructure and Status (Short listed Indicator OP1 b,c, OP2a,c)

Hatchery includes a facility for producing one day chicks of any size.

You estimate the number of requirement for this livestock infrastructure. DLFO, discussing with DAICO, fix the realistic figures based on current circumstances.

This figure is applied for

Type of Infrastructure (i)	Number of infrastructure		Number Required (iv)	Number of Registered (v)	Reasons for not working (vi)
	Working (ii)	Not working (iii)			
Slaughter House					
Hatchery					
Milk Collection Centre					
Auction Market					
Godown (Ghala)					
Abattoirs					
Veterinary Centre					
Veterinary Clinic					
Veterinary Laboratory					
Veterinary Hospital					
Check Point					
Holding Ground					
Quarantine Station					
Stock Route					
Primary Market					
Secondary Market					
Border Market					
Feeder Road (km)					
Dam					
Livestock Input Shop					

Veterinary centre: an establishment or premise operated under supervision of veterinarian to offer animal health services including dispensing of medicines.

Veterinary clinic: is an establishment whereby animal patients are admitted for examination, diagnosis, treatment and carrying out of medical and surgical procedures that require use of general anaesthesia under the care of registered Veterinarian(s).

Veterinary laboratory: a premise providing testing for infectious agent's toxins and other causes in animal operated and supervised by a registered veterinarian, veterinary laboratory technologists or veterinary laboratory technicians.

Veterinary hospital: is an institution suitably located, constructed, organized, and managed by Veterinarians or veterinary specialists to supply scientifically, economically, efficiently all or part of requirements for the prevention diagnosis and treatment of medical and surgical conditions.

Stock route is illegal as of 2018/19. You do not need to report this.

Artificial Insemination Centre					
Artificial Insemination kit (AI kit)					
Meat Processing Facility/ Plant					
Milk Processing Facility/ Plant					
Fish Processing Facility/ Plant					

Attachment 5.0

Budget Table for the District

Indicative Cost Estimate (General Form)

(A) Minimum cost necessary for adequate ARDS Operation (Blank format only to WAEO)

Item	Details	Number	Page / litre / day		Unit price	No of copies/ event	Frequency	Cost
			Amt	Unit				
		(1)	(2)	(3)	(4)	(5)	(6)	(6)=(1)x(2)x(4)x(5)x(6)
Printing and Photocopying	Monthly	ww	5	Page	150	2	12	
	Quarterly	ww	4	Page	150	2	4	
	Annual	ww	11	Page	150	2	1	
Fuel for WAEO	Monthly	ww	3	Litre / month	2,200	1	12	
Bicycle maintenance for VAEO	Monthly	vv	1	Time / month	2,000	1	12	
Stationary for VAEO/WAEO	Monthly	ww+vv	1	Time / month	500	1	12	
Submission of complete format (by bus, etc.)	Monthly	ww	1	Time / month	2,000	1	12	
Monitoring by DMEO, DS	Monthly	1	4	Days / month	45,000	1	12	
	Fuel	1	yy	Litre / month	2,200	1	12	
ARDS Web Portal internet connection	Monthly	1	1	Time / month	10,000	1	12	
(A) Total								

ww: number of WAEO, vv: number of VAEO

yy: amount of litres necessary for DMEO/DS to monitor VAEO/WAEO per month.

(B) Additional costs for ARDS Operation with enhancing components

Enhancement: (a) Blank format to VAEO, (b) Bi-annual facilitation by Regional IT, (c) Annual refresher workshop to WAEO/VAEO, (d) Refresher/Training to LGA officers.

Item	Details	Number (1)	Page / litre / day		Unit price (4)	No of copies/ event (5)	Frequency (6)	Cost (6)=(1)x(2)x(4)x(5)x(6)
			Amt (2)	Unit (3)				
Printing and Photocopying	Monthly	vv	5	page	150	2	12	
	Quarterly	vv	4	page	150	2	4	
	Annual	vv	11	page	150	2	1	
Facilitation for regional IT specialist (In case of computer malfunctioning)	Per diem	1	2	days / event	6,5000		2	
	Travel	1	2	time / event	10,000		2	
Annual workshop with all VAEO/WAEO	Per diem	ww+vv	3	time / event	45,000		1	
	Travel	ww+vv	2	days/ event	5,000		1	
	Per diem (DAICO/ DLFO, DME0, DS)	3	2	days/ event	32,500		1	
Training for LGA officers	Per diem	mm	1	days / event	32,500		1	
(B) Total								

ww: number of WAEO, vv: number of VAEO, mm: number of LGA officers

Grand Total (A)+(B)	
----------------------------	--

Attachment 6.0

Data Quality Management Sheet

1) FY2019-20 Data Quality Monitoring Sheet (Crop)

2) FY2019-20 Data Quality Monitoring Sheet (Milk)

Attachment 7.0:

Crop List and Definition

No.	Sub category	Description	Items												
			Maize	Paddy	Sorghum	Bulrush Millet	Finger Millet	Wheat	Barley						
1	Cereals Nafaka	The definition of cereals production figures is limited to crops harvested for dry grain only. The only exception is "rice", which should be reported in terms of paddy rice , i.e. brown rice but not milled rice.	Maize	Paddy	Sorghum	Bulrush Millet	Finger Millet	Wheat	Barley						
2	Roots and Tubers Mazao yatokanayo na mizizi	The production of root and tuber crops should be reported in terms of clean weight , i.e. the weight of the product free of earth and mud.	Cassava	Sweet Potato	Irish Potato	Yam	Coco Yam								
3	Industrial Crops Mazao ya viwandani	<ul style="list-style-type: none"> Production of "Seed Cotton" should be reported in terms of unginned cotton, excluding linters and waste. "Tobacco" production figures should refer to farm sales weight, i.e. the weight of the leaves leaving the farm for tobacco factories. Production of "Sugar cane" should relate to the stage when they are sent to the sugar factories, i.e. reasonably clean and free of tops and leaves. Production of "Jute" should be reported, preferably in terms of dry fibres as they are generally marketed, and/or in terms of dry stems. The production of "Sisal" contains fibrous, fleshy and persistent spiny leaves attached to rizometous rootstock. "Cashew nut" production data should relate to the weight of the nuts in the shell, or in the husk, without counting the weight of the outer husks. 	Seed Cotton	Tobacco	Coffee	Tea	Pyrethrum	Cocoa	Rubber	Wattle	Sugar cane	Jute	Sisal	Cashew nut	
4	Oil Crops Mazao ya mafuta	<ul style="list-style-type: none"> Oil crops are mostly defined as dry seeds harvested from oil-bearing crops. The production data should be reported in terms of dry mature products. It should always relate to the quantities actually harvested, irrespective of their use after harvest. "Groundnuts" data should be reported in terms of groundnuts in the shell; other oilseeds, in terms of the weight of the seeds. The "Oil Palm" production contains a large number of fruits/nuts having a fleshy mesocarp or pulp enclosing a kernel covered by a hard shell. As regards "Coconut", the product is the nut, including the woody shell, the meat and the water or milk, but excluding the fibrous outer husk (coir), which represents about one third of the total weight of mature unhusked coconut. 	Sunflower	Simsim/ Sesame	Groundnut	Palm Oil? (Oil Palm)	Coconut	Soya Bean	Castor Oil Seed	Jatropha					
5	Pulses Mazao ya jamili ya kunde	The definition pulses should be limited to crops harvested for dry seeds only. Production data of pulses should be reported in terms of dry clean weight, excluding the weight of the pods.	Cow Pea	Pigeon Pea	Green/Black Gram	Garden Pea	Chick Pea/Lenti	Bambara	Bean						
6	Spices Viungo	Production data of spices should be reported in terms of ripe, dried or powdered products	Ginger	Black Pepper	Coriander	Cinnamon	Turmeric	Vanilla	Chilli Pepper	Clove	Garlic	Cardamom	Paprika		
7	Vegetables Mbogamboga	Vegetables are plants cultivated both in the open and under grass. Since vegetables grown under protective cover, the production data for covered crops should be collected and reported separately from those of vegetables grown in the open or under grass.	Cucumber	Mushroom	Cauliflower	Cabbage	Amaranthus	Spinach	Chinese Cabbage	Tomato	Eggplant	Onion	Sweet Pepper	Carrot	
8	Fruits Matunda	With regard to "bananas" specifically, the production should be reported in terms of weight, not in terms of numbers of bunches. The weight should include the weight of single bananas or the weight of banana hands, excluding, therefore, the weight of the central stalk of the bunches.	Sweet Banana	Cooking Banana (Plantain)	Mango	Pawpaw	Orange	Tangerine	Guava	Apple	Pineapple	Avocado	Water Melon	Lemon	
9	Flowers Maua	*****	Rose	Chrysanthe-mum	Carnation	Aster	Gypsophylla	Ginger rose	Helianthus						
10	Others Mengineyo	*****	Rosella	Chrysanthe-mum	Carnation	Aster	Gypsophylla	Ginger rose	Helianthus						

Attachment 8.0

Conversion and Equivalents Tables

Conversion table

Weights and measures		Conversions	
1 hectare	= 10,000 sq metres (100 x 100 mita)	1 hectare	= 2.47 acres
1 acre	= 4050 sq metres	1 acre	= 70 times 70 steps
1 kilometre	= 1,000 metres		
1 foot	= 30.48 centimetres		
1 step	= 3 feet		
1 tonne	= 1,000 kgs		

Kg Equivalents

	Crop Name	Standard (kgs)		Non-standard	
		Bag	Tin	Name	kgs
Cereals	Maize	100	18	Rumbesa	140
	Paddy	75	15		
	Sorghum	100	18		
	Bulrush Millet	100	18		
	Finger Millet	120	20		
	Wheat	75	15		
	Barley	75	15		
Roots and Tuber	Cassava	60	12		
	Sweet Potatoes	80	16		
	Irish Potatoes	80	16		
	Yams	80	16		
	Cocoyams	80	16		
Industrial Crops	Cotton	50	10		
	Tobacco	70	14		
	Coffee	55			
	Tea	60			
	Pyrethrum	60	12		
	Cacao	60			
	Rubber				
	Wattle	90			
	Sugar Cane	120			
	Sisal	130			
Cashewnut	80				

	Crop Name	Standard (kgs)		Non-standard	
		Bag	Tin	Name	kgs
Oil Crops	Sunflowe	60	12		
	Simsim	100	20		
	Groudnut	50	10		
	Palmoil	100			
	Coconut	75			
	Soyabeans	100	20		
	Caster Seed	100	20		
Pulses	Cow Pea	100	20		
	Pigeon Pea	100	20		
	Green Gram	100	20		
	Chick Pea	100	20		
	Bambara Nut	100	20		
	Bean	100	20		
Spices	Ginger	75	15		
	Chilli Pepper	85			
	Cardamon	100			

	Crop Name	Standard (kgs)		Non-standard	
		Bag	Tin	Name	kgs
Vegetables	Cucumber	80			
	Cauliflower	50			
	Cabbage	50			
	Amaranthus	50			
	Spinach	45			
	Tomato	90			
	Eggplant	70			
	Onion	80	16		
	Carot	110			
Fruits	Banana	120			
	Mango	130			
	Pawpaw	100			
	Orange	130			
	Tangerine	110			
	Guava	110			
	Apple	110			
	Pineapple	90	18		
	Avogado	140			
	Water Melon	80			
	Plum	110			
Pear	110				

ANNEX8: ARDS Web Portal User Manual



AGRICULTURAL ROUTINE DATA SYSTEM WEB APPLICATION DEVELOPMENT PROJECT

(Version 5)

PREPARED AND SUBMITTED BY:
PROJECT TEAM
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
UNIVERSITY OF DAR ES SALAAM
FOR
JICA TECHNICAL COOPERATION PROJECT
FOR CAPACITY DEVELOPMENT FOR THE ASDP MONITORING AND
EVALUATION SYSTEM, PHASE II
MINISTRY OF AGRICULTURE, FOOD SECURITY, AND COOPERATIVES

March 01, 2019



Revision History

Date	Version	Author	Section	Amendment
June 11, 2014	Zero	UDSM	All	n/a
November 24, 2014	Version 1	UDSM	1.3.2, 3.1,3.2, 3.4, 3.6, 3.7, 3.8, 3.8.1,3.8.3, 3.11	Help desk contact added to section 1.3.2, 3.1 and 3.2 contents updated as per improvement made, Section 3.4, 3.6,3.7, 3.8.3 and 3.11 are new contents, 3.8 and 3.8.1 report overview added
February 13, 2015	Version 2	UDSM	1,2, 3.3-3.6	Section 3.3 - 3.6 are new contents and section 1&2 have been revised to include A ARDS-LGMD2 Web Based Data Entry that has been integrated to the portal. Minor changes have been made on other sections too.
July 11, 2016	Version 3	UDSM	1.1, 1.5, 2.2, 3.4.6, 3.5.4, 3.7, 3.11, 3.13	Removed ARDS-LGMD2 context from 1.1 & 1.5. Updated Web Based Data Entry inputs and outputs. Revised data estimation & synchronization in 3.4.6 & 3.5.4 as per the improved ARDS Web Portal. Updated how to access Data Analysis in 3.7 and revised report creation and approval in 3.11 added 3.13 to include guide on changing user settings
December 15, 2016	Version 3	UDSM	3.5.4, 3.11.2, 3.4.7, 3.4.4	Added and revised the sections
August 28, 2017	Version 4	UDSM	2.2, 3.5.4, 3.8, 3.11	Updated Web Based Data Entry inputs and outputs, update aggregation process, revise pivot table features, revise standard report and submission and creation status report.
October 20, 2017	Version 4	UDSM	4.2, 11	Re structure the old section 3 numbers by breaking its subsection into independent sections, Add locking of data entry form, revise report section

March 01, 2019	Version 5	UDSM	3, 3.1, 10.1, 10.2, 10.3, 11.2, 11.3,	Removed data estimation, Updated GIS Map module, Archived reports, Static Tables and Task list
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1 General Information

1.1 System Overview

The Agricultural Routine Data System (ARDS) Web Portal was primarily intended to provide functions where ARDS data from the LGMD2/2i database can be uploaded at the portal, viewed, analyzed, and downloaded for further processing. The ARDS Web Portal aims to enable sharing of the ARDS data broadly among all relevant Local Government Authorities (LGAs) and Monitoring & Evaluation Units of Agriculture Sector Leading Ministries (ASLMs). Such that, officers of authorities can easily access and download the data for their specific demands regardless their computer has LGMD2/2i application installed. Currently, the application has been upgraded and integrated as the ARDS-LGMD2 web based data entry module of the ARDS Web Portal.

The ARDS Portal is a web-based application thus accessible through the Internet by a web browser. Users access all functions provided by the portal, including the ARDS-LGMD2 Web Based Data Entry, through friendly and intuitive interactive controls of the graphical user interface.

ARDS Web Portal can be perceived as a platform on several levels. First, the portal's key source of data is the improved ARDS-LGMD2 web based data entry, which serves as a tool for collecting ARDS data. Second, the ARDS Web Portal database is designed ground-up with flexibility in mind. Data structures such as data elements, forms and user roles can be defined completely freely through the application user interface. These make it possible for the portal to incorporate the improved ARDS-LGMD2 web based data entry while offering flexibility to accommodate future changes at the portal user interface.

Third, The ARDS Web Portal architecture and functions is broken up into separate modules. Due to the modular design of 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.

The application delivered in this phase is functional system in that it includes the web based data entry, report, pivot table, Data Visualizer, GIS-Maps, Data Analysis, dashboard, Task List, News and Content Management System (CMS) and other maintenance tools. Functions provided by these tools will be discussed later in this document.

1.2 Authorized Use Permission

This section will provide a warning regarding unauthorized usage of the ARDS Web Portal and making unauthorized copies of data, software, reports, and documents, if applicable.

1.3 Points of Contact

1.3.1 Information

For additional information, UDSM team of ARDS Web Application Development Project can be contacted through Project coordinator: Dr. Honest Kimaro (honest_c@yahoo.com).

1.3.2 Help Desk

For further user support the M&E TWG technical team can be contacted through Mr. Raphael Sendalo (rsendalo@yahoo.co.uk) and **Mr. Philip Shayo (shayo.inns@gmail.com)**.

1.4 Organization of the Manual

The remaining sections of this manual provide system summary and explanation on how to get started with the ARDS Web Portal. General overview of the system is outlined in section 2 of this document. Section 3 to 11 provide a user guide on how to start the portal and login; how to navigate through the user interface of the portal and the Web Based Data Entry; how to perform data entry, synchronization and aggregation, and data approval; how to use dashboard, data analysis, pivot table, data visualizer, GIS Map and report modules of the portal. Also, section 12 and 13 shows how a user can update his/her account information including changing of the password and finally introduces online inbuilt help.

1.5 Acronyms and Abbreviations

ARDS	Agricultural Routine Data System
ASLMs	Agricultural Sector Lead Ministries
DF02	Quarterly District Entry Form
DF03	Annual District Entry Form
DIR02	Quarterly District Integrated Report
DIR03	Annual District Integrated Report
DR01	Monthly District Report
DR02	Quarterly District Report
DR03	Annual District Report
GIS	Geographical Information System
HTTPS	Hypertext Transfer Protocol Secure
JICA	Japan International Cooperation Agency
LAN	Local Area Network
LGA	Local Government Authority
LGMD	Local Government Monitoring Database
M&E	Monitoring and Evaluation
MAFC	Ministry of Agriculture, Food Security and Cooperatives
MSSQL	Microsoft SQL Server
NIR02	Quarterly National Integrated Report
NIR03	Annual National Integrated Report
RIR02	Quarterly Regional Integrated Report
RIR03	Annual Regional Integrated Report
SDS	Software Design Specification
SRS	Software Requirement Specification
TOR	Terms of Reference
TWG	Thematic Working Group
UDSM	University of Dar es Salaam
URL	Universal Resource Locator
VAEO	Village Agricultural Extension Officer(s)
WAEO	Ward Agricultural Extension Officer(s)
WF00	Ward Annual Target Entry Form
WF01	Ward Monthly Entry Form
WF02	Ward Quarterly Entry Form
WF03	Ward Annual Entry Form

2 System Summary

This section provides a general overview of the system. It outlines the uses of the system in supporting the activities of the user.

2.1 System Configuration

The Diagram below illustrate configuration of the ARDS Web Portal and its integration with the web based data entry. A user can use a desktop, laptop, tablet, Personal Data Assistant (PDA), smart phone or any other device, which is running any web browser except Internet Explorer version 7 and below. The device shall be connected to the ARDS Web Portal Server either through the LAN or the Internet. A user will be required to run a web browser and provide URL of the ARDS Web Portal Server. Currently, the web browser communicates with the server using HTTP but later HTTPS will be used to encrypt data transmitted between user's web browser and the server so as to ensure confidentiality of data, in particular when a user access the server through the Internet.

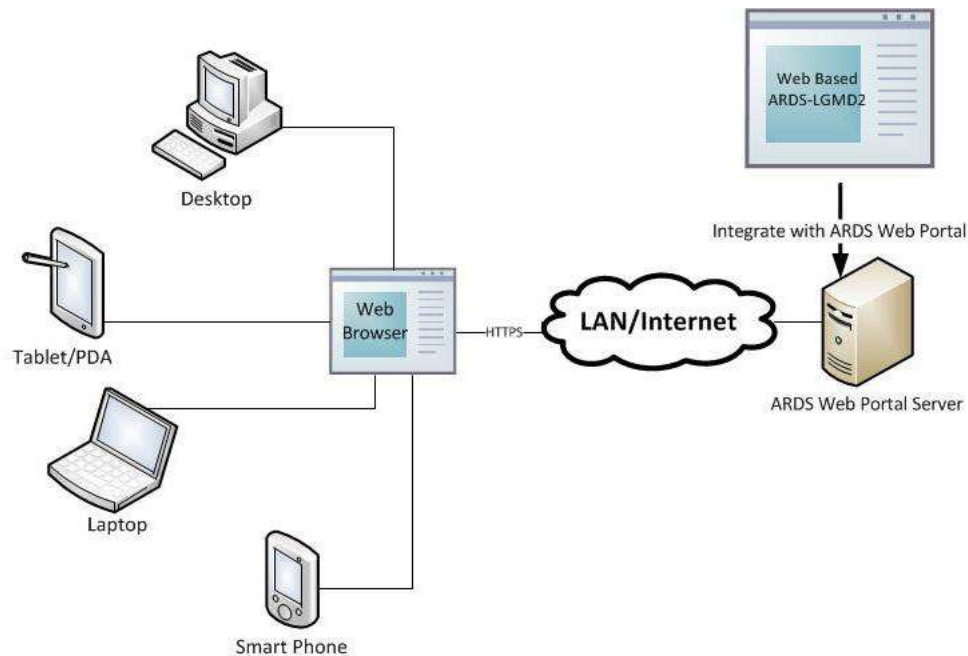


Figure 1: ARDS Web Portal Configuration

2.2 Data Flows

Major data flow in the ARDS Web Portal integrated with the web based data entry are as summarized in figure 2 which involves submission of data entry forms and creation of district reports by LGAs, checking of the reports to assess submitted data and provide feedback to LGAs when necessary by regional officers, view feedback and resubmit data correction when necessary by LGAs, approve reports when ready by regional officers as well as data utilization by ASLMs.

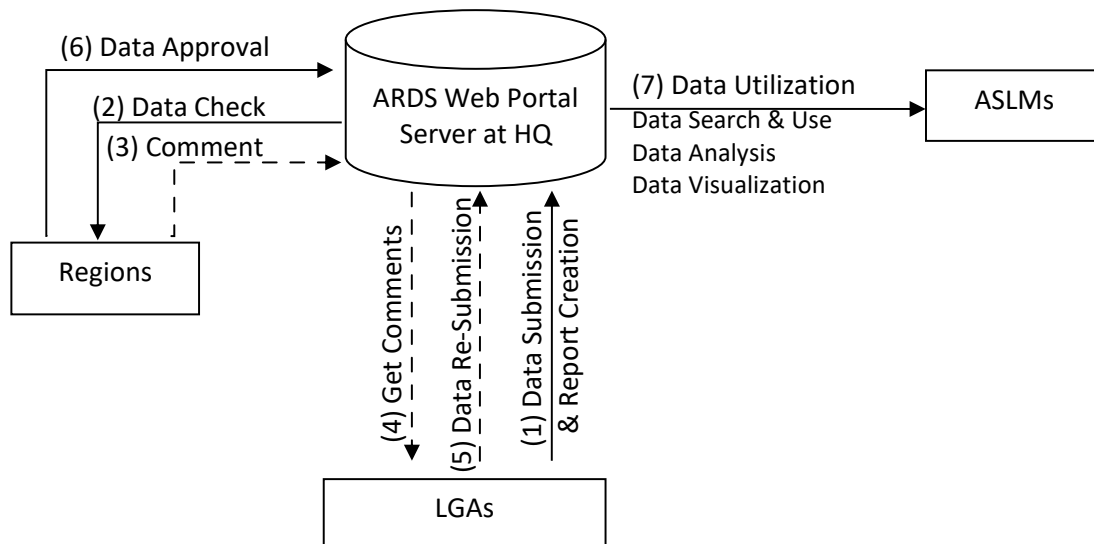


Figure 2: Diagram of Data Flow in the ARDS Web Portal

The ARDS data is stored in the central database of the portal so that is accessible and can be manipulated by the system modules. The Modules, which includes the web based data entry, Metadata Search & Browse, Pivot Table, Data Visualize & Charting, GIS Framework, Data Analysis, Report, and Dashboard, enable a user to perform the following on the data:

- Enter ward annual target data.
- Enter prior estimate for estimating missing ward data.
- Enter monthly, quarterly, annually ward agricultural sector data from completed data collection forms (VAEO/WAEO format).
- Obtain monthly, quarterly, annual district aggregate data automatically.
- Enter quarterly, annually district agricultural sector data from completed data collection forms.
- Validate the entered data and check for various errors to enforce data quality.
- Estimate missing ward data.
- Upload the entered data, through the Internet, to the central server as they entered, or save them locally when the Internet connection goes down during data entry, and upload them to the server when connection is back.
- Import and export data and-or metadata for transferring of data between different instances of the system. Import GML data to update changes in the administrative unit's geographical coordinates.
- Print forms/reports with the data or blank forms.
- Report generation
 - Monthly, quarter and annually ward report (WR01, WR02, and WR03)
 - District report for monthly, quarterly and annually (DR01, DR0 and DR03)
 - Region Report for monthly, quarterly and annually (RR01, RR0 and RR03)
 - District, regional, national integrated report for quarter and annual (DIR02, DIR03, RIR02, RIR03, NIR02 and NIR03)
- Post comments from the region about unapproved reports and-or approve report.

- View approval status, comment and edit data (if required) for final approval by the region.
- Use an offline standalone copy in areas with no connectivity at all; export the entered data as a local file for sending to national headquarters, or another area with the Internet connectivity via a USB Key (or any external storage) or by email, so that can be imported to the central server.
- Metadata search and browse using different properties of content available in the database and in predefined categories.
- Represent and manipulate the data in pivot table based on existing dimensions such as what data, from which locality and of which period.
- Represent the data in various types of charts.
- View the data on top of a map along with thermal indicators of presented data for association of captured geographical locality.
- Create and generate various custom reports.
- Create and manage a dashboard that helps users to get an overview of important trends or performance of particular variables in charts, graphs, summary tables, maps and headlines.
- Download data from the portal to PDF, Excel, CSV, and-or XML. Print out information created by the system.

Besides, users of the ARDS Web Portal can get various news, online support and broadcast information through the news, online help and message modules respectively. Figure 3 illustrate the web based data entry inputs and outputs in the ARDS Web Portal.

