



# ADGG program in Tanzania

## Monthly report

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# Introduction

The African Dairy Genetic Gains (ACGG) in Tanzania report shares progress of the program activities implemented in a particular month to give the team and stakeholders information on what is happening in terms of success and challenges. The successes are shared to influence others to change and the challenges are shared so that they can be mitigated to enhance best dairy management practices by dairy farmers to increase productivity per cow and earn profit. This report is shared with the ADGG team, stakeholders and partners to inform, share lesson and seek recommendations for improvement in program activities.

The report is a compilation of reports by performance recording agents (PRAs), site coordinators (SC) and Information Communication Technology (ICT) teams in each of the Local Government Authorities (LGAs) we are working with. It also has information on what has happened in ADGG team in site and national levels over the past month. It covers the events, data capture, scenarios, success, challenges and threats in program implementation with the aim of supporting farmers to improve dairy productivity and profitability.

Among other activities, the ADGG team carries out data capture and advises farmer based on the data they have captured during monitoring. Monitoring in February 2020 was slightly lower compare to January 2019 in terms of total farmer visited and number of records done per farmer visited. There is improvement in the quality of data collected by the team over the past one year. As the rainy season comes to an end, road access has been difficult, but the PRAs have been doing extraordinary work in making sure farmers are reached. During monitoring, several activities are carried out such as recording animal weight, production, body condition score, to mention a few. On the other side, PRA performance in artificial insemination (AI) increased this month as did pregnancy diagnosis and synchronization. Calf registration decreased tremendously due to challenge of updating data and the list of farmers.

The success stories reported in February are a result of PRA advice to farmers on good practices during monthly visits and scenarios highlight the poor practices observed among some farmers. These are captured as a lesson for farmers to help them adopt good dairy management practices. The threats and challenges reported affected implementation of the activities but if mitigated they can become opportunities.

The monitoring and awarding strategy analysis for this month shows that Maridadi Upatu (Njombe) has performed better than the rest of the PRAs, followed by Justine Magayane (Siha) and in third place are Leah Mfikwa (Rungwe) and Amani Mgoba (Makambako). The top three PRA have been on top for the last three months. The best performing award is based on number of farmers visited and number of forms filled, distance traveled and evaluation by farmers.

The ADGG team (all PRA and SC) has worked closely with field officers with support from ADGG offices in Dar Es Salaam. Resource sharing has enabled the best performing farmers to give the best information services daily, which enhances productivity per cow among farmers in the program.

## Activities by ADGG in Tanzania

This report compiled overall activities from the field team that were performed in February 2020. The report is compilation of details sent by PRAs and SCs from all Sites and all LGA that ADGG is working. The PRAs and SCs are employees of LGAs or government institutions but have given special contract by the ADGG program to works with dairy farmers in their respective areas to ensure ADGG activities are done as per government regulations. The PRAs work under supervision of SC from ADGG side and District Livestock and Fisheries Development Officers (DLFDO) from the LGA side. DLFDOs have supported the ADGG team on the ground to enhance efficiency.

# Data management

## Registration, animal identification and monthly monitoring

The PRAs and SCs have been keen in ensuring the data captured is of high quality and reliable, despite system malfunctions. In February, farm visits slightly decreased in terms of data captured during monitoring, major cause being update list malfunction, which did not update the information that was sent by PRAs or SCs. The ADGG monthly visits to the farmers and interventions towards dairy improvement through record keeping and feedback has changed how farmer are making decisions, but the system malfunction will introduce gaps in the data captured as many farmers cannot be monitored anymore.

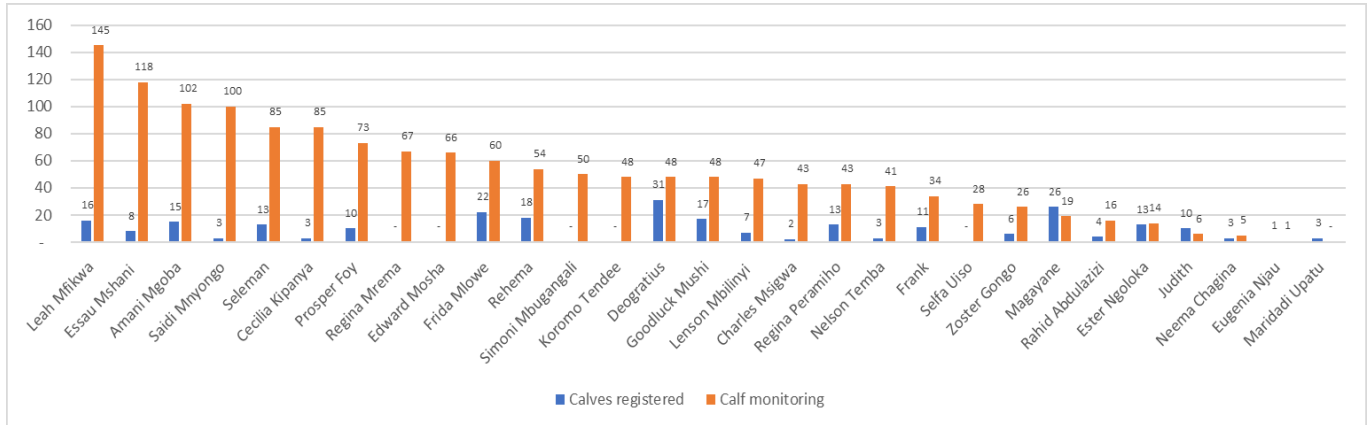
However, the challenges and issue raised by farmers in the field were mitigated using different methods in different areas. Table I shows the monitoring done this month. The farmers visited in February were 8,398; slightly fewer than the number visited in January, which was 8,643, this is a decrease of 2.8%. Forms filled were 12,317, slightly lower than the previous month, which was recorded as 12,811, a decrease of 3.86%.

Table I: Monthly monitoring by site in February 2020 compared to January 2019

	Farms revisited		Monthly recording		Calf registration		Calf monitoring		Animal exit		Housing, tech and services		iCow survey	
	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb
Arusha	1,495	1,358	2,615	2,402	5	3	251	187	23	19	0	0	0	0
Kilimanjaro	1,806	1,688	2,454	2,427	79	109	175	246	32	34	0	0	0	0
Tanga	1,898	1,938	1,898	1,938	55	30	318	276	41	41	0	0	0	0
Iringa	1,691	1,767	3,016	2,891	69	59	341	252	31	29	76	68	84	107
Mbeya	1,753	1,647	2,828	2,659	44	57	607	511	9	15	0	2	0	204
<b>TOTAL</b>	<b>8,643</b>	<b>8,398</b>	<b>12,811</b>	<b>12,317</b>	<b>252</b>	<b>258</b>	<b>1,692</b>	<b>1,472</b>	<b>136</b>	<b>138</b>	<b>76</b>	<b>70</b>	<b>84</b>	<b>311</b>
Difference	-245		-494		6		-220		2		-6		227	
% change	-2.8		-3.86		2.38		-13		1.47		-7.89		270.24	

Calf registration has increased to 258 in February compare to 252 recorded in January (an increase of 2.38%), but calf monitoring decreased to 1,472 in February compare with 1,668 recorded in January, a decrease of 13%. When looking at the trend in the Figure 1, it shows tremendous decrease in calf monitoring for each PRA, this was caused by calves not seen during monitoring caused by update list malfunction.

