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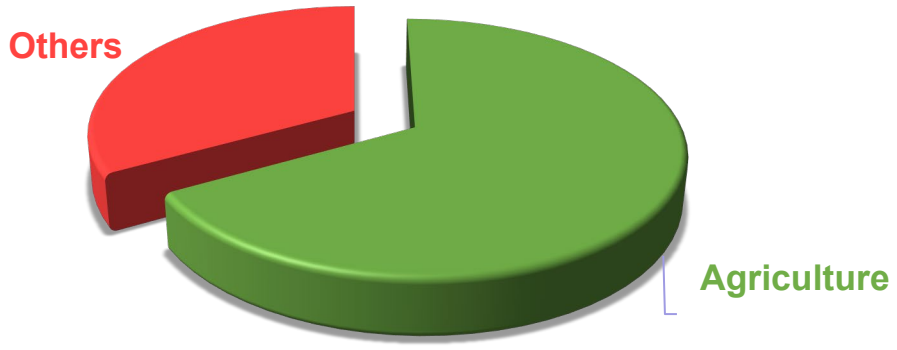
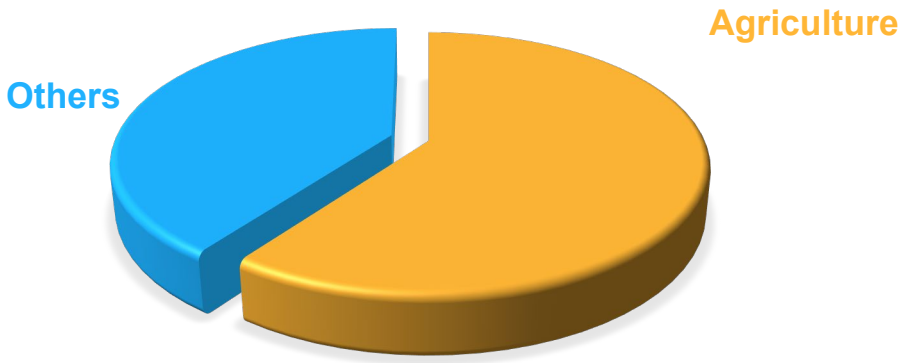
Digital Technology as a Solution to Address Negative Impact of Climate Change on Women's Agricultural Participation in Sub-Saharan Africa

AGRICULTURE IN SUB-SAHARAN AFRICA

- Agricultural sector in Africa has a huge **social and economic footprint**.
- In sub-Saharan Africa, more than **60% of the population are smallholder farmers**, about **23% of the region's GDP** comes from agriculture and agriculture accounts for **30% of the value of exports**.



Provides employment for about **two-thirds of Africa's working population** and for each country



Contributes an average of **30% to 60% of GDP**

WOMEN'S AGRICULTURE IN SUB-SAHARAN AFRICA

- Women's economic labour remains concentrated in the agricultural sector in Sub-Saharan Africa (more than **50%**).
- **Climate change amplifies existing gender inequalities** and poses unique threats to women and girls' livelihoods, health and safety. They have lower chances of surviving climate disasters because of the **disparities in access to information and safety resources**.
- Their production struggle to keep up as **crop yields level off** in many parts of Africa, **ocean health declines**, and natural resources are being stretched dangerously thin - including soils, water, and biodiversity.

“For **women**, farming offers a chance to provide for their families and become **financially independent**. It also provides an opportunity for women to participate in **decision-making processes** and be recognized as key players in the agricultural sector.”

