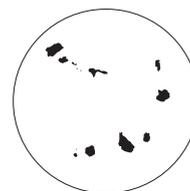




Risk Assessment

# Cabo Verde

## Agricultural Risk Profile



### What are the key findings?

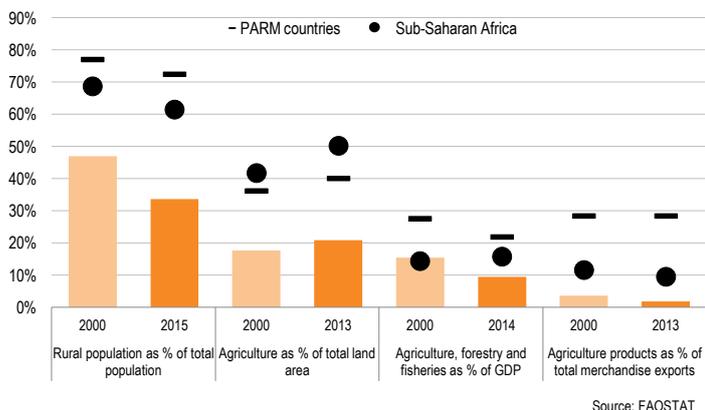
- ▶ The analysis suggests that production risks are greater than output price risks, in terms of both frequency and severity.
- ▶ Droughts occur more frequently than floods. As a small arid island nation, Cabo Verde is reliant on rainfall events.
- ