

Cameroon



Information Systems for Agricultural Risk Management

Policy Brief

In collaboration with



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Key message

1

Frequent occurrence of endemic diseases, price fluctuations, flooding and drought in Cameroon affects the production and marketing of major crops like banana, tomatoes, cassava and cocoa.

2

Data from national systems – the national statistical institute INSC¹ and the MINADER² provide detail information for risk analysis across different thematic areas and commodities. MINEPIA³ and ONCC⁴ focus on market and production of livestock, cocoa and coffee. Information dissemination environment is well-laid in the country.

3

The shorter length of some risk information such as in crop/animal health and the ineffectiveness of delivery channels limit the use of the information for proper risk management.

4

For effective and reliable information systems in Cameroon there is a need to strengthen capacities for data collection and enhancing public-private partnerships for ITC information delivery mechanisms. The network of automatic weather stations should also be expanded and consolidated, while market information should be extended to other staple food crops and inputs.

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 Cameroon IS-ARM report. Managing risks in agriculture involves seeking avenues and information to identify the opportunities and threats affecting farmers, both on-farm and off-farm. In Cameroon, the commonly noted risk affecting agricultural sector occurs at the production level. They include endemics of crop/animal pests and diseases like Newcastle disease, lumpy skin disease and Africa swine fever. Other frequent risks also noted are commodity pricing/marketing fluctuations, drought and floods. The 2016 PARM country risk profile for Cameroon estimates that annual value of production losses for 12 crops is averaged 6.5% from 1990 to 2013. Staple crops such as banana, tomatoes and cassava are the most affected. Together, these three crops make up 10% to 16% of annual production losses. While these risks could be managed properly, the availability of reliable and adequate information on crop/plant health, agricultural market and trade as well as weather systems in Cameroon have been one of the main challenges.

Existing information sources and information systems

The information systems identified for the seven thematic areas of agricultural risk management in Cameroon are indicated in Table 1. Some of them provides data and/or deliver information on a single thematic area of agricultural risk management. They include DMN⁵ for meteorology/climate information and ONCC for commodity price/market information on cocoa and coffee. Others including INSC and MINADER offer integrated information on two or more thematic areas of agricultural risks. INSC for example is Cameroon's public institution that coordinates activities of the national statistical information systems and processes data for economic and social management. By performing its main function, INSC makes information available for agricultural risk management relating to meteorology and climate, price and market, production levels and yields, animal and human health, and socio-economic aspects farmers' livelihoods. MINADER is the Cameroon ministry in charge of agricultural and rural development. It manages agricultural statistics and publishes biannual market bulletin, food balance sheets, and agricultural statistics yearbooks on a wide range of commodities. Sometimes, it brings out yearbook on monthly precipitation and temperature. Information from both INSC and MINADER can be accessed at their websites, only through internet access.

- 1 Institut National de la Statistique du Cameroun (INSC).
- 2 Ministry of Agriculture and Rural Development (MINADER).
- 3 Ministry of Livestock, Fisheries and Animal Industries (MINEPIA).
- 4 Office National du Cacao et du Café (ONCC).
- 5 Direction de la Météorologie Nationale.

Study Conducted by: Research Centre for the Management of Agricultural and Environmental Risks (**CEIGRAM**), a research centre of the Universidad Politécnica de Madrid, Spain; **VISAVET** - Health Surveillance Centre, a research centre of the Universidad Complutense de Madrid, Spain



Table 1: Information systems for thematic areas of agricultural risk management in Cameroon.

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	DMN / MINADER / INSC	MINADER	INSC / MINADER / MINEPIA / MINICOMMERCE / AMIS / ONCC	INSC / MINADER / ONCC / Portail de l'information phytosanitaire au Cameroun	INSC / MINEPIA / Ministère de la Santé Publique	Direction de la protection civile	INSC
Regional	ACMAD	AARSE	AfDB / UNECA	AfDB / eRAIL / AfricaRice	AU-IBAR / WHO-Africa	BCEAO / ARC	AfDB
International	CRED – IDD / FAO-Aquastat / WB – CCKP / ESDAC / ISRIC	NASA / ESA / USGS / CGIAR – CSI / UN (Spider) / Terra Remote Sensing	GIEWS-FAO / WFP-VAM / FAOSTAT / UN Comtrade	CountryStat-FAO / FAO-crop calendar / ICCO / Plantwise	FAOSTAT / OIE / WHO-HSIS / EMPRES / IAEA / USAID	GIEWS-FAO / IPC / WFP / WB	WB

Source: PARM IS-ARM Report, Cameroon (2016). These sources and information systems were identified during the Information Systems for Agricultural Risk Management Study in Cameroon 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

Cameroon boasts of national systems such as INSC, ONCC MINADER, and MINEPIA, which provide information that allows for proper agricultural risk management on thematic and sub-thematic areas of communication, satellite image, trade, production level and yields (see Table 2 for the score).

Well-laid environment for information dissemination: Cameroon has doubled mobile penetration and tripled internet access over the last three years. Rural use of mobile phones has made text-based SMS to be one of the promising communication medium. Thus farmers can be easily alerted on related weather and animal health risks through mobile phones, usually engineered by private operators.

Detailed information on market and price: National information sources such as INSC and MINADER have adequate data and reports for comprehensive analysis of agricultural market and trade. The information provided captures wide range of commodities and input across markets in Cameroon, which allows for better production and food security risk analysis. The MINADER, in particular has a transparent systems for monitor all the target market from time to time.

Weaknesses

As can be referred to in Table 2, assessment scores for information relating to thematic and sub-thematic areas of commodity stock and input price, socio-economic and sectorial, crop health and policies appeared to be weak and inadequate for proper analysis.

Length of information not sufficient for risk analysis: The PIPC⁶ is an important initiative of MINADER designed to provide pests and disease information on tomatoes, banana, cassava and maize but is no historical data. Besides, long-term series archives on thematic areas such as price from AMIS⁷ and MINADER, and crop health from Plantwise are not easy to access because the websites are not working properly. Update of some information is also weak in Cameroon. The most recent livestock census data gathered by *Ministère de l'Élevage, des Pêches et des Industries Animales* was in 2013, and the INSC last published its agriculture year book in 2010.

Ineffective information delivery: Satellite data from some sources cannot be downloaded or printed. Besides, the websites of ministry of agriculture and the PIPC initiative, both of whom are the key sources of crop health information are not functioning. For national systems with operative websites, insufficient internet services are limiting the access to use available information. At present, information dissemination to rural farming households is also mainly through text messages initiated by private firms whom in most cases charge for delivery.

Missing relevant information: Very limited and unclear information on stocks as there is no perfect distinction between public and private stock for emergency and market stabilization purposes. Important areas such as livestock movement, transports, exports and imports, national level soil information also appear not to be available. In particular, the private sector handles most of the marketed cereals and storage, and they do not publish this information due to the confidentiality issues.

The way forward

Reinforce and strengthen information systems: DMN should expand and consolidate the network of automatic weather stations to provide desirable agricultural risk data in strategic agro-ecological zones. The national system for soil information should be updated and where necessary new ones initiated through references from the Africa Soil Profiles Data Base of the ISRIC World Soil Information. In the same way, relevant information on livestock movement should be created while input price and commodity stocks/food reserves should also be set up from the MINADER balance sheets to allow for comprehensive agricultural market risk analysis. Over the years, the INSC agriculture year book has focused on crops like rice, coffee and cocoa. There should be efforts to extend works to include other staple crops and agricultural inputs (fertilizers, machinery, seeds).

Building resources for information generation: The local administration and field-based/extension officers should be capacitated with adequate skills to collect data and build information that have immense contribution to the adequacy and reliability of national information systems statistics. Particularly in crop health areas, officers should be trained to undertake surveillance for improving information on crop health status and updating geo-localised phytosanitary data. The availability of adequate skilled field officers would enhance effective articulation of information and alert systems for crop and animal related risks. Cooperation between ministries, national directorates and institutes is also required.

Improve farmers' access to information: Cameroon is among the few African countries with high penetration of mobile phones, especially within rural areas. This should be complemented with quicker and cheaper internet service provision. Relevant risk management application should also be built to allow farmers to access cheaper information than those delivered by private based initiatives that might cost high amount for SMS. This would require committed public-private partnerships with potential investors.

Table 2: Scores for information on thematic & sub thematic areas of ARM in Cameroon

Strongest information areas (%)		Weakest information areas (%)	
Soil	85	Commodity stock & inputs	20
Satellite images	80	Socio-economic & sectorial	25
Communication	60	Crop health	30
Trade	70	Policies	40
Production levels & yields	70	Risk of endemics and emerging disease	55
Prices	65	Meteorology & climate	58
Cost of animal diseases	60		

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

6 Portail de l'information phytosanitaire au Cameroun (PIPC).

7 Agricultural Marketing Information Services (AMIS).