- Sinethemba Masinga

CLIMATE CHANGE IN SUB-SAHARAN AFRICA

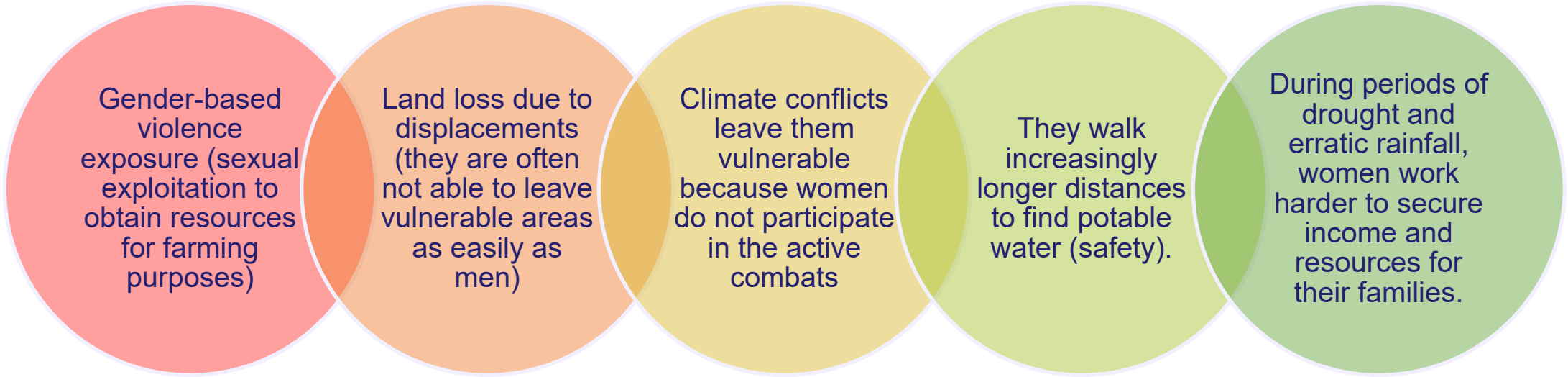
- **Agriculture is sensitive to weather and climate.**
- **Africa** is the most affected by the adverse effects of **climate change**. From an agricultural perspective, it is contributing to **food security**, **population displacement** and **stress on water resources**.
- This is due to **increasing temperatures and sea levels**, **changing precipitation patterns** and increasingly extreme weather patterns are threatening health and safety, food and water security and socio-economic development in Africa.

CLIMATE CHANGE IN SUB-SAHARAN AFRICA

- Africa has **diverse agro-ecological zones**, ranging from the **rain-forest vegetation with bi-annual rainfall to relatively sparse, dry and arid vegetation with low unimodal rainfall**.
- Agriculture heavily depends on soil, water and other natural resources that the climate affects. While changes such as in temperature, precipitation and frost timing could lengthen the growing season or allow different crops to be grown, it could also make **agricultural practices more difficult**.
- The effects of climate change on agriculture will depend on the **rate and severity of the change**, as well as the degree to which the farming community in Africa can **ADAPT**.

Projected increases in temperatures, changes in precipitation patterns, changes in extreme weather events, and reductions in water availability may all result in **reduced agricultural productivity for women**. Increases in the frequency and severity of extreme weather events can also interrupt food delivery and result in increased food prices. Increasing temperatures can also contribute to spoilage agricultural products, thus affecting value chains. These result in shifting agroecosystem boundaries, invasive crops and pests, nutritional quality is compromised and lowering livestock productivity.

IMPACT OF CLIMATE CHANGE ON WOMEN'S PARTICIPATION IN AGRICULTURE IN SUB-SAHARAN AFRICA



“I have seen tangible climate change impacts in my daily work of farming. The **weather patterns have become unpredictable**, making it difficult to plan when to plant and harvest crops. There are more **frequent droughts and floods**, which affect crop yields and the overall quality of the produce. The **increased temperatures have also led to the spread of pests and diseases** that damage crops.”

- Sinethemba Masinga

CLIMATE-SMART AGRICULTURE

- Although focusing on the growth potential of the agricultural sector is important, creating enabling conditions and an environment for the continuity of this sector's value chains for women is going to be crucial. **Substantial investments in adaptation for women** will be required to maintain current yields and to achieve production and food quality increases to meet demand.
- The promise of a new climate economy requires tangible actions across key economic systems, some of which include targeted investments into sustainable water infrastructure. **It is going to be crucial for women to have the technical and financial capacity to incorporate climate-smart farming methods such as climate forecasting tools, planting cover crops and managing climate-related production threats.**
- Additionally, supporting the availability of **gender statistics and sex-disaggregated data** will help ensure that national policies and frameworks are gender-sensitive to aptly respond to the socio-economic problems posed by the climate crisis.