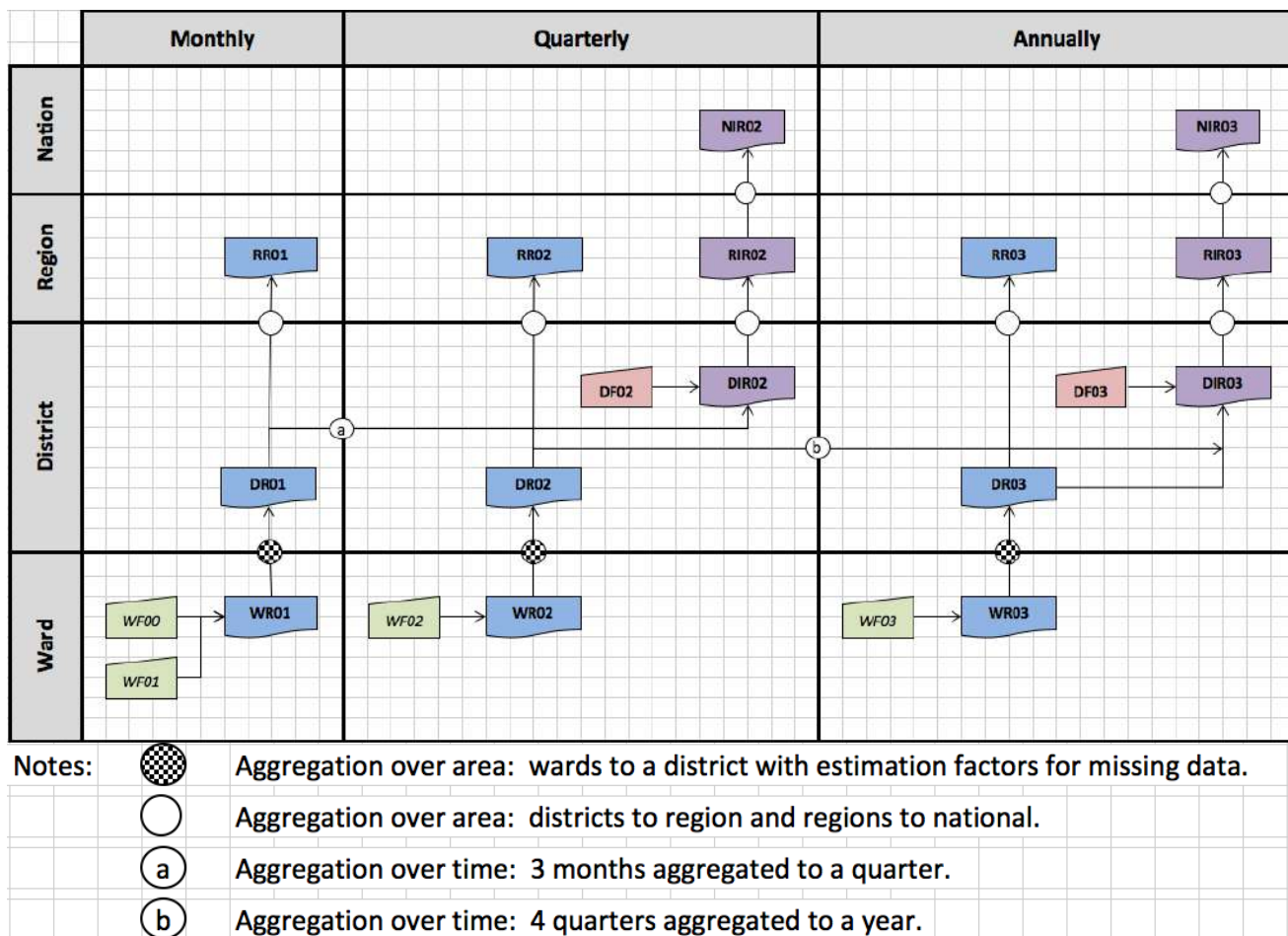


Figure 3: The summary of ARDS Web Portal inputs and outputs

The Regional Integrated Reports (RIR02 and RIR03) are consolidated from the District Integrated Reports (DIR02 and DIR03). The National Integrated Reports (NIR02 and NIR03) are consolidated from the Regional Integrated Reports.

2.3 User Access Levels

Information in the ARDS is confidential. Therefore, when a user opens the portal is required to use name and password to get access to the rest of the features. The portal restricts access privilege based on user roles including administrative and normal users.

The administrative user is a super user and can carry out all activities that are supported by the portal including system maintenance and configuration activities.

The portal restricts normal users based on their information access level. Table 1 shows the current ARDS Web Portal user levels and roles. Any user account shall belong to at least one of the levels identified below and should be assigned to the respective user role(s) in the system.

Table 1: ARDS Web Portal User Level and User Roles

User Level and User Roles					
* When user use Web portal in the first time, we requested to input all information about users, such as contact number and e-mail address to prepare contact list.					
	User Level	User Group	List of <u>NOT Available</u> functions	Data accessibility for Data analysis	Remarks
1	Super User	Administrator	None (All functions are available for Administrators)	All	
2	National	TWG	Data entry, Data upload, Data approval, User management, update lookup tables, update administrative unit	All	incl. uploading .zip files from LGA
3	National	Min. Agriculture Staff	Data entry, Data upload, Data approval, User management, update lookup tables, update administrative unit	All	
4	National	Min. Livestock	Data entry, Data upload, Data approval, User management, update lookup tables, update administrative unit	All	
5	National	Min. Industry and Trade	Data entry, Data upload, Data approval, User management, update lookup tables, update administrative unit	All	
6	National	PMO-RALG	Data entry, Data upload, Data approval, User management, update lookup tables, update administrative unit	All	
7	National	Others	Data entry, Data upload, Data approval, User management, update lookup tables, update administrative unit	All	
8	Region	Region	Data entry, User management, update lookup tables, update administrative unit	All	Can see other District/ Region data (can't enter other LGA data)
9	District	District	Data approval, User management, update lookup tables, update administrative unit	Within same Region	Can see other District within same Region and Region level data (not allow to enter other LGA data)
10	Others	Others	Data entry, Data upload, Data approval, User management, update lookup tables, update administrative unit	All	For e.g. JICA Expert team members, JICA, other Donors
11	Others	Trainers	User management, update lookup tables, update administrative unit	All	Functions for both District and Region, this is only for training

3 Getting Started

To start ARDS Web Portal the user opens a web browser:

- Start □ All Programs □ Google Chrome (Or any other browser)
- Enter URL for the ARDS Web Portal Server i.e. <https://ards.kilimo.go.tz>.
- Then Press ENTER. The login screen shall open

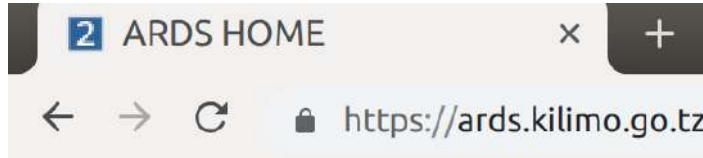


Figure 4: Entering URL to the Web Browser

3.1 Login Screen

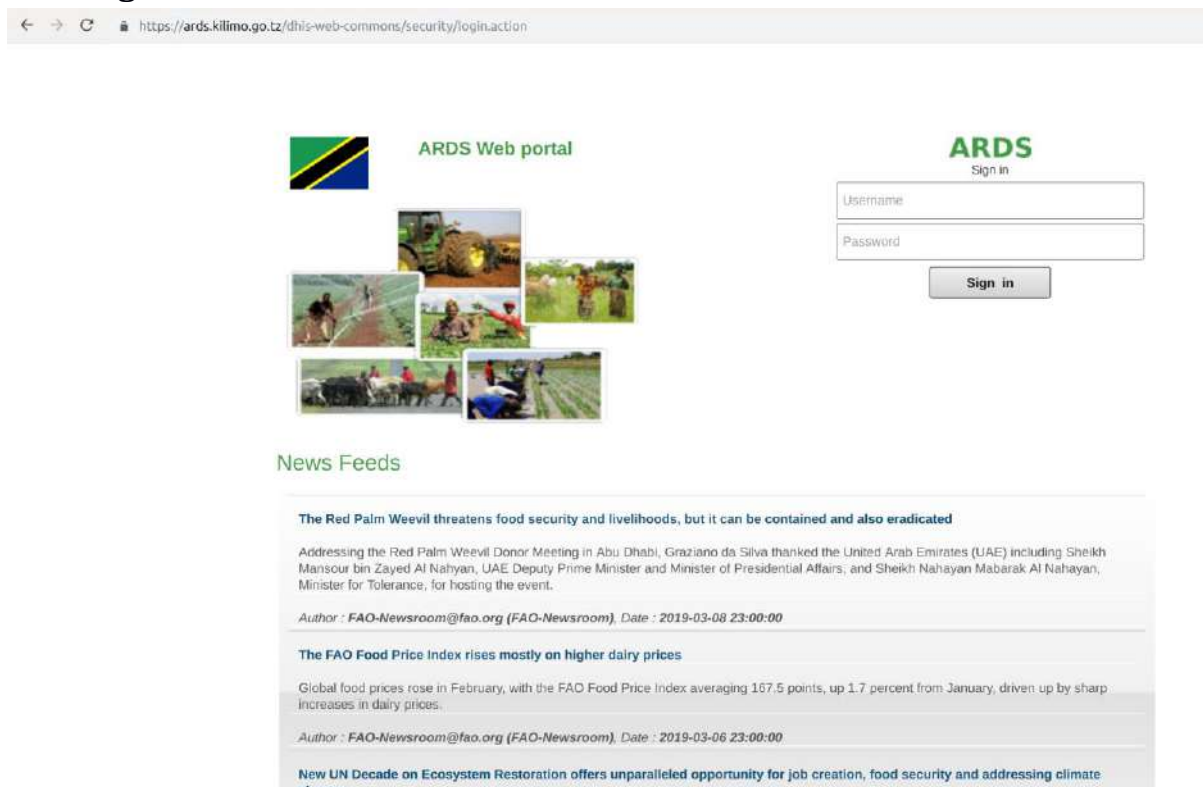


Figure 5: Login Screen

- If you are interested to view agricultural related news before login go to the News Feeds panel. Here you will see a list of news headings and when you select one by a single left click a new tab will open containing the selected news in detail from its original source (website).

- You may use “Prev” and “Next” buttons of the menu below the news feed to navigate back and forth of the list of available news respectively. The numbered menus show available pages containing list of news, you may use the menu to go to a specific page.
- To login to the ARDS Web Portal, type your username and password correctly and click “Sign in”. The default page (Home page) shall open as shown in figure 6. District users do not get to the same home page as other users. Please note that the default page also depends on the specific user settings as explained in section 12.4 of this manual.
- When a district user login is directed to the web based data entry where the default page is data entry screen as shown in figure 16.

3.2 ARDS Web Portal Home Page



Figure 4: Home Page

3.2.1 Menus

3.2.1.1 ARDS (Home icon)

Left click on this menu takes you to the home page shown above.

3.2.1.2 Dashboard

Left click on this menu takes you to the dashboard module where you can create and manage a dashboard of charts, graphs, summary tables, maps and headlines as it will be explained in the later sections.

3.2.1.3 Report

Left click on this menu take you to the report module, where you can run on demand aggregation of the submitted data for reports, create and view standard, custom, and submission status reports as well as comment and-or approve reports. More detail about these functionalities will be explained in the later section.

3.2.1.4 Data

Left click on this menu provide links to Pivot Table, Data Visualize and Map module of the ARDS portal. Each module will be explained in the later section.

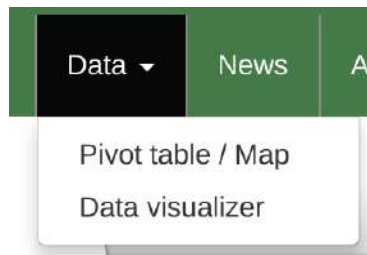


Figure 5: Data Menu

3.2.1.5 News

Left click on this menu aims to take you to the list of current agricultural related news automatically searched from various sources over the Internet through ARDS Web Portal automatic news feed. Essentially, these are the same news as the one you get in the login page before login and you can navigate and read the news in the same way. The purpose is to make the news easily available to the user even after login.

3.2.1.6 Articles

Left click on this menu aims to take you to the list of all available articles (pages) created by other users for information sharing. Logically, each article is an additional web page created and managed by a user for the purpose of sharing specific information in more details. The menu opens a page with a list of available articles as links. You can read the particular article by clicking on its name (link).

3.2.1.7 Data Entry

Left click on the ARDS Data Entry menu aims to provide you with a link to ARDS web based data entry and import-export module.

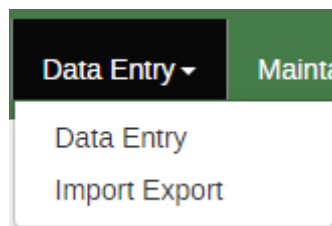


Figure 6: Data Entry Menu

3.2.1.8 Maintenance

Left click on this menu provides an administrative user with the system maintenance options shown below. Operation of most of this menu is explained in the Operational and Maintenance Technical Manual.

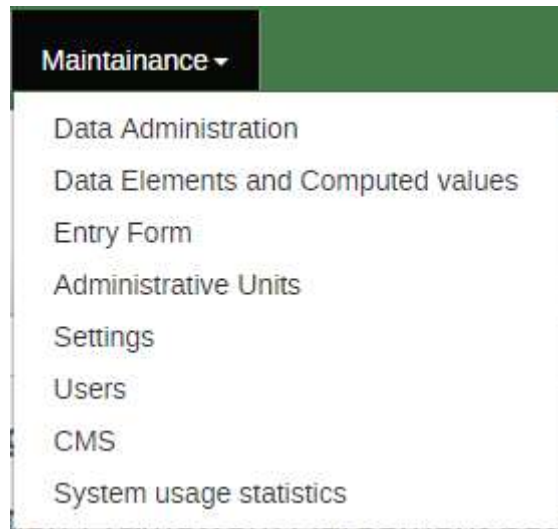


Figure 7: ARDS Maintenance Menu

3.2.1.9 Who login menu

This menu displays the current user. Left click on this menu provides to the current user, links to update his/her account information and specific user settings, change password, log out, about ARDS and help as shown below. Operation of this links will be explained in the later sections

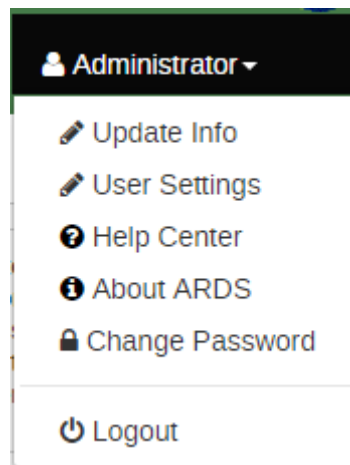


Figure 8: Who Login Menu

3.2.2 Left Panels

3.2.2.1 Data Analysis

Left click on tree like navigation menus provided in this collapsible panel aim to provide you with simple analysis of predefined data category while allowing manipulation of data in only two dimensions. Categories shown in the diagram below are just examples but will be created when saving favorite tables in the pivot table, as it will be explained later.



Figure 9: Data Analysis in ARDS Home Page

3.2.2.2 Document

Left click on the links provided in this collapsible panel download the corresponding document. The administrator will maintain contents of this panel by using the CMS feature, which is explained in the operation and technical manual. Contents shown below only serve as an example.



Figure 10: Documents Panel

3.2.2.3 Links

Left click on the links provided in this collapsible panel open the corresponding website. The administrator will maintain contents of this panel by using the CMS feature, which is explained in the operation and technical manual. Contents shown below only serve as an example.



Figure 11: Useful Links Panel

3.2.3 Right Panel

3.2.3.1 Broadcast Message

This panel aims to contain broadcast message which is useful in the dissemination of important information to the all users in the system as shown in the example below. However, the contents in this panel will be maintained by an administrator using the CMS feature which is explained in the operation and technical manual.

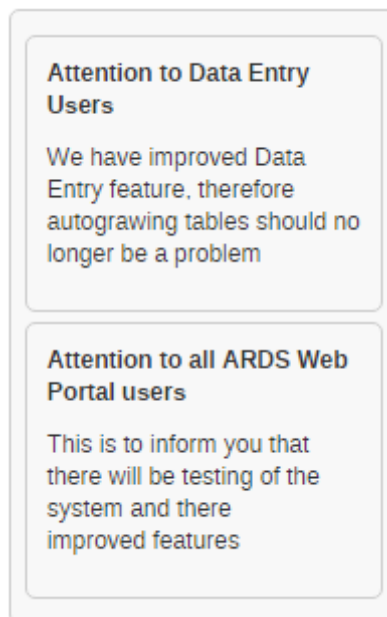


Figure 12: Broadcast Message Panel

3.2.3.2 Statistics

This panel aims to display most significant statistics (Charts) and will be maintained by an administrator using the CMS feature, which is explained in the operation and technical manual. The content below only serves as examples.

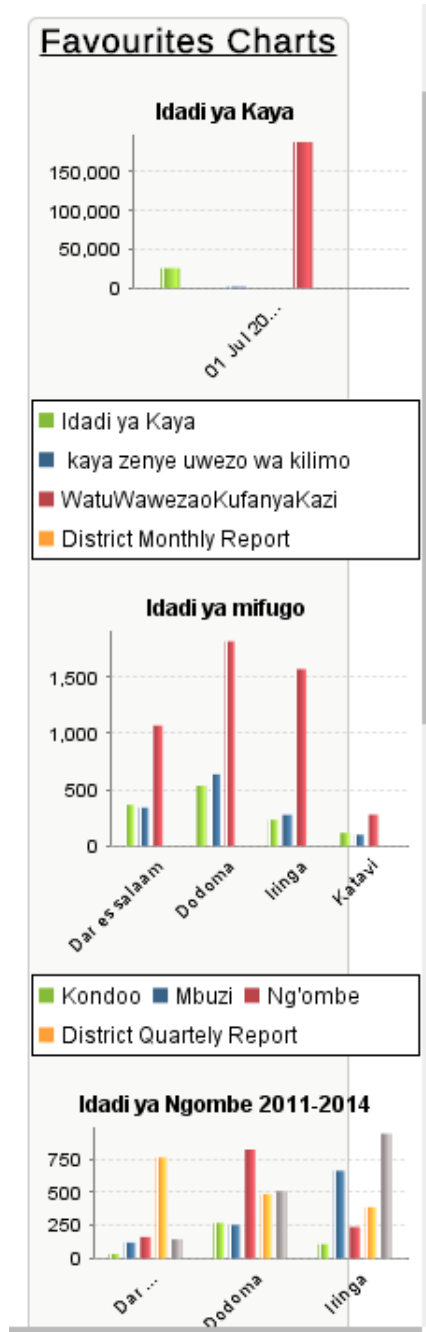


Figure 13: Most Significant Statistics Panel

3.2.4 Center Panel

This panel currently contains news for the home page but the contents here will be maintained by administrator using CMS which is explained in the operation and technical manual. The contents in the home page are categorized as shown in the figure 6, a user may select to view contents in a specific category by using the menu tabs located at the top or choose to view all. The categories and their menu tabs are also manageable by administrative user using the CMS. Also, for some other pages this will be displaying content based on the navigations that will be made by the user.

3.3 Web Based Data Entry Default Page

When a district user login will be directed to the Web Based Data Entry module where the default page is data entry screen as shown in figure 16 below. However, a user can change the default page through user settings found in the top right menu i.e. the menu which shows the user who logged in.



Figure 14: Web Based Data Entry Module Default Page

3.3.1 Menu of Web Based Data Entry Module default page

3.3.1.1 ARDS (Home icon)

Left click on this menu takes you to the default page (data entry screen or the page a particular user set as a default page in the user settings) that is shown in figure 16.

3.3.1.2 Report

This is the same as in the ARDS Web Portal, left click on this menu take you to the report module, where you can run on demand aggregation of the submitted data for reports, create and view standard, custom, archived, static tables and submission status reports as well as comment and-or approve reports. More detail about these functionalities will be explained in the later section.

3.3.1.3 Analysis

This is the same as in the ARDS Web Portal, left click on this menu aim to provide you with simple analysis of data. You can search for data and visualize the data using different type of charts in different dimension, as it will be explained in the later section.

3.3.1.4 Pivot Table

Left click on this menu aim to provide you with advanced analysis of data. You can search for data and present the data in tables in different dimension, as it will be explained in the later section.

3.3.1.5 Data Entry

Left click on this menu provide links to Data Entry and Import-Export of the ARDS Web Portal. Each module will be explained in the later section.

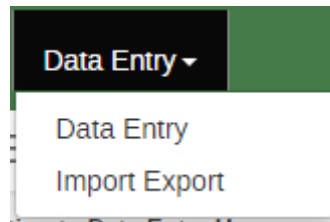


Figure 15: Data Entry Menu

3.3.1.6 Who login menu

Similar for all users, it displays the current user. Left click on this menu provides to the current user, links to update his/her account information and specific user settings, change password, log out. Operation of this links will be explained in the later sections.

3.3.2 Left panel of Web Based Data Entry module default page

The left panel consists of administrative unit tree like navigation menu. Left click on any level on the tree aim to expand the tree to see the children. Administrative unit displayed in this tree may differ from different users since are determined by the user level and roles. Left click on a ward or district aim to select an administrative unit for data entry, as it will be explained later. The search icon on top of the tree allows you to locate an administrative unit by searching its name.



Figure 16: Administrative Unit Tree

3.3.3 Center panel of Web Based Data Entry module default page

The center panel consists two parts:

- First is a panel which display and broadcast message sent to all user in the system for the purpose of disseminating important information. This message is sent by an

administrative user, for example the M&E TWG members want to share information to district users. If there is no message this panel does not appear.

- Second is the panel that provides the following options, which are used to select the particular form for data entry: First, a text field, which aims to display the name of the administrative unit that you have selected from the tree in the left panel. Second, a drop-down that allows you to select a form, for example the Ward Monthly Entry Form. Lastly, a drop-down that allows you to select a specific period for data entry, for example July 2014 or July 2014 – June 2015 if you select monthly or annual form respectively. If you left click on the question mark icon gives you a quick help tip. “Prev year” and “Next year” menus allow you to navigate to previous financial years and next financial years respectively. Successful selection of the three options i.e. an administrative unit for which data is going to be entered, a form type, and a specific period of the data to be entered, opens the form and you can continue with the data entry process as it will be detailed in the later sections.

Data Entry ?

Attention to Data Entry Users:
We have improved Data Entry feature, therefore autogrowing tables should no longer be a problem

Attention to all ARDS Web Portal users:
This is to inform you that there will be testing of the system and there improved features

Administrative Unit: Testing land

Forms: [Please Select]

Period: [Please Select] Prev year Next year

Figure 17: Data Entry Form Selection Menu

3.3.4 Right panel of Web Based Data Entry module default page

The right panel consists of three menus:

- Clear cache allows you to delete all ARDS Web Portal history and load the latest system settings.
Note: The system history is kept as you access the system so as to improve performance when you access the same thing later. Therefore, you can clear cache only when you noted that the system is misbehaving while previously it was working fine or you have been informed that the changes has been done but you still cannot see the changes. Otherwise, you should not clear cache as it helps in improving response time when you access same feature more than once.
- Print form allows you to print the selected form with the data, which has been entered.
- Print Blank form allows you to print the selected form but with no data.

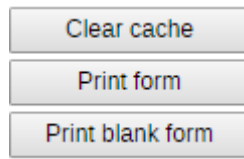


Figure 18: Right panel of the data entry screen

4 Data Entry

The data entry module is where ARDS data is manually registered in the system database. Data is registered for an administrative unit, a period, and a set of data elements (form) at a time. A form often corresponds to a paper-based VAEO/WAEO Formats.

If you are a district user for data entry you are always directed to the data entry screen by default when login, or simply by clicking on the ARDS home icon after login. You can also access the data entry screen from the main menu by clicking on Data Entry and select Data Entry from the dropdown list.

4.1 Selecting data entry form

To start entering data the first step is to open the correct form by following these steps:

- Locate the administrative unit you want to enter data for in the tree menu to the left. Expand and close branches by clicking on the +/- symbols. A quick way to find an administrative unit is to use the search box just above the tree (the green symbol), but you need to write in the full name to get a match.
- Select an entry form from the dropdown list of forms available to your selected administrative unit.
- Select a period to enter data for. The available periods are controlled by the period type of the form (reporting frequency). You can jump a year back or forward by clicking on “Prev year” and “Next year” menu.
- By now you should see the data entry form. From ARDS entry forms perspective, there are six types for forms: Monthly, quarterly, annual ward entry form, quarterly, annual district entry forms, and ward annual target entry form. In addition to that there is form for entering prior estimate for missing ward data.

Data Entry

Administrative Unit: Baraa

Forms: Ward Annual Entry Form

Period: July 2013 - June 2014

Ward: Baraa

July 2013 - June 2014

ANNUAL REPORT

Jina la Aita Ugant: Tarehe ya kuwasilisha:

(Wasilishwe kwenye kata kabla ya mwisho wa mwaka kutoka kwenye kijiji, na wilayani mwisho wa wiki ya kwanza ya mwaka unaofuata kutoka kwenye kata)

ANGALIZO

- 1) Iwapo kitu kinacho ulizwa hakipo kwenye kijiji/Kata yako, andika "0" (Sifuri)
- 2) Iwapo kitu kinacho ulizwa kwenye kijiji/Kata yako andika makadirio kwa takwimu jidadi.
- 3) Vinginevyo acha kisanduku wazi
- 4) Tumia vipimo vya kila kila kwa kila jedwali vinapo hitajika
- 5) Soma kwa makini maelezo katika idia jedwali kabla ya kuanza kujaza.

1.0 Taarifa za Wilaya

	Wanaume	Wanawake	Jumla	Wenye uwazi wa kufanya kazi za kilimo
Idadi ya watu	<input type="text"/>	<input type="text"/>	0	<input type="text"/>

Figure 19: Part of the annual entry form of Baraa ward for July 2013 - June 2014 financial year

4.2 Locked data entry form

After selecting a form for data entry, the form may open but locked such that you cannot make any changes of the data or it may appear active which allows you to continue entering data. The form may be locked because the related report(s) have been created or the respective fiscal year has ended. Depending on the need of the ministry, an administrative user can manage these locking options through maintenance settings as demonstrated in the Operation and Maintenance Technical Manual.

4.2.1 The related reports are created

If lock data entry forms after the related reports are created is enabled and the report is already created you cannot edit the corresponding entry forms, for example if District Annual Report of Mpanda Mjini for the period of July 2011 – June 2012 is created, you cannot edit Ward Annual Entry Form of any ward of Mpanda Mjini for July 2011 - June 2012. When a user opens any of those form, a message will appear above the form selection as shown in the figure 22.

However, if you are the district user or super user responsible for that report and the report is not approved yet, you can go to the report and open the respective report then Undo Report by clicking on the “undo report creation” if you want to edit the corresponding data entry forms.

