



## Agriculture and Food Security

# PA21B-0976: Strengthening food security assessments in Kenya through implementation of a National Crop Monitor System



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### Problem Specification

Agriculture in Kenya accounts for approx. 26% of the GDP and provides approx. 80% of all employment opportunities in the country. With dependence on rainfed production systems, inadequate actionable information on in-season crop conditions create a challenge for food security decisions, especially in the face of emergencies such as drought.

### Goals

- Combine field information and earth observations to develop bulletins that summarize crop specific conditions, seasonal trends and outlooks, and other critical information such as climate forecasts and market information.
- Customize and implement a National Crop Monitor in Kenya for improved agricultural decision making
- Provide the Ministry of Agriculture, Livestock, Fisheries and Irrigation (MOALFI) tools for synthesizing and customizing crop conditions information to suit their reporting metrics and provide detailed sub-regional assessments in a standardized format that can inform global and regional assessments.

### Key stakeholders

**Decision makers:** State Department of Agriculture(Kenya) (SDA), IGAD Climate Prediction and Application Centre (ICPAC), Famine Early Warning Network (FEWSNET), Food and Agriculture Organization

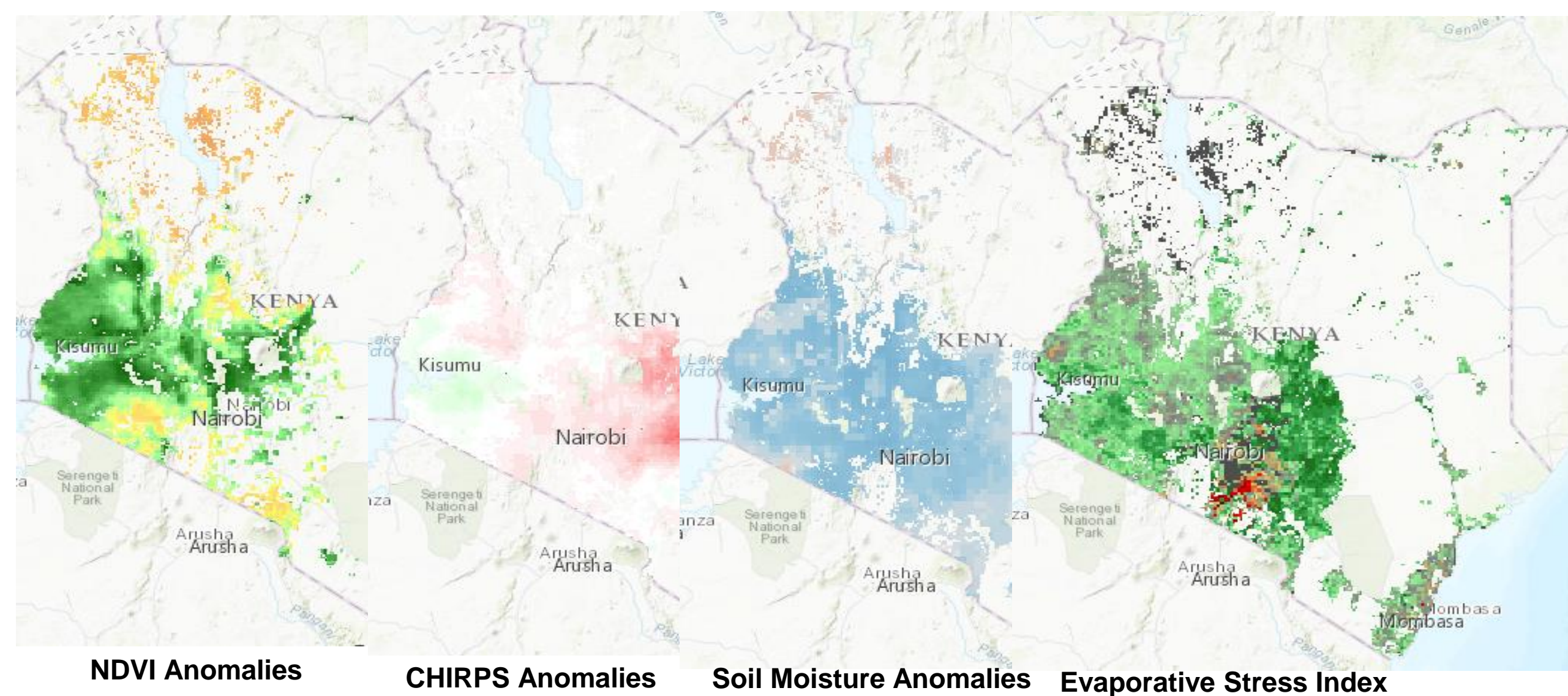
**Users:** SDA, FEWSNET, ICPAC, KNBS (Kenya National Bureau of Statistics), Extension officers and Field Agents

