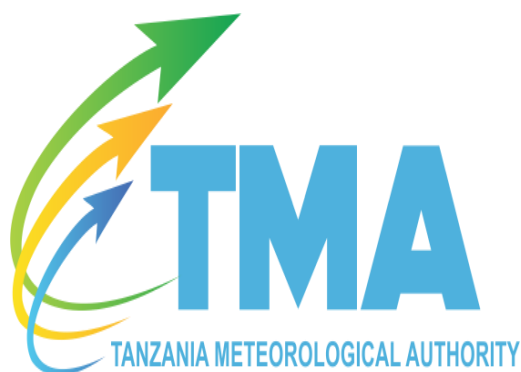


REPORT ON FOCUS-AFRICA JOINT PARTNERS STAKEHOLDERS ENGAGEMENT MISSION TO TANZANIA



DATE: From 9th-13th MAY 2022

LOCATION: Dar es Salaam and Kibaha in Tanzania

1. PARTICIPANTS

I.	Sebastian Grey	WMO
II.	Dragana Bojovic	BSC
III.	Alberto Troccoli	WEMC
IV.	Sara Octenjak	BSC
V.	Dr. John Faragher	UK Met Office
VI.	Sam Whittlesey	LGI consulting company
VII.	Adéola jaiyeola	LGI consulting company
VIII.	Dr. Ladislaus Chang'a	TMA
IX.	Dr. Hashim Ng'ongoro	TMA
X.	Mr. Isack Yonah	TMA
XI.	Mr. Wilbert Timiza	TMA
XII.	Dr. Alfred Kondowe	TMA
XIII.	Mecklina Merchades	TMA
XIV.	Lovina Japhet	TMA
XV.	Vaileth Jonas	TMA
XVI.	Mathew Ndaki	TMA
XVII.	Magreth Massawe	TMA
XVIII.	Tereza Ngassa	TMA
XIX.	Vanessa Chase	TMA
XX.	Avelina Sulley	TMA
XXI.	Rashid Abdallah	TMA
XXII.	Maria Ernest	TMA
XXIII.	Jacqueline Tukay	TMA
XXIV.	Busara Titu	TMA
XXV.	Sara Mlonganile	TMA
XXVI.	Yunus Ibrahim	TMA
XXVII.	Emmanuel Wambura	TMA
XXVIII.	Omary Hamis	TMA
XXIX.	Gideon Kimario	TMA
XXX.	Doroth Ally	TMA

2. AGENDA

- I. Day one – A meeting at Tanzania Meteorological Authority (TMA) with the project team and people from Climate Action Network in Tanzania (CANTz)
- II. Day two – A visit to University of Dar es Salaam (UDSM) and Kibaha
- III. Day three – A visit to Tanzania Electric Supply Company (TANESCO) and Kibaha
- IV. Day four – A meeting with Food and Agriculture Organization (FAO) from United Nations, TotalEnergies and a windup meeting at TMA
- V. Day five - Departure

3. INTRODUCTION

FOCUS-Africa has been implementing the project by having several online meetings, which had several challenges like poor contribution and involvement of local stakeholders such as farmers, in response to that the project team has planned a joint partner mission to the country Tanzania as part of case studies development and engagement to stakeholders. The main objectives being:

- a) Face-to-face interaction between case study team members in the consortium
- b) Conduct work planning and advance technical aspects of the case studies in collaboration with the services provider such as TMA
- c) Engage with relevant stakeholders and users for the climate services to be developed
- d) Contribute to the initial socio-economic baseline assessment

The guests arrived safely in Tanzania on 8th May 2022 and they all stayed at Protea Courtyard Hotel in Dar es Salaam, the guests were a total of seven including:

- | | |
|---------------------|------|
| 1. Sebastian Grey | WMO |
| 2. Dragana Bojovic | BSC |
| 3. Alberto Troccoli | WEMC |
| 4. Sara Octenjak | BSC |

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|--------------------|------------------------|
| 5. John Faragher | UK Met Office |
| 6. Sam Whittlesey | LGI consulting company |
| 7. Adéola jaiyeola | LGI consulting company |

I. Day one – A meeting at Tanzania Meteorological Authority (TMA)

The guests arrived at 06:00am UTC at TMA on day one (9th May 2022) of the mission at reception 3rd floor, Ubungu Plaza, Dar es Salaam and were warmly welcomed by the TMA project team, soon after greetings, the team welcomed the guests in Seminar room at 3rd floor for further procedure and the schedule for the day ahead.