This Form has been locked because report has been created

Administrative Unit: Ilembo

Forms: Ward Annual Entry Form (WF03)

Period: July 2011 - June 2012 | Prev year | Next year

Data Dimension: Actual Figure

When done, Press 'Complete' for submission

Figure 20: A message when a form is locked because report has been created

4.2.2 The fiscal year ended

If lock data entry forms after the fiscal year end option is enabled and the period specified has passed then you cannot edit any corresponding entry form. This option may be set to lock data entry form to lock immediate after the fiscal year has passed or after a specific number of month(s) passed. When a user opens any of those form, a message will appear above the form selection as shown in the figure 23.

If the need to make changes of the data for a locked fiscal year arise, you may need to communicate to the responsible officers at the ministry and if approved an administrative user can unlock the forms.

This Form has been locked because data entry period selected is not within current financial year

Administrative Unit: Ilembo

Forms: Ward Annual Entry Form (WF03)

Period: July 2011 - June 2012 | Prev year | Next year

Data Dimension: Actual Figure

When done, Press 'Complete' for submission

Figure 21: A message when a form is locked because the fiscal year ended

4.3 Entering data

If the form is not locked then you can continue entering data by clicking inside the first field and type in the value.

- Move to the next field using the Tab button. Shift+Tab will take you back one step.
- You can also use the "up" and "down" arrow keys to navigate between the form cells.

- The values are saved immediately and do not require to be saved at a later stage.
- A green field indicates that the value has been saved. A yellow field indicates that data is still saving. A red field means data is not saved.

	Wanaume	Wanawake	Jumla	Wenye uwezo wa kufanya kazi za kilimo
Idadi ya watu	5	77	82	23
	Zinazoongozwa na wanaume	Zinazoongozwa na wanawake	Jumla	Zenye uwezo wa kufanya kazi za kilimo
Idadi ya kaya	2	45	45	3

Figure 22: A sample of saved and unsaved values in data fields

- When in the middle of the form/table during data entry, there is no need of scrolling to get description of the cell's value, simply get description in the pop up message as shown on the screenshot below.

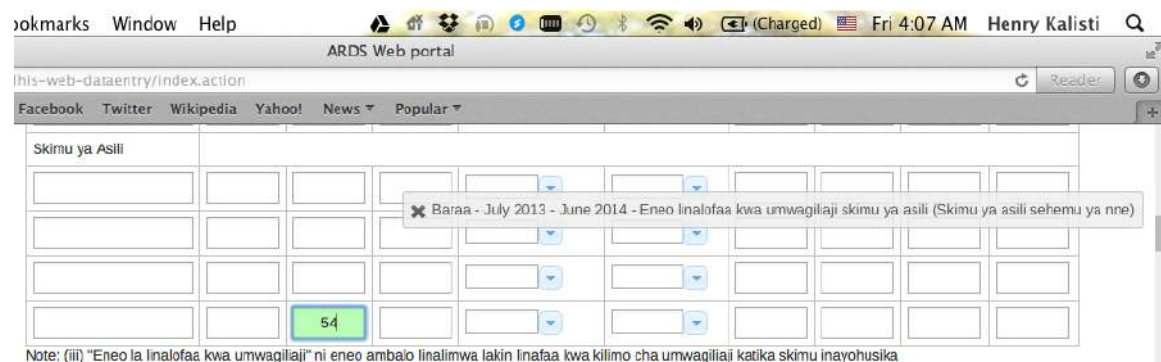


Figure 23: Information message describing a data entry field

4.3.1 Input validation

- If you type in an invalid value, e.g. a character in a field that only accepts numeric values you will get a pop-up that explains the problem and the field will be colored yellow (not saved) until you have corrected the value.



Figure 24: Invalid value error message

- If you have defined a min/max range for the field (data element+ administrative unit combination) a pop-up message will notify you when the value is out of range, and the value will remain unsaved until you have changed the value (or updated the range and then re-entered the value).



Figure 25: Min-Max violation error message

4.3.2 Disabled fields:

If a field is disabled (grey) it means that the field should not be filled. The cursor will automatically jump to the next open field.

4.3.3 Data history:

By double-clicking on any input field in the form a data history window opens showing the last 12 values registered for the current field in a bar chart. This window also shows the min and max range and allows for adjusting the range for the specific administrative unit and data element combination. In the comment box, you will be informed if the value was estimated.

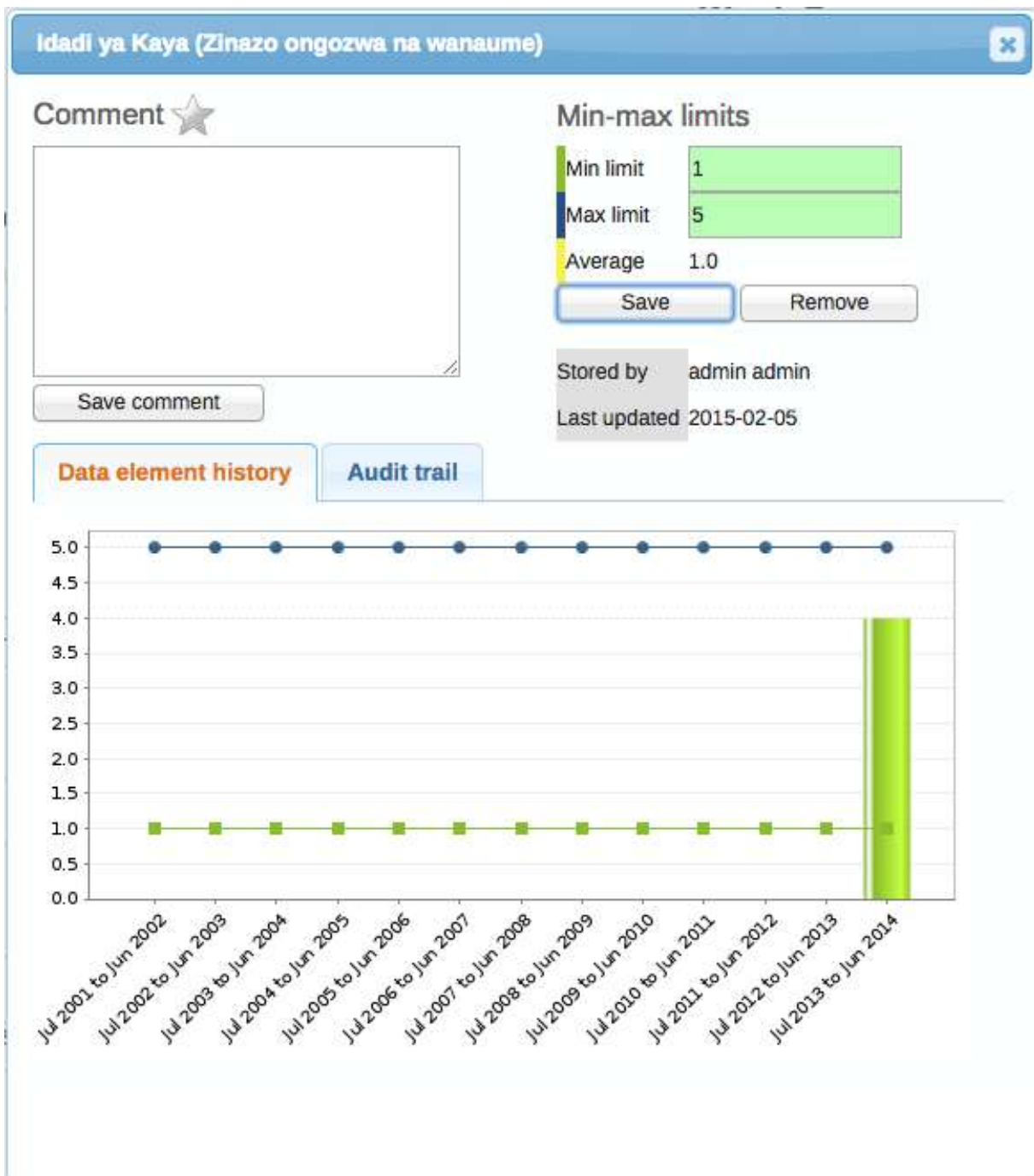


Figure 26: Data history window

4.3.4 Audit trail:

The audit trail allows you to view other data values that have been entered prior to the current value. As an example, the data element was changed from its original value several times. The audit trail shows when the data value was altered along with which user made the changes.

Data element history		Audit trail	
On	Modified by	Value	Modification
2015-02-05 02:20	admin	5	Update
2015-02-05 02:20	admin	1	Update
2015-02-05 02:19	admin	2	Update
2015-02-05 02:09	admin	45	Delete
2015-01-30 06:52	admin	45	Delete
2015-01-30 00:55	Kalisti	2	Delete

Figure 27: Audit trail screen

4.4 Editing and deleting data

If you wish to edit data that has already been entered, simply replace the data entry value with the update values.

If you want to delete a data value completely, you should select the value of interest, and press "Delete" on your keyboard. If you enter a zero and the data element has been configured to not store zeros, the previous data value (i.e. the one you wish to modify) will not be overwritten with the new value.

NOTE: Therefore, it is better practice to delete the data value completely (waiting for the cell to turn green) and then to enter the new value.

4.5 Complete/ Undo Complete and Validation

When you have entered data or corrected any erroneous values and are done with the form the recommended practice is to click on the "Complete" button below the form to register the form as complete. This information is used when generating submission status reports for ward, district, region or the national level as well as in the report creation.

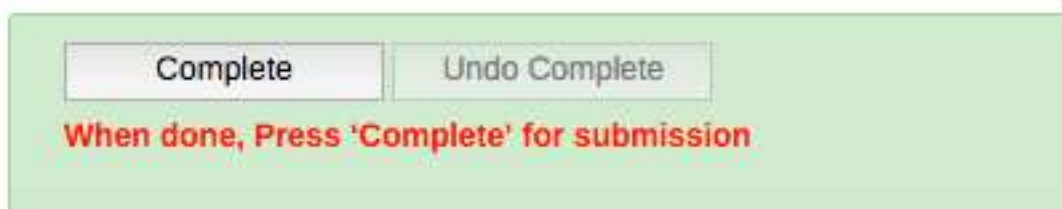


Figure 28: Incomplete Status

When you click a "Complete" button the system validate the data to check if they violate any of the expected values based on the defined rules before accepting that data is complete. If there is no validation error found you will be informed that the data entry screen successfully passed

validation, then you can click “Complete form” to register the form as complete or “Cancel” if you want to continue entering or editing data.



Figure 29: Validation Result when there is no Validation Errors

If there is validation error found you will be informed that the data entry screen has validation errors and the list of rules violated are listed, then you can click “Cancel” to continue correcting the data.



Figure 30: Validation Result when there is Validation Errors

This help you to crosscheck the validity of the data and if necessary collect feedback from the VAEO/WAEO to ensure data quality. However, if you have already done the follow up and for some reason you cannot get the correct data please click complete to register the form as complete even with the outstanding validation errors.



Figure 31: Complete Status

Please note the following:

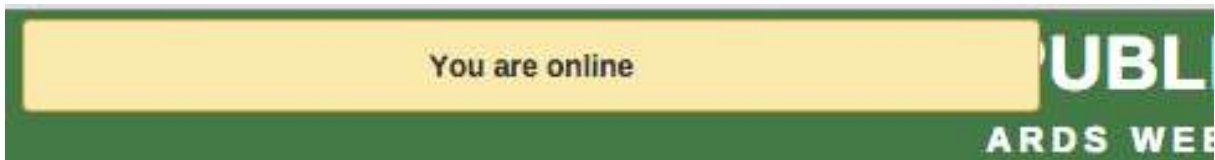
1. Once the form is in a Complete status you will not be able to edit data in the form. If you want to continue editing data click “Undo Complete”
2. Once you click complete the form before deadline the form is registered as submitted on time in the system, thus will appear in the Submission Status report. If you click complete the form after the deadline the form is registered as submitted but not on time. Otherwise, the form will not be considered as submitted and will not appear as submitted in the Submission Status report even if the form has data.
3. If a district entry form is not in a “Complete” status the respective integrated report will not be created. For example, DIR02 requires that 3 DR01s (single quarter) be created and the respective **DF02 be completed**. DIR03 requires that 4 DR02s (single fiscal year) and 1 DR03 be created and the respective **DF03 be completed**. Subsequently, RIR and NIR is automatically created and archived when all respective district integrated reports (DIRs) are created, therefore, if DIRs are not created because respective DFs are not completed then respective RIR and NIR will not be created.
4. If a ward entry form is not completed its data in the respective district report will not be included into district report calculations.
5. When a district report is created, you will not be able to enter or edit data of the respective entry forms regardless of their status i.e. whether Complete or Incomplete status.
6. Entry forms cannot be input two months after the fiscal year (End of August).

4.6 Offline data entry

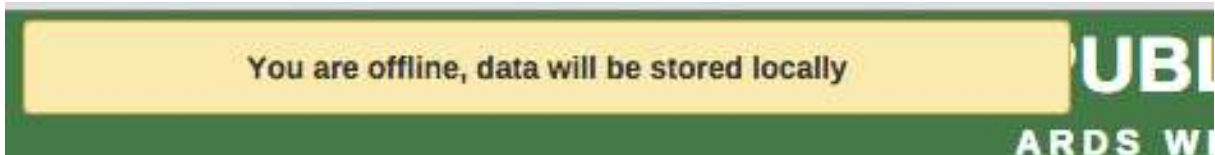
The data entry module will function even if during data entry the Internet connectivity is not stable. In order to utilize this functionality, you must login to the server while Internet connectivity is present, but if during data entry, the Internet link between your computer and the server becomes unstable, data can still be entered into the data entry form, saved to your local computer, and then pushed to the server once the Internet connectivity has been restored.

Data can be entered and stored locally while being offline and uploaded to the central server when on-line. This means that the online deployment strategy will be more viable in areas with unstable Internet connectivity. The total bandwidth usage is greatly reduced since forms no longer are retrieved from the server for each rendering.

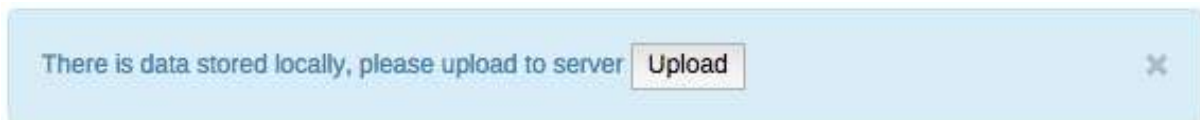
When the server can be reached through the Internet connection, a message is displayed at the top of the data entry screen as shown below.



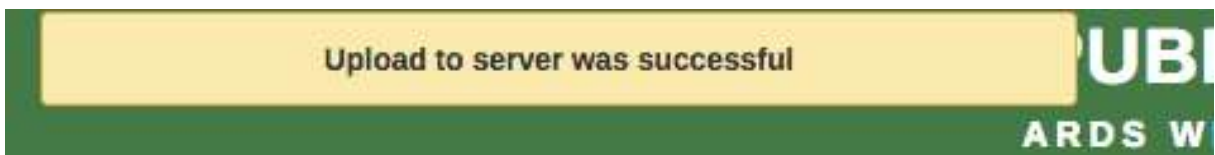
If the Internet connection should disconnect for some reason during the data entry process, this will be detected by the application, and you will be informed that your data will be stored locally.



Data entry can proceed as normal. Once you have entered all of the necessary data, and the application detects that the server is back online, you will be informed that you have data that needs to be synchronized with the server. Always click upload.



Once the data has successfully synchronized with the server, you will receive a confirmation message that the data has been successfully uploaded to the server.



5 Synchronization & Aggregation

In ARDS, the old LGMD2i typically involved a distributed application, where the same application was running in different administrative unit (district, regional, and national). Therefore, the data needed to be synchronized through the Internet in order to have a consolidated database at the national level. However, some of these physical locations did not have stable Internet connectivity, and hence they worked offline. For this, it was important to be able to export and import data from a location, which is working offline to national level or to another location where it needs to be imported.

The Web Based Data Entry of the ARDS Web Portal uses the online synchronization strategy (online/offline mode), which is more viable in areas with unstable Internet connectivity. Besides, the ARDS Web Portal also provides robust import-export functionality to support areas with unstable Internet connectivity. It allows transferring of data between computers for different purpose.

“For instance, a user at Arusha Vijijini district was entering data, unfortunately he becomes disconnected from the Internet for a long time until he finishes entering data, he may decide to export the data and take it to a nearby computer (or district such Arusha Mjini), which has the Internet connection and import the data to the server. Also, if it seems more convenient, a user may send the exported file to the national headquarter technical team to be imported to the server”

This feature helps overcome the dependency on Internet to some degree, as data updates can be transferred via USB key where there is no connectivity, or through email where there is limited Internet connectivity.

Also, the standalone offline copy can be installed in areas with no Internet connectivity, such that the system is accessed offline and data are always entered offline and uploaded to the server through import-export feature. The standalone copy can be configured to automatically synchronize with the central server in areas with limited connectivity. However, online/offline mode is highly recommended over standalone copy in areas with limited connectivity. It only need to:

- Login when there is connectivity,
- Continues entering data offline and,
- Upload offline data when connectivity is back.

5.1 Online/offline data entry

When entering data while online the values are saved immediately:

- Do not require any save/finished/Sync button click.
- A green field indicates that the value has been saved in the system (on the server).

- On a slow connection, it might take some time before the values are saved.
- The data entry module will function even if during data entry the Internet connectivity is not stable.
- In order to utilize this functionality, you must login to the server while the Internet is functional

If during data entry, the Internet link becomes unstable, data can still be entered into the data entry form,

- Data are saved to your local computer, and then uploaded to the server once the Internet connectivity has been restored.
- This means that the on-line deployment strategy will be more viable in areas with unstable Internet connectivity.
- When the server can be reached through the Internet, a message is displayed at the top of the data entry screen telling that you are online.
- Any Internet disconnection will be detected by the application, and you will be informed that you are offline and data will be stored locally.
- You can proceed with data entry as normal.
- Once the application detects that the server is back online. You will be informed that there is data stored locally, please upload to the server. You should always click Upload.
- Once the data has successfully synchronized with the server, you will receive a confirmation message.

More detail about how this work during data entry can be found in the data entry section.

5.2 Import-export

To access the main Import-Export module, go to Data Entry menu in the Web Based Data Entry module or in the ARDS Web Portal and select “Import Export”. A number of import export services are available; Data import and export is described in detail in respective sections below. Metadata import and export, GML import and more advanced data import options can only be done by administrative user and are explained in the ARDS O & M Maintenance Technical Manual.

5.2.1 Data import

To import data in XML format, simply choose "Import Export" from Data Entry menu in the Web Based Data Entry module interface or in the ARDS Web Portal, and then follow the following steps:

- Select the file to import by pressing "Choose File" and choose the file from your local file system.
- When importing XML and JSON files, the system will automatically detect which format of the file should be imported. When importing CSV data, you will need to specify the format.

Consult the ARDS O & M Technical Manual on "CSV data import" for more specific information on how the CSV file should be created.

There are two separate options for importing data.

- **Dry run:** This gives a preview option. It will do a dry run import, and give you information about any errors.
 - **Note:** It is recommended always using the Dry run option when importing data to make sure you keep control over any changes to your data.
- **Strategy:** There are three options here, "New and Updates", "New only", and "Update only".
 - New and updates tells the importer to expect both new data, and updates to existing ones.
 - New only will only accept fresh data, usually you would use this on an empty database.
 - Updates only will only allow the data to match data that is already there (same identifiers, new name etc.).

5.2.2 Data export

To export raw data from the system, choose "Import Export" from Data Entry menu in the Web Based Data Entry module or in the ARDS Web Portal, and then follow the following steps:

- Click on Data Export,
- Select the administrative unit(s),
- Select Entry Form(s) and-or Report(s) for which data export should be selected,
- Select the start and end date for which data export should be selected,
- Once you have specified all options as required, press "Export as XML".

You can also select which types of identifiers which will be exported by pressing "More options" and then selecting either UID, Code, or Name for data elements, administrative units and category options. Also, you can go to more option when you would like to export the data as JSON or CSV. However, only technical personnel may need to go to more options.

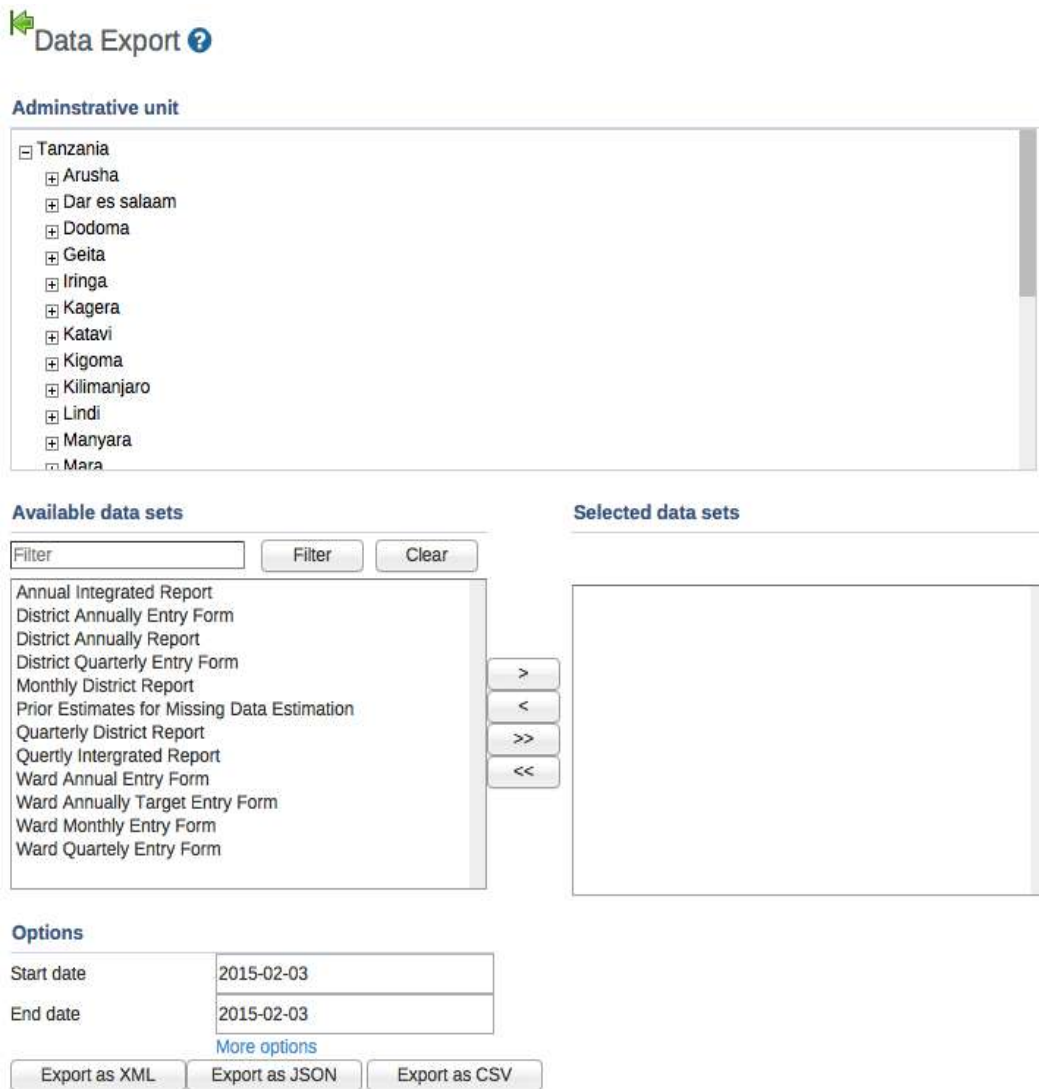


Figure 32: Data export screen

5.3 Standalone copy

This feature helps overcome the dependency on the Internet, as data updates can be transferred via USB key (or other external storage) through export and imported to the server through a computer connected to the Internet as introduced earlier in section 5. To set up standalone copy:

- Requires installing an offline instance of the system to a computer in the location where there is no Internet connectivity.
- Installation of the local copy follows same steps as installing the server (see ARDS O & M Technical Manual).
- Make use of import-export functionality as described in the previous section 5.2 to synchronize data to the central server.

Note: Set up of the standalone offline copy should be done by administrative user (technical personnel), other users will then continue working with the offline copy and use import-export to sync with the server.

Also, in areas with limited connectivity, administrative user can configure the standalone copy to synchronize with the central server at a specified time. See ARDS O & M Technical manual on how to schedule a standalone copy for automatic synchronization.

However: If the problem is limited connectivity, consider using online/offline mode first. Standalone offline copy is suitable when the Internet connection is a serious problem or no Internet connection at all.

5.4 Aggregation

Aggregation allows you to control the process of converting collected data into aggregated and write them to the resource and analytic tables. This process improves performance of the system by speeding up response to the user when requesting a report or performing analysis on the data.

Note: In order to see any new data submitted to the server, aggregation process should run between the time data was submitted and before you view the reports.

Aggregation process is normally scheduled to run periodically at a certain time or you may choose to run it when you want to view report immediately after the data was entered. However, the process might take a long time and heavily utilize the resources of the server, so make sure you start such processes at a feasible time in production environments.

Aggregation perform the following three major operations:

1. **Estimation:** It first gets list of all district reports (DR01, DR02, and-or DR03) requests to create, then *automatically* estimates all missing ward data of the wards that have not submitted data for each district report i.e. estimate only if the respective ward form is not in a “Complete” status.

Please note the following:

- There are two ways in which estimation is performed i.e. during Scheduled Aggregation or On Demand Aggregation.
 - For Scheduled Aggregation estimation is automatically done overnight for the district’s data in which there is pending request for report creation.
 - While for the On Demand Aggregation estimation is done when a user request to run aggregation and it also perform estimation for the districts which have the pending request for report creation.
2. **Analytics:** Perform data aggregation across periods and administrative units then update analytics table with the aggregated values, so that the reports can quickly be produced when requested.
 3. **Archiving:** It check if there is any pending request to create report or if there is integrated report which is ready to be created then archives and stores the report in the system. This help when a user requests the report later can get the report in a PDF which is retrieved from the archive. This report archiving process which is done when the report is created help you to retrieve the report at any time with its original administrative unit even if there was administrative unit change.