**Beneficiaries:** Farmers, Food Security Agencies

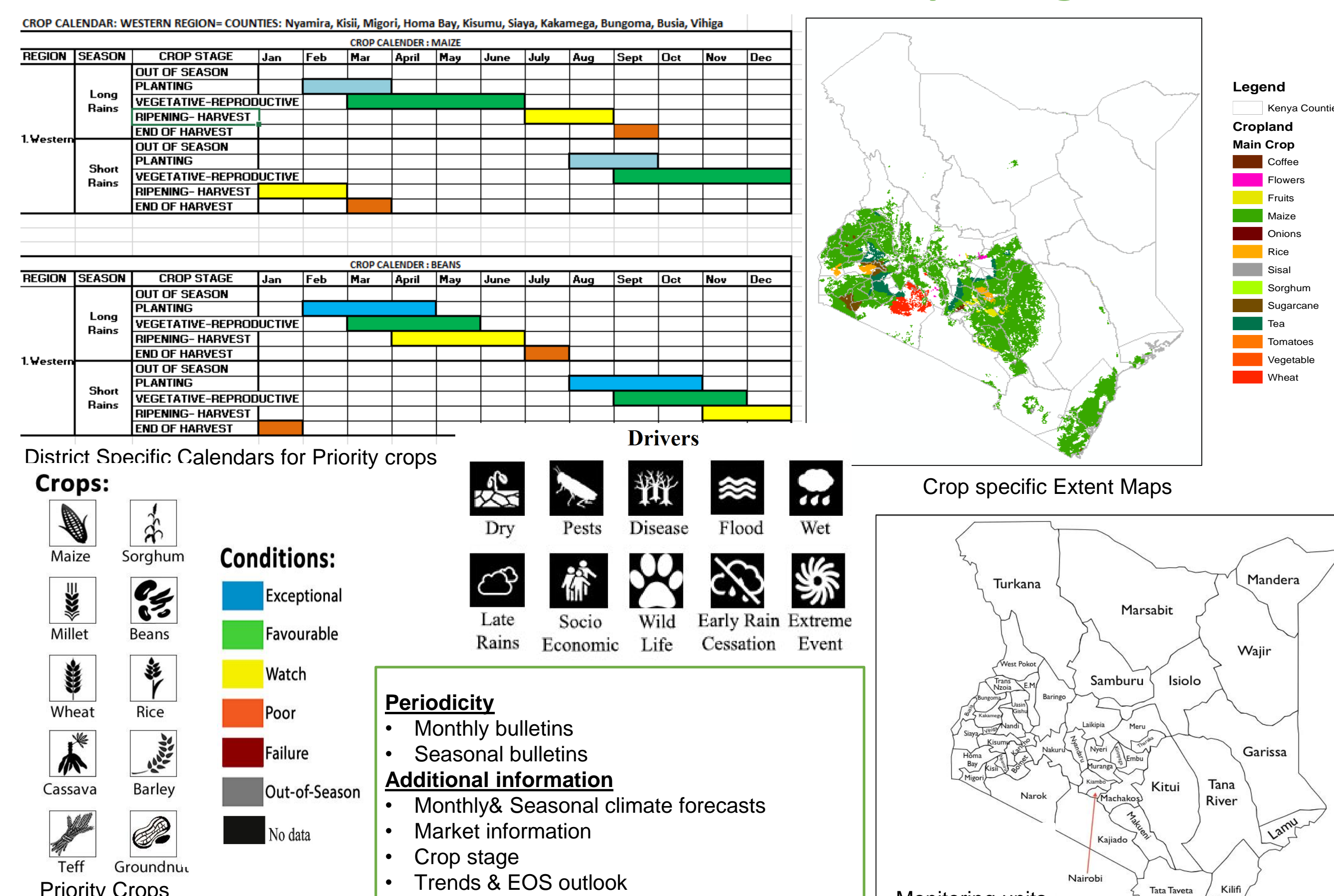
### Background

- SERVIR Eastern and Southern Africa (SERVIR E&SA) is a joint initiative of National Aeronautical Space Agency (NASA) and USAID; with the Regional Centre for Mapping of Resources for Development (RCMRD) as the implementing organization.
- SERVIR E&SA's overarching goal focuses on assisting developing countries improve environmental management and resilience to climate change by strengthening the capacity of governments and other key stakeholders to integrate Earth Observation information and geospatial technologies into development decision-making.
- The University of Maryland (UMD) supported the implementation and customization of the GEOGLAM Crop Monitor for national reporting as part of the SERVIR E&SA Applied Science Team(AST).
- The Group of Earth Observation for Global Agricultural Monitoring (GEOGLAM) has been supporting global assessments for partners in the Agricultural market information system (AMIS) and in countries that are at risk of food insecurity with the Crop Monitor for AMIS and Crop Monitor for Early Warning respectively