Dr. Chang'a gave brief remarks on behalf of Dr. Kijazi (Director general at TMA), he welcomed all the guests by explaining how existed TMA colleagues are to finally meet the team of FOCUS-Africa, he appreciated the visit, he then gave an opportunity for everyone in the room to introduce themselves to familiarize with everyone. Soon after the introduction from everyone, Dr. Chang'a explained in details on the schedule of the day ahead for day one of the mission.

A brief video clip showing the activities done by TMA soon followed the remarks from Dr. Chang'a, The video clip showed different activities done by Climat section, Agromet section, Hydrology section, Central forecasting office, modeling and storage of data in achieve. The video clip followed by a presentation from Vaileth Jonas (Climate expert FOCUS-Africa at TMA) who gave a presentation on the progress of the project in TMA, achievements and some challenges.



Some key issues that were highlighted were the involvement of other stakeholders in infrastructure case study, the identified stakeholders were the Tanzania National Roads Agency (TANROADS) and Tanzania Rural and Urban Roads Agency (TARURA) together with COWI who were initially the identified end users of climate services for infrastructure.

The presentation that followed after Vaileth was of Dr. Kondowe who is in Modeling section at TMA which explained and showed on the weather services and products to energy, infrastructure and food security, reviewing of the existing products/models for agriculture and food security, energy and infrastructure but also dissemination channels.



The key issues highlighted by Alberto in this presentation were the colors used in displaying of seasonal forecast maps provided as WRF model products, he was curious if it was the decision made by TMA to choose such colors to be used, and the response from Dr. Kondowe was that there are three kinds of maps with different colors but all the maps have the same meaning, there are maps that use colors that have been agreed with TMA with involvement of different stakeholders and end-users of climate services, the second kind of maps are using the colors as put forward usually in climatological maps, and the last kind of maps used by modelers at TMA with their agreement on what colors to be used by themselves.

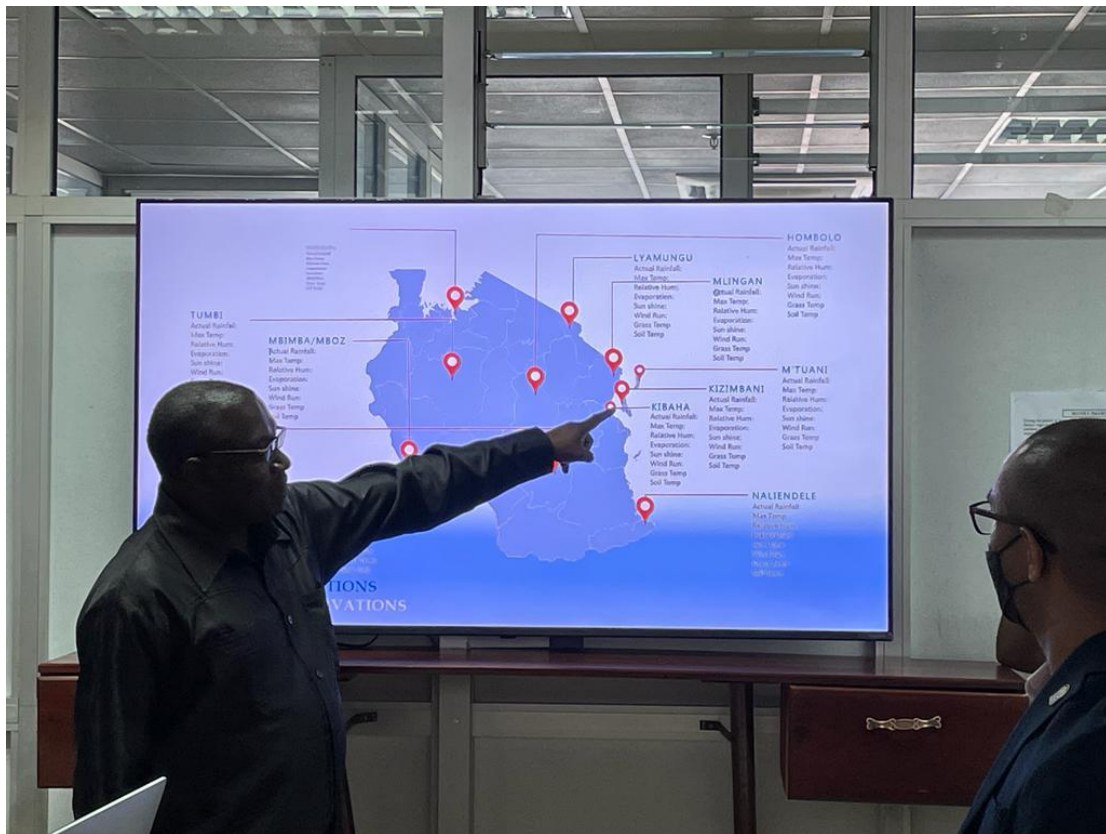
The presentation from agrometeorologist Ms. Lovina from Agromet section on the types of weather forecast for agricultural activities, Agromet bulletins, Agromet database and dissemination method followed soon after Dr. Kondowe's presentation.



