

# **STAKEHOLDER WORKSHOP**

## **Focus On Tanzania**

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**Second External Stakeholder Workshop,**

**14-15 September 2021**

**13:00 – 17:00 CET**

**14:00 – 18:00 EAT**



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**Dr Hidelitha Msita**



# **Impact of Climate Change on Agriculture and Mitigation Measures for Sustainable Production in Tanzania**

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- **Collaborators: Tanzania Meteorological Agency (TMA) and World Meteorological Organization (WMO)**
- **Expected Donor: European Union (EU)**

# Introduction

- **TARI established on 2016 and started to work on 2018**
- **Aimed to enhance and strengthen agricultural research system in Tanzania; development and dissemination of technologies, innovations and management practices to address the real needs of farmers and other stakeholders**
- **Mandated to conduct, regulate, promote and coordinate all agricultural research activities conducted by public and private research institutes or organisations in**

**Tanzania**

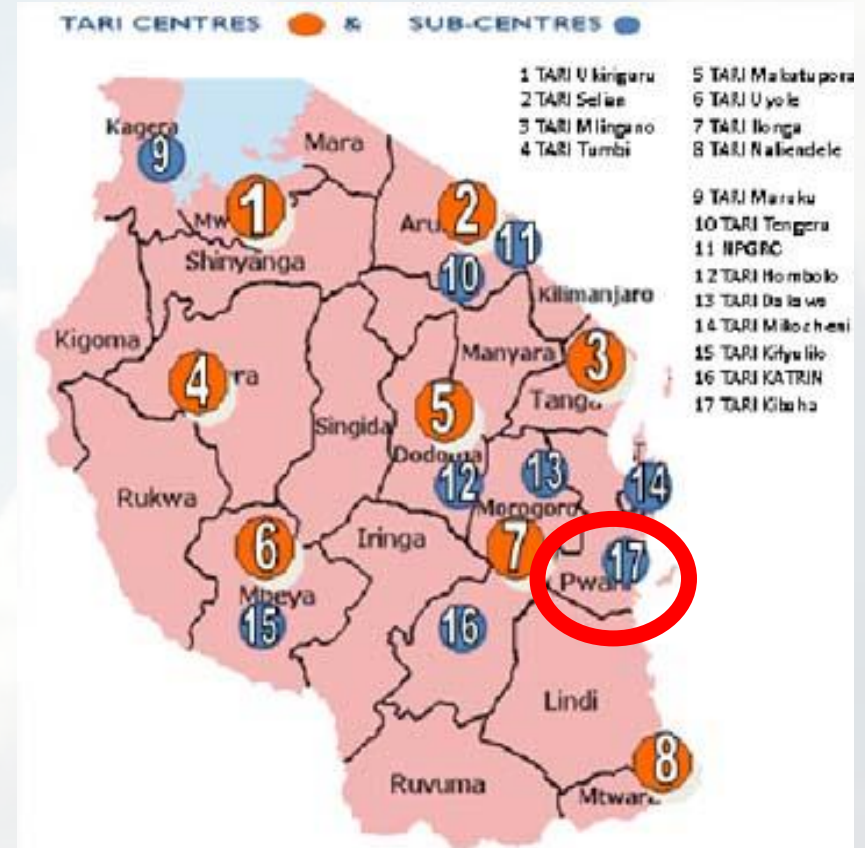


- **TARI KIBAHA is among 18 TARI centers**

- **National mandate sugarcane research and root and tuber crops**

- **It is situated at 06° 50' South and longitude 38° 58' 21.2" East**

- **An altitude of about 170 m.a.s.l.**



# TARI meteorological data user

- **TARI uses weather information specifically rainfall and temperature from TMA in planning and implementing its research activities**
- **Experiments; land preparation, planting and harvesting time of crops depend on the amount of available rainfall, temperature and other parameters**