### Earth Observations Inputs



### Customizations for National Reporting



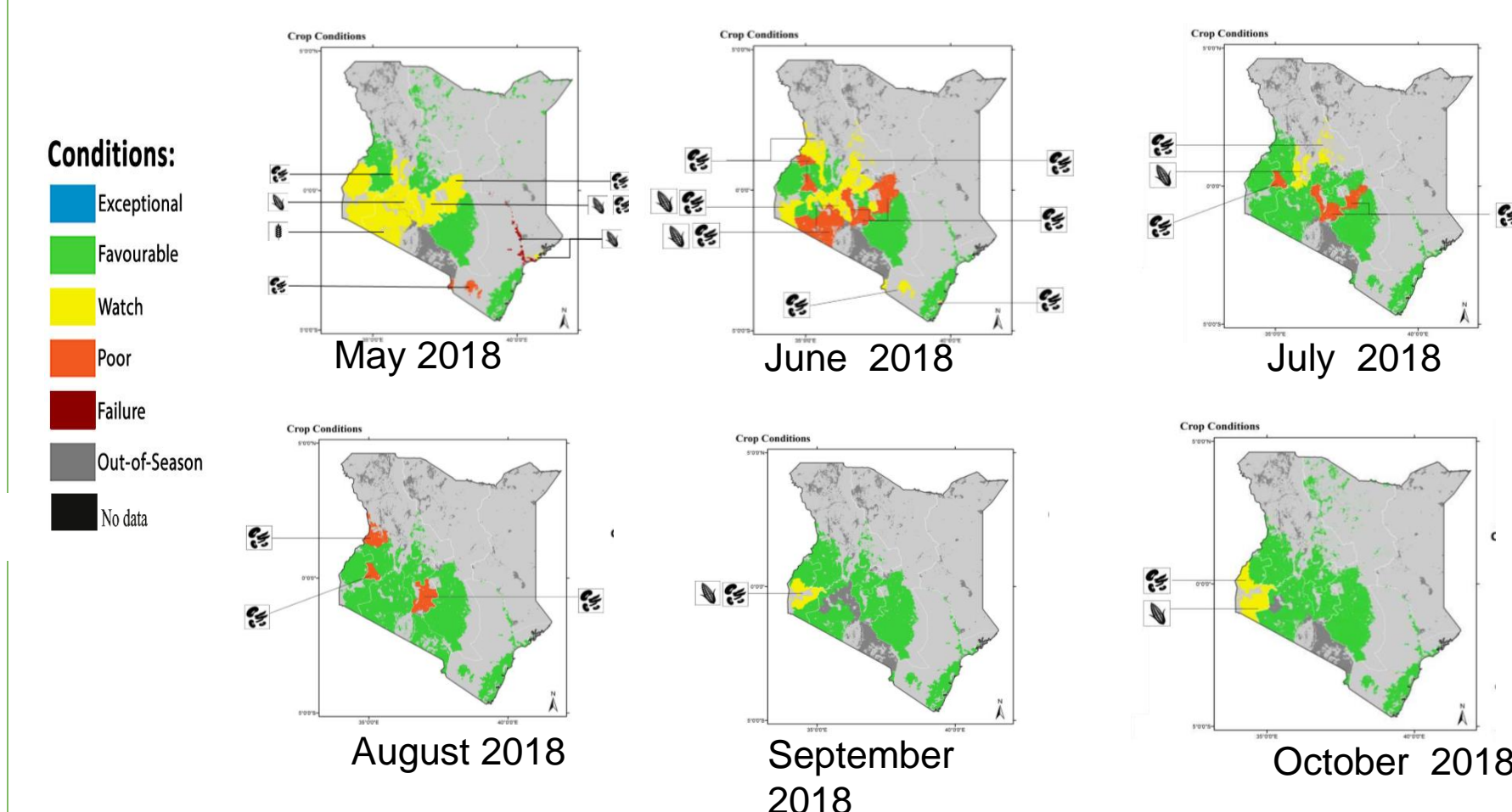
### 2018 Milestones

- 7 Bulletins Produced
- Fully Customized Crop Monitor
- County crop conditions reporting template developed
- Capacity building of National and county officers (29 officers trained and reporting)
- Improved capacity of the Ministry in using EO for decision making
- National team created for region specific monitoring
- Timely production of the bulletin