5.4.1 Scheduled aggregation

Aggregation processes is scheduled as regular tasks. Run at a pre-determined time (always at midnight based on the server time). Administrative user can manage scheduling through system settings. See ARDS O & M Technical Manual for more details.

5.4.2 On demand aggregation

If you do data entry and you would like to view the changes in the reports immediately, run on demand aggregation. Follow the following simple steps;

- Go to Report from the main menu
- Select Aggregation
- If there are pending requests for report creation, a list of those scheduled reports will be listed, which allows the privileged user to cancel the request(s) if necessary.
- If the list of scheduled reports is fine and you want to continue run the aggregation then Click on “Start”
- The steps above will request aggregation to run, which will aggregate only data for the districts that have requested to create district report(s) to make them ready for report.

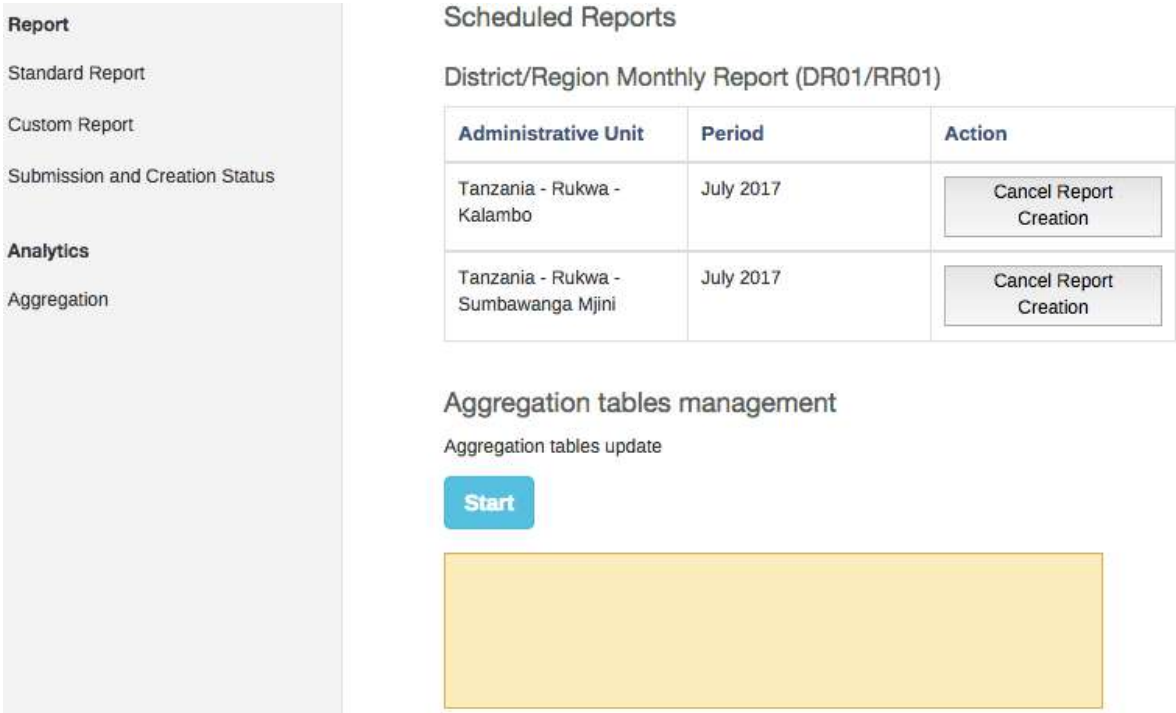


Figure 33: On demand aggregation management screen

Note: On Demand Aggregation process will estimate data, update aggregation table and archive the report just the same as what is done by the scheduled aggregation which run overnight. Aggregation applies only to the data of districts that have requested to create District Report(s) and not all data in the system. Therefore, if there is no any request for report creation the aggregation will not run.

6 Dashboard

Dashboard provides a mechanism to organize and share the saved favorite of more interest for quick view. When you left click on the dashboard menu of the home page the following menus as displayed in the diagram below appear for dashboard operation outlined below.

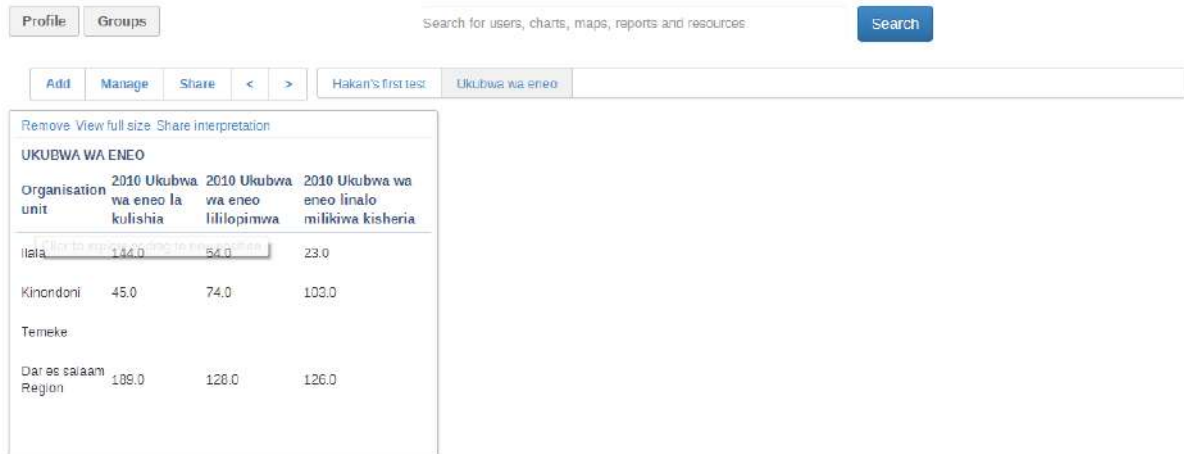


Figure 34: Dashboard Module

6.1 Add a dashboard

- You click Add button to add a new dashboard.
- You shall then provide a self descriptive name as shown in the example below and click create button.

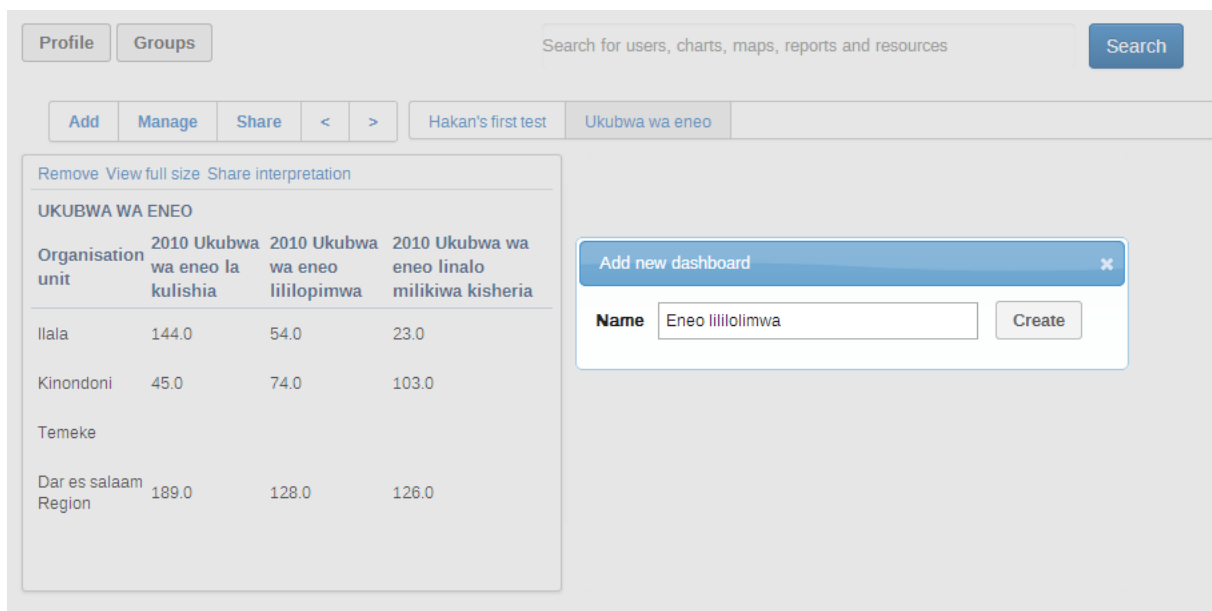
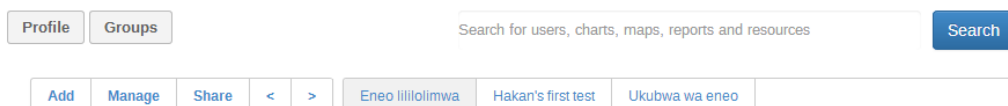


Figure 35: Add new Dashboard Menu

6.2 Add contents to a dashboard

- To add stuff/contents to the created dashboard search for the saved charts, maps and etc. using the search filed shown below.



Add stuff by searching from the search field above

Then arrange dashboard by dragging and dropping items

Figure 36: A New Created Empty Dashboard

- From the search result choose the content you wish to appear on your dashboard and click Add button as shown below.
- You may rearrange contents on the dashboard by dragging and dropping the items.
- You may update/change the table, chart, or map displayed on a dashboard by left click on it and it will open in the corresponding tool. For example a table will be open in the Pivot Table module.



Then arrange dashboard by dragging and dropping items

Figure 37: Search and Add Dashboard Contents Menu

6.3 Manage Dashboard

- If you wish to rename or delete the current dashboard or add headline to the current dashboard click on manage button and use the available options as shown below

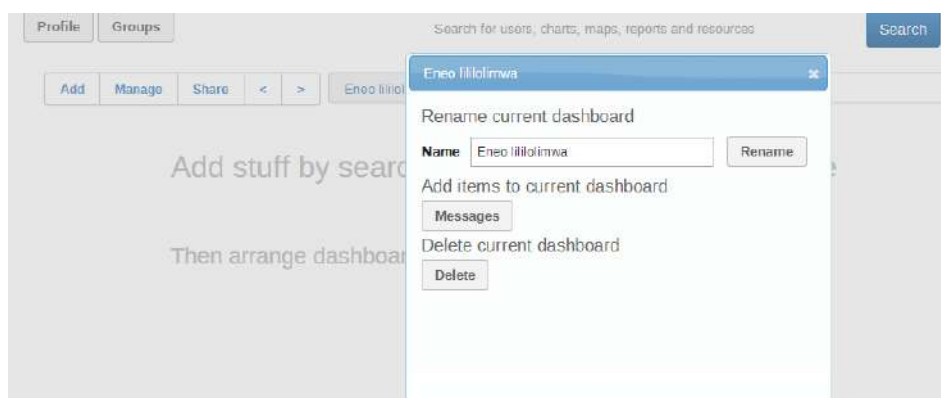


Figure 38: Dashboard Manage Menu

6.4 Share a dashboard

- An administrative user can share the dashboard of interest.
- To share the dashboard left click on the Share button and follow the popup menu shown below

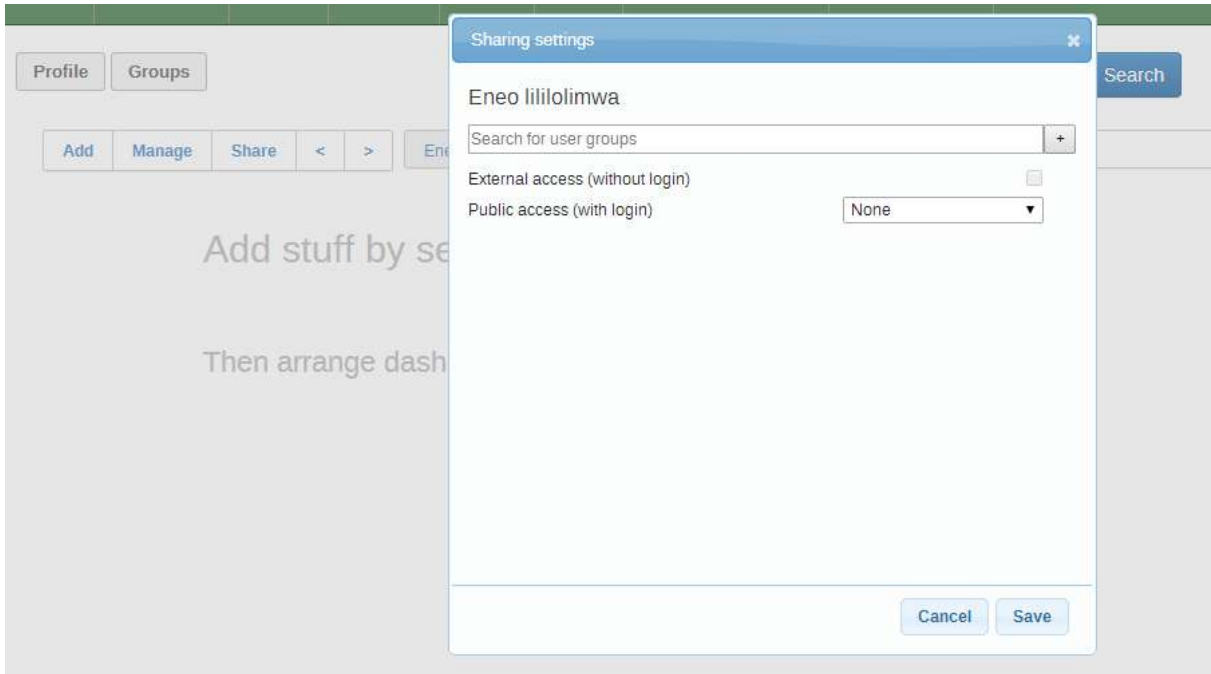


Figure 39: Dashboard Sharing Menu

6.5 Create user group for dashboard sharing

If you are an administrative user, you can create user group for sharing dashboards.

- Left click on the Groups button to view and edit existing user groups for dashboard.

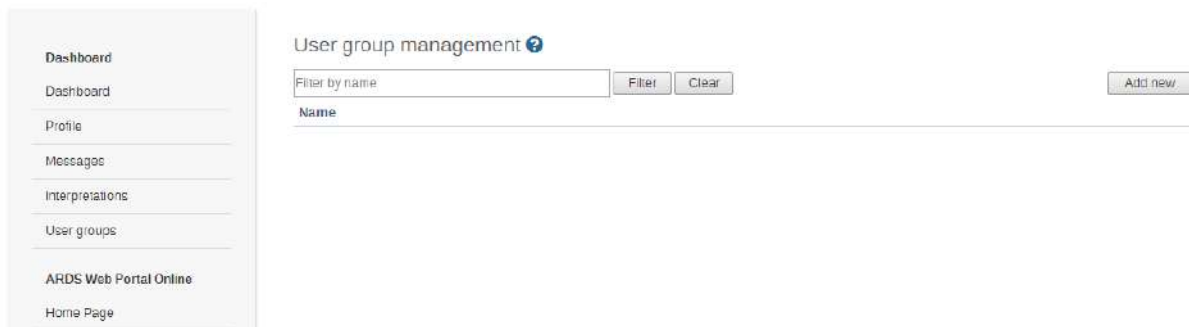


Figure 40: Dashboard User Group Management Menu

- Click on Add new to create a new group by using the menu options shown below

Add user group

This object will be created with public edit and view rights

User group details

Name *

Available users **Group members**

Filter

admin, admin

>
<
>>
<<

Figure 41: Dashboard Add User Group Menu

- You may edit your profile for dashboard sharing purposes by click on the Profile button and follow instruction provided.

7 Data Analysis

Data Analysis is found in the Main Menu as “Analysis” for the district users or through “Data Analysis” menu panel in the left menus for other users. Consist of Left Panel, Top Panel & View Port. Data analysis aim to provide a simplified search for data and allow user to create and save their tables and charts. The figure below show data analysis module working screen.

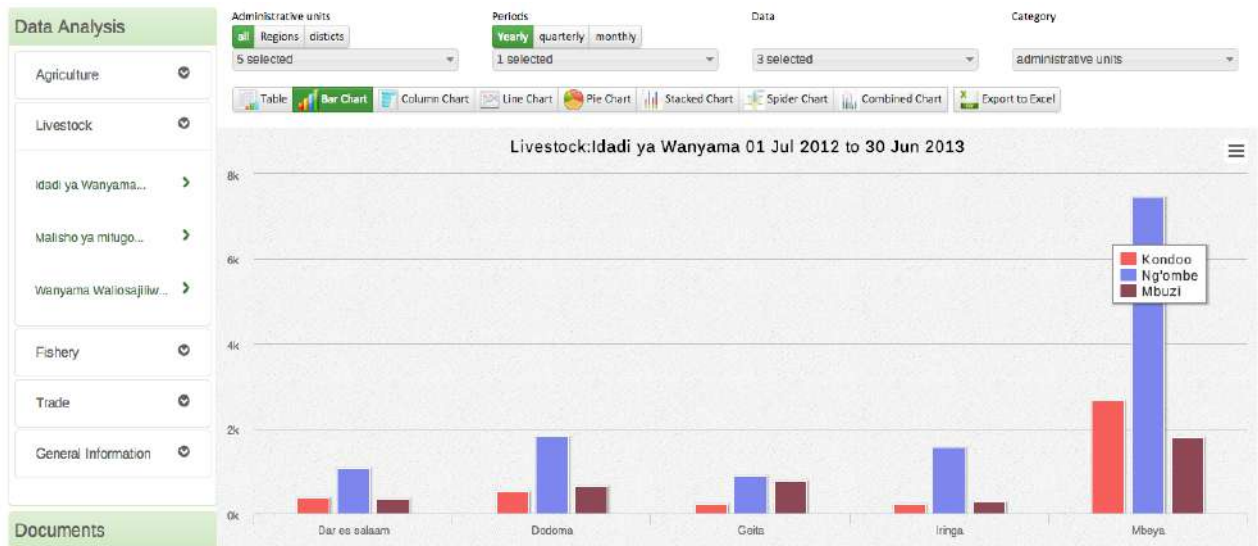


Figure 42: Data Analysis Module

- Data Analysis menus in the left panel is a list of saved favorite table in their respective categories.
- The table are produced and saved for this purpose using Pivot Table (to be explained in the Pivot Table module in the later section).
- When you select a menu, the table will open. The table contains the data as it was selected by the one who created it in pivot table.

	Kondoo	Ng'ombe	Mbuzi
Dar es salaam	364.0	1070.0	340.0
Dodoma	534.0	1818.0	636.0
Geita	228.0	893.0	768.0
Iringa	233.0	1570.0	276.0
Kagera			
Kigoma			
Kilimanjaro			
Mbeya	2656.0	7453.0	1796.0

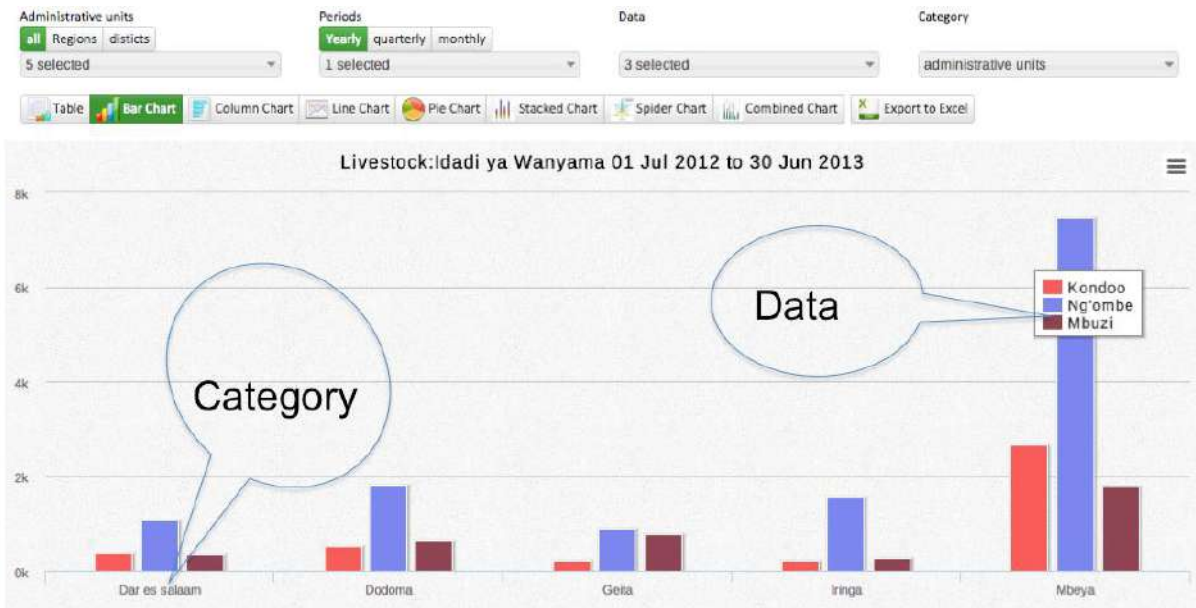
Figure 43: Default Table in Data Analysis as a Result of Saved Favorite in the Pivot Table

7.1 Selecting chart Type

- The Data Analysis module provides seven different chart types, each with different characteristics. You can select the type of your chart by clicking on one of the icons in top bar titled "Chart type". Chart Types consist of:
 - Column chart
 - Bar Chart
 - Line Chart
 - Pie Chart
 - Stacked Bar Chart
 - Spider Chart
 - Combined Chart

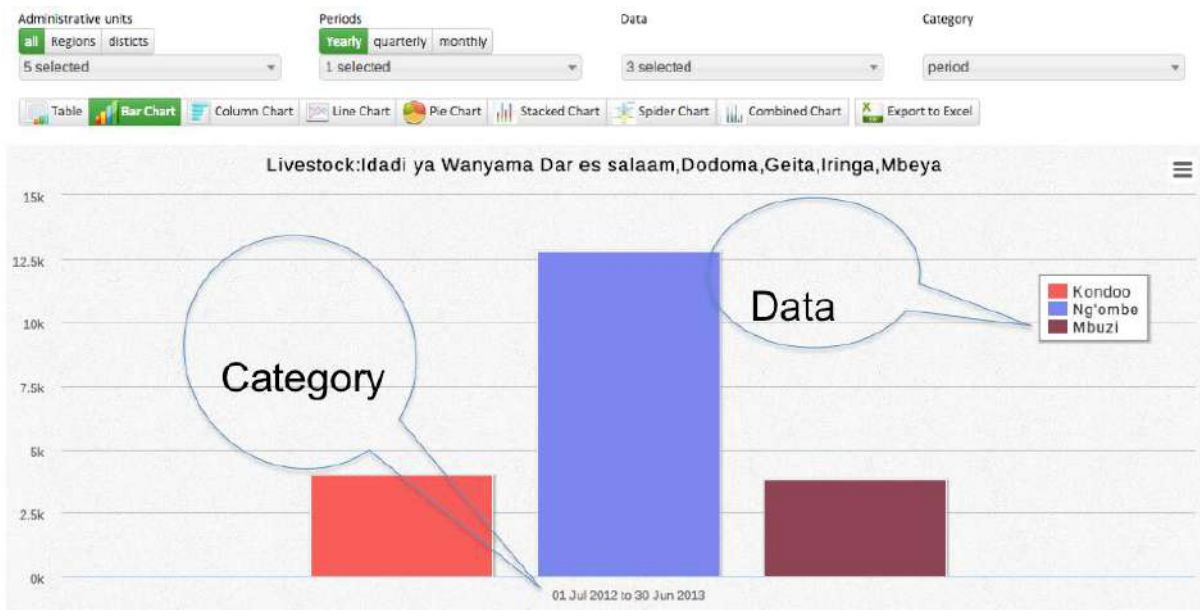
7.2 Selecting Administrative Unit, Period, Data and Category

- This section lets you change which dimension of the data you want to appear as series, category and filter.
- Dimension in this regard refers to the elements that describe the data values
- There are three main dimensions in the system:
 - Data: Includes data elements and Computed Values, describing the phenomena or event of the data.
 - Periods: Describes when the event took place.
 - Administrative units: Describes where the event took place.
- However, Data Analysis allows variation of data and only one of the two categories: Data against period or data against administrative unit. To select the option, go to category in the top right, click on the drop down then select administrative unit or period. The following figure provides an illustration.



Note: Selected periods are displayed on the title of the chart

Figure 44: Data and Administrative Unit Category



Note: Selected administrative units are displayed on the title of the chart

Figure 45: Data and Period Category

7.3 Selecting Data Dimensions

- Selecting “What” Dimension of Data
 - Selecting Data element or Computed Values. The figure below provides an illustration.



Figure 46: Selecting Data Dimension

- Selecting “Where” Aspect of Data i.e. Administrative unit.
 - Choose Selection Mode for Administrative unit
 - All: List all Regions and Districts in the drop down for selection.
 - Region: List only all regions in the drop down for selection
 - District: List only all districts in the drop down for selection
 - For Quick selection, a filter can be used to search for specific region or district. Also “Check all” and “uncheck all” can be used. The figure below provides an illustration.



Figure 47: Selecting Administrative Unit

- Selecting “When” Aspect of Data I.e. Period.
 - Choose Selection Mode for Period
 - Yearly: List all available financial years in the drop down for selection
 - Quarterly: List all available quarters in the drop down for selection
 - Monthly: List all available Months in the drop down for selection
 - For Quick selection, a filter can be used to search for specific period. Also “Check all” and “uncheck all” can be used. The figure below provides an illustration.