Figure 1: PRA performance on calf registration and monitoring



The animals exit increased by 1.47% (Table 1) indicating that farmers are disposing more of their animals this month than last month. However, PRAs have been proactive in transferring ownership of the animal sold. Figure 2 shows average calf registered are 9 with an average of calf monitoring of 51 calves per PRA. The maximum calf registration is 31 while calf monitored is 145 per PRA.

Figure 2: Average calves registered

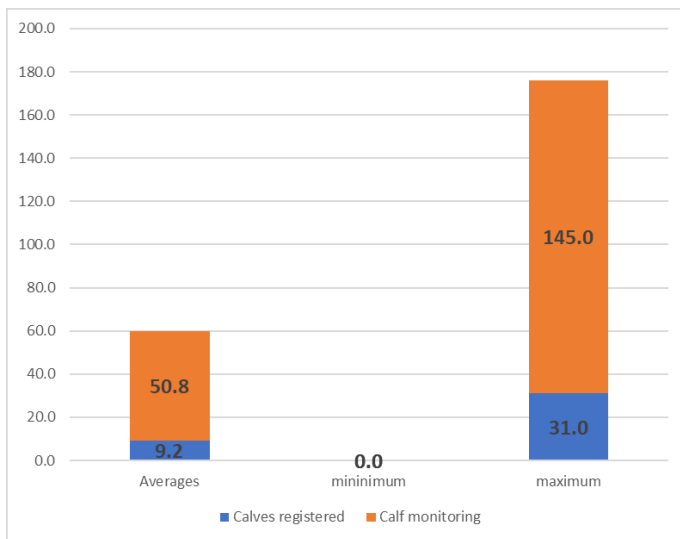


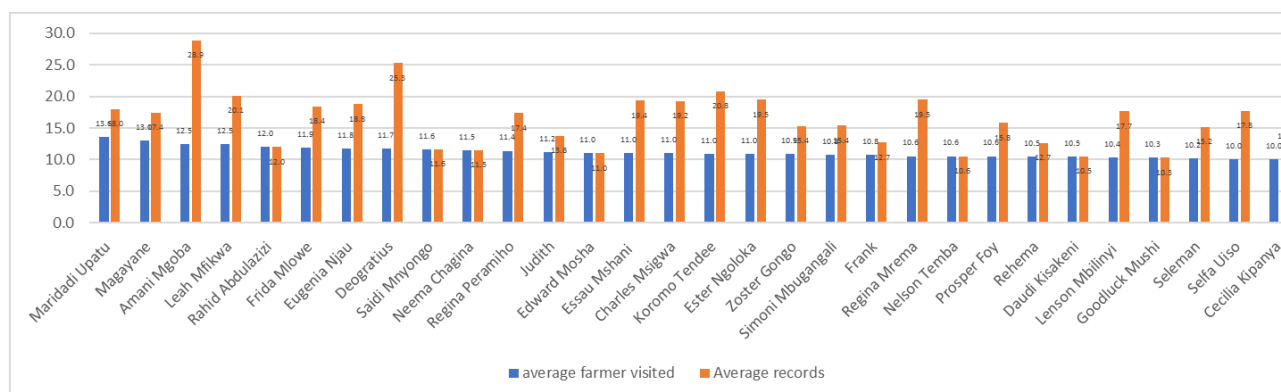
Table 2 shows an increase in farmers registration by 0.02% while animals registered increased by 0.25% in February. Many farmers are demanding their animal be monitored but limited resources make it difficult to increase the number of animals monitored. Farmers registered are those who have used AI for the first time. Increase in visits has direct relation to increase in farmers' getting advise, which impacts dairy management in all sites.

Table 2. Registered farmers status, farmers revisits and monitoring

SITES	Total Farmer Registered		Total Animal Registered		Farmer visited		Farmer called (phone)		Total farmers register but not visited/ called by phone		Farmer lost criteria		Farmers changes phone # this month		Farmer who does not get SMS and needs it	
	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb
Arusha	2873	2873	14135	14138	1495	1358	279	295	1406	1196	0	0	0	2	0	3
Kilimanjaro	2807	2807	7855	7855	1806	1754	408	586	0	0	0	0	0	0	0	0
Tanga	5,401	5,402	11,140	11,148	1,898	1,938	548	650	0	0	0	0	0	0	0	0
Iringa	2584	2587	9826	9893	1731	1767	196	220	675	600	0	0	0	2	0	0
Mbeya	3,273	3,273	10,012	10,069	1751	1647	426	410	1015	1042	0	3	0	5	0	23
<b>TOTAL</b>	<b>16938</b>	<b>16942</b>	<b>52968</b>	<b>53103</b>	<b>8681</b>	<b>8464</b>	<b>1857</b>	<b>2161</b>	<b>3096</b>	<b>2838</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>26</b>
Difference	4		135		-217		304		-258		3		9		26	
% change	0.02		0.25		-2.5		16.37		-8.33		NVD		NVD		NVD	

## The average performance of PRAs per day

The PRA performance is slightly lower this month than last month. The average performance per PRA recorded as per farmers visited in a day is 11, which is slightly lower than January (12). The minimum record for farmer visited is 10, which is the same as those recorded last month.



The average form filled in a day is 16, slightly lower than last month (17). The maximum and minimum are 29 and 10, respectively, which are the same as last month (January).

The best performer **Maridadi Upatu, 14** (Njombe DC) who had more farmer visited and more records in four consecutive months, followed by **Justine Magayane, 13** (Siha DC) and third position are **Leah Mfikwa** (Rungwe DC) and **Amani Mgoba** (Makambako), **12.5**.

performance goes to **Njombe DC** where PRA anyone in the team. Congratulation to **Maridadi** than any other PRA in this month. For consecutive underperformance.

Lowest performer (less than 10)  
No PRA recorded less than 10 visits.



## Site coordinators' performance in medium-scale and large farms

For medium-scale and large-scale farmers, monitoring and registration has been done by SCs. This month some sites performance was unsatisfactory compared to last month. Asanterabi Urasa (Arusha) again did very well compared to other SCs. Others SCs worked below expectation.