The presentation ahead that was from Mr. Joseph from climate section where he explained on receiving of weather data and storing of data in Clidata and in achieve. All the presentations were quite impressive, as they tend to show in brief summary what is done by TMA in mentioned sections. Dr. Chang'a requested for a round of applause for all the presentation from all presenters, he then announced on the recent release of the annual statement on status of Tanzania's climate for 2021 and provided some of the statements to Alberto on behalf of the energy/infrastructure team and Dragana on behalf of food security and agriculture team.



After that Dr. Chang'a allowed our guests to visit different sections in TMA to see what is done in reality now, the guests visited climate section where they saw how data are digitized in Clidata and how some data are scanned to be stored in form of pictures for data rescue, they also got the chance to see the achieve room where the data in hardcopy are stored, it was followed by visiting Agromet section where the guests saw how bulletins are prepared and disseminated, the Agromet stations and how they are distributed all over the country and the data base.



Central Forecasting office followed after Agromet section, in Central forecasting office, the guests got to see the models used in forecasting, the synergies and the communication desk where data are received, they also visited the modeling sections and saw the Weather Research and Forecasting (WRF) models, lastly the guests visited the severe weather warning section.

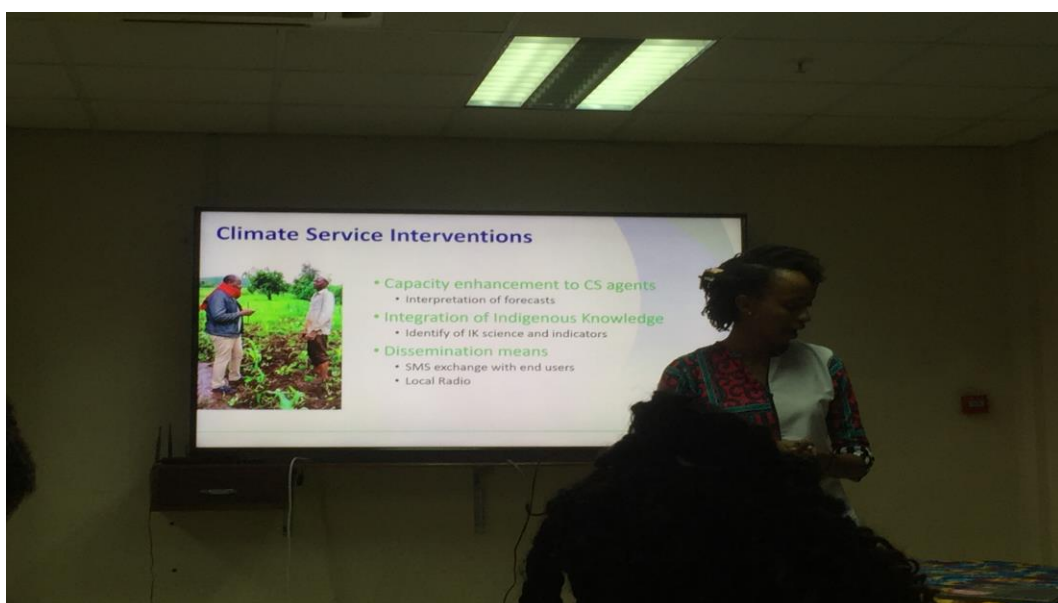
The TMA project team and the guests returned to the seminar room for planning of day two of the mission after we have had lunch outside Ubungu Plaza building. We agreed to divide ourselves in two teams, the food security and agriculture team, which included Sebastian, Dragana, Sara, Sam, Dr. Kondowe, Lovina and Mathew while the energy/infrastructure team involving Alberto, John, Adéola, Mecklina and Vaileth.



After the discussion for planning for day two we had a quick short break before we started our meeting with people from CANTz, Mr. Elifadhili and Ms. Jacqueline came on behalf of Dr. Sixbert Mwanga whom we were supposed to meet with but unfortunately he was having another mission. CANTz is an NGO and network with over 50 members country wide, in 2017 CANTz started a project to support communities in 4 districts to embark into participatory climate services for improving livelihoods, (Phase I: 2017-2020 and Phase II 2020-2023). The project ensures access, integration and utilization of climate services to enhance Climate Change adaptation. Their climate services interventions included:

- a) Capacity enhancement to Climate Services agents
 - Interpretation of forecasts
- b) Interpretation of indigenous knowledge (IK)
 - Identification of IK science and indicators
- c) Dissemination means
 - SMS exchange with end users
 - Local Radio

What really seemed interesting from CANTz was the use of SMS as the way of getting feedbacks from end-users as it seemed very interesting, easy and more fast to engage to end users of their services.