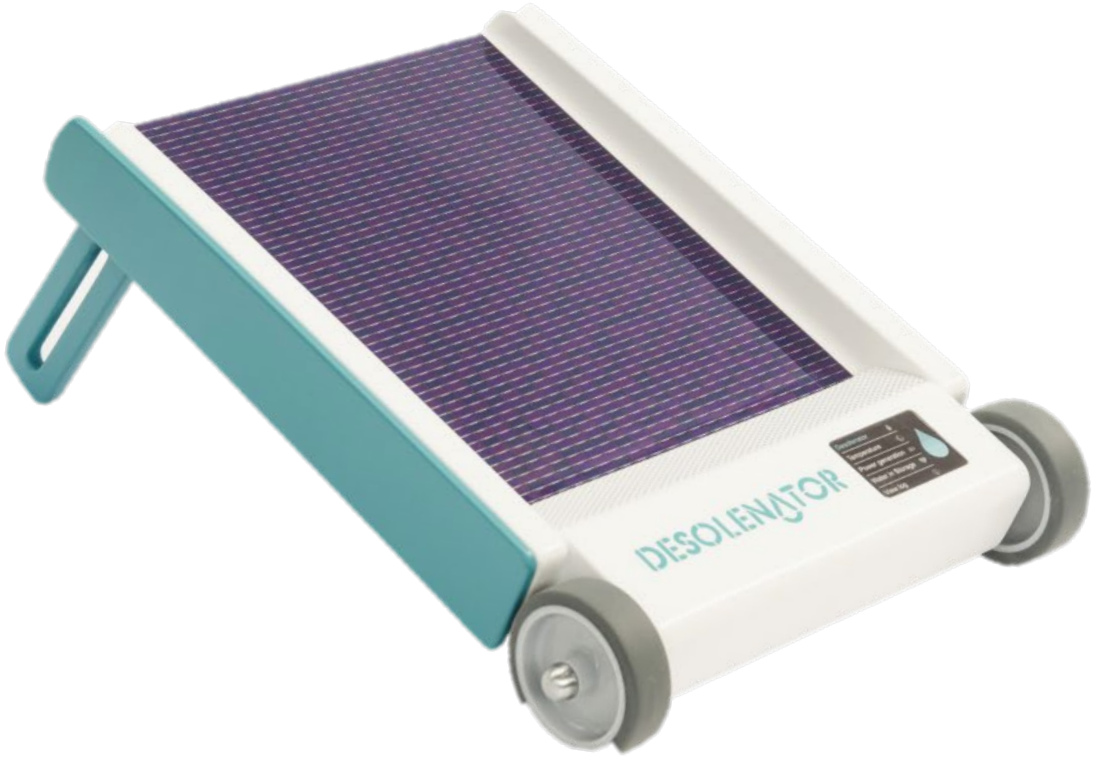
CLIMATE-SMART AGRICULTURE

1. **Water management systems** - Effective water management strategies such as rainwater harvesting, drip irrigation, and the use of drought-resistant crops can help optimise water use efficiency and ensure water availability for agriculture.
2. **Dry Farming** - crop production without irrigation during a dry season, usually in a region that receives at least 20 inches (50 cm) of annual rainfall, and utilizes the moisture stored in the soil from the rainy season.
3. **Hydroponics or Aeroponics** - which involves growing plants, usually crops or medicinal plants, without soil, by using water-based mineral nutrient solutions or are grown in the air

Source: https://prima-med.org/what-we-do/water-management/

DIGITAL TECHNOLOGY AS A SOLUTION

1. **Ocean Water** - Desalination methods (e.g. **Graphene Filters and Desolenator**) that is a separation process used to reduce the dissolved salt content of saline water to a usable level.
2. **Grey Water** - Products like the **Orbital Systems** which collects used shower water after use and repurifies it and creates a near-perfect system without loss of water.
3. **Water from Air** - The **Warka Water Tower or Water-Gen Atmospheric Water-Generation Unit** captures clean drinking water out of thin air and can capture 26 gallons of drinking water per day, enough for a small village.
4. **Sewage into Water** - **Omni Processor – S200** is a heat and power plant that converts dry or wet waste generated from wastewater treatment, industrial or food and beverage refining processes into pathogen-free reuse water or potable water



Q&A