However, Mistro seem not to work as expected which made all the information flow during monitoring difficult. The evidence shows a decrease of 22% whereby 2,296 animals were registered, which is higher than what was reported in January (2,265) but animals monitored were 831, which is lower than what was reported in January (1,058). Details of comparisons are in Table 3 below.

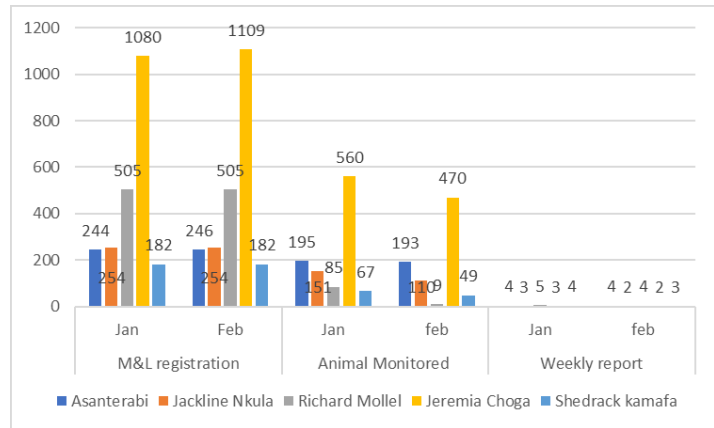


Table 3. Medium-scale and large farms registration and monitoring between January and February 2020

Site	Number of farms registered to date	Total animals registered to date		Total animals monitored	
		Jan	Feb	Jan	Feb
Mbeya					
TALIRI Uyole	1	99	99	51	31
Lawrence Farm	1	31	31	16	18
Kitulo LMU	1	52	52	0	0
Mbeya subtotal	3	182	182	67	49
Arusha					
LITA Tengeru	1	120	122	101	95
Zulfiroz Farm	1	124	124	94	98
Arusha subtotal	2	244	246	195	193
Iringa					
JKT Mafinga	1	103	103	60	60
LMU SaoHill	1	63	63	0	0
Nyamande Farm	1	80	100	0	0
Ndoto Farm	1	160	160	150	150
Kibebe Farm	1	113	113	0	0
Lutemi farm	1	130	130	0	0
Ilandutwa farm	1	81	90	0	90
ASAS (Mgongo farm)	1	170	170	170	170
ASAS - Igingilanyi	1	180	180	180	0
Iringa subtotal	8	1080	1109	560	470
Kilimanjaro					
Kilacha	1	40	0	34	36
Masaya	1	0	0	0	0
Kibosho girls	1	22	0	15	11
Kafoi	1	192	13	102	88
Total	4	254	13	151	135
Tanga					
TALIRI	1	180	0	40	59
Julius Shoo	1	40	0	15	0
LITA Buhuri	1	55	9	30	13
Dar-fresh (MilkCom)	1	230	0	0	0
Tanga subtotal	4	505	9	85	72
Grand total	21	2,265	1,559	1,058	919
% differences			-31.17		-13.14

Generally, overall performance was impaired by the system malfunction. Where total animal monitored for both small-scale, medium-scale and large-scale farms decreased tremendously. Unless necessary effort is made, there will be continue decrease in monitoring. The summary in Table 4 shows the evidence of farmers and animals monitored.

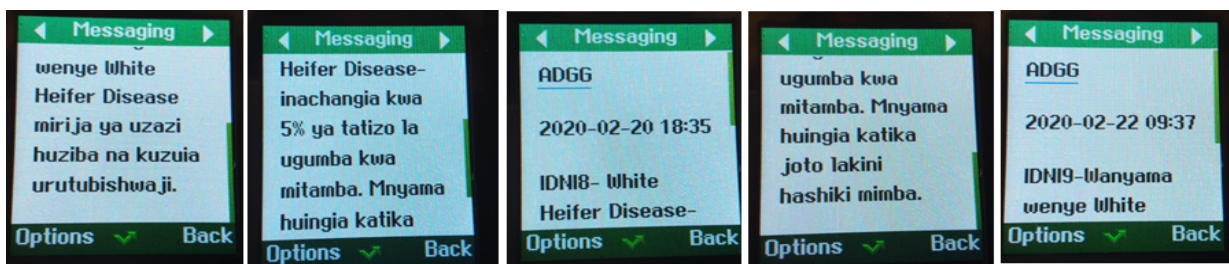
Table 4: Statistic of farmer registered and monitored

Site	Small-scale farmers				Large-scale farmers			
	Total farmers registered to date		Total animals registered and monitored every month		Farmers registered		Animal registered and monitored	
Months	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb
Arusha	2,877	2,873	14,135	14,138	2	2	195	193
Kilimanjaro	2,833	2,807	2,454	2,517	4	4	153	135
Tanga	5,401	5,402	19,750	11,148	4	4	37	72
Iringa	2,582	2,587	9,766	9,893	8	8	640	330
Mbeya	2,538	3,273	7,033	10,069	3	3	58	182
Total	16,231	14,135	53,138	47,765	21	21	1,083	912
Differences	-2,096		-5,373		0		-171	
% change	-13		-10		0		-16	

## Animal identification

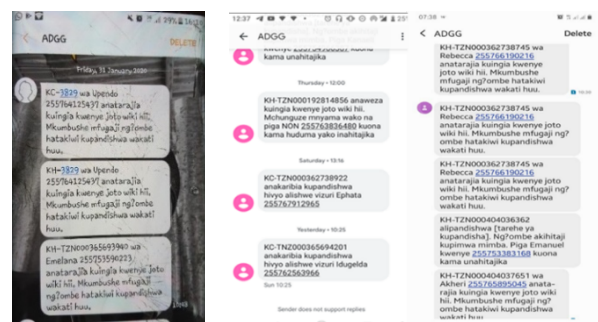
Though important in identification of the animals, ear tagging has been used in a limited way. The distribution mechanism of ear tags is not clear from the ministry of Livestock and Fisheries and 150,000 tags imported by Bajuta Tags have not been distributed to farms/farmers.

## Farmers feedback (SMS)



Various SMS messages have continued to be sent to farmers as a means of educating them on various issues concerning management of dairy cattle. In February, messages sent were on heifer diseases. Farmers frequently communicate with the team in case they receive messages that need clarification.

Feedback SMS messages alerts on the cow calendar were sent to farmers to remind them when cows are on heat of when a cow is expected to deliver to help farmers prepare.



However, the recent government requirement for registration of the all mobile phone numbers using national ID and fingerprint has affected most farmers. Many of them have changed their phones hence are not receiving SMS communication. The ADGG team has started working with PRAs and SCs to get a list of all farmers who are not receiving SMS due to sim card switch off by the government. A special report will be sent to iCow with the list of new phone number of all interested farmers.

## Farmers feel privileged to be visited every month

Farmers visited every month and receiving SMS alerts say they feel very privileged and they appreciate ADGG for making them feel special. Some of them said that non-registered farmers envy those who are visited and receive messages from ADGG, which has helped them improve their dairy management practices and are getting more milk. However, non-ADGG farmers do receive information and knowledge shared by the program from their fellow farmers and are also learning from the program's interventions.

## Artificial insemination (AI) delivery

### PRAs/AI technicians performance in February

PRAs and SCs were trained how to carry out artificial insemination. Some of them have started doing AI and capturing data digitally. It is encouraging that performance has improved tremendously for some of them especial those in the southern highlands, Muheza DC and Tanga areas. Table 5 below summarizes their performance. It shows that AI in February increased by 20.44% from the previous month. The trend is the same for pregnancy diagnosis (PD) and synchronization with an increase of 504% and 250% for PD and synchronization, respectively. Each month there is at least more than 20 calves born from AI in the 24 LGAs where PRAs are working and cows were served by PRAs.

Table 5: AI services delivered by PRA/AI tech in the ADGG sites in February 2020

SN	Name of PRA (AI technician)	Council	No of insemination		No. of pregnancy diagnosis performed		Synchronization		Calf born on AI		Calf registration	
			Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb	Jan	Feb
1	Eugenia M Njau	Arusha DC	4	3	0	4	0	0	0	0	3	1
2	Jacqueline Nlula	Moshi DC	0	0	0	0	0	0	0	0	0	0
3	Frank Lyimo	Moshi DC	5	6	0	11	0	0	0	0	0	0
4	Rehema Nkya	Moshi DC	20	11	0	8	0	0	0	0	0	0
5	Rashid Abdulaziz	Muheza DC	0	4	0	10	0	0	0	2	0	5
6	Said Mayongo	Lushoto DC	0	1	0	0	0	0	0	0	0	0
7	Neema Chagina	Bumbuli DC	0	0	0	0	0	0	0	0	0	0
8	Daudi Kisakeni	Muheza DC	13	16	0	8	0	0	0	0	0	0
9	Amani Mgoba	Makambako TC	40	62	15	32	15	32	0	9	13	9
10	Frida Mlowe	Njombe TC	6	4	0	6	0	0	0	0	9	0
11	Maridadi Upatu	Njombe DC	32	43	5	28	5	36	0	3	3	3
12	Shedrack Kamafa	Mbeya DC	9	5	0	13	0	2	0	6	0	0
13	Jeremia Choga	Iringa site	0	0	0	15	0	0	0	0	0	0
14	Asanterabi Urassa	Arusha site	0	0	0	0	0	0	0	0	0	0
15	Richard Mollel	Tanga site	0	0	0	0	0	0	0	0	0	0
16	Selfa Uisso	Meru Dc	1	3	0	0	0	0	0	0	0	0
17	Zosta Gongo	Iringa DC&MC	0	0	0	0	0	0	0	0	0	0
18	Deogratias Mfuko	Hai DC	5	7	5	10	0	0	0	0	0	0
19	Prosper Foy	Mbeya DC	0	0	0	0	0	0	0	0	0	0
20	Justine Magayane	Siha DC	2	0	0	6	0	0	0	0	0	0
TOTAL			137	165	25	151	20	70	0	20	28	18
Difference			28		126		50		20		-10	
% change			20.44		504		250		NV		-35.71	

## Calves born through artificial insemination

Calves born through AI are increasing each month. On the right are pictures captured in Njombe DC and Muheza DC for newborn calves. PRAs are advised to educate farmers in choosing the range of breeds that are available so that farmers can increase productivity and get profit based on breeds available in their environment.



## Information communication technology (ICT) support

ICT support for the month was to attend to issues that hindered field activities as per project goals. The issues that surface and attended to in February were: Mistro, update list challenges, capturing inputs and comments on testing the new tool and visualization, and the web-based and SMS numbers that failed.

On the part of using the Open Data Kit (ODK), the major challenge experienced was issues with updating the list, which resulted in field activities such as monitored animals not being seen, overlapping of district and villages information etc. For the medium- and large-scale farms, GPS location and herd size information was requested and shared with the data team (see attachment in the annexes). Meetings were also held with the eGovernment Authorities (eGAs) to identify all phone numbers of farmers who were not active due to sim card blockage by the government. Last was capturing comments and inputs from the field for the new tool in ODK and visualization of web-based tools which were tested. Comments and inputs were shared to the data team (attached in annexes).

# ADGG project image portraying

## ADGG awareness raising

ADGG is now known by many farmers as the project that support them to improve their livelihoods. Recently, dairy farmers were meeting to discuss and come up with solutions to their challenges. SMS alerts and visits have change the lives of many dairy farmers who are now able to do dairy management in new ways. They are proud to be part of ADGG and they share what they have learned with their neighbours and those who visits their farms.

## ADGG-PAID meetings

### ADGG meetings with the Public-Private-Partnership for Artificial Insemination Delivery (PAID)/Ministry of Livestock and Fisheries and the National Artificial Insemination Centre (NAIC)

A joint meeting for ADGG, PAID, Ministry of Livestock and Fisheries (MLF) and NAIC is conducted every month. The progress has been made in the pilot area where the Kinondoni Municipal Council Livestock Department has started implementing a dairy business model. To begin with, the department organized meetings in Mabwepande and Kawe wards where the dairy stakeholders developed actions plan to address challenges facing smallholder dairy farmers. ADGG, PAID, MLF and NAIC will visit the stakeholders on 5 March 2020 at Kawe ward and 7 March 2020 at Mabwepande ward. The agenda is to discuss further challenges which require inclusive discussion with the team (MLF, NAIC, ADGG and PAID Tanzania).

## ADGG collaboration with other projects/initiatives in the field

Working together between PRA and AI technicians is important to avoid duplication of resources and effort but more crucial is the need to approach farmers as a unit (instead of confusing the farmer). In case there is a challenge in the field, PRAs and AI technicians should work together to solve it. At this time, some PRAs and SCs are testing a new tool, AI technicians are still requesting if the update list can be removed or rectified to make the data capture possible digitally.

# ADGG events

## Major events in ADGG Tanzania

### National event

#### ADGG planning meeting in Nairobi

The ADGG team comprising participants from Ethiopia, Kenya, Rwanda, Tanzania and Uganda met at the International Livestock Research Institute (ILRI) campus in Nairobi in February to discuss ADGG plans for the next 14 months. The meeting had two main objectives: (1) to continue and complete data collection, comprehensively analyse and report on the current ADGG activities, and (2) to establish partnerships necessary for funding and scaling up ADGG into a regional platform. Apart from discussing the two objectives, the team agreed to use champions to support mainstreaming of genetic gains in government plans, program and initiatives and solidify the activity with a legal framework by the government. This will help to improve and accelerate livestock development in Tanzania. Program plans were developed for each country and contracts with all partners were finalized.

### Event in ADGG sites

#### Farmers meeting in Amani, Tanga

In Amani Tanga, farmers met to discuss challenges and success stories they are facing. Most farmers requested to join the ADGG project through farmers registration and later to be visited every month and their animals monitored. Their requests were inspired by how PRAs visit and support dairy farmers in the project.



#### Farmers meeting in Makambako

In Makambako Town Council, farmers met to discuss achievement and progress of AI service in the area. The meeting, which was led by farmers' leaders from all farmers groups in Makambako, agreed to request government to provide subsidies to decrease the cost of AI from TZS 30,000–35,000 to TZS 10,000–15,000 per insemination. Farmers wanted to know when they will start benefiting from the subsidized costs, which was announced by the Minister of Livestock and Fisheries Development. PRAs in collaboration the acting Town





Livestock and Fisheries Officer (TLFO) advised farmers to be patient and wait for the government to provide subsidy, which could not be provided in the current government budget.

### Stakeholders meeting in Mbozi

In Mbozi DC, a meeting, which was led by Livestock Department brought together farmers and other dairy stakeholders to discuss issues limiting growth of the dairy industry in Mbozi. During this meeting, the PRA of Mbozi DC spoke about ADGG and its progress in the LGA. The PRA advised farmer to records livestock data so that they can make informed decisions and improve their management of their farm animals.



## Field scenarios

### Diseases and disease surveillance

Animal diseases can be controlled or eliminated when farmers' attitudes and behaviour are changed to adopt improved dairy management practices. Most farmers do follow the advice and lessons conveyed during farm visits and mobile phone SMS service on the need to change from traditional dairy keeping to modern dairy husbandry practices. However, many farmers now understand the need for improved animal housing and the importance of disease control and prevention. Example of disease control and prevention measures adopted by farmers after advice by the PRAs and veterinary officers include the following.

### Anaplasmosis disease management

The Meru PRA found an anaplasmosis case during his monthly farm visits. He attended to the case and was able to get laboratory test confirmation of the disease. The treatment of the affected animal started was started immediately and it has started to recover. The PRA advised the owner of the animal to use prophylactic drugs regularly to make sure animals are protected against the disease.



### Prolapsed uterus caused death of a cow

The Arusha DC PRA found an unfortunate scenario of a farmer in Arusha CC whose cow calved during the night and the cow ended up having a prolapsed uterus. Because it happened during the night, the farmer could not get assistance and the cow ended up dying due to severe loss of blood. The farmer lost a cow but remained with a calf that she is keeping with a foster mother after being advised by the PRA on the proper way to raise the calf including making use of artificial colostrum.



### Ephemeral fever

A case of ephemeral fever was found in Arusha CC. A farmer noticed her cow was not well and had an increase in temperature. She called the PRA who observed the animal and recorded fever, lameness and nasal and ocular discharge. The PRA diagnosed the animal's sickness as ephemeral fever and started administering antibiotics and other supportive treatments. After few days the animal recovered successfully.





### Cow attacked by crocodile

In Korogwe DC, animals are grazed in free-range conditions. A farmer who was grazing his animal in Pangani, near the river lost his cow after it was attacked by a crocodile. The animal was rescued by a neighbour who made efforts to chase crocodile, but crocodile cut off the tail of the cow and injured it on its fore limb. Farmers was advised to be careful when grazing there and when watering their animal in the river.

### Cow with vaginal prolapse

In Amani Tanga, an animal was found with vaginal prolapse after a farmer called PRA to attend to the case. Initially, the farmer thought that the animal was watched (traditional way of referring to ill-wish) by the neighbour as it was very new to him and he had never heard about it before. The PRA counseled farmer and gave him hope that the cow will recover after treatment.



### Pneumonia case

A farmer, God Juma, in Itende ward in Mbeya CC reported that he had a calf that was very sick. The PRA rushed to attend to the calf and found it had severe pneumonia. He informed the farmer and started treatment immediately and the calf started to recover. The farmer was advised to feed it well with enough milk and ensure proper hygiene to avoid a repeat of the case.



### Accidents

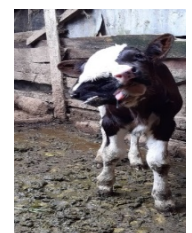
#### Snake bite

A bull in Arusha CC was bitten by a snake while it was grazing in the field. The owner noticed the bite after a short time and called the PRA who is also a veterinary officer who administered some drugs to neutralize the poison. The bull is still recovering from the incidence and farmer is happy that her bull was saved.



#### Abnormality in calf

In Arusha DC, a calf was born with two head, two mouth, three eyes and two ears. The PRA and SC found the history of the parents to try and find out what went wrong. They found the case was caused by inbreeding or heavy metals effect. Research is ongoing on to see what might have caused it.



#### Cow failed to deliver on time

An AI technician in Iringa DC (Juma Ramadhan Mwevirah) called the SC (who is also a veterinary surgeon) claiming to have inseminated the cow eleven month ago. He said the farmer had waited for calving time in vain. The cow was diagnosed and found to be pregnant. Upon examination it was realized that uterus was full of fluid with a very small foetus which did not relate to the length of gestation and it was



unclear whether the foetus was alive or dead. Because of the prolonged gestation period it was assumed dead. The SC decided to perform a Caesarian section (surgical intervention) which was successful. However, the following was seen.

- The foetus was still alive but was small contrary to the gestation period and was formed outside the amniotic cavity.
- The uterus also had indication of fungal infection which may have caused its limited growth.

## Poor management practices

### Poor housing

Following ongoing heavy rains some animals have been suffering as a result of poor housing. Some of the cattle sheds were flooded and muddy due to poor infrastructure and/or improper construction. During the monthly visits, the ADGG team advised farmers to consider relocating the affected cattle sheds to other safer areas. The team also insisted on the need to for properly constructed cattle sheds with good foundations.



### Overfeeding calf with brewer waste causes death

In Hai District, a car carrying brewers waste was involved in an accident. Farmers around the area rushed to the accident scene with buckets to fetch as much brewers waste as they could carry to use as feed for their animals. Unfortunately, one farmer fed his calf too much of it, which led to bloating, which caused the calf's death. The PRA advised farmers to always use the recommended amounts of animal feeds, especially when it is foreign feed that an animal has not eaten before.



### Poor hygiene

On the course of monthly visits in Tanga, the PRA there met with a worker who assists farmer in managing dairy cows. This person was wearing dirty clothes that were stained with cow dung and he wore the same clothes during milking. The PRA advised him to wear clean clothes when milking to reduce chances of contaminating milk during or after milking.



In Njombe DC, unhygienic animal housing conditions were found to be a leading cause of mastitis. Often, during the monthly visits, farmers in the area complain that their cows are having udder problems. In this case, upon examination, mastitis was found to be the result of keeping a dairy cow in poor hygiene conditions. The cow was standing in a wet floor throughout without sleeping. The PRA started treating the cow and advised the farmer to improve the cow shed and maintain its cleanness.



### Overgrown hooves

Overgrown hooves in cows is a common condition associated with poor housing and limited movement or exercise of the animals. It mostly happens in particularly poorly constructed floors. During a field visit in Iringa, the SC came across a lame cow with overgrown hooves. The history of the animals showed that the animal was bought from another farm with poor housing



conditions, which probably accelerated the problem. After assessing the animal, the ADGG team trimmed its hooves after which the cow would walk well and is in good health.

## Attitudes and beliefs

### Misconceptions about fearing bulls

The ADGG team learned that some farmers have misconceptions about rearing bulls. One farmer in Meru DC believes that bulls are not supposed to be sheltered inside cattle sheds but instead exposed to extreme weather conditions including rain in order for them to grow fast. The farmer was advised not to do so because it might cause diseases and lead to economic loss. The farmer was surprised by the advice and felt bad for letting his animal suffer for many months. He subsequently moved the bull into a shed.



## ADGG success story

Monitoring (visiting farmers) each month has given opportunity for the field team (PRAs and SCs) to observe changes among farmers. The changes observed mostly are the improvement of cow husbandry which includes improvement of cowsheds, feed storage, pasture and range management, and better cleaning and hygiene practices.

### Increased milk production

Increased milk production as result of improved management has created an opportunity for youth get employment by engaging themselves in activities along the milk value including in milk processing. In Arusha DC, John Alfayo, a farmer discovered an opportunity in adding value to the milk and decided to start a small milk processing plant in his farm. He started small and is aiming at processing at least 2,000 litres of milk per day. He said the main challenge he faces in his new business is poor milk quality, which makes him reject milk from some farmers. The PRA took the challenge as an opportunity to educate farmers on the need to improve milk quality since farmers often complain about a limited milk market and processors complaining about poor quality milk produced by farmers.



### Range and pasture management

Farmers have been advised to improve cattle feeds so maintain the health of their animals and make them more productive. In Arusha DC, one farmer has increased his pasture area from a small plot to a quarter acre in order to have more pasture for his cow. The PRA also advised him to grow a variety of forage species such as *Pennisetum spp* and *Desmodium spp* in his farm because they grow together well and improve nutritional advantages for animals when combined in feeds.



At the same time, in Korogwe TC, a farmer has planted plenty of pasture for use when there is scarcity of feeds. The farmer started growing his own pasture plots after being advised by the PRA.





Most farmers now know the importance of establishing pasture plots and planting fodders in this rain season as an insurance for feed availability in the future.

## Good management practices

### Improved feed and storage

Following regular visits and advice, farmers are improving feed management which is improving milk production and the health status of their animals. In Nkoaranga Ward, a farmer has witnessed an increase in milk production from 16 to 20 litres per day after following advice from PRA on proper formulation of concentrates at reasonable cost.



Elsewhere, due to seasonality in availability of feeds, farmers need to store feeds for use when feed availability is limited. Some farmers have improved feed storage by building feed stores near their cowsheds to prevent damage of feeds during harsh weather.



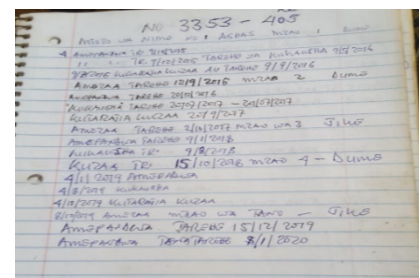
### Cattle house improvement

Many farmers are, however, still moving towards implementing good management practices in their farms based on advice given by PRAs and messages they receive from the ADGG program. In one scenario, a farmer in Meru DC was advised to use available resources to improve her cowshed. She did so, but after a very long time.



### Record keeping improved

In Njombe, farmers have been keeping records in their notebook for reference and decision-making. On the right is picture from a page in a notebooks of a farmer who uses this method successfully. She said keeping records has made her change her whole herd. Record keeping has improved her cows by helping her avoid inbreeding when using bull semen or AI. She said she also refers to the notes treating the animals and deciding which animals to keep for breeding and which ones to sell.



# ADGG strengths, weaknesses, opportunities and threats (SWOT) analysis

## Strength and opportunities

The ADGG program has been working in Tanzania for four years now and is seen as a model for other projects/ programs in the country. It has changed the lives and perceptions of many farmers based on the feedback of farmers and practitioners in the program sites.

## Challenges and threats

1. Update list challenges decrease efficiency and reduce number of animals being monitoring each day.
2. This month, the Mistro program was corrupted in many computers, especially farmers' computers and IT was contacted and the issue was resolved.
3. Details of registered calves and other animals not appearing in the ODK tool for monitoring because of ODK update list failure.
4. Heavy rains which have interfered with the working efficiency of the team especially on timing for working and destruction of roads to farms.
5. The rate of slaughtering registered animals is increasing
6. AI technicians in Mbeya have lacked liquid nitrogen since the Mbeya Zone Referral Hospital stopped selling the gas two weeks ago.

## Conclusion and recommendations

In February, it became difficult to work in the field because of various system challenges, which brought down performance significantly because of a decrease in animals monitored. The decrease in the number of animals monitored needs immediately intervention. A malfunction in the update list has affected field work. It is recommended to fast track the roll out of the new tool so that we can have clean data collected with minimal missing data. Hence, the ICT team should work as fast as possible to avoid having more gaps as a result of data that is not captured due to system malfunction, which has existed for long now. Capturing data for the medium-scale and large-scale farms has decreased as well due to Mistro program failure in many farms.

This month, the best PRA is Maridadi Upatu (Njombe DC) followed by Justine Magayane (Siha) and third are Leah Mfikwa (Rungwe) and Amani Mgoba (Makambako). These farmers have ranked at the top for three consecutive months. The PRA/AI technicians performance has increased tremendously, although animals data was not updated in the system to capture insemination data.

The ADGG team appreciates the Local Government Authority for continuous support in data capturing in the field and organizing innovation platform meetings, especially RLAs, DLFDO/CLFDO/TLFDO in each area we are working. We thank the regional commissioners and the district commissioners and LGA directors for the support they give in the field and free venue they provide for meetings in their respective areas. The ADGG program team also thanks all the partners whom are working with the team the field and those who provide farmers with the services promised to them.

# Acknowledgements

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# Annexes

## Performance of PRA in February

PRA/ITEM	FARMER VISITED	MONTHLY RECORDS	Calves registered	Calf monitoring	average farmer visited	Average records	Ratio of Farmer visited and records
Maridadi Upatu	341	451	3	-	13.6	18.0	0.8
Magayane	326	436	26	19	13.0	17.4	0.7
Amani Mgoba	312	723	15	102	12.5	28.9	0.4
Leah Mfikwa	312	503	16	145	12.5	20.1	0.6
Rahid Abdulazizi	300	300	4	16	12.0	12.0	1.0
Frida Mlowe	298	461	22	60	11.9	18.4	0.6
Eugenia Njau	295	470	1	1	11.8	18.8	0.6
Deogratius	293	632	31	48	11.7	25.3	0.5
Saidi Mnyongo	291	291	3	100	11.6	11.6	1.0
Neema Chagina	287	287	3	5	11.5	11.5	1.0
Regina Peramiho	285	435	13	43	11.4	17.4	0.7
Judith	281	345	10	6	11.2	13.8	0.8
Edward Moshia	276	276	-	66	11.0	11.0	1.0
Essau Mshani	276	484	8	118	11.0	19.4	0.6
Charles Msigwa	275	481	2	43	11.0	19.2	0.6
Koromo Tendee	274	520	-	48	11.0	20.8	0.5
Ester Ngoloka	274	487	13	14	11.0	19.5	0.6
Zoster Gongo	272	384	6	26	10.9	15.4	0.7
Simoni Mbugangali	270	385	-	50	10.8	15.4	0.7
Frank	269	318	11	34	10.8	12.7	0.8
Regina Mrema	264	487	-	67	10.6	19.5	0.5
Nelson Temba	264	264	3	41	10.6	10.6	1.0
Prosper Foy	264	395	10	73	10.6	15.8	0.7
Rehema	263	317	18	54	10.5	12.7	0.8
Daudi Kisakeni	263	263	-	-	10.5	10.5	1.0
Lenson Mbilinyi	260	442	7	47	10.4	17.7	0.6
Goodluck Mushi	257	257	17	48	10.3	10.3	1.0
Seleman	256	379	13	85	10.2	15.2	0.7
Selfa Uiso	250	444	-	28	10.0	17.8	0.6
Cecilia Kipanya	250	400	3	85	10.0	16.0	0.6
<b>Total</b>	<b>8398</b>	<b>12317</b>	<b>258</b>	<b>1472</b>	<b>335.92</b>	<b>492.68</b>	<b>21.7419</b>
<b>Averages</b>	<b>279.9</b>	<b>410.6</b>	<b>9.2</b>	<b>50.8</b>	<b>11.2</b>	<b>16.4</b>	<b>0.7</b>
<b>minimum</b>	<b>250.0</b>	<b>257.0</b>	<b>0.0</b>	<b>0.0</b>	<b>10.0</b>	<b>10.3</b>	<b>0.4</b>
<b>maximum</b>	<b>341.0</b>	<b>723.0</b>	<b>31.0</b>	<b>145.0</b>	<b>13.6</b>	<b>28.9</b>	<b>1.0</b>

## Site coordinators' performance in February

Site Coordinators	M&L registration		Animal Monitored		Weekly report	
	Jan	Feb	Jan	feb	Jan	feb
Asanterabi	244	246	195	193	4	4
Jackline Nkula	254	254	151	110	3	2
Richard Mollel	505	505	85	9	5	4
Jeremia Choga	1080	1109	560	470	3	2
Shedrack kamafa	182	182	67	49	4	3
<b>Total</b>	<b>2265</b>	<b>2296</b>	<b>1058</b>	<b>831</b>	<b>19</b>	<b>15</b>
Differnces	31		-227		-4	
% Change	1.368653422		-21.45557656		-21.05263158	

## List of farmers who failed to get SMS in February

Farmer's name	LGA	Site/region	Old phone number	New phone number	Why change phone	Did they get SMS previously?
Ismael Kyungai	Meru DC	Arusha	0766083387	0767928195	Old phone was blocked by TCRA	Yes
Saimon Kyungai	Meru DC	Arusha	0766909634	0757217662	Old phone was blocked by TCRA	Yes
Antony Msari	Meru DC	Arusha	0782503748	0754507324	Old phone was blocked by TCRA	Yes
Amani Matee	Moshi DC	Kilimanjaro	0764752591	???		no
Orest Mgini	Mufindi DC	Iringa	0759905458	0744703092	Phone loss	
Mussa Fute	Njombe TC	Njombe	0752983162	0756386181	Phone loss	
God Juma	MbeyaCC	Mbeya	0754583706	0768220904	Lost old number	Yes
Jery Muro	MbeyaCC	Mbeya	0766711308	0759303629	Lost old number	Yes
Saba Peter	Mbeya DC	Mbeya	0745249245	0762111834	Lost old number	Yes
Elia Yohana	Mbeya DC	Mbeya	0766215961	0746319148	Lost old number	Yes
Asa Ambikile	Mbozi DC	Mbeya	757319692	0757319692	Old phone did not start with '0' during registration	No
Efraim Enock	Mbozi DC	Mbeya	753691195	0753691195	Old phone did not start with '0' during registration	No
Tumaini Msongole	Mbozi DC	Mbeya	755275645	0755275645	Old phone did not start with '0' during registration	No
A Nsaja	Mbozi DC	Mbeya	766142041	0766142041	Old phone did not start with '0' during registration	No
Amos Kalinga	Mbozi DC	Mbeya	758072114	0758072114	Old phone did not start with '0' during registration	No
Andason Kibona	Mbozi DC	Mbeya	753391471	0753391471	Old phone did not start with '0' during registration	No
Anne Mwakoma	Mbozi DC	Mbeya	762840490	0762840490	Old phone did not start with '0' during registration	No

## Farmers lost criteria

Name of farmer	LGA	Active Phone	PRA save him/her	Why lost criteria
Menyaichi Ringo	Moshi DC	0674329230	Judith	Sold all animal
Anamel Makei Moshi	Moshi DC	0658633932	Judith	Sold animal
Emrod Kiwon	Moshi DC	0784396589	Judith	Sold due to age
Amasha Lameck	Mbeya CC	0757666790	Essau Mshani	Sold and slaughtered
Stela Kihega	Mbeya CC	0753259922	Essau Mshani	Sold and slaughtered
Samwel Muyoya	Mbeya CC	0769562185	Essau Mshani	Sold and slaughtered

## Large-scale herd size and GPS location of farms

Farm Name	Region code	District	Ward	Village	Longitude	Latitude	Herd size
Zulfiroz Farm	Arusha	Meru DC	Usa River	Usa River	E 36° 51' 54"	S 3° 21' 18"	149
Valahala Estate	Arusha	Meru DC	Usa River	Usa River	E 36° 52' 3"	S 3° 21' 20"	55
Oljoro Unit I Farm	Arusha	Meru	Oldonyosambu	Oldonyowas	E 36° 39' 24"	S 3° 11' 19"	125
Arusha Prison Farm	Arusha	Arusha City	Olmoti	Ngaramtoni	E 36° 36' 53"	S 3° 22' 1"	152
Lita Tengeru Farm	Arusha	Meru	Akeri	Patandi	E 36° 47' 58"	S 3° 23' 11"	120
Milkcom Dairy Farm	Dar Es Salaam	Temeke Municipal Council	Kisarawe 2	Lingato	E 39° 23' 14"	S 6° 56' 23"	580
Lmu Saohill	Iringa	Mufindi	Ifwagi	Itulavanu	35.328356	8.370608	1742
Nyamande Farm	Iringa	Iringa	Mgama	Ihemi	35.474512	7.996311	214
Mafinga Jkt Dairy Farm	Iringa	Mafinga	Wambi	Luganga	35.299648	8.329094	103
Ndoto Farms Ltd	Iringa	Kilolo	Ihimbo	Ihimbo	35.296608	7.91698	358
Kibebe Farm Ltd	Iringa	Iringa DC	Luhota	Tagamenda	35.754329	7.804082	640
Lutemi Farm	Iringa	Iringa DC	Maboga	Makungati	35.431177	7.892509	138
Ilandutwa Dairy Farm	Iringa	Iringa DC	Mgama	Ilandutwa	35.35'40"	8.10'35"	263
Asas Dairies - Nduli Farm	Iringa	Iringa DC	Nduli	Igingilany	35.738685	7.676754	353
Asas Dairies - Igingilanyi Farm	Iringa	Iringa DC	Nduli	Igingilany	35.742866	7.623481	390
Asas Dairies - Mgongo Farm	Iringa	Iringa MC	Nduli	Mgongo	35735941	7.702576	215
Ruseous Farm	IRINGA	Iringa District Council	Nzihi	Nzihi	35.523827	7.723951	93
Kibosho Girls Farm	Kilimanjaro	Moshi Dist	Kibosho Ma	Singa	37.31159	3.273233	27
Masaya Farm	Kilimanjaro	Moshi Dist	Kahe Masha	Kyomu	E 37° 33'7"	S 3° 28' 10"	122
Kafoi Farm	Kilimanjaro	Siha	Garagagua	Wiri	37.038984	-3.1160808	183
Kilacha Farm	Kilimanjaro	Moshi Dist	Mwika Kusini	Mawanjeni	37.560169	3.39104	39
Kilari Farm	Kilimanjaro	Siha	Gararagua	Wiri	E 37° 1' 20"	S 3° 10' 44"	270
Lawrence Farm	Mbeya	Mbeya DC	Utengule	Utengule	E 33° 19' 33"	S 8° 53' 57"	27

Taliri Uyole	Mbeya	Mbeya City Council	Uyole	Ibala	E 33° 31' 50"	S 8° 55' 8"	97
Kitulo Lmu	Mbeya	Makete DC	Kitulo	Ujuni	E 33° 54' 13.3"	S 9° 05' 25.4"	815
TALIRI Farm -Tanga	Tanga	Tanga City	Nguvumali	Majani Mapana C	E 39° 3' 37"	S 5° 5' 15"	285
Lita Buhuri	Tanga	Tanga City	Maweni	Kichangani	E 39° 1' 39"	S 5° 7' 14"	262
Nicodemus Kessy	Tanga	Tanga City	Pongwe	Kisimatui	E 38° 55' 47"	S 5° 10' 8"	150
Julius Shoo Dairy Farm	Tanga	Tanga City	Pongwe	Maranzara	E 38° 57' 51"	S 5° 11' 10"	77
Mruazi	Tanga	Korogwe DC	Hale	Hale	E 38° 36' 18"	S 5° 17' 34"	1800

### Feedback of the new tool shared to the data team after testing phase I

Sn	Platform segment	Observed challenge	Suggested solution
		No villages names	Add villages
1	Cattle exits from the herd	The form neither shows tag IDs of the registered animals nor animals to be exited	Provide list of animals in this case
2	Cattle management/ monitoring	No section of mature animal monitoring i.e. weights	Add information required.
3	Large scale farms	The forms ask about household information like in small scale farms; this is not necessary as most large scale are institutions	Remove irrelevant information
4	Animal registration	The form requires to input 9 small print ear tag numbers while standard ear tags have only 8 digits in small print.  The form ask to select the AI Straw and Bull that Conceived Animal: No list of straw and bull	Correct into reading 8-digit number in small print on the ear tag.  Add the list of AI Straw  And Bull
5	Feedback to Household	Preferred language for feedback shows other languages not used in Tanzania	Leave English, Kiswahili and Other Dropdown
1	Cattle management/ monitoring  Milk production per cow	Current lactation details require only month and year No date	Add date.
2	Cattle management/ monitoring  Pregnancy observation	No details for pregnancy observation	Add information required.
3	Cattle management/ monitoring  Calving registration	No details for calving registration	Add information required.
4	Cattle management/ monitoring  Calf growth monitoring	No details for calf monitoring	Add information required.

5	Farm management/ monitoring  Milk utilization in household	On the part of Milk selling and utilization there is no restriction in the form. This might cause errors as one might mistakenly fill data which will not tally with the amount of milk produced. eg production in a day is 10 litters but milk usage 12lites	Restrict the form from moving forward if milk usage do not tally with the amount produced that day.
6	General farm details  Current cattle breeding technologies	It does not ask about recent breeding details for example if the animal has been served or any other related information, it only asks about general breeding information	Add serving details like it is in the current forms in use.
7	General farm details  Current cattle health services	It's too general as it does not ask about recent practices for individual animal I.e. since last visit	Add health record inquiries as they are in the current forms in use.

### ADGG web visualization data system feedback

Sn	ADGG web visualization system	Observed challenge	Suggested solution
1	REPORT BUILDER ATTRIBUTE REMOVED	The report attribute was tested earlier for report generation of variety variables corresponding to the need of the user	Add the attribute with active functionality.
2	EVENTS SEARCH SEQUENTIAL ORDER	The first search starts with farm name	Sequentially for the system timely response it should start with the location (i.e. country, region, ward, village), then follows enumerator, scale of the farm, farm name
3	ADD VILLAGES, ENUMERATORS, FARMER  DATA LEVEL SEARCH	The system response up to ward level in data search	Add search corresponding to villages, enumerators and farmer level in getting data feed in by the enumerators in relatively corresponding.  It's necessary to have technician name linked to his/her data on the click of the name.



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