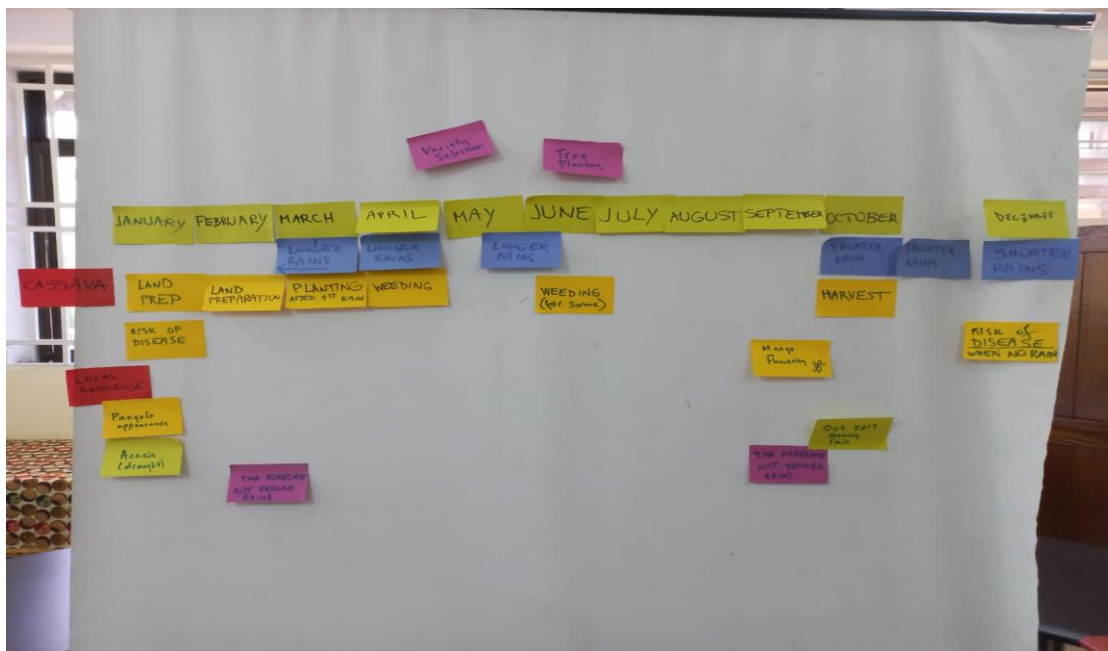


II. Day two – A visit to University of Dar es Salaam (UDSM) and Kibaha District

Day two of the mission, food security and agriculture team visited Dr. Msita from TARI, extension officers, DAICO and RAA in Kibaha district. They started with Focus Group Discussion (FGD) with the extension officers, DAICO and RAA that went very well beyond their expectations. The extension officers, DAICO and RAA were very cooperative which made an effective work and acquisition of more information.



It was noted that the main crops grown by the farmers in Kibaha district are cassavas, the guests were able to see the trend of planting to harvesting period within a year as shown below.



After speaking with the extension officers, DAICO and RAA together with having breakfast and lunch the guests where able to visit Dr. Msita at TARI and saw how they do work to provide services to farmers and agriculture sector generally but also they got the chance to see the weather station for observation at Kibaha.



On the same day a visit to University of Dar es Salaam happened for a meeting with Prof. Pius Yanda, so as to have his views on climate services for Infrastructure in Tanzania. The visit was accompanied with the energy/infrastructure team.



Prof. Pius Yanda is a professor at the Institute of Resource Assessment (IRA) in Dar es Salaam, Tanzania. He led the process to establish the climate change Centre and PhD and MS degree on climate change at the University of Dar es Salaam. He holds a PhD from University of Dar es Salaam.

Prof. Yanda explained that so far we still have a long way to go for the case of infrastructure sector with the ongoing climate change, as it has not been given much attendance, he suggested such big projects like Standard Gauge Railway (SGR) should include climate change in planning and construction. He gave an example of Jangwani Bridge in Tanzania that was build without considering climate change and now whenever there are rainy periods the bridge is flooded which affects transport and communication. Generally it was his thought that climate change in infrastructure has not been taken seriously.



