IRRIGATION FOR DROUGHT RESILIENCE

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DROUGHT

Droughts occurrence are cyclical in nature and have poorly predictability, increasing in frequency and severity due to climate change & increased vulnerability

Has devastating impacts on livelihoods (i.e. Drought of 2018 left 3.4 M people severely food insecure and an estimated 500,000 people without access to water

The 2008-2011 drought estimated the total damage and losses to the Kenyan economy at a staggering US$12.1 billion (Post Disaster Needs Assessment)

IMPACTS ON AGRICULTURE

The agricultural sector suffers most from the consequences of droughts, leading to famine and food shortages including livestock deaths and water shortages

There is therefore urgent need for intervention options including irrigation, to mitigate future drought events.

LIVESTOCK DEATHS

WATER SHORTAGES

IRRIGATION

Irrigation is watering crops, pasture, by the use of water supplied through pipes, sprinklers, canals, sprays, pumps and other man-made features, rather than purely relying on rainfall

Irrigation infrastructure will also include adequate supply of water through collection strategies (e.g. dams for water storage etc)

ADVANTAGES OF IRRIGATION

- Can increase in yields by up to 230 %.
- Can save water up to 70% compare to flood irrigation.
- More land can be irrigated with the water thus saved
- Crop grows consistently, healthier and matures fast
- Ensures higher and faster returns on investment.

CLIMATE SMART AGRICULTURAL PRACTICES

USE OF DRIP IRRIGATION, WATER HARVESTING & HIGH VALUE CROPS, (Kikuumini Village - Makueni County)

DRIP IRRIGATION (Advantages)

- **Best suited for areas where there is a shortage of water.**
- **Energy and cost efficient**
- **Fertilizer and chemical can be given through micro Irrigation System itself.**
- **Fertilizer can be applied and increases FUE by 30%.**
- **Undulating terrains, Saline, Water logged, Sandy & Hilly lands can also be brought under productive cultivation.**
- **Will ensure higher and faster returns on investment.**
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Other forms of Irrigation

*** FLOOD IRRIGATION**

- Surface Irrigation (Rice paddies e.g. Mwea)
- Lots of water loss by evaporation

*** SPRINKLER IRRIGATION**

- Water saving up to 30% – 50 %.

*** SUBSURFACE IRRIGATION**

- Costly,
- Saves water loss from evaporation

SPRINKLER IRRIGATION

FURROW IRRIGATION

RECOMMENDATIONS

- Increases land areas occasioned by drought with irrigation during drought
- High-value crops can be raised with irrigation to enhance food and income during famine caused by drought
- Recommended for improved crop growth (healthy, consistent, high yields), which are elusive during drought
- Investment in irrigation using alternative water sources and on-farm reservoirs would enhance water availability.