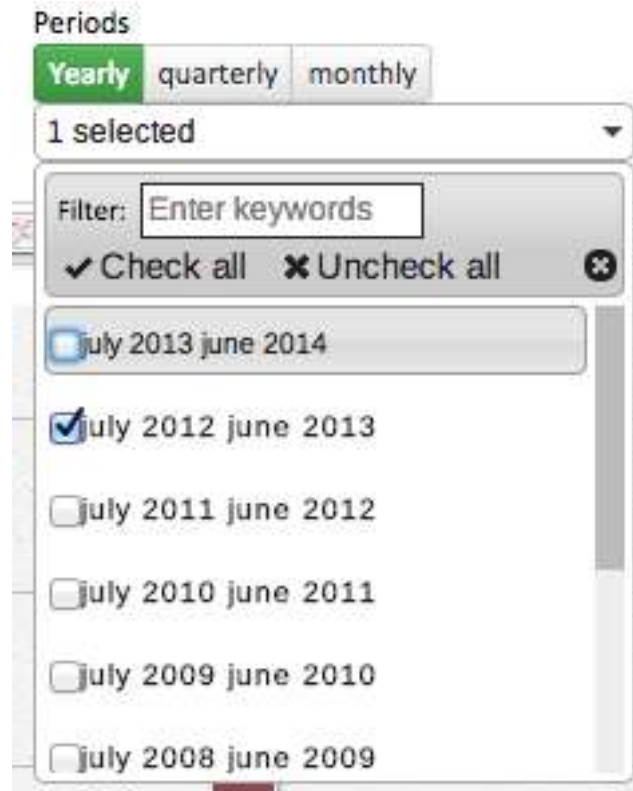


Figure 48: Selecting Period

7.4 Selecting a Chart Type and Editing the Chart

- After selecting the dimensions, you can produce the chart by selecting type of chart on the top menu.
- After the chart is produced:
 - You can reduce series (data) by selecting and deselecting the series directly on the chart.
 - You can change, add, or remove selected period as explained in the previous slide.
- You may choose to view data in the table by selecting Table menu.
- You can also export selected data to Excel for further manipulation.

8 Pivot Table

Pivot Table provides a user with ability to manipulate data in a pivot table.

July 2015 - June 2016				
	WF03 4.1 Aina ya mashine/vifaa Trekta(Tractor), Nzima, Binafsi	WF03 4.1 Aina ya mashine/vifaa Trekta la Mkonzo(Power tiller), Nzima, Binafsi	WF03 4.2a Zinazo kokotwa na trekta/trekta la mkono Jembe la kulimia(Disk plough), Binafsi	WF03 4.2b Zinazo kokotwa na wanyama kazi Jembe la kulimia(Disk plough), Binafsi
Kalambo	21	15	582	18,346
Nkasi	27	15	22	25,475
Sumbawanga Mjini	20	20	31	8,444
Sumbawanga Vijijini	10	32	12	21,920
	78	82	647	74,185

Figure 49: Report Module

8.1 Create a pivot Table

To create a Pivot Table, you may follow the following simple steps:

1. Select items from any of the dimensions in the left menu
2. You may click on layout to arrange your dimensions on table rows and columns as you wish
3. Click update to create your table

8.1.1 Select the dimensions

The first step to create a pivot table is to specify what data you want, for which period (when) and from which administrative unit (where). To select what data a user can choose to search from all data in the system or specify a particular type of data i.e. Data Elements, Computed Values Submission or Auto Growing table data.

Step 1: Selecting data.

- Select “All Data”: This is the default selection but if not selected you can click on “All Data” button to select it, which will allow you search for any data collected in ARDS Web Portal.
- Select Data Elements: If the data you are looking for is a raw data directly captured in any table of the data entry form except auto growing tables, then you can click to select “Data Elements”.

- Select “Computed”: If the data you are looking for is not directly captured from any of the data entry form but its value is computed from the data which is directly captured, then you can click to select “Computed”.
- Select “Auto Growing”: If the data you are looking for is a raw data directly captured in any of the auto growing tables of the data entry form, then you can click to select “Auto Growing”.
- Select “Submissions”: If you are looking for submission status of data entry forms click on “Submissions”, select an entry form from the dropdown list then select the status you want to see.

Please note the following: All other options above apart from selecting “All Data” will minimize the list of items from which you will be selecting from but only if you know type of the data you are looking for. Alternatively, you can follow these simple steps:

- *Once you select All Data, by default the system allows you to search data from all tables but if you know from which table does the data you are looking for is being collected, then you can select a specific table from the dropdown.*
- *If you know at least part of the name of the data you want you can type the name directly in the search field and the data items will filter as you continue typing.*
- *You can also use the search field to filter by entry form and-or table number. For example, you can type WF03 4.1 to list only data items in table 4.1 of Ward Annual Entry Form*

After you apply the filters you can now go through the list of available data items and click on the data you were looking for to move it to selected items. To unselect you can go through the list of selected items and click on the specific items to unselect. Alternatively, you can click on forward arrows or backward arrows to select or unselect all respectively.

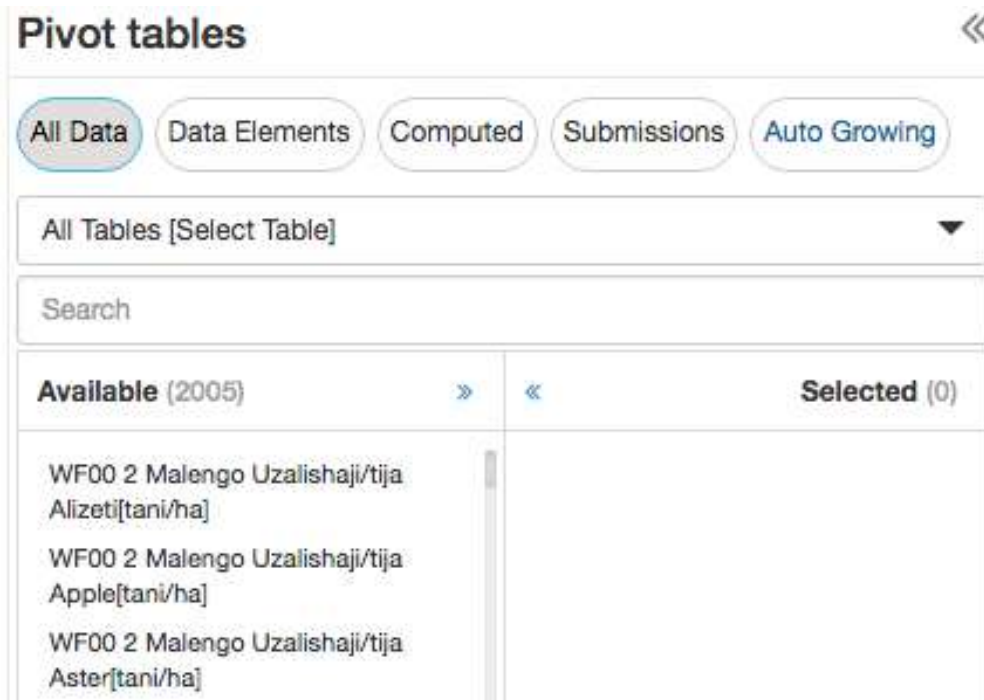


Figure 50: Select data dimension

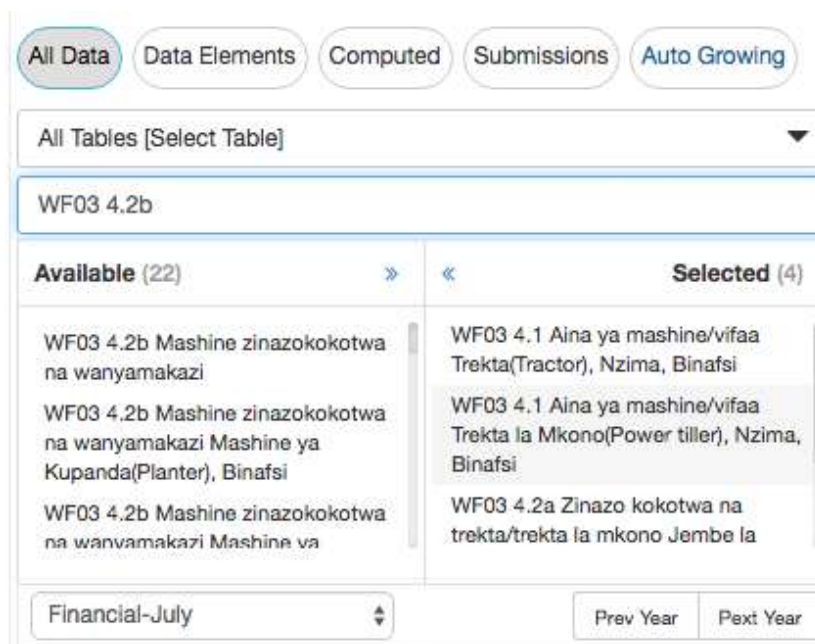


Figure 51: Selecting Data from Table 4.1, 4.2a and 4.2b in WF03

Step 2: Select Periods

- Click on available options to select and click on selected periods to remove selection or you may click on forward arrows to select all and backward arrows to remove all selections. Please note the following:
 - Options of period you can select depends on the data selected. For example, if all data selected are from WF03 then you can only select financial year. If all data selected are from WF01 then you can select monthly, quarterly and annually.

- In the dropdown list you can select relative period which allows you to select a varying periods based on the recent date, such as this financial year, last financial year, last four quarters and etc.
- You can click on “Prev Year” and “Next Year” to navigate back and for when you are looking for previous periods.

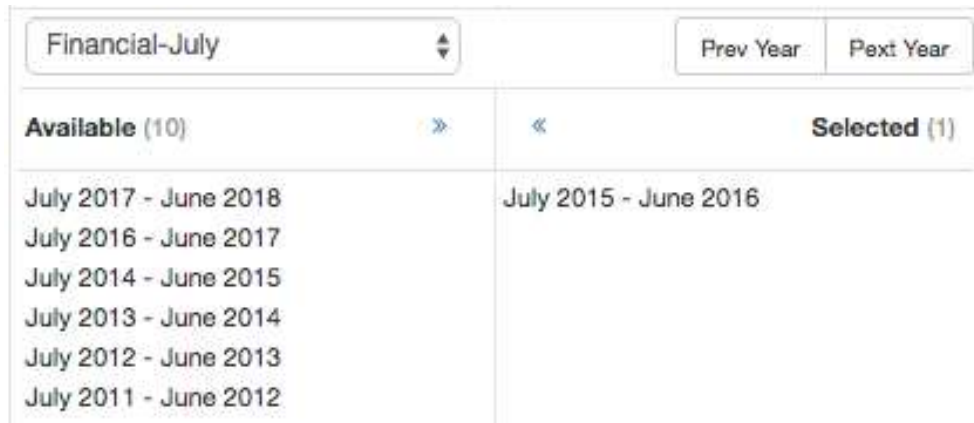


Figure 52: Select Period Menu

Step 3: Select Administrative Units

- You can quickly select the Administrative Unit(s) you want by clicking on the arrows to expand and click on a specific Administrative Unit to select or remove selection as shown below:

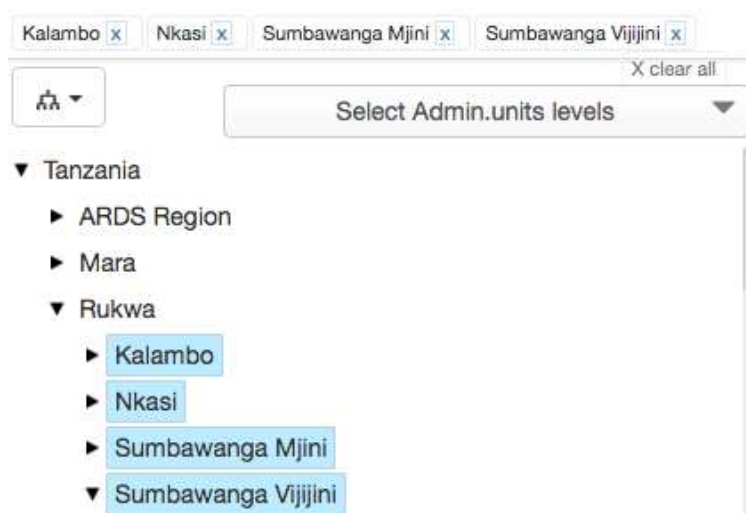


Figure 53: Select Administrative Units Menu

- Alternatively, you can select the parent Administrative Unit from the tree, click on the dropdown list on the left and click on “Select Level” then select to view region, district or ward from the dropdown located on the right. You can also click on “Select group” and select the particular group of Administrative Units, for example Rural or Urban.

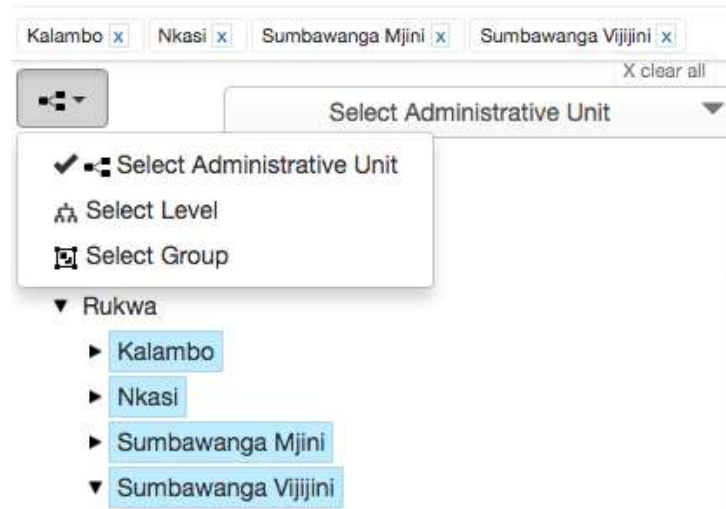


Figure 54: Select Administrative Unit by Level or Group

8.1.2 Arranging the layout of dimensions on table rows and columns

- One you are done selecting the data, period and administrative unit dimensions, you already know what data you want to analyze, when and from where.
- You can now click on the layout menu to arrange your dimensions into rows, columns and filters so as to have the table structured in a way you want for good presentation and easy interpretation of the data.
- To exchange the dimensions in the layout simply click, hold then drag and drop to the right position, after that click on update to effect the changes.

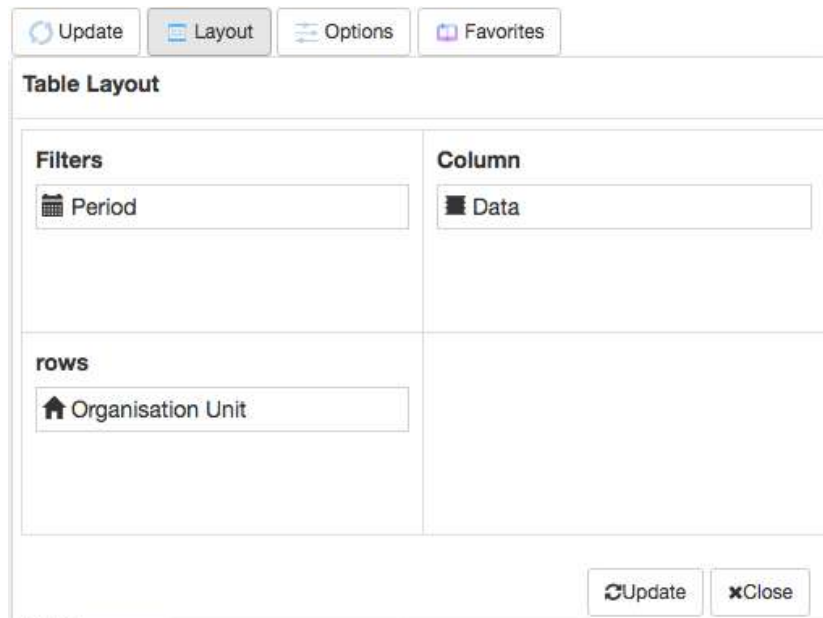


Figure 55: Layout Menu

July 2015 - June 2016				
	WF03 4.1 Aina ya mashine/vifaa Trekta(Tractor), Nzima, Binafsi	WF03 4.1 Aina ya mashine/vifaa Trekta la Mkono(Power tiller), Nzima, Binafsi	WF03 4.2a Zinazo kokotwa na trekta/trekta la mkono Jembe la kulimia(Disk plough), Binafsi	WF03 4.2b Zinazo kokotwa na wanyama kazi Jembe la kulimia(Disk plough), Binafsi
Kalambo	21	15	582	18,346
Nkasi	27	15	22	25,475
Sumbawanga Mjini	20	20	31	8,444
Sumbawanga Vijijini	10	32	12	21,920

Figure 56: An example of Pivot Table Result Based on The Selection Made Above

8.2 Working with a pivot table

8.2.1 Select More Options

- You may go to options to show/hide totals, sub-totals, column average, row average, dimension labels, empty rows and hierarchy as well as setting the table title.

Update	Layout	Options	Favorites
<p>Data</p> <p><input checked="" type="checkbox"/> Show column totals</p> <p><input checked="" type="checkbox"/> Show row totals</p> <p><input type="checkbox"/> Show column sub-totals</p> <p><input type="checkbox"/> Show row sub-totals</p> <p><input type="checkbox"/> Show column average</p> <p><input type="checkbox"/> Show row average</p> <p><input type="checkbox"/> Show dimension labels</p> <p><input type="checkbox"/> Hide empty rows</p> <p>Organisation Units</p> <p><input type="checkbox"/> Show hierarchy</p> <p>General</p> <p>Table Title:</p> <p>Individually Owned Ag</p> <p>Update Close</p>			

Figure 57: Options Menu

- After selecting the options which you want, click on update to effect the changes.

The screenshot shows a web application interface with a navigation bar at the top containing buttons for 'Update', 'Layout', 'Options', and 'Favorites'. On the right side of the navigation bar are icons for refresh, information, and home. Below the navigation bar is a title 'Individually Owned Agriculture Machines and Equipments in Rukwa, July 2015 - June 2016' and an 'Excel' download button. The main content is a pivot table with the following data:

July 2015 - June 2016					
	WF03 4.1 Aina ya mashine/vifaa Trekta(Tractor), Nzima, Binafsi	WF03 4.1 Aina ya mashine/vifaa Trekta la Mkono(Power tiller), Nzima, Binafsi	WF03 4.2a Zinazo kokotwa na trekta/trekta la mkono Jembe la kulimia(Disk plough), Binafsi	WF03 4.2b Zinazo kokotwa na wanyama kazi Jembe la kulimia(Disk plough), Binafsi	total
Kalambo	21	15	582	18,346	18,964
Nkasi	27	15	22	25,475	25,539
Sumbawanga Mjini	20	20	31	8,444	8,515
Sumbawanga Vijijini	10	32	12	21,920	21,974
	78	82	647	74,185	74,992

Figure 58: An example of Pivot Table Result After Applying the Options Above

8.2.2 Save as favorites

- You may click on Favorites, then click on the “New” button and save your table for later uses.
- To open an existing favorite, type the name on the search field then click on it from the list.
- You can also delete or edit the existing favorite using the menu in front of the particular name in the list.

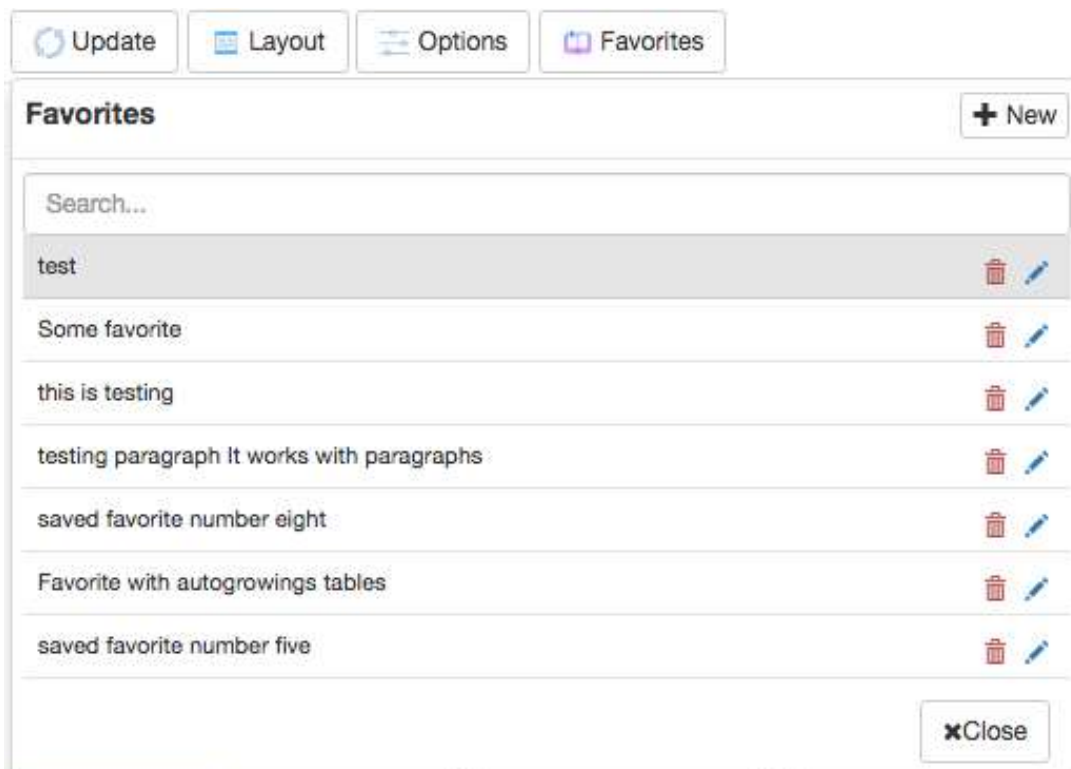


Figure 59: Favorite Menu

- When you have set up a pivot table and you want it to appear and being used in the Data Analysis module by other users, it is important to save it as a favorite using the following naming standards.
 - Select category name from the data analysis to which the data in your current table correspond to: E.g: “Livestock” for data about “Malisho ya mifugo”
 - Then write the full name of your favorite by starting with the category name followed by a colon and then name of your favorite table.
 - E.g.: The full name of the example above should be Livestock:Malisho ya mifugo
 - The table will appear in the Data Analysis under the Livestock menu.
 - If your data does not correspond to any of the existing categories in the Data Analysis, you can define a new category name. But this is not recommended unless found necessary since will create a new menu in the data analysis panel.

8.2.3 Download table data

- You may click “Excel” button at the top right of the table, which will allow you to choose to download and save table data in your computer as raw or merged data in Excel format.

July 2015 - June 2016					Merged Data
	WF03 4.1 Aina ya mashine/vifaa Trekta(Tractor), Nzima, Binafsi	WF03 4.1 Aina ya mashine/vifaa Trekta la Mkono(Power tiller), Nzima, Binafsi	WF03 4.2a Zinazo kokotwa na trekta/trekta la mkono Jembe la kulimia(Disk plough), Binafsi	WF03 4.2b Zinazo kokotwa na wanyama kazi Jembe la kulimia(Disk plough), Binafsi	total
Kalambo	21	15	582	18,346	18,964
Nkasi	27	15	22	25,475	25,539
Sumbawanga Mjini	20	20	31	8,444	8,515
Sumbawanga Vijijini	10	32	12	21,920	21,974
	78	82	647	74,185	74,992

Figure 60: Download Menu

8.2.4 Other navigation menus

- While you are in pivot table you can click on “Home” button to exit Pivot Table and go your default landing page.
- You can also click on the refresh icon to reload the data in the table in case some data are not presented because of other factors such as network issues.



Figure 61: Other Navigation Menu

8.3 Working with auto growing table data

- If the data you are looking for is a raw data directly captured in any of the auto growing tables of the data entry form, then can be selected through searching by their names or you can click to select “Auto Growing” so as to get a list of auto growing table data only.
- Essentially selection follows the same mechanism as explained in section 8.1. Besides, all auto growing table data items have been colored in blue to help users to differentiate them.
- Working with auto growing table data follows the same mechanism as detailed in section 8.2. But auto growing table data is displayed in separate table from other table data. For example, if a user selects some data items from auto growing table and others from normal table then result will be displayed separately as shown in the figure below.

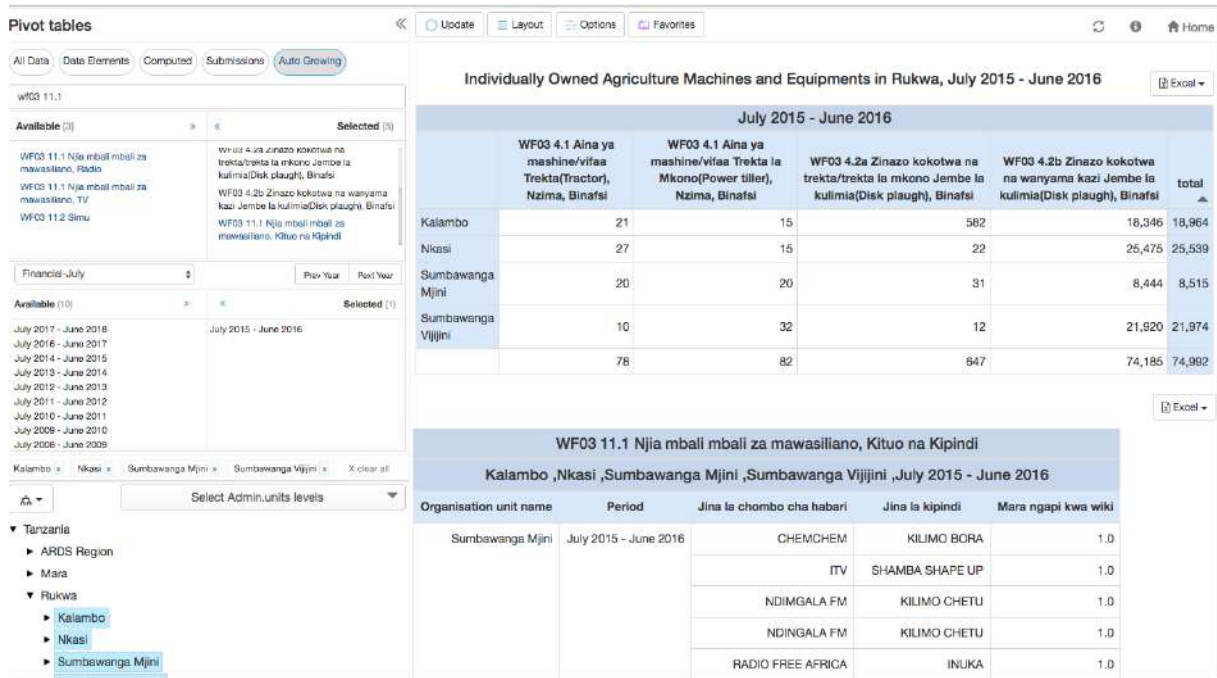


Figure 62: Pivot Table Result with Both Normal and Auto Growing Table Data

9 Data Visualizer

The data visualizer module enables users to easily create dynamic data analysis and visualizations through charts and data tables. You can freely select content (like Computed Values, periods and administrative units) for your analysis. This module can be accessed by going to "Data -> Data Visualizer" in the main menu. The image below shows the viewport of the module. Consists of Left Panel, Top Panel and View Port

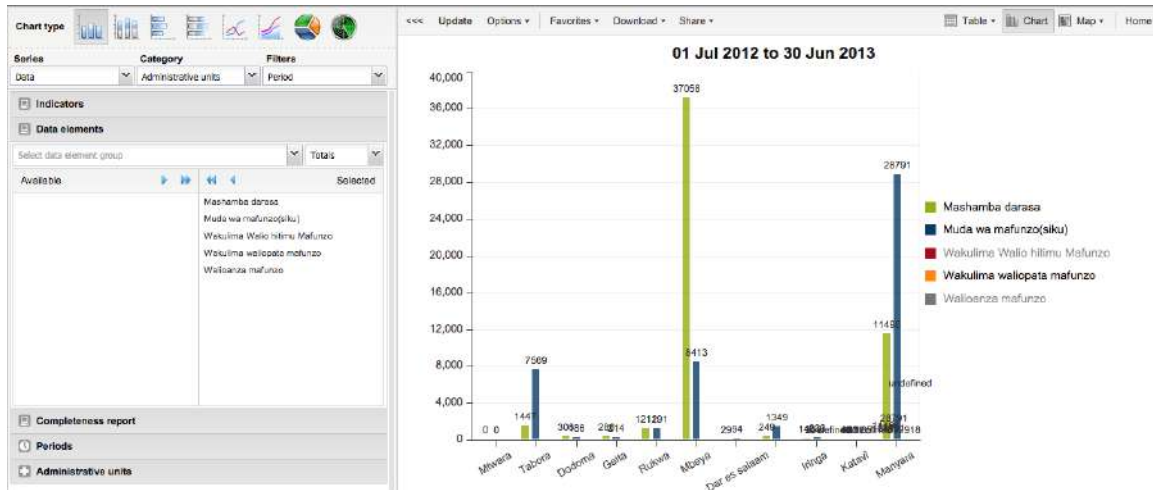


Figure 63: Data Visualizer

The data visualizer is designed firstly to be easy-to-use, you can simply select the Computed Values, data elements, periods and administrative units you want to include and click "Update" to get your visualization. Secondly it is designed to be fast and work well over poor Internet connections, charts are generated in the web browser and very little data is transferred over the Internet.