# Problem statement

- **In Tanzania, Climate variations contributed in yield fluctuation of sugarcane and food crops.**
- **Emergence of pests and diseases like aphids, worms and smut**
- **Unreliable predictions of on setting of season or cropping calendar for sugarcane and other food crops**
- **Climate change lead to change in strategic crop management in order to cope with the situations**

# Problem statement

- **Situation of climate change variations with rise/fall in sugarcane yield observed in Fiji eg: high sugar production of (516,529 tonnes) in 1994 and low production than that of 1994 in 1997, 1998, and 2003 (J.Gawander, 2007)**
- **Severity of most sugarcane diseases associated with the climate related factors such as sugarcane orange rust disease observed in Florida due to warmer winter and higher humidity (Zhao & Li, 2015)**



# Justification

- **Reliable predictions of cane yields with response to climate change are necessary for planning adaptation strategies and sustainable production**
- **However, study on the impacts of climate change has been conducted in cereals and legumes only and information on its impacts on cane and other crops is not known in Tanzania**
- **To identify and evaluate the impacts of climate change on cane crop using climate data from TMA will results: designing mitigation measures for adaptation and sustainability**



# Objectives

- **Main: Assessment of the impacts of climate change on sugarcane productivity for adaptation strategies and sustainable agriculture**
- **Specific :**
  - i. **To collect information on awareness and availability of climate information to farmers**
  - ii. **To project crop productivity of sugarcane using crop model**
  - iii. **To design mitigation measures for sustainable sugarcane production**
  - iv. **To capacitate users on how to use climate information in their agricultural activities planning for sustainability of production**

# Materials and methods



**Location: Manyara, Morogoro and Kagera Regions**

## **Activities**

**(i) To collect information on awareness and availability of climate information to farmers**

- ✓ Preparation of questionnaire for face to face interview to farmers, extension officers.**
- ✓ Information will be also collected using focus group discussion and Participatory Rural Appraisal (PRA)**
- ✓ More than 600 farmers will be randomly selected for interview from district to village level**

# Materials and methods



**(ii) To project crop productivity such as sugarcane using crop models**

- ✓ **Collection of crop data (yield) from Tanzanian Ministry of Agriculture, Faostat and Sugar Board of Tanzania and sugarcane estates from 1990 to 2020**
- ✓ **Collection of weather data (monthly mean rainfall and temperature) from TMA from 1990 to 2020**
- ✓ **Model simulation up to 2100**

# Materials and methods

**(iii) To designing mitigation measures for sustainable sugarcane production**

- ✓ **Collection of secondary data**
- ✓ **Setting field experiment in different agroecological zones**

**iv) Capacity building to farmers, extension officer and researchers**



# Expected outputs

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- **Information on awareness and availability of climate information to farmers will be available and updated**
- **Information on projections of crop productivity and weather (rainfall and temperature) for 100 years will be available**
- **At least 3 mitigation measures will be identified for adaptation strategies**
- **At least 1 PhD, 2 MSc, 3 BSc students and 50% of farmers will be capacitated on the use of climate information in their agricultural activities for sustainability of the project**



# TARI in FOCUS Africa

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- **Agriculture and food security case study goal is to develop climate services for the agricultural sector in Tanzania and tailor them to the local farmers' needs**
- **TARI was identified by FOCUS Africa Project as a potential co-producer of user-centric the climate products and services.**
- **Therefore, engagement of TARI in the project is very crucial for sustainability of the services because TARI is directly using climate services from TMA**



# TARI in FOCUS Africa

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- **TARI staff will be involved in different project activities, including participating in project meetings and workshop, exchange of information on the needs, uses of the climate services for TARI decision making.**
- **Through this project, TARI will be able to access the updated climate services for selected crops eg (rice/beans and sugarcane) and regions such as (Manyara, Morogoro and Kagera) to support farmers' in using the climate services.**



# Acknowledgement

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- **World Meteorological Organization**
- **Tanzania Meteorological Authority**
- **Tanzania Agricultural Research Institute**



Thank you for your listening

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