Prof. Yanda suggested we engage some potential people whom are directly involved in infrastructure such as NEMC who are responsible for issuing of Environmental Impact Assessment (EIA), Minister of Infrastructure, COWI, and City Authority who are responsible for planning development in the urban areas.

III. Day three – A visit to Tanzania Electric Supply Company (TANESCO) and Kibaha

This day we had agriculture and food security team visiting Kibaha District but this time around engaging farmers for Focus Group Discussion, it was a very interactive discussion as the guests explained it was beyond their expectations too. The farmers also complied with the extension officers on their main crop grown which is cassava.



For the energy/infrastructure team, we went to visit TANESCO and had a very good discussion with them, although some intended experts like Mr. Simon Lauwo, Dr. Muyungi and Mr. James Kirahuka were not present as we wanted to do a follow up on the two presentations we have had with them on behalf of TANESCO before but Mr. Sappa represented them well together with Eng. Maunda, Eng Daniel, Eng. Clarence (Principle Hydrogeneration) and Eng. Samuel Kessy.

The Tanzania Electric Supply Company Limited (TANESCO) is a Tanzanian organization, it is whole owned by the government of Tanzania, its business include electricity generation, electricity transmission, electricity distribution and sale of electricity to the Tanzanian mainland and bulk power supply to the island of Zanzibar.

A meeting with TANESCO was a great success as we got to have an agreement for provision of models from FOCUS-Africa for climate projection so as to help in sustainability of power production in the country. To help know the requirements of TANESCO and the suitable model that would work best for them, TANESCO is to

provide inflow data from their six locations where they have set their Hydropower plants.