The Visualizer module provides eight different chart types, each with different characteristics. You can select the type of your chart by clicking on one of the icons in top left bar titled "Chart type". Chart Types consist of:

- Column chart
- Stacked Column Chart
- Bar Chart
- Stacked Bar Chart
- Line Chart
- Area Chart
- Pie Chart
- Radar Chart

9.1 Selecting Series, Category and filter

This section lets you define which dimension of the data you want to appear as series, category and filter. Dimension in this regard refers to the elements that describe the data values in the system. There are three main dimensions in the system:

- Data: Includes data elements and Computed Values, describing the phenomena or event of the data.
- Periods: Describes when the event took place.
- Administrative units: Describes where the event took place.

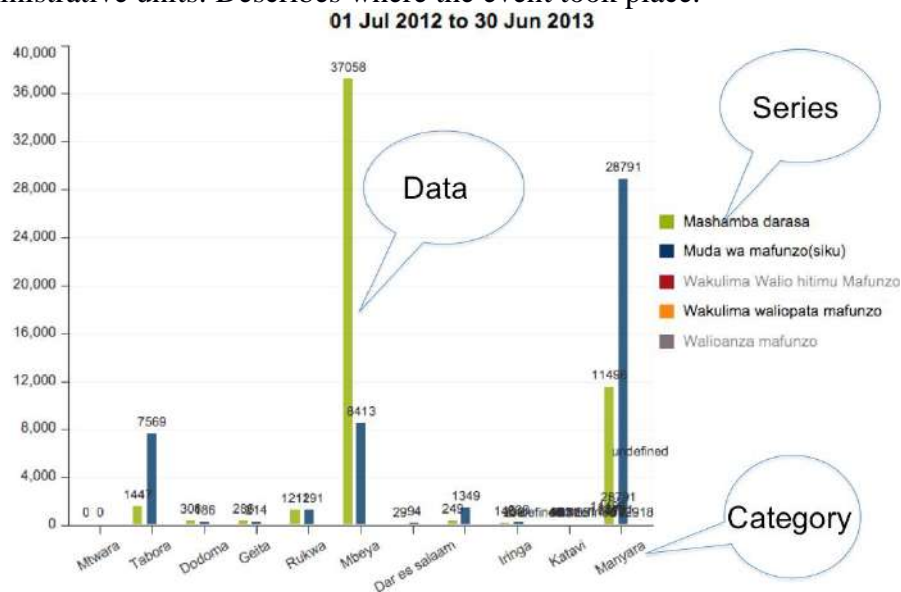


Figure 64: Series, Category and Filter in Data Visualizer

9.2 Selecting “What” Dimension of Data.

This is done in a similar way as in pivot table and involves the following:

- Selecting Computed Values
- Selecting Data element
- Selecting Reporting Rate

9.3 Selecting “Where” Aspect of Data i.e. Administrative unit

This is done in a similar way as in pivot table and involves the following:

- Choose Selection Mode for Administrative unit
 - By Levels (Select Levels) i.e. National, Regions, and Districts
 - By Groups i.e. if applicable
 - By Multiple selection (Select administrative unit) starts as default. Also, allows relative selection, e.g. User administrative unit or Users children administrative unit or User Grandchildren administrative unit.

9.4 Selecting “When” Aspect of Data i.e. Period

This is done in a similar way as in pivot table and involves the following:

- Choose Fixed Period by starting with “Select Period Type” i.e. Monthly, Quarterly, Annual (Financial July) followed by selecting the available fixed periods i.e. Months, Quarters, or Years
- Choose Relative Periods, i.e. Last 12 Months, last 3 Months, etc.

9.5 Selecting chart options

- You can set various chart options by clicking on the "Options" button the chart toolbar. The available options are:
 - Show trend line,
 - Show series data,
 - Target line value/title,

- Base line value/title,
- Show values,
- Hide chart legend,
- Hide chart title, Chart title,
- Domain axis label and Range axis label

9.6 Downloading chart as image or PDF

- After you have rendered a chart you can download it to your local computer as an image or pdf by clicking on "Download" on the top centre menu.
- The file will be automatically downloaded to your computer - for instance can you now embed the image file into a text document as part of a report.
- You can also download the data source behind the chart in json, xml, csv or Microsoft Excel format.

9.7 Saving chart as favorite

- Once you have rendered a chart you can save it as a favorite to be able to access it easily at a later point.
- Click on the "Favorites" button on the top menu to open up the favorites window.
- Click "Add new" and in the name field enter the desired name for your chart.
- The chart will be visible only to you.
- For every favorite in the list you have four options to the right.
- You can rename the chart (grey button), overwrite the chart (green button), modify the sharing settings of the chart (blue button) or delete the chart (red button).

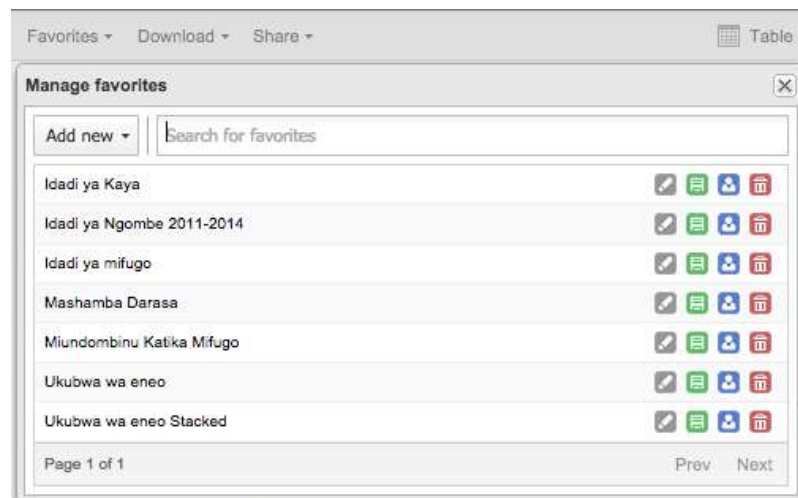


Figure 65: Manage Favorite Charts

- While in Data Visualizer, you may also navigate to pivot table, Map and Home Page through Table, Map and Home menus at the top left respectively.

10 GIS Map

Geographical Information System is a system designed to capture, store, manipulate, analyze, manage, and present all types of geographical/geospatial data. GIS is made up of spatial and non-spatial data, whereas spatial data refers to co-ordinate reference systems (CRS), which specify location of an object, and non-spatial data refers to attributes of that object. GIS allows merging of geographical and statistical information to enforce informed decision making. In ARDS Portal, GIS is used to merge data element and Computed Value statistical reports with geographical/geospatial data/ spatial data for National, Regional/LGA Level administrative boundaries. The following screenshot is an example of geographical map shows “Idadi ya ng’ombe waliochinjwa” in all Regions Tanzania on December 2018.

10.2 Creating a Map

To create a Map, you may follow the following simple steps:

1. Select items from the dimensions in the left menu.
2. Click update to create your map.
3. Define/ modify your legends.

10.2.1 Select the dimensions

The first step to create a map is to specify what data you want, for which period (when) and from which administrative unit (where). To select what data a user can choose to search from all data in the system or specify a particular type of data i.e. Data Elements, Computed Values.

Step 1: Selecting data.

- Select “All Data”: This is the default selection but if not selected you can click on “All Data” button to select it, which will allow you search for any data collected in ARDS Web Portal.
- Select Data Elements: If the data you are looking for is a raw data directly captured in any table of the data entry form except auto growing tables, then you can click to select “Data Elements”.
- Select “Computed”: If the data you are looking for is not directly captured from any of the data entry form but its value is computed from the data which is directly captured, then you can click to select “Computed”.

Please note the following: All other options above apart from selecting “All Data” will minimize the list of items from which you will be selecting from but only if you know type of the data you are looking for. Alternatively, you can follow these simple steps:

- *Once you select All Data, by default the system allows you to search data from all tables but if you know from which table does the data you are looking for is being collected, then you can select a specific table from the dropdown.*
- *If you know at least part of the name of the data you want you can type the name directly in the search field and the data items will filter as you continue typing.*
- *You can also use the search field to filter by entry form and-or table number. For example, you can type WF03 4.1 to list only data items in table 4.1 of Ward Annual Entry Form*

After you apply the filters you can now go through the list of available data items and click on the data you were looking for to move it to selected items. To unselect you can go through the list of selected items and click on the specific items to unselect. Alternatively, you can click on forward arrows or backward arrows to select or unselect all respectively.

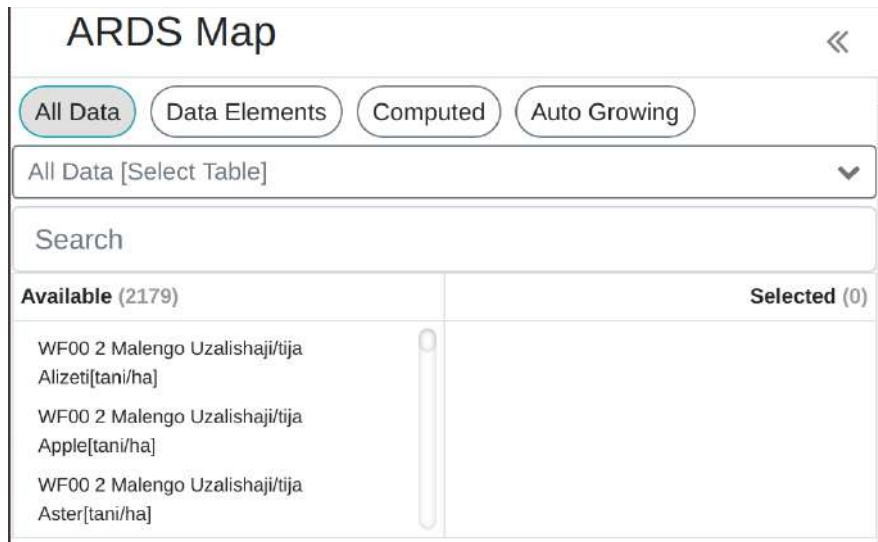


Figure 67: Select data dimension

Step 2: Select Periods

- Click on available options to select and click on selected periods to remove selection or you may click on forward arrows to select all and backward arrows to remove all selections. Please note the following:
 - Options of period you can select depends on the data selected. For example, if all data selected are from WF03 then you can only select financial year. If all data selected are from WF01 then you can select monthly or quarterly or annually.
 - In the drop down list you can select relative period which allows you to select a varying periods based on the recent date, such as this financial year, last financial year, etc.
 - You can click on “Prev Year” and “Next Year” to navigate back and for when you are looking for previous periods.

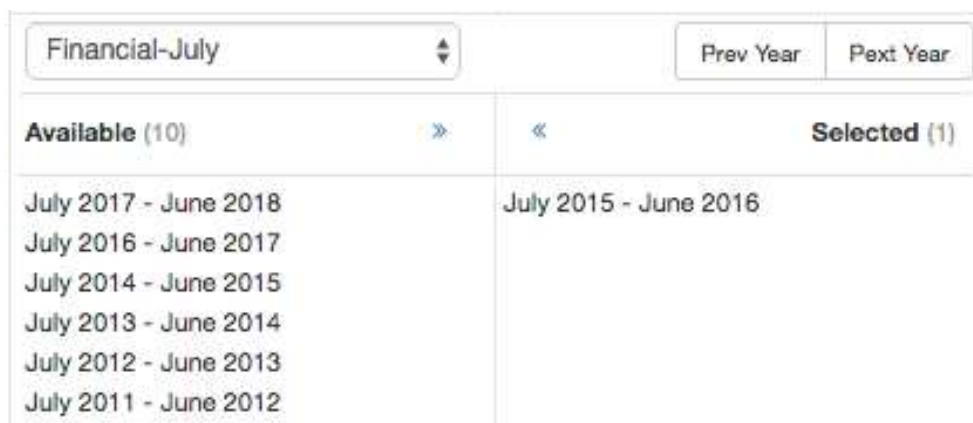


Figure 68: Select Period Menu

Step 3: Select Administrative Units

- You can quickly select the Administrative Unit(s) you want by clicking on the arrows to expand and click on a specific Administrative Unit to select or remove selection as shown below:

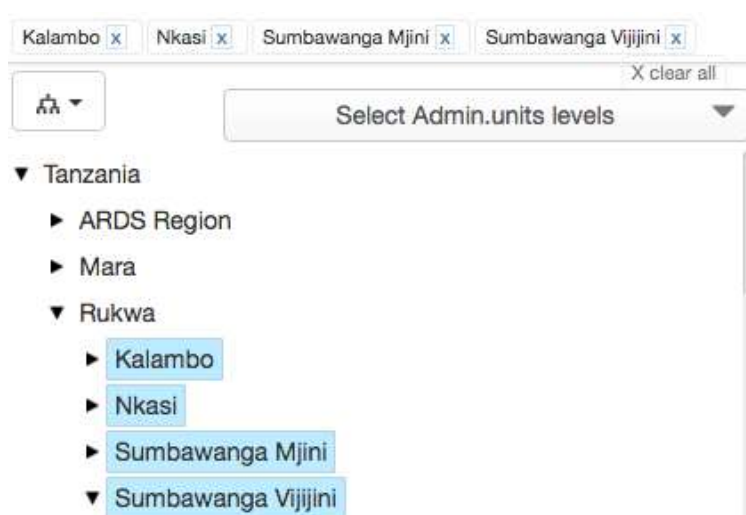


Figure 69: Select Administrative Units Menu

- Alternatively, you can select the parent Administrative Unit from the tree, click on the dropdown list on the left and click on “Select Level” then select to view region, district or ward from the dropdown located on the right. You can also click on “Select group” and select the particular group of Administrative Units, for example Rural or Urban.

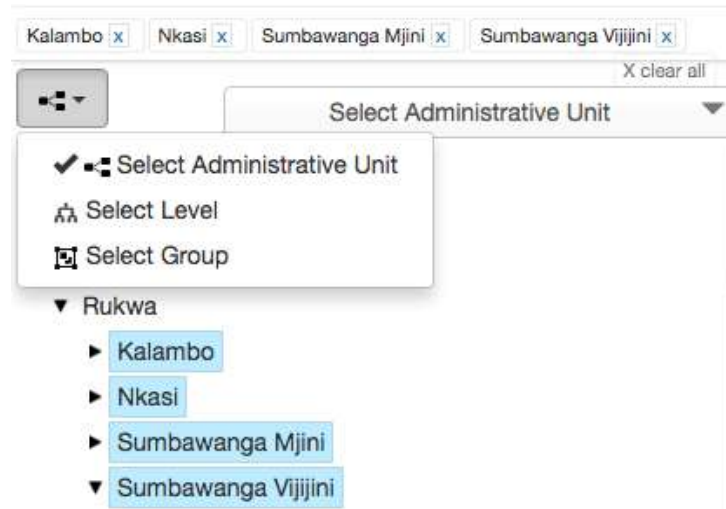


Figure 70: Select Administrative Unit by Level or Group

10.2.2 Define/ modify your legends

- One you are done selecting the data, period and administrative unit dimensions, you already know what data you want to analyze, when, from where and Clicking update to see the map.
- You can now click on the legends on your map and click the menu “filter by different dimensions” to get more options on legends.
- To exchange the dimensions in the layout simply click, hold then drag and drop to the right position, after that click on update to effect the changes.

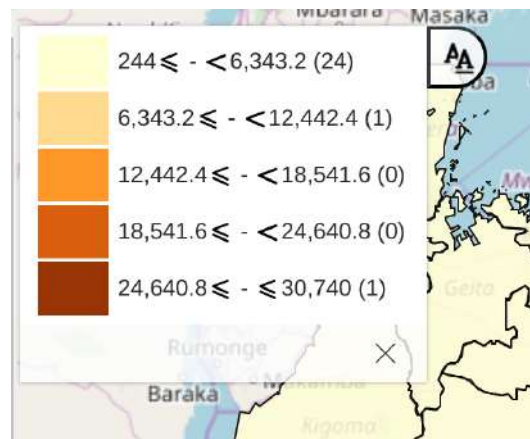


Figure 71: Legends

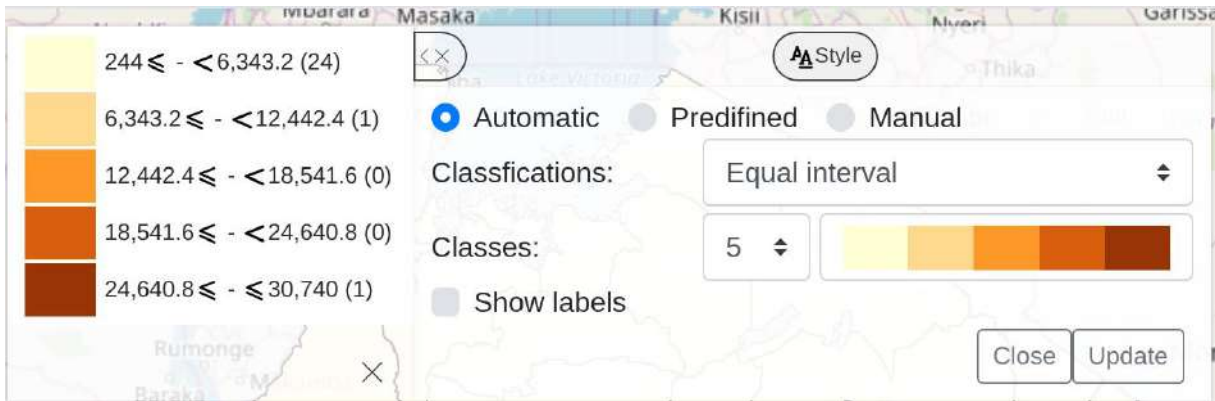


Figure 72: Legends Menu Options

10.3 Working with a GIS Map

10.3.1 Automatic, Predefined and Manual Legends

- You may select to use automatic legend where you can only specify:
 - Number of classes you wish to have to differentiate data in different range (the maximum number of classes is 9)
 - The low color and its size
 - High color and its size
- Thus, the legends auto generate the intermediate range/colors.

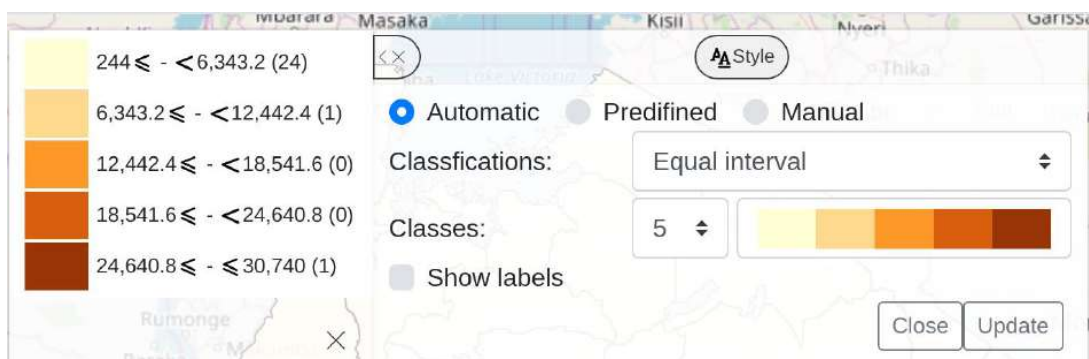


Figure 73: Automatic Legends

- You may define a custom legend then save and use it as predefined legend from the list of predefined Legends.

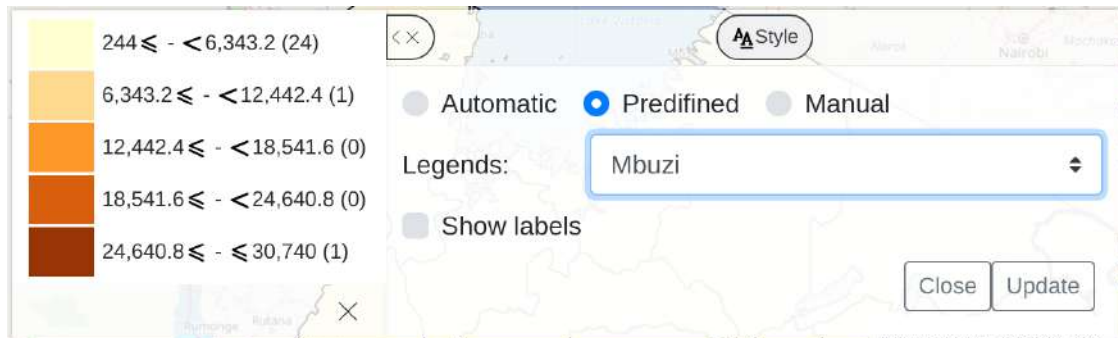


Figure 74: Predefined Legends

- You may define a Manual legend on the map, define color ranges, and then update your map on the spot with the manual legend. Also save and use it as manual legend from the list of manual Legends.

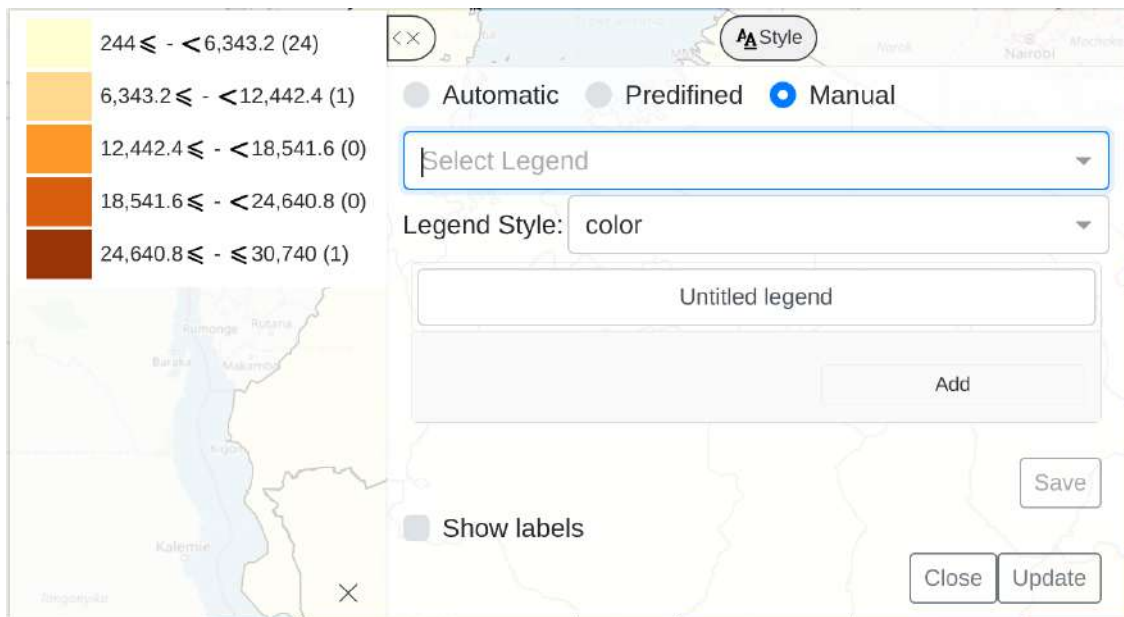


Figure 75: Manual Legends

10.3.2 Saving Favorite Map

- To create Favorite Map:
- Click the "Favorite" button on the toolbar to get the Favorites window.
- The first option is "New" which opens up a window where you are supposed to type the name of the favorite and create the favorite.
- A list of all available favorites including the one created above appears below the "New" menu with additional menu for each favorite to allow a user to rename, share and delete the favorite.

10.3.3 Save Map as Image

- To save or download map as an image;
- Click the "Save as Image" and an image is downloaded as PNG (image)

10.3.4 Output Usage for routine reporting

- The saved GIS Map Image can be re-used in reporting of ARDS data using different Office application suites such as Microsoft Office (PowerPoint, Word, Excel etc.), or other Non Microsoft Suite product like Open Office (Word, Calc, Impress, etc.),
- To re-use the saved Image on Microsoft office
 - Open Microsoft Office Word or PowerPoint.
 - Point where you want to place your map.
 - Go under insert menu, Select Picture to insert picture from file (Note: GIS Map. save the map to the download folder as image nameYouSpecified.png).
 - Browse your image from location you saved.
 - Insert the image in your work and it'll appear in your document.
- Then you can send your Report/Presentation with GIS Map.