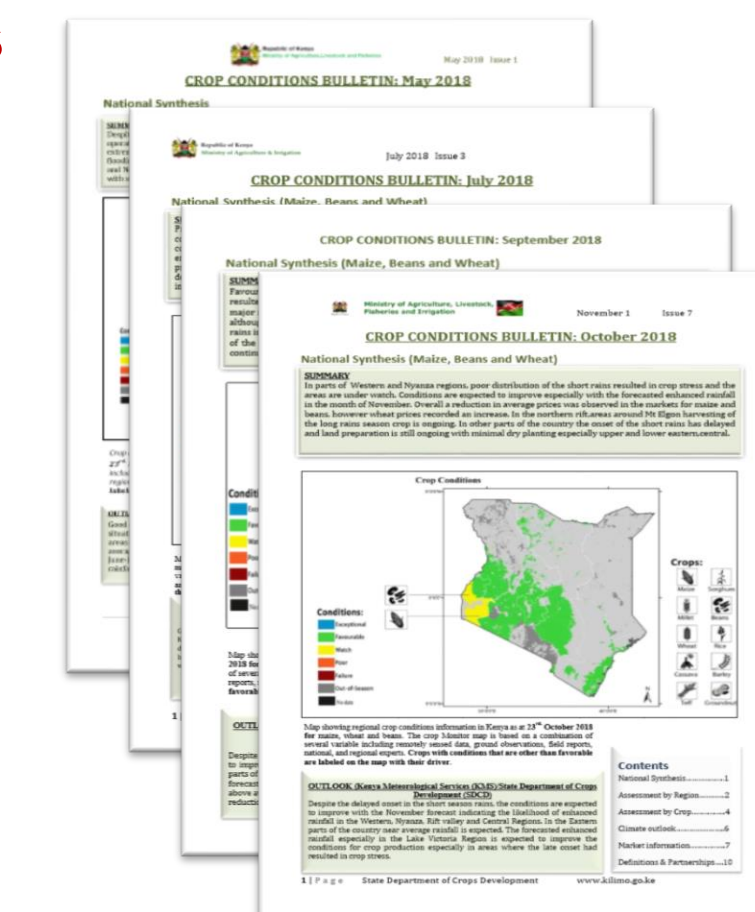


### Bulletin Highlights

**National Synthesis maps providing a summary of the overall crop conditions**



**Improved reporting and communication crop situation to govt and food security stakeholders**



**Outlook and projected implications on end of season yields informs the Govt Crop Insurance Program**

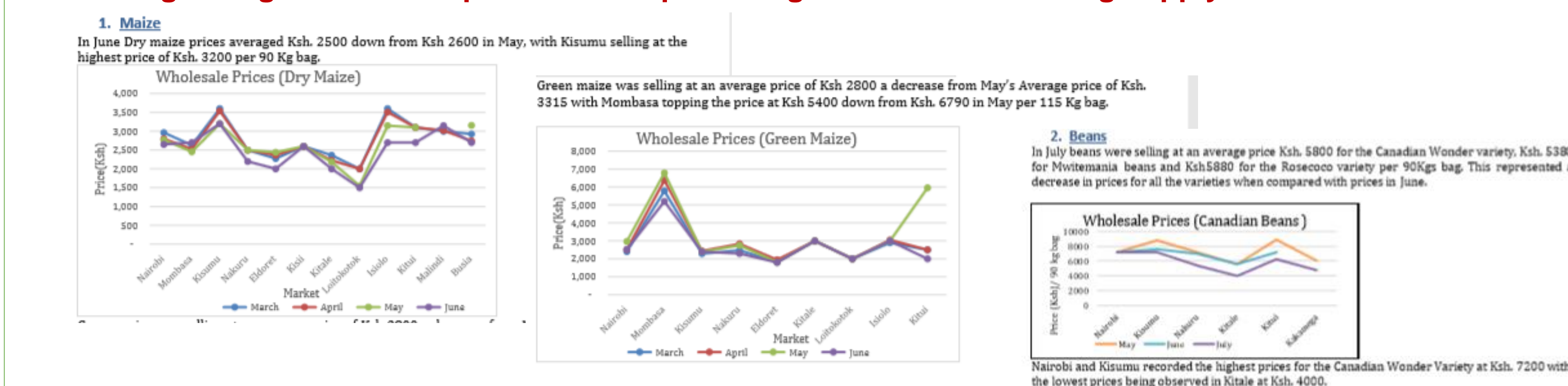
**Outlook:** Normal yields are expected for maize in most of the counties except in Nakuru county where the yields will be above normal if the current conditions persist. However, the wet conditions has resulted in reduced beans production attributed to poor podding and fungal disease. Up to 50% of beans yield reduction is expected in Nakuru. Wheat production will decline in Narok but will be above normal in Nakuru county.

**Actionable summary for high level decision making and linkage to Met forecasts, Sept 2018**

**SUMMARY**  
Prevailing conditions are favourable for maize production in most parts of the Country. Harvesting is complete in most parts of the country with average to above average yields being realised. Extremely wet conditions adversely affected