Before TANESCO had an engagement with Norwegian company for a project that wasn't successful and it fell apart as the objectives were not met. FOCUS-Africa team requested the documents of that project to see if they can take it from there onwards. Basically for meeting the objectives it should be the combination of getting the data from TANESCO from their six locations then FOCUS-Africa will provide the models that will produce a forecast to help TANESCO in planning.



TANESCO explained their main challenges including the issue of collection of data is done manually which sometimes lead to delaying of data hence they need automatic gauging stations for collection of data, they also have data logger where the data are sent so they download the data from there but the equipment is not working. John asked if the data collected from these locations are written and the answer from TANESCO was yes, the data are plotted and then sent to TANESCO. Alberto explained that provision of equipment is different to what FOCUS-Africa does, it's actually with CAPEX but TMA, Met Office and WMO should see how to assist on that. John added that there are future options like WMO project in future that will allow the countries to ask for equipment.

Mr. Sappa explained on the need for capacity building for the experts in TANESCO especially for experts of water resources and generation as there are no experts of modeling, Alberto explained that capacity building is embedded in the process as there will be feedbacks after understanding what are TANESCO's requirements. He further said "we will do the work and you will give feedbacks, hence TANESCO is to establish a relationship to get feedback monthly, because we don't want to produce something not relevant to what TANESCO needs and the models are just simple enough to even run in a laptop. So capacity building can be done remotely and we have done it before like in Central Asia with the energy company."

Vaileth intervened and asked to be sure if the models are already generated? And if so, is there any possibility that there wouldn't be a model that would meet TANESCO's requirements? And Alberto clarified that the models are already generated and there is a minimal chance that there wouldn't be a model that will not meet TANESCO's requirements, he further elaborated that there are statistical models that are just faster and are the best way recommended.

Mecklina also wanted to know the modality for model generation, and who will be running the model? The feedback from Alberto was that firstly they will have to know the requirements from TANESCO and he suggested statistical models to be the best option then the models will be provided to TANESCO and they can use it and run them (in python language)

The agreements made at the end of the meeting we had with TANESCO were as follows:

- a) It was agreed for the data to be provided to FOCUS-Africa energy team but after consulting the managing Director of TANESCO for approval
- b) Presentation on how the model works, there will be monthly calls on progress and feedbacks
- c) Contact people from TANESCO will be Mr. Simon Lauwo, Mr. Tulway Sappa and Mr. James Kirahuka
- d) TANESCO to share the documents on the Norwegian project.



IV. Day four – A meeting with Food and Agriculture Organization (FAO) from United Nations, TotalEnergies and a windup meeting at TMA.

Day four of the mission, the two teams were at TMA and we had two meetings with stakeholders who came to TMA, the first meeting with Mr. Vyuvian Katala from TotalEnergies

TotalEnergies is a major multi-energies player on the international scene, present in over one hundred and thirty countries and strong due to the commitment of more than one hundred thousand people, from a wide range of origins, professions, and know-how. Today, the corporation is a player that has to interact not only with the various representatives of the economic world but also with the local populations in the areas in which it is established as well as with the public authorities. As such, the corporation plays an active role in the public debate.

The company mostly deals with exploitation of wind and solar energy in the country,. Their target is to have large power project. Mr. Vyuvian explained that the government is on discussion on developing of renewable energy and TANESCO has engaged with TotalEnergies on October 2021.

TANESCO are the main end-users of TotalEnergies services. Alberto asked if people from Total use climate information from TMA but the feedback was no, they don't use the climate information and data from TMA, instead they use data from online open sources, Mecklina tried to make it clear that TMA is the mandate authority for provision of weather data like solar radiation and wind to stakeholders of climate services in the country. Mr. Vyuvian made added that their main requirement is land acquisition for exploitation of resources.



Adéola was curious to know whether there are specific regions in the country where the exploitation of wind and solar energy done more and the acceptance of end-users to the use of their services. Mr. Vyuvian explained that so far the only and main end user are TANESCO and they haven't engaged other stakeholders and the exploitation of energy is done in most potential areas where wind and solar energy are crucial.

Vaileth asked if TotalEnergy has any plans in engaging and investing on other sources of renewable energy apart from Solar and Wind energy but also she wanted to know how urgent does TANESCO need these services from TotalEnergies since they are the main end-users of TotalEnergies services? Mr. Vyuvian explained that for Tanzania they have planned to invest on wind and solar energy only and on the other question he said that by early next year TANESCO is to produce 200mw, which is impossible hence they are looking for developers.

Mecklina also elaborated that knowing the company TotalEnergies is a great opportunity for TMA as it has been implementing Act No 2 of 2019 for provision of weather information to stakeholders, hence TMA will take the opportunity to visit TotalEnergies for a meeting on planning and discussion for sustainable investment.

We had a lunch break with the team before having a meeting with Mr. Mponda from (FAO) of United nations at TMA from 11:40am UTC. Mr. Mponda is an agrometeorologist working in FAO, the main objective of the organization is to build resilient for food security, improving communication and increasing support in interpretation of Agrometeorological information. In the organization the structure is having the food security department, division of early warning (information on weather alert in food security).

Dragana wanted to know how does the chain of information up to the farmers go, and Mr. Mponda explained that everything starts at TMA, where they issue warnings then they are passed to President's office, Regional administration and Local governments (PORAG) who are responsible for actions.



It was explained that everything PORAG says he/she has to consult MoA and the role of other stakeholders like UNA and UNCRO is that they ask for appeal from disaster risk management department and discuss what needs to be done. So TMA invites the stakeholders after issuing a warning and they decide what should be done.

Sam asked if there are seasonal forecast annually on climate projection and Mponda replied that there are no models for seasonal outlook and it would be good if the models would be there for planning and decision, Sam added a question, he said “are there any resources/policy/reports that you recommend we look into it?” mponda replies that they can look on Agriculture Climate Resilient which is found online.

Dragana wanted to know from Mponda what are the ideal of climate services should be issued, how should it look like and if there is a need for a forecast ahead of time, and Mponda explained that the climate information should be more localized, TMA did something as downscaling products for the whole country (at District level), he further explained that what’s critical is the onset and cessation of the rainy season so that farmers would decide what to grow but also dry spell periods so that they know

when dry spell is about to happen they can know when to do weeding or apply fertilizers and lastly the forecast to be released a little bit earlier (Two weeks) for enough time to prepare. Mr. Mponda suggested that they would appreciate it if downscaled forecast were done to Agroecological zones. He added that 10 days forecast is important to keep track and monitor the climate for example this year the issuing of MAM seasonal was updated and some people didn't get the update, so people complained the Mam seasonal forecast was wrong.

Mr. Mponda explained the challenges they face is that the PORAG usually produces the budget for actions in severe events but the forecast to issue warnings for actions comes after the budget is already set. Mr. Mponda concluded that the important thing to be done now is to do Train of Trainers (ToT) as interpretation of forecast to local farmers is a process. Lastly we thanked Mr. Mponda for his continuous cooperation and for agreeing to meet with the food security team from FOCUS-Africa, he indeed provided very crucial information that will help the food security team towards generating climate services for agriculture and food security.



4. CONCLUSION

At 09:00am UTC before the meeting with Mr. Mponda we had a wind up meeting with Dr. Chang'a and all the FOCUS-Africa team in Conference room, where Dr. Chang'a explained his deep thanks to the team with all the efforts conducted, he further requested each one from the FOCUS-Africa team to explain in brief their experience during the mission and everyone just proved that the mission was a complete success. Sebastian also got the opportunity to thank TMA for organizing the mission and make it possible, he also thanked Dr. Chang'a for making the meeting with TANESCO possible as it was a challenge to the last minute but we managed to meet with them. Dr. Chang'a marked the end of the mission and provided his regards on behalf of the Director General and lastly we had a photograph of all of us together.

I hereby submit the report,

Prepared by Vaileth Jonas