11 Report

ARDS Portal provides a range of reporting alternative. The user can get standard reports as per administrative unit and ARDS reporting structure (Monthly, Quarterly and Annual). The report generated can be printed or exported to Excel and PDF. Archived Standard reports for past years reports Customized reports can be generated as per user's requirements where a user can customize look and feel of different reports using jaspersoft iReport tool. Submission and creation status report as per administrative unit. Also user can generate/ download Static tables. Each method gives detailed information, which can be used in analyzing the data you have in the system.

- To generate report left click on the Report Menu of the home page and list of available report types will appear, which includes options to generate ARDS standard reports, custom reports and Submission and Creation Status.

Note: Report module also supports Data Approval and Aggregation. If there is new data that have been submitted, aggregation should take place as per schedule or on demand before viewing the report. Details of Aggregation and Data Approval process are explained in the section 5.4 and 6 respectively.

11.1 Generating and Approving Standard Report

Standard Reports gives ARDS original reports. Essentially, it is a report of datasets filled with either raw or aggregated data. Only available for the following forms that mimic the original ARDS reports:

1. District/Region Monthly Report (DR01/RR01)
2. District/Region Quarterly Report (DR02/RR02)
3. District/Region Annual Report (DR03/RR03)
4. District, Regional and National Quarterly Integrated Report (DIR02, RIR02 and NIR02)
5. District, Regional and National Annual Integrated Report (DIR03, RIR03 and NIR03)

11.1.1 Generating a District or Region Report

To generate district or region report i.e. DR01, DR02, DR03, RR01, RR02, or RR03 use the following steps:

1. Select Standard Report and the menus shown below will appear. Use the menus to specify the type of district or region report you want.

Note: *District and Region Monthly, Quarterly or Annual Report are three reports available for the district or region level.*

- *That is District and Region Monthly Report are similar reports obtained by selecting a district or a region respectively.*
- *District and Region Quarterly Report are similar reports obtained by selecting a district or a region respectively.*

- *District and Region Annual Report are similar reports obtained by selecting a district or region respectively.*

For example, if you need District Annual Report of Arusha Mjini for July 2014 – June 2015 continue as follows.

2. On the report select District/Region Annual Report (DR03/RR03) so as to use standard forms and table of the District/Region Annual Reports.
3. On the report period select annual and choose which annual for example July 2014 - June 2015 in the diagram below.
4. Navigate through the administrative unit's tree menu and select the respective district: Tanzania → Arusha → Arusha Mjini.

Note: *If you want Region Annual Report (RR03) then navigate through the administrative unit's tree and select the respective region instead of a district. If you have selected a District/Region Monthly Report (DR01/RR01), District/Region Quarterly Report (DR02/RR02) or District/Region Annual Report (DR03/RR03) form and try to select national or ward from the tree you will be notified accordingly.*

The screenshot shows a web interface titled "Standard Report" with a help icon. It contains three main sections:

- Report:** A dropdown menu currently set to "District/Region Annual Report (DR03/RR03)".
- Report Period:** A dropdown menu set to "July 2014 - June 2015", with "Prev year" and "Next year" buttons to its right.
- Report Administrative Units:** A tree view where "Arusha Mjini" is selected and expanded, showing a list of sub-units: Baraa, Daraja Mbili, Elerai, Engutoto, and Kaloleni.

 At the bottom of the form are two buttons: "Get Report" and "Cancel".

Figure 76: Creating ARDS Standard Report

5. Then left click on Get Report to generate the report

6. If the report was already created the system display the report and provide the following options, otherwise if you are responsible for that report you can preview and-or create report as explained in the respective section.

Change Criteria Print Download Excel Undo Report Creation Approve

Regional Officers Comments

Write Your Comment Here

District Officers Comments

Write Your Comment Here

Edit

Figure 77: User Options for a Created District Annual Report

11.1.1.1 Approve district or region report

Click on “Approve” to approve the report if you are satisfied with the report and you are responsible for approving report or “Disapprove” to disapprove. Note that a region user can approve and disapprove all his/her districts and national user can approve all regional reports.

Note: *Once a district or region report is approved, a user cannot undo creation of that report and the related reports unless it is disapproved first.*

11.1.1.2 Comment on district or region report

A regional or district officer can click on Edit, write a comment in the respective field and then save. Please note the following:

- Comments on the reports by the region officer can be edited only by the region officer or an administrator, a district officer cannot edit the comments.
- Comments on the reports by the district officer can be edited only by the district officer, the region officer, or the administrator.

11.1.1.3 Print a district or region report

You can use print button to save your report in PDF format or print the report for other uses.

11.1.1.4 Download a district or region report in Excel format

You can use Download Excel button to save the report in Excel format for further uses or manipulation using spreadsheet applications such as Microsoft Excel. Depending on the internet browser application the you are using, the file will automatically be saved to downloads folder or you will be asked to browse and select a folder to save the downloaded Excel file.

11.1.1.5 Change criteria to select another report

If you want to generate another report, click on “Change Criteria” button to send you back to the data criteria selection screen and select another report.

11.1.2 Create a District or Region Report

If the report was not already created the system bring a report creation screen. District report creation screen gives completeness summary as shown in the following figure:

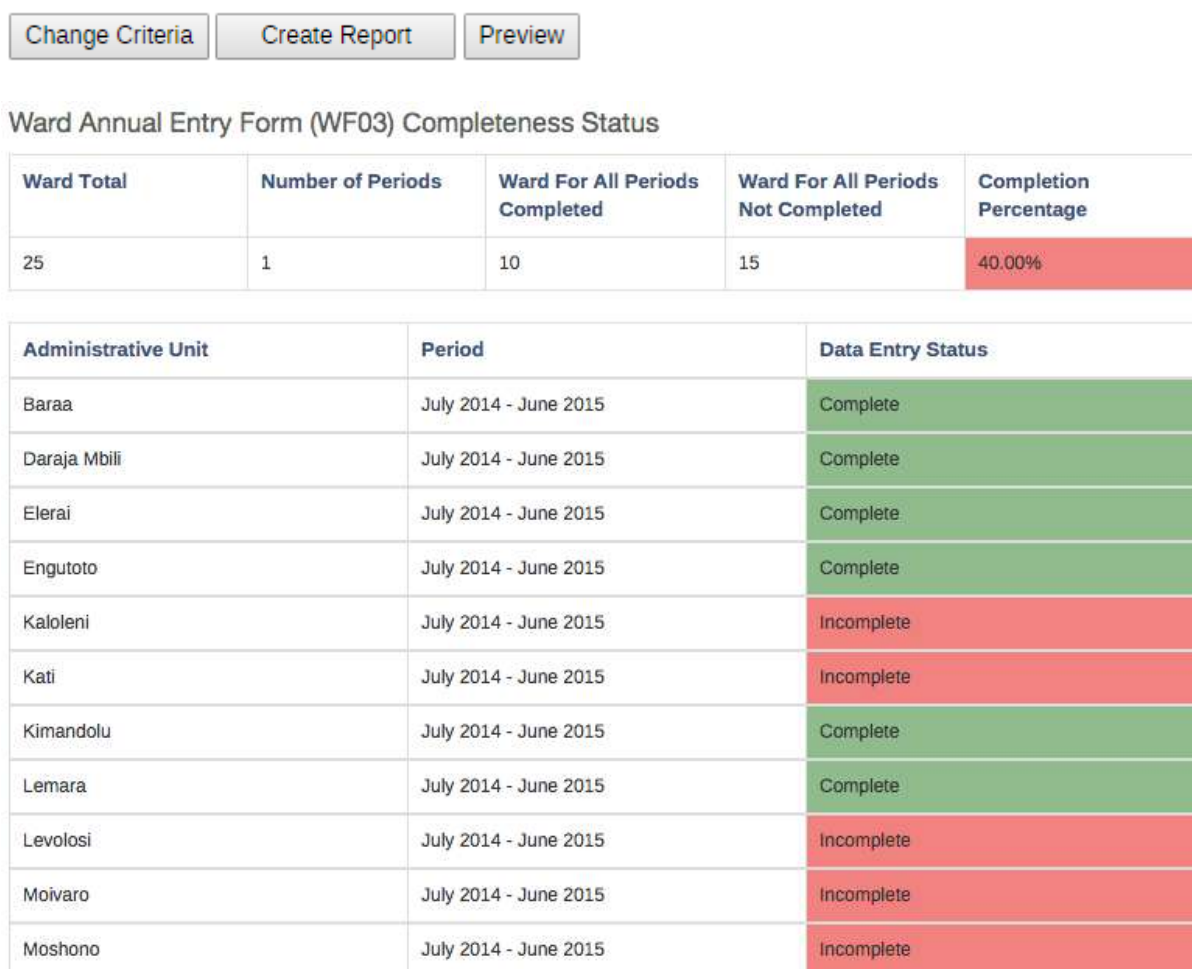


Figure 78: Entry Form Completion Status Screen with an Option to Create or Preview the District Report

Note: District Reports (DR01, DR02 and DR03) displays summary and list of wards and periods (month, quarter or year) with data entry status whether complete or incomplete.

District/Region Annual Report (DR03/RR03) Report Status

Administrative Unit	Period	Report Status
Kalambo	July 2014 - June 2015	In Progress Cancel Creation
Nkasi	July 2014 - June 2015	Not Created Create
Sumbawanga Mjini	July 2014 - June 2015	Not Created Create

Figure 79: Creation Status Screen with an Option to Preview the Region Report or Create Related District Reports

Note: Region Reports (RR01, RR02 and RR03) displays list of districts and periods (month, quarter or year) with creation status whether created, in progress or not created.

11.1.2.1 Preview a district or region report

If you are a district or region user responsible for that report or a super user the system will then allow you to preview report if you click on “preview” button. Otherwise you will only be allowed to change criteria. Change Criteria send you back to the data criteria selection screen to select another report.

Note: *If you select to preview the report the system will display the draft of the report as per the data which have been submitted and estimated the day before when you preview the report. This is because report aggregation process, which includes estimation, aggregation and archiving have been scheduled to run overnight. This setup is in order to maximize its efficiency as well as preventing disturbance to other users as the process may keep the server busy.*

ⓘ This is a preview copy of the reports.
 District/Region Annual Report (DR03/RR03)
 July 2014 - June 2015
 Arusha Mjini

OFISI YA RAIS - TAWALA ZA MIKOA NA SERIKALI ZA MITAA

PRESIDENT'S OFFICE - REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT (PO-RALG)



FOMU YA TAARIFA YA MPANGO WA MAENDELEO YA KILIMO WA KIJIKI/KATA

Jina la Afsa Ugani:

Mnamba	Regius Kalyelye
Mambwe Nkoswe	Jonathan Elieza
Mwimbi	Amina Chimela

Figure 80: An example of Part of the Report Preview

11.1.2.2 Request creation of a district or region report

If you are a district user responsible for that report or a super user the system will then allow you to create report if you click on “create” button. Otherwise you will only be allowed to change criteria. Change Criteria send you back to the data criteria selection screen to select another report.

If all wards have submitted (completed) and you are satisfied with the district report or you do not expect any more data submission from the wards, then you can select “Create Report” button to store the report in the archive so that you can easily access it later when you click Get Report. Below is the response you will get when a request to create report is successful. This means the report will be created and archived overnight and you will be able to retrieve the report from archive the next day.

District/Region Annual Report (DR03/RR03)

Kalambo

July 2014 - June 2015

Info! Report creation has been scheduled.

Figure 81: Report Creation Progress Status

Note: Region Reports are automatically created once all respective district reports are created thus “Create Report” button is always disabled.

11.1.2.3 Request creation of all districts report for a region

For Region Reports an administrative user will also see “Create” button in front of each district report that is not created and can click on it to request creation of the particular district report.

Besides s/he can click on “Create All District Reports” button to request creation of all respective district reports for the specific region and period.

11.1.2.4 Cancel a request for report creation

If a user opens a district report and the report was requested to be created but it is not created yet, the screen will appear with information that “Report creation has been scheduled” with a “Cancel Report Creation” button.

If a user opens a region report, on the creation status screen, if any district report was requested to be created but it is not created yet it will appear with the status “In Progress” with a “Cancel Creation” button in.

In either of the case above, if necessary a user can choose to cancel a request for creation which is still in progress by clicking on cancel button.

11.1.2.5 View all requests of report creation

If you are a privileged user you can view a list of all pending requests for report creation. To view the list, follow this step:

- a. Select Aggregation from the left side panel in the report module. If you do not see the “Aggregation” button then your access level does not have such privilege.
- b. If there are pending requests for report creation, a list of those scheduled reports will be listed.
- c. In front of each report in the list there is a “Cancel Report Creation” button, which allows you to cancel the request(s) if necessary.

Scheduled Reports

District/Region Annual Report (DR03/RR03)

Administrative Unit	Period	Action
Tanzania - Rukwa - Kalambo	July 2014 - June 2015	Cancel Report Creation

Aggregation tables management

Aggregation tables update

Start

Figure 82: Starting on Demand Aggregation

11.1.2.6 Run on demand aggregation

If you just finished entering data and-or you requested to create a report and you would like to see the data in the report you created in the same day, then you have to run on demand aggregation. Follow this step:

- a. Once you are done entering the data create the District Report(s) that you want to see the data (follow steps in section 11.1.2).
- b. Select Aggregation from the left side panel in the report module. If you do not see the “Aggregation” button then your access level does not have such privilege.
- c. If the list of scheduled reports is fine and you want to continue run the aggregation then Click on “Start”
- d. Once the aggregation is completed you will see the green tick icon and the details as shown below.
- e. Select Standard Report from the left side panel and follow steps in section 11.1.1 to open the report.

Note: On Demand Aggregation process, will estimate data, update aggregation table and archive the report just the same as what is done by the scheduled aggregation which run overnight. The aggregation applies only to the data of districts that have requested to create District Report(s) and not all data in the system. Therefore, if there is no any request for report creation the on demand aggregation will not run.

Aggregation tables management

Aggregation tables update

Start Export

```
2016-07-16 11:15:47 : The Aggregation Operation is complete 
2016-07-16 11:15:47 : clearing cache
2016-07-16 11:15:47 : Done Archiving Intergrated Report for Bird District For 2014Q4
2016-07-16 11:15:46 : Archiving Intergrated Report for Bird District For 2014Q4
2016-07-16 11:15:45 : Done Archiving Report for Bird District
2016-07-16 11:15:41 : Archiving Report for Bird District
2016-07-16 11:15:40 : Analytics is done, restoring old data values and starting the Archiving Process
2016-07-16 11:15:19 : Initiating Analytics -> Check status on right side ->
2016-07-16 11:15:18 : Initiating Analytics -> Check status on right side ->
2016-07-16 11:15:16 : Done Saving Estimated data for Bird District for 201412
2016-07-16 11:15:16 : Saving Estimated data for Bird District for 201412
2016-07-16 11:15:16 : Done Estimating data for Bird District for 201412
2016-07-16 11:15:16 : deleting actual data for incomplete wards from Bird District for 201412
2016-07-16 11:15:12 : Estimating data for Bird District for 201412
2016-07-16 11:15:12 : deleting old estimated data for all wards Bird District for 201412
2016-07-16 11:15:11 : Estimating data for 1 Districts reports
2016-07-16 11:15:11 : getting list of reports to estimate
```

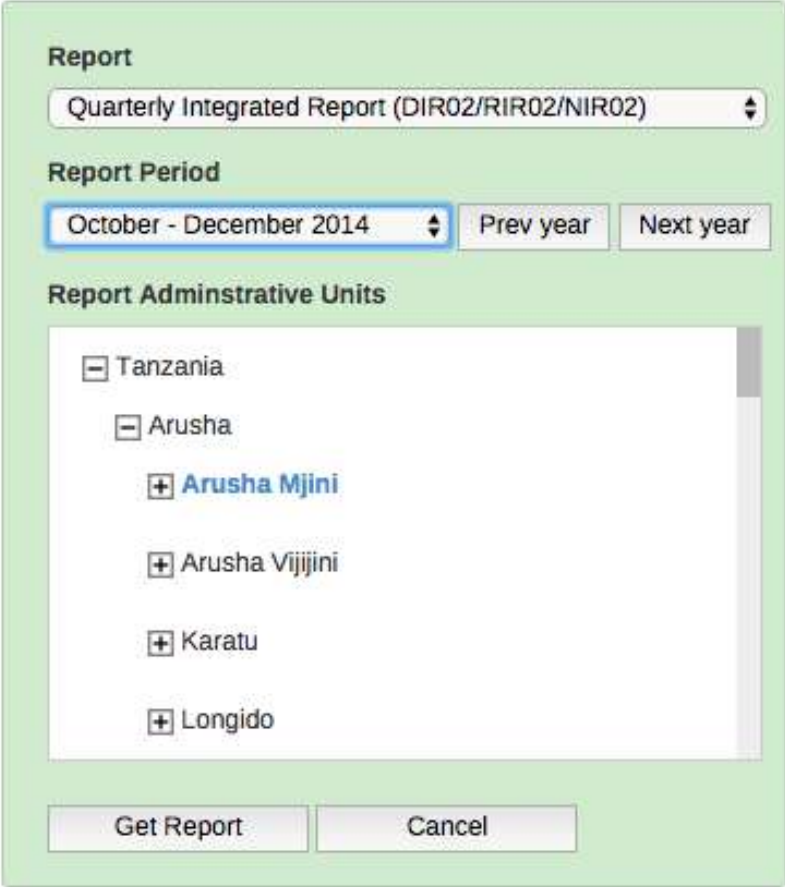
Figure 83: On Demand Aggregation Successful Completed

11.1.3 Generating an Integrated Report

To generate integrated report i.e. DIR02, RIR02, NIR02, DIR03, RIR03 or NIR03 use the following steps:

1. Select Standard Report and the menus shown below will appear. Use the menus to specify the type of integrated report you want. *For example, if you need District Quarterly Integrated Report of Arusha Mjini for October – December 2014 continue as follows.*
2. On the report select Quarterly Integrated Report (DIR02/RIR02/NIR02) so as to use standard forms and table of the District Quarterly Integrated Reports.
3. On the report period choose which quarter for example October – December 2014 in the diagram below.
4. Navigate through the administrative unit's tree menu: Tanzania → Arusha → Arusha Mjini.

Note: If you have selected a district report form and try to select national, region or ward from the tree you will be notified accordingly.



The screenshot shows a web-based interface for generating a report. It has a light green background. At the top, there is a section titled "Report" with a dropdown menu currently showing "Quarterly Integrated Report (DIR02/RIR02/NIR02)". Below this is a section titled "Report Period" with a dropdown menu showing "October - December 2014" and two buttons: "Prev year" and "Next year". The third section is titled "Report Administrative Units" and contains a tree view with the following items: "Tanzania" (expanded), "Arusha" (expanded), "Arusha Mjini" (selected and highlighted in blue), "Arusha Vijijini", "Karatu", and "Longido". At the bottom of the interface are two buttons: "Get Report" and "Cancel".

Figure 84: Selecting District Integrated Quarterly Report

5. Then left click on Get Report to generate the report.

6. If the report was already created the system display the report and provide the following options, otherwise if you are responsible for that report you can preview report as explained in the respective section.

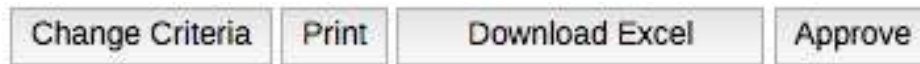


Figure 85: Features on the Created Integration Report

***Note:** If the report is already created means that the respective District Report(s) was already created and the respective District Form was completed, so you cannot edit the corresponding entry forms. For the example above, if the report is created means that DR01 for October, November and December 2014 was already created and DF02 for October - December 2014 was completed. Consequently, you cannot edit Ward monthly entry form of any wards of Arusha Mjini for October, November and December 2014. Also, you cannot edit DF02 for Arusha Mjini for October – December 2014.*

11.1.3.1 Approve the integrated report

Click on “Approve” to approve the report if you are satisfied with the report and you are responsible for approving report or “Disapprove” to disapprove. Note that a region user can approve and disapprove all his/her districts and national user can approve all regional reports.

***Note:** Once an integrated report is approved a user cannot undo creation of the corresponding district reports. For the example above, if the report is approved means a user cannot undo DR01 for October, November and December 2014.*

11.1.3.2 Comment on the integrated report

A regional or district officer can click on Edit, write a comment in the respective field and then save. Please note the following:

- Comments on the reports by the region officer can be edited only by the region officer or an administrator, a district officer cannot edit the comments.
- Comments on the reports by the district officer can be edited only by the district officer, the region officer, or the administrator.

11.1.3.3 Print the integrated report

You can use print button to save your report in PDF format or print the report for other uses.

11.1.3.4 Download the integrated report in Excel format

You can use Download Excel button to save the report in Excel format for further uses or manipulation using spreadsheet applications such as Microsoft Excel. Depending on the internet browser application the you are using, the file will automatically be saved to downloads folder or you will be asked to browse and select a folder to save the downloaded Excel file.

11.1.3.5 Change criteria to select another report

If you want to generate another report, click on “Change Criteria” button to send you back to the data criteria selection screen and select another report.

The screenshot displays a user interface for report management. At the top, there are four buttons: 'Change Criteria', 'Print', 'Download Excel', and 'Approve'. Below these buttons, there are two text input fields. The first is labeled 'Regional Officers Comments' and contains the placeholder text 'Write Your Comment Here'. The second is labeled 'District Officers Comments' and also contains the placeholder text 'Write Your Comment Here'. Below the 'District Officers Comments' field, there is a green 'Edit' button.

Figure 86: Options Displayed when an Integrated Report is already Created.

11.1.4 Create an Integrated Report

You may not that there is no button to create or undo creation of an Integrated Report, this is because the system automatically creates DIR if respective DF is marked as complete by the user and respective district reports are created:

11.1.4.1 Create a quarterly district integrated report

DIR02 is automatically created when 3 DR01s (single quarter) are created and the respective DF02 is completed.

11.1.4.2 Create an annual district integrated report

DIR03 is automatically created when the respective 4 DR02s (single fiscal year) and 1 DR03 are created and the respective DF03 be completed.

11.1.4.3 Create a quarterly regional and national integrated report

RIR02 is automatically created and archived when all respective district integrated reports (DIR02s) for the specific region and period are created.

NIR02 is automatically created and archived when all respective regional integrated reports (RIR02s) for the Tanzania and respective period are created.

11.1.4.4 Create an annual regional and national integrated report

RIR03 is automatically created and archived when all respective district integrated reports (DIR03s) for the specific region and period are created.

NIR03 is automatically created and archived when all respective regional integrated reports (RIR03s) for the Tanzania and respective period are created.

Note: Whenever a report is created is archived and stored in the system and that is why when you request a report which was already created you get the report in a PDF or download it in Excel format which has been retrieved from the archive. This report archiving process which is done when the report is created help you to retrieve the report at any time with its original administrative unit even if there was administrative unit change.

If the selected integrated report was not already created, the system will display the Report Creation and completeness status screen.

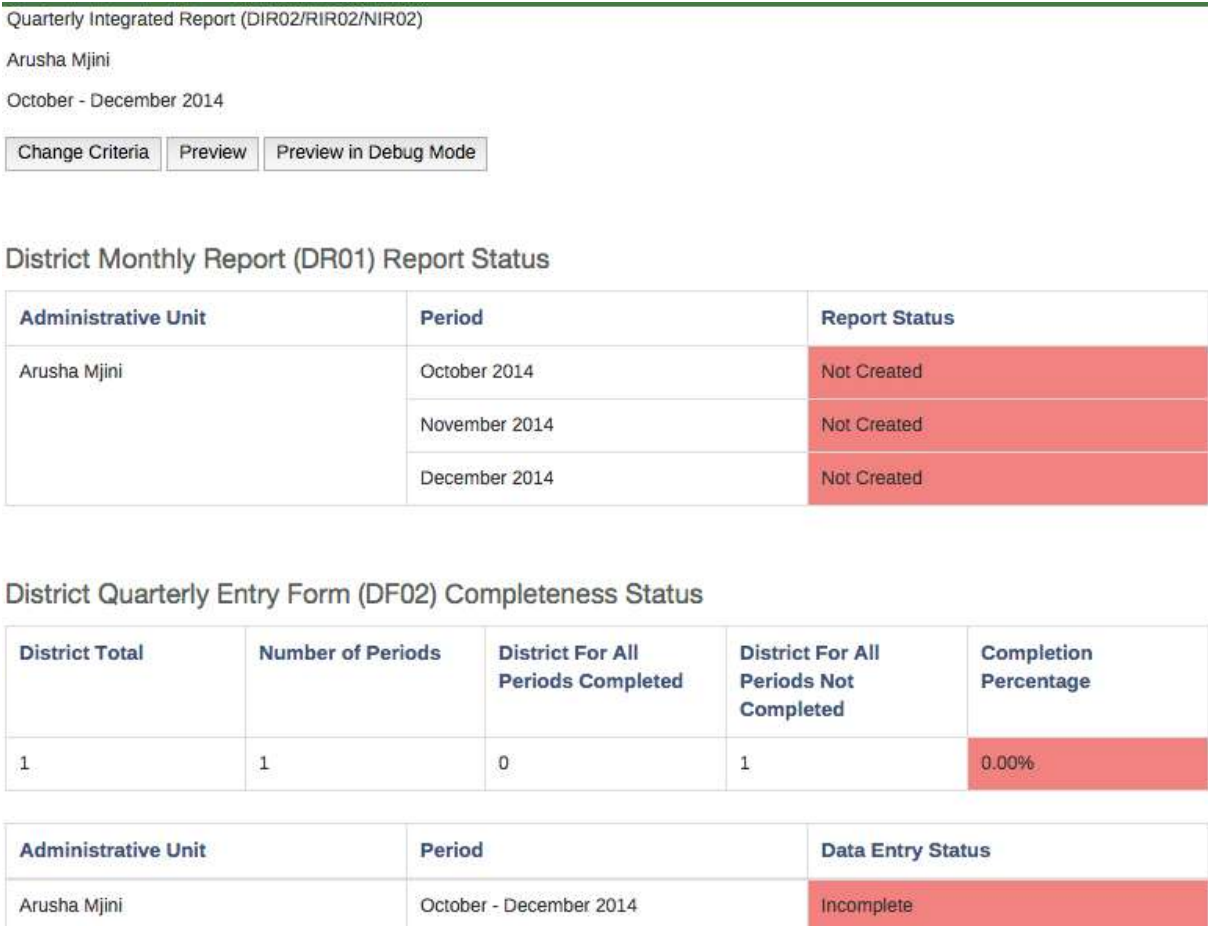


Figure 87: Form Completion and District Report Creation Status for DIR02

11.1.4.5 DIR Creation and completeness status screen

- District Quarterly Integrated Reports displays DF02 completeness status for the given quarter and district and list of DR01 for the three months in the given quarter with report creation status whether created, in progress or not created. See the figure above.
- District Annual Integrated Report displays DF03 completeness status for the given year and district. DR03 report status for the given year and district i.e. whether created, in

progress or not created. List of DR02 for the four quarters in the given year with report creation status i.e. whether created, in progress or not created. See the figure below.

