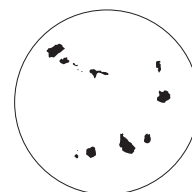**Tools Assessment**

Cabo Verde

Information Systems for Agricultural Risk Management

Policy Brief

October 2016

Key message

1

Agricultural production risks in Cabo Verde linked to epidemics, drought and floods appears to be greater in terms of frequency of occurrence and severity of impact than output price risks.

2

Data from some of the national systems like ARFA[1] provide complete and integrative information on price and commodity risks management. Cabo Verde has a well-laid environment for agricultural risk information dissemination.

3

Relevant information on soil, plant health and climate is missing in great depth, while socio-economic and policy related information are not systematically organised. Access to information is also associated with cost.

4

The weaknesses could be improved by enhancing public-private partnerships, building capacity for data collection in areas of plant health, soil and climate, and ensuring data disaggregation for thorough risk assessment at micro-levels.

Context

In October 2016, the Platform for Agricultural Risk Management (PARM) finalised a study that assessed **Information Systems for Agricultural Risk Management (IS-ARM)** in seven Sub-Saharan African countries undertaken by CEIGRAM/VISAVET. The assessment and systematic scoring focused on information for seven thematic areas (see table 1) of agricultural risk management: meteorology, climate and soils, satellite image and communications, price of commodities, inputs and market, production level, yield and plant health, animal and human health, policy, and socio-economic and sectorial. This policy brief outlines the strengths, weaknesses and recommendations for the information systems as identified in the Cabo Verde IS-ARM report.

According to the **2016 PARM country risk profile for Cabo Verde,** agricultural production risks linked to drought and floods, outbreak of pests and diseases and fires are greater in terms of frequency and severity than output/commodity price risks. In particular, droughts occur three times more than floods, from 1990 to 2015 but not as compared to the PARM countries average. There are records of volcanic activity and insects infestations in some parts of the country. Newcastle disease and African swine fever are endemic in Cabo Verde from 2005 to 2015. Production losses for twelve major crops from 1990 to 2013 are estimated at about 8%, with losses amounting to about 18% in maize and 15% in pulses. These impacts affect not only poor rural farmers but also the government disaster/risk preparedness and management initiatives.

Existing information sources and information systems

Several information systems are available for agricultural risk management in Cabo Verde. Some of the information systems identified deliver information on a single thematic area of agricultural risk management: the INMG[2] for meteorology and climate information, the SNPC[3] for satellite image information, and ARFA commodity stock/input price information. Only two of the national information systems – the INE[4] and MDR[5] – offer integrative information on two or more thematic areas. The INE for instance is the main national statistical agency in Carbo Verde responsible for developing sustainable systems to support private and national institutions. It provides different datasets on agriculture, foreign trade, national accounting, livelihood, energy, environment, justice, health and communications. The MDR is Cabo Verde's ministry for rural development. It basically monitors, validates and maintains data from different sources and publishes bulletin for use across the country.

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1 Agência de Regulação e Supervisão de Produtos Farmacêuticos e Alimentares (ARFA).
2 Instituto Nacional de Meteorologia e Geophísica (INMG).
3 Serviço Nacional de Protecção Civil (SNPC).
4 Instituto Nacional de Estatística (INE).
5 Ministério do Desenvolvimento Rural (MDR).

Table 1: Information systems for thematic areas of agricultural risk management in Cabo Verde

Type of information systems	Thematic areas of agricultural risk management						
	Meteorology, climate & soils	Satellite image & communications	Prices of commodity, input & market	Production levels, yields & plant health	Animal & human health	Policy	Socio-economic & sectorial
National	INMG / MDR	SNPC	MDR / INE / ARFA/ ANSA / DNRE (Customs)	INE / MDR	INE / MDR / Ministério da Saúde	SIARA-CV / BCV	INE
Regional	ACMAD / AGRHYMET	AARSE	AfDB & JRC-AfDB / RESIMAO / UNECA / AMITSA	AGRHYMET / AfDB / eRAILS	AU-IBAR / WHO-Regional Office for Africa	ARC	AfDB
International	CRED – IDD / FAO-Aquastat, / ESDAC	NASA / ESA / USGS / CGIAR – CSI / SOS Sahel / Terra Remote Sensing / ICARDA	GIEWS-FAO / WFP-VAM / FEWS NET / FAOSTAT / USDA / CountryStat-FAO	CountryStat-FAO / FAO-crop calendar / Plantwise	Factfish / FAOSTAT / OIE / WHO-HSIS / EMPRES / IAEA / WB & CDC	GIEWS-FAO / HDX / WFP / WB / IPC	WB

Source: PARM IS-ARM Report, Cabo Verde (2016). These information systems were identified during the Information Systems for Agricultural Risk Management Study in Cabo Verde finalised by PARM in October 2016. The classification of information systems are based on geographical scope or scale of information (national, regional and international).

