

# Ministry of Agro Industry and Food Security

## *Climate Change and Food Security*

Agricultural Services

Agricultural Research & Extension Unit (AREU)

Forestry Service

National Parks and Conservation Service (NPCS)

Small Farmers Welfare Fund (SFWF) and

Irrigation Authority (IA), *among others*



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### ○ Food security

- household
- national level

~~the production of sufficient food or economic activities that generate sufficient revenue to purchase (or import) safe and nutritious food for a healthy life.~~

Definition no longer valid as money does not guarantee food supply, sometimes due to export ban in supplying countries (*due to local demand or low production from climate change impacts*).

*Increasing demand of food quantity and quality from local and tourist population puts pressure on the need for higher food supplies and security*

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- ① **Import and Export**
  - ① Sugar export
  - ① Food and feed import
- ① **Self-sufficiency in fresh vegetables and poultry products**
- ① **Heavy dependency on imports of staple food – wheat, rice, pulses, dairy products, oil, and feed – maize and others**

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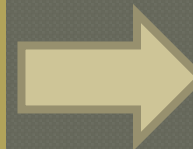
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### Impacts of Climate extremes on Food Security

- Changes in rainfall patterns
  - Unpredictability
  - Water deficit periods & drought
  - Flash floods
- Temperature extremes
- Cyclones



**Inappropriate water regime**  
**Soil erosion and degradation,**  
**Salinisation and loss of arable land**  
**Pest and disease build up**



### **Severely affect Food Production**

- **Crop loss**
- **Crop failure**
- **Lower feed intake & productivity in livestock**
- **High mortality**

**FOOD SHORTAGE**

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**Sugar Cane GeneBank at the MSIRI, Réduit**

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Mungbean Trial at Richelieu Experimental Station

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Forest in Catchment Area of La Nicolière

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Fire on Signal Mountain (Forestry Service)



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Pointe D'Esny Protected Wetland - NPCCS

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Mare aux Vacoas Reservoir

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Agricultural Services During World Food Day, Réduit

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Plant Genetic Resource Seed Genebank, Curepipe

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**Food Technology Laboratory, Réduit**

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### **R & D Activities at AREU**

- Promote production of seeds & seedlings
- Screen new varieties (heat tolerant & pest & disease resistant)
- Breeding of new varieties of crops

**Seedling production**



**Screening of variety**



**Onion seed production**



**Francia onion**



**Bellarose onion**



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**Drip fertigation in  
onion**



## **Efficient use of irrigation water**

- Sprinkler, micro-sprinkler, drip irrigation, & family drip systems

**Gravity fed irrigation  
system**



**Fertigation under  
protected culture**



**Use of Tensiometers,  
to monitor soil moisture for  
irrigation scheduling**



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### Soil Conservation

**Contour planting on mountains slopes at Les Mariannes**



**Mulching to conserve soil moisture**



**Drainage in field at Palmar**





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### Improvement of Soil Health through Use of Compost/Organic Manure

Support to ***Solid Waste Recycling Company Ltd*** on composting of Municipal Solid Waste for use in food crop production



Demonstration and sensitization on different types of composting & benefits of compost



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### Climate Change and Livestock Production

#### Improved housing

- Better ventilation & stocking density



#### Modifying environment to minimise heat stress

- Cooling & shading
- Lower population density



**Fodder production and conservation**  
- Cultivation of high quality fodder species  
silage & haymaking

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### **Climate Change and Livestock Production**

Conservation & utilisation of local breeds -  
Creole cattle and local goats: more  
adapted to harsh environment  
conditions

Use in genetic improvement programme



### **Waste Management**

- Biogas production & composting



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# Integrated Pest and Disease Management

- Maintain pest & disease surveillance
- Promote physical methods of pest control
- Promote biological control of pests



**Yellow sticky trap for  
Leaf miner**



**Stable fly**



***Trichopria sp***



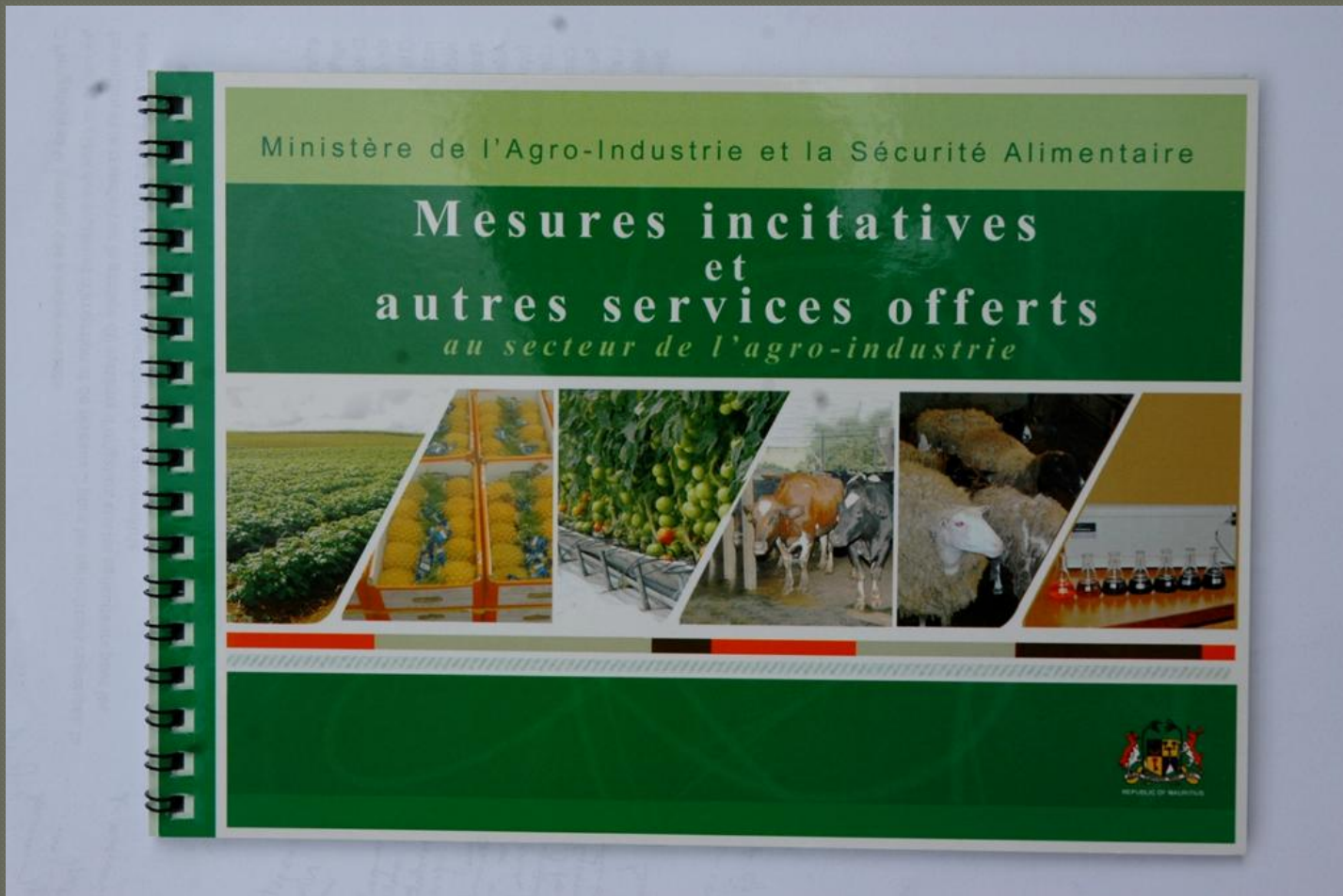
**DBM**



***Cotesia plutellae***

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MINISTRE DE L'AGRO-INDUSTRIE ET LA SÉCURITÉ ALIMENTAIRE

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### **Agricultural Decision Support System (ADSS)**

 **Agro-Meteorological Station - AMS**

- **Solar powered AMS to measure**
  - **solar radiation, temperature (minimum and maximum), rainfall, wind speed & soil moisture**
- **The AMS will also allow the collection and storage of local weather data automatically to a server where they will be stored and distributed free to stakeholders**

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Training workshop on ADSS components, FARC- Réduit



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### Improving livelihood of farmers

**Provision of 6 salinity meters by AAP to planters' association of Petit Sable, Grand Sable & Bambous Virieux to monitor the salinity of irrigation water**

**Training of farmers in salinity management practices by MoESD - NEL and AREU**

**Assistance to growers at Petit Sable, Grand Sable & Bambous Virieux in protecting the onion var. *Local Red*, project under GEF / SGP**

**Planting of mangroves along the Petit Sable shores by Ministry of Fisheries**



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Thank you for your attention