11.1.4.6 RIR and NIR Creation and completeness status screen

- Regional and National Quarterly Integrated Report displays DIR02 and RIR02 report creation respectively for the given quarter and region or national i.e. whether created or not created.
- Regional and National Annual Integrated Report displays DIR03 and RIR03 report creation status respectively for the given year and region or national i.e. whether created or not created.

District Annual Entry Form (DF03) Completeness Status

District Total	Number of Periods	District For All Periods Completed	District For All Periods Not Completed	Completion Percentage
1	1	1	0	100.00%

Administrative Unit	Period	Data Entry Status
Arusha Mjini	July 2014 - June 2015	Complete

District Annual Report (DR03) Report Status

Administrative Unit	Period	Report Status
Arusha Mjini	July 2014 - June 2015	Not Created

District Quarterly Report (DR02) Report Status

Administrative Unit	Period	Report Status
Arusha Mjini	July - September 2014	Not Created
	October - December 2014	Not Created
	January - March 2015	Not Created
	April - June 2015	Not Created

Ward Annual Entry Form (WF03) Completeness Status

Ward Total	Number of Periods	Ward For All Periods Completed	Ward For All Periods Not Completed	Completion Percentage
25	1	10	15	40.00%

Figure 88: Form Completion and District Report Creation Status for DIR03

11.1.4.7 Preview an integrated report

If you are a user responsible for that report or a super user the system will then allow you to preview report if you click on “preview” button. Otherwise you will only be allowed to change criteria. Change Criteria send you back to the data criteria selection screen to select another report.

11.1.4.8 Create all district reports for an integrated report

You may not that there is no button to create or undo creation of an Integrated Report. This is because of the following:

- District Quarterly and Annual Integrated reports are automatically created once all respective district report(s) are created and respective DF(s) are completed.
- Regional/national Quarterly and Annual Integrated reports are automatically created once all respective district and regional integrated report(s) are created.

Besides, for DIR, a privileged user will also see “Create” button in front of each district report that is not created and can click on it to request creation of the particular district report. Also, a user can choose to cancel a request for creation which is still in progress by clicking on “Cancel Creation” button.

For DIR, RIR and NIR, a privileged user will also see a “Create All District Reports” button at the top right of the creation and completeness status screen. A user can click to request creation of all respective district reports for the specific district, region or Tanzania and for the corresponding period.

11.1.5 View/Write Comment on a Standard Report

Region officers can comment on LGA in the standard report once it has been created and LGA can look at the comment and act accordingly. To view or write comment do the following;

1. Open the report you want review and comment through similar steps for opening the report. For example, step 1 to 6 in section 11.1. Note that, the report should have been created by the LGA so that Region Officer can view it and comment.
2. Once a report is displayed you will see the comment at the top if exist.
3. Click on “Edit” below the comment field and the following screen will appear where you can type the comment if you want to provide feedback to the LGA.

Please note the following:

- A regional officer can click on Edit, write a comment in the Regional Officers Comments field and then save.
- A district officer can see the comment from the regional officer, click on Edit then write a comment in the District Officers Comments field and then save.
- Comments on the reports by the region officer can be edited only by the region officer or an administrator, a district officer cannot edit the comments.
- Comments on the reports by the district officer can be edited only by the district officer, the region officer, or the administrator.

Regional Officers Comments

Write Your Comment Here

District Officers Comments

Write Your Comment Here

Edit

Figure 89: Regional Officer Writing Comment

4. Click on Save changes to send the comment.
5. To view the comment, follow step 1 to 2 above and you will see the comment if it exists. If a user wants to respond on or add the comment can just click on “Edit” and type below the previous comment and then “Save changes”.

Figure 90: LGA Viewing Comment and Respond

11.2 Generating/ Viewing Archived Standard Report

Archived Standard Reports interface provides a means whereby Archived Reports can be retrieved even if the administrative unit no longer exists in the database. Essentially it contain the following forms that mimic the original ARDS reports:

- District/Region Monthly Report (DR01/RR01)
- District/Region Quarterly Report (DR02/RR02)
- District/Region Annual Report (DR03/RR03)
- District, Regional and National Quarterly Integrated Report (DIR02, RIR02 and NIR02)
- District, Regional and National Annual Integrated Report (DIR03, RIR03 and NIR03)

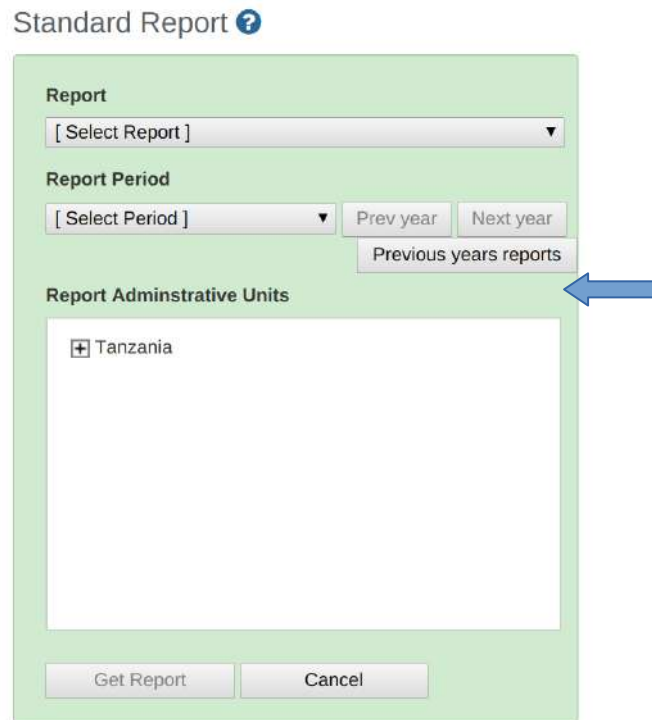


Figure 91: Archived Report Button

11.2.1 Generating a District or Region Archived Report

- Click on “Report” on the menu bar.
- Select “Standard reports.
- Click on the “Previous years report” button.
- Select the previous fiscal year of interest.
- Select preferred report, DR01, RR01, DR02, DR03, DIR02, Etc..
- Select period and appropriate administrative unit as per report.
- Click “get report” button.

Change Fiscal Year 2017-2018 ▼

Report

[Select Data Set] ▼

Report Period

[Select Period] ▼ Current year reports

Report Administrative Units

▶ Tanzania

Get Report
Cancel

Figure 92: Interface to get Archived Reports

11.3 Generating Static Tables

At the end of every fiscal year, the data based on the administrative boundary for the year are copied from corresponding standard reports to the new tables called Static tables. There are static tables for the following;

- Crops (All Crops in WF01 Table 2.1)
- Livestock (Livestock Population, Livestock slaughtered)
- Animal Products (Egg, Milk, Hide and skin)

Static tables

Historical data from 2016/2017 to 2018/2019

Debug

1. Crops

2. Livestock

3. Animal Products

Figure 93: Static Tables Interface

11.3.1 Generating a District or Region Archived Report

- Click on “Report” on the menu bar.
- Select “Static Tables” from the menu.
- Select the category of interest, Crops/ Livestock/ Animal Products.
- Click “Download” button on the static table you need.

1. Crops	
Name of Crop(i)	Action
1.1 Cereals	
Maize	Download
Paddy	Download
Sorghum	Download
Bulrush Millet	Download
Finger Millet	Download
Wheat	Download

Figure 94: Sample Static Tables for Crops

- Once “Download” button has been clicked, an Excel file of the respective Table will be downloaded.

11.4 Creating Custom Report

11.4.1 Create a New Custom Report

- You can also create a new Custom Report by left clicking on the Add new button and add in details as shown in the figure below.
- For example, you may select to use Jasper report where as you have to design the report template by using Jasper iReport tool and upload the template as a design file
- You may also choose report table that you what to be used in your custom report
- Then save the report which will then be available for the next step outline below.

Create new report

This object will be created with public edit and view rights

Details

Name

Type Jasper report with report table data source ▼

Design file No file chosen

Report Table [None] ▼

Figure 95: Define New Custom Report

11.4.2 Access Available Custom Report

- You access the available reports from the main menu, by selecting Reports.
- In the report select Custom Report. A list of all pre-defined reports will appear in the main window.
- From a list of all pre-defined reports you create a report you want.
- You will then see a report parameter window where you must fill in the values needed for administrative units and/or reporting month, depending on what has been defined in the underlying report table(s).
- Click on "Get Report" when you are ready.
- The report will appear directly in your browser or be available as a .pdf file for download, depending on your browser settings for handling pdf files.
- You can save the file and keep it locally on your computer for later use.

Filter by name

Name ▼

Figure 96: Display Existing Custom Reports

11.5 Submission and Creation Status Report

Essentially, it shows report submission and creation status. Submission Status Report will show how many entry forms have been submitted and-or how many reports have been created by administrative units according to completed entry forms or created reports respectively.

It also shows the timely form submission and report creation rate for the administrative unit.

11.5.1 Creating Submission and Creation Status Report

The report is accessible through the report menu in the main menu. Select Submission and Creation Status and follow these steps:

1. Select the administrative unit from the tree. (Where?).
2. Select administrative unit children.
Please note the following:
 - *The report is by default set to display submission and-or creation status for each child of the selected administrative unit and the summary for the parent.*
 - *However, a user can to see status for each grandchild and a summary for the parent by changing what to show under “Administrative unit children” dropdown.*
 - *For example, if a user selects Tanzania then by default will get status for each region and a summary for Tanzania. But a user can select “Show districts” Under the “Administrative unit children” and will get status for each district and a summary for Tanzania.*
3. Select a data entry form or report you want to see its submission or creation status respectively (What?)
4. Select a period type and a period from the list of available periods for that period type. (When?). Note that the type and period you can select depends on the entry form submission or report creation status selected.
5. Select date of report. This option allows you to retrieve report submission rates (or report creation rates) as of the date you specify, otherwise the default action will be displaying submission or creation status as of the current date.
6. Finally click the get report button.
7. You can download the report as excel or pdf file.
8. Select to show more options if you want to display the officer in charge of the particular administrative unit (AU) area and-or you want to display AUs with their hierarchy.

Submission and Creation Status ?

The screenshot shows a web interface for viewing submission and creation status. It includes several sections with green arrows and text boxes indicating steps:

- Administrative unit:** A tree view showing Tanzania > ARDS Region > Mara > Rukwa. An arrow points to Rukwa with the text "1. Select AU".
- Hide Options:** Two checkboxes: "Show person in charge" and "Show Hierarchy". An arrow points to the "Show Hierarchy" checkbox with the text "8. Select to see officer in charge of the AU or display in hierarchy".
- Administrative unit children:** A dropdown menu currently showing "Show Districts". An arrow points to it with the text "2. Select to show regions or districts".
- Entry form / Report:** A dropdown menu showing "Ward Annual Entry Form (WF03) Submission". An arrow points to it with the text "3. Select entry form or report".
- Period:** A dropdown menu showing "Financial-July". An arrow points to it with the text "4. Select period type then period".
- Date of report:** A date field showing "29 Aug 20" with a close icon. An arrow points to it with the text "5. Select status as of which date".
- Buttons:** A "Get report" button and a "PDF" button. An arrow points to "Get report" with the text "6. Display report". Another arrow points to "PDF" with the text "7. Open as PDF or Print".

Figure 97: Selecting Entry Form or Report to View Submission or Creation Status

11.5.2 Interpreting the submission and creation status report result

Please note the following terminologies used in the report:

- **Actual:** means the number of submitted form or created reports.
- **Expected:** means how many forms or report should be submitted or created respectively.
- **Percent:** gives percentage of form submitted or report created.
- **Report on time:** means number of forms submitted or report created before deadline.
- **Percent on time:** means percent of forms submitted or report created before deadline

If a user selects a region or Tanzania and then a District/Region Monthly Report (DR01/RR01) or District/Region Quarterly Report (DR02/RR02) or District/Region Annual Report (DR03/RR03) Creation will get the result for both district and region report creation status but if the user select a district will only get district report creation status.

If a user selects Tanzania and then a Quarterly Integrated Report (DIR02/RIR02/NIR02) or Annual Integrated Report (DIR03/RIR03/NIR03) Creation will get the result for district, region and national integrated report creation status accordingly but a user selects a region will only get district, and region integrated report creation status and if the user selects a district will only get district integrated report creation status.

Rukwa - Ward Annual Entry Form (WF03) Submission - July 2015 - June 2016
Submission Status as of Aug 29, 2017

[Excel](#)

Name	Actual Entry forms	Expected Entry forms	Percent	Entry forms on time	Percent on time
Kalambo	18	23	78.3	3	13.0
Nkasi	18	28	64.3	18	64.3
Sumbawanga Mjini	13	19	68.4	13	68.4
Sumbawanga Vijijini	22	27	81.5	22	81.5
Rukwa	71	97	73.2	56	57.7

Click to download to Excel

Figure 98: Submission Status Report for each District in the Selected Region

Tanzania - District/Region Monthly Report (DR01/RR01) Creation - December 2015
Report Creation Status as of Aug 29, 2017

Region Monthly Report (RR01) [Excel](#)

Name	Actual Reports	Expected Reports	Percent	Reports on time	Percent on time
ARDS Region	1	1	100	0	0
Mara	1	1	100	0	0
Rukwa	1	1	100	0	0
Tanzania	3	3	100	0	0

District Monthly Report (DR01) [Excel](#)

Name	Actual Reports	Expected Reports	Percent	Reports on time	Percent on time
ARDS Region	2	2	100	0	0
Mara	2	2	100	1	50
Rukwa	4	4	100	0	0
Tanzania	8	8	100	1	12.5

Figure 99: An Example of District and Region Report Creation Status for each Region

Tanzania - Quarterly Integrated Report (DIR02/RIR02/NIR02) Creation - July - September 2015

Report Creation Status as of Aug 29, 2017

Quarterly Integrated Report (NIR02) Excel

Name	Actual Reports	Expected Reports	Percent	Reports on time	Percent on time
Tanzania	1	1	100	0	0

Quarterly Integrated Report (RIR02) Excel

Name	Actual Reports	Expected Reports	Percent	Reports on time	Percent on time
ARDS Region	1	1	100	0	0
Mara	1	1	100	0	0
Rukwa	1	1	100	0	0
Tanzania	3	3	100	0	0

Quarterly Integrated Report (DIR02) Excel

Name	Actual Reports	Expected Reports	Percent	Reports on time	Percent on time
ARDS Region	2	2	100	0	0
Mara	2	2	100	0	0
Rukwa	4	4	100	0	0
Tanzania	8	8	100	0	0

Figure 100: An Example of Quarterly Integrated Report Creation Status for each Region

12 Task List

Task List is a feature/ module designed to shows a lists tasks that are still pending but are specific to the user that is logged in. It is designed to be used as the default landing page for LGAs and RS, where it will show Tasks, notifications as well as their deadlines. The tasks include which data entry forms need to be submitted, which reports need to be created, and the approval status of reports from RS;

- The page that shows a list of tasks and notifications
 - LGA task: All data entry (WF00, WF01, WF03, DF02, DF03,)
 - LGA task: All report creation (DR01, DR02, DR03)
 - LGA notification: All approval status from RS of LGA reports
 - RS task: All report approvals (DR01, DR02, DR03, DIR02, DIR03)
- Task List screen show tasks/notifications only for Current Fiscal year and Previous Fiscal year. And any tasks/notifications before the previous fiscal year are not shown.
- Task List screen does Not show tasks that have been completed and tasks that are not possible to be completed due to them being locked.

12.1 Task List for LGA

The Task list screen shows Entry forms that have not been submitted, reports that needs to be created and gives notification of reports that have not yet been approved, deadline and Action.

UNITED REPUBLIC OF TANZANIA ARDS WEB PORTAL		
ARDS	Tasks	Report
Data	Data Entry	
Reload tasks		
Notification	Deadline	Action
DR01 July 2018 - Approval by RS: Not Yet Approved	25 Aug	View Report
DF02 July - September 2018 - Data Entry	15 Oct	Data Entry
DR01 September 2018 - Approval by RS: Not Yet Approved	25 Oct	View Report
DIR02 July - September 2018 - Report Creation	25 Oct	DIR02 not created
DR02 July - September 2018 - Approval by RS: Not Yet Approved	25 Oct	View Report
DR01 October 2018 - Approval by RS: Not Yet Approved	25 Nov	View Report
DR01 November 2018 - Approval by RS: Not Yet Approved	25 Dec	View Report
DF02 October - December 2018 - Data Entry	15 Jan	Data Entry
WF02 October - December 2018 - Data Entry: 0 out of 26 ward submitted (0%)		
> WF02 for Babayu	15 Jan	Data Entry
> WF02 for Chandama	15 Jan	Data Entry
> WF02 for Chemba	15 Jan	Data Entry

Figure 101: Task List Screen for LGA

12.2 Task List for RS

The Task list screen shows reports that have not yet been approved, the deadline for LGA as well as deadline for RS.



Reload tasks

Notification	LGA Deadline	Deadline	Action
DR01 July 2018: 7 out of 7 districts created (100%) 0 approved (0%)			
> DR01 for Arusha Mjini: Not yet approved	15 Aug	25 Aug	View Report
> DR01 for Arusha Vijijini: Not yet approved	15 Aug	25 Aug	View Report
> DR01 for Karatu: Not yet approved	15 Aug	25 Aug	View Report
> DR01 for Longido: Not yet approved	15 Aug	25 Aug	View Report
> DR01 for Meru: Not yet approved	15 Aug	25 Aug	View Report
> DR01 for Monduli: Not yet approved	15 Aug	25 Aug	View Report
> DR01 for Ngorongoro: Not yet approved	15 Aug	25 Aug	View Report
DR01 August 2018: 7 out of 7 districts created (100%) 1 approved (14%)			
> DR01 for Arusha Vijijini: Not yet approved	15 Sep	25 Sep	View Report

Figure 102: Task List Screen for RS

13 Managing your account

In order to login to the ARDS Web Portal you need a user name and password. Therefore, if it is your first time you need to contact the administrator and request a user account for you.

13.1 Update account information

It is a good practice to keep your account information up to date. To do so follow the following steps:

1. Login to the system
2. Go to the top right corner of your screen.
3. Click on the dropdown menu which is labeled the name of the current user i.e. your user name.
4. Select Update Info on the dropdown list
5. Fill in the Profile Details form accordingly and save

Profile details	
First name *	Administrator
Last name *	System
E-mail	
Mobile phone number	
Introduction	
Job title	Livestock officer
Gender	Female
Birthday	1981-01-25
Nationality	TANZANIAN
Employer	DED-LINDI
Education	B.Sc. Animal Science
	Watching movies

Figure 103: Update Account Information Form

13.2 Change Password

As a user of the ARDS Web Portal you are directly responsible to protect your password by making sure that it is only known by you. When administrator created an account for you, may use a default password therefore you shall change your password immediately after your first login. Also, as a password security best practice it is recommended that you change your password frequently or whenever you suspect possible disclosure of your password to someone else.

To change password, follow the same steps as in section 12.1 above but select change password from the dropdown list, fill in the requested information and save.

If you forget your password then contact the administrator.

User account

Details

Username	<input type="text" value="admin"/>
Old password *	<input type="password"/>
New password	<input type="password"/>
Retype new password	<input type="password"/>

Figure 104: Change Password Form

13.3 Logout and exit the portal

For security purpose remember to log out whenever you want to quit the portal and do not leave the portal open on your computer or any other devices when you are not using it. This is to protect ARDS data by ensuring that confidentiality of data is not compromised when someone get access to your computer or other devices. To exit the portal, you should follow the following steps:

1. Go to the top right corner of your screen.
2. Click on the dropdown menu which is labeled the name of the current user i.e. your user name.
3. Select logout on the dropdown list
4. If your web browser contains other open tabs close all tabs containing ARDS Web Portal pages or simply close the browser if you do not want to keep any of the existing browser tabs open.

13.4 Changing User Settings

ARDS Web Portal allows a user to select a default page where the system will direct the user when log into the system. To set your default page you need to change user setting by following these simple steps:

1. Go to the top right corner of your screen.
2. Click on the dropdown menu which is labeled the name of the current user i.e. your user name.
3. Select User settings on the dropdown list
4. Select the default module you want to start with from the start page drop down list

User Settings

Interface language

Start Page

Property to display in analysis modules

Figure 105: User Setting Screen

14 Inbuilt user guide

Apart from this comprehensive user manual ARDS Web Portal includes two inbuilt user guides, which are onscreen help tips within various features and a comprehensive help center.

14.1 Onscreen Help

The ARDS Web Portal includes whenever necessary an onscreen help instructions for a user. If you get stuck on how to carry out a particular activity just look around the screen to find a question mark icon as the one shown below. When you left click on the question mark icon a popup panel containing help instruction will appear on the screen.

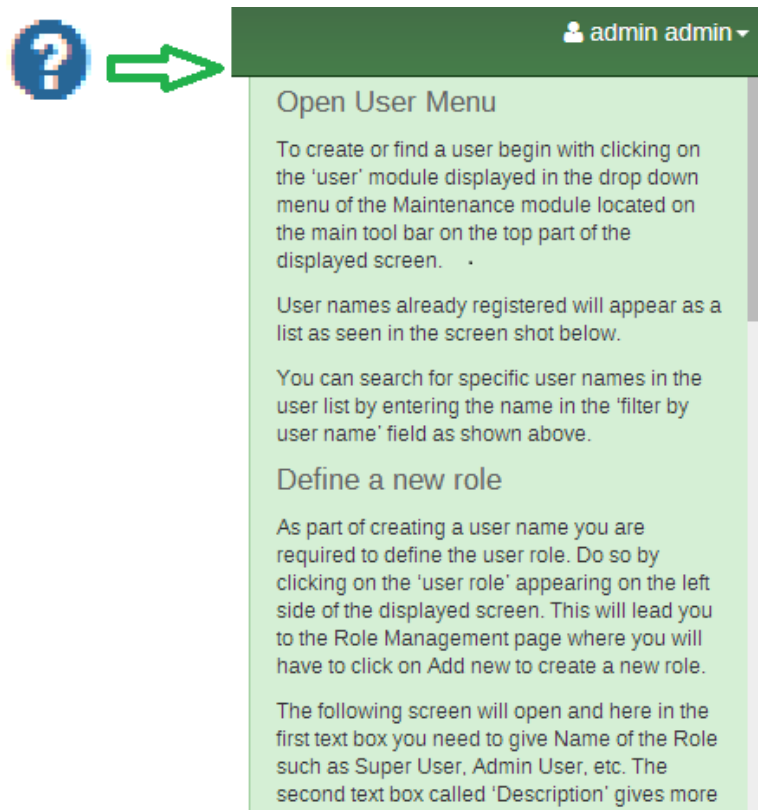


Figure 106: A Sample of Onscreen Help

14.2 Help Center

This is an inbuilt ARDS Web Portal online user manual and it is accessible in any page of ARDS Web Portal including the Web Based Data Entry module user interface. To go to the Help Center, click the username in the top right menu and select help center and the following screen will appear where you can select appropriate topic based on your need.

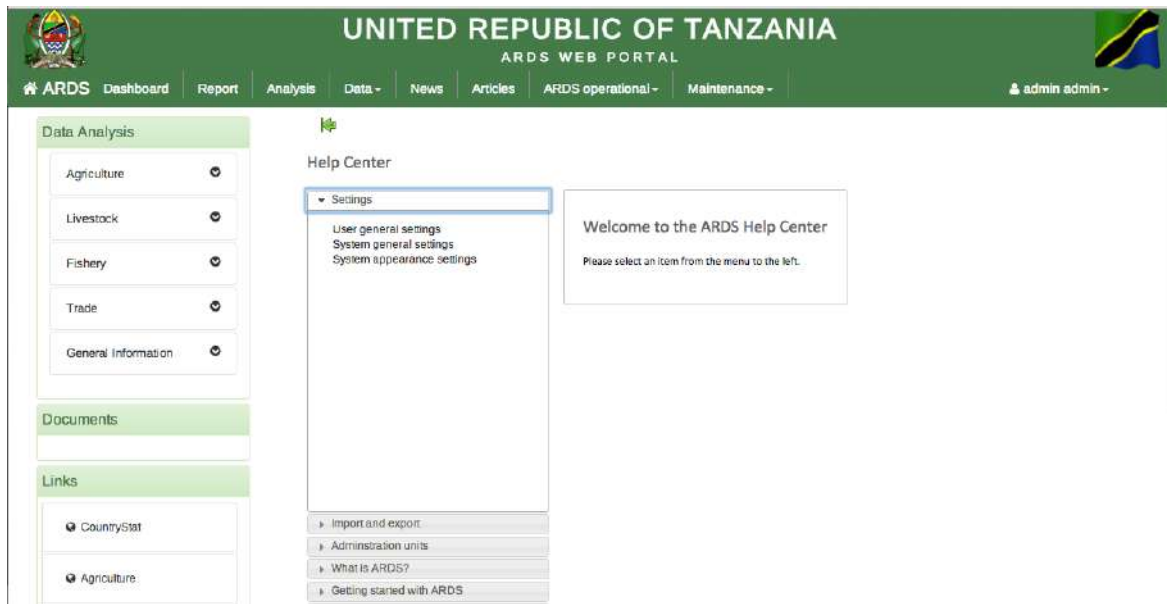


Figure 107: Help Center