Strengths

The thematic areas of soil, price, commodity stock and input, trade and meteorology and climate, and communications record the strongest score in Table 2, indicating that available information in these areas is sufficient for agricultural risk management in Cabo Verde.

Strong national integrated information on price of commodity and inputs availability: ARFA is one of the best rated information systems in Cabo Verde. Although it has only medium products coverage, most of its information is complemented by the MDR. Together, these two national systems provide information that are connected and allows for analysis of length of price data and information at different levels from many markets.

Complete information on price: There are specific sections of ARFA's website aimed to collect and provide the latest price datasets from consumers and producers. Price section provides average, maximum and minimum price of commodities for the last 6 months, compared domestic retail prices, and international price for certain commodities from January 2009 to September 2015. There are reports on stocks, availability and imports for cereals and sugar as well.

Well-laid dissemination systems/environment: There is a very good mobile penetration indicator and good internet users and secure internet servers indicators. The broadcast news media for radio, TV and Newspapers are also widespread across the country. This makes it possible to disseminate information via all forms of medium for risk assessment purposes.

Weaknesses

At the moment, information on some thematic and sub-thematic areas may not allow for sufficient analysis for agricultural risk management. For instance, the scores for information on soil, plant health, socio-economic and sectorial, and policy had weakest records during the IS-ARM assessment in Cabo Verde.

Relevant information on weather, soil and plant health is lacking. Very little weather information is available at MDR website. The continuity/update of data series requires a long term investment and commitment: they only depict easily available averages on annual basis. Besides, the score for soil information is 10/100 because is hardly any national systems reporting on the soil typologies and properties in Cabo Verde. While monitoring centers for pests and diseases is important for plant health risks, only virtual tracking is available. Also some specific and necessary details on trade (flow of official trade, and an estimation of the unofficial and the illegal trade), livestock holdings and distribution, biosecurity, slaughterhouses, markets are lacking.

Information not organized in a systematic, periodic and updated way. There are global and national early warning systems – important tools for food market volatility and food crisis emergency management. But not much information on them exists to aid agriculture commodity risk management.

Cost to access information: High resolution satellite image is only available from private companies and can only be access at a cost of a fee. The websites of national public systems like INMG and MDR with free access to information respectively on meteorology/climate and commodity price do not work properly.

Information lacks proper representation: The data for production levels and socio-economic information are collected and analysed by the INE at macro level without any disaggregation at sub-national/micro levels.

The way forward

Reinforce national systems to build relevant data on soil, plant health and meteorology/climate. The capacity of local administration should be enhanced to collect data for reliable national statistics on soil, plant health and socio-economic and sectorial indexes. Well-informed professional and experienced individuals should be identified and approached for information gathering.

More financial resources are needed to strengthen the capacity information systems to deliver timely and reliable information. Very few statistics are collected at national level on annual basis and lack of relevant data exists due to the low capacity and lack of technical resources of the Institutions in charge of national statistics.

Seek for public-private partnerships to enhance investments in data management and information dissemination to smallholder farmers.

Data disaggregation is required to enhance regional (islands) and local information to be achieved at great depth. The adequate geographical scope of the data will permit fine-tuning and more detailed risk assessments and modelling efforts.

Table 2: Scores for information on thematic & sub thematic areas of ARM in Cabo Verde.

Strongest information areas (%)		Weakest information areas (%)	
Prices	75	Soils	10
Commodity stock & input	70	Plant health	20
Trade	65	Socio-economic and sectorial	30
Meteorology and climate	62	Policy	30
Production levels & yields	60	Cost of animal diseases	50
Communications	60	Satellite image	50
Risk of endemic and emerging diseases	55		

Source: PARM IS-ARM Report, Cabo Verde (2016).