beans production in most parts of the country during the season. Wet conditions in the Central highlands led to rotting and delayed harvesting of the beans. Wheat production is favorable in most of the growing areas although heavy rains resulted in late planting and a reduction in planted acreage. Land preparation for the short rains is ongoing. Wholesale prices of most commodities continued to decline due to adequate supplies from the season's harvest.

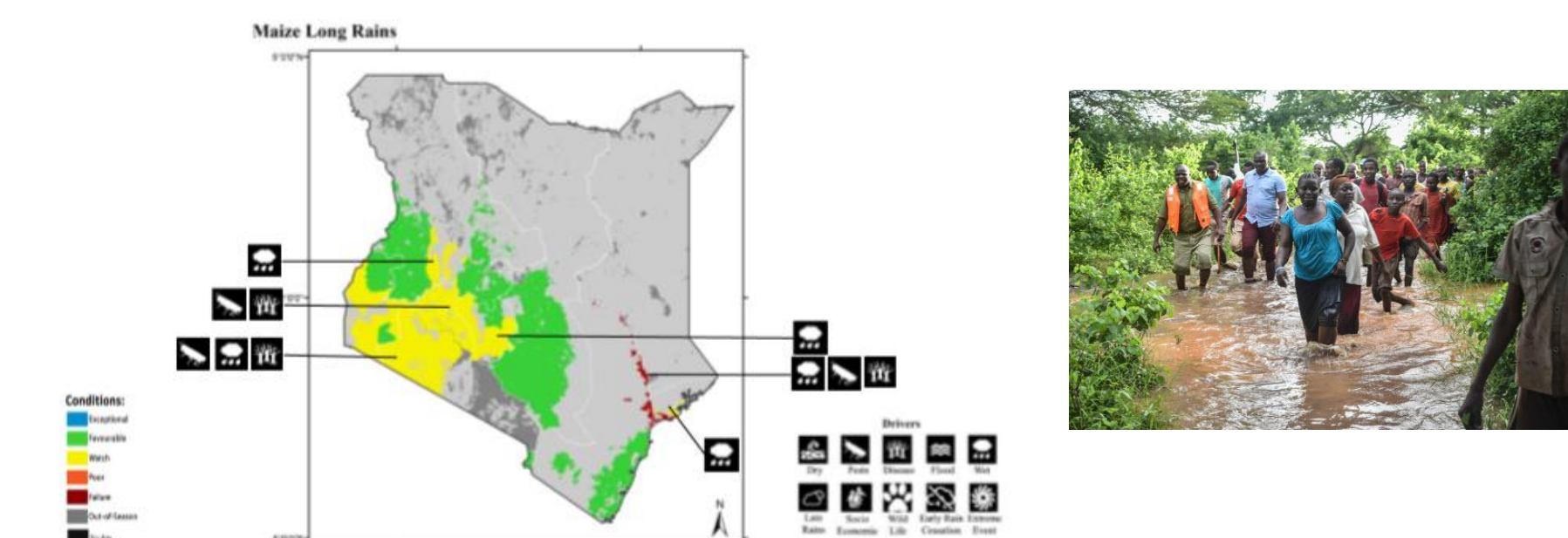
**OUTLOOK (Kenya Meteorological Services (KMS)/State Department of Crops Development (SDCD)**  
Good maize crop performance is expected to continue North Rift. Western and parts of Central and South Rift. While most parts of the country are expected to be generally dry, the highlands west of the Rift Valley and parts of the Central Rift Valley will experience near-average to below average rainfall. The expected dry conditions in most parts of the country will allow for drying and harvesting of the mature crops. However, beans production has been adversely affected in most parts of the country due to very wet conditions which resulted in depressed yields.

**Monitoring changes in market prices due to prevailing conditions informing supply and demand**



### Use Cases

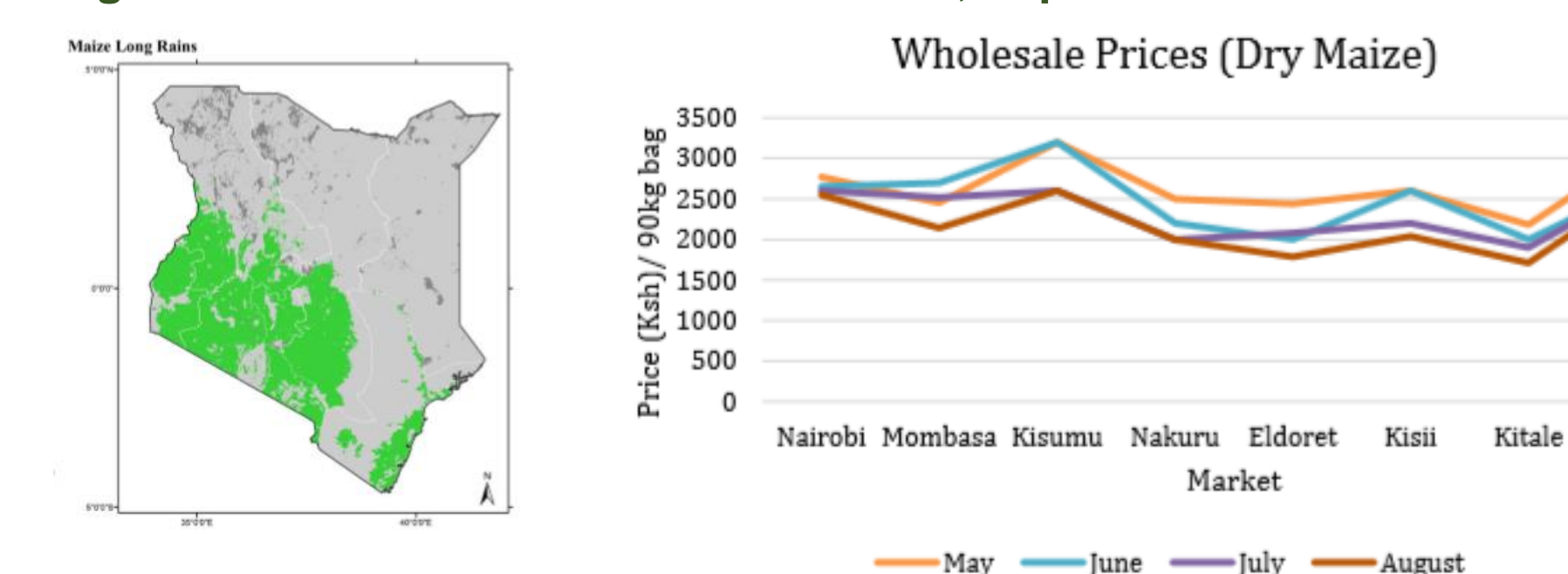
**Monitoring Spread of the Fall Army worm in Maize, May 2018**



**Government Prioritization in distribution of interventions**



**Informing Government on Season Performance, September 2018**



**Government Regulation of Maize prices due surplus and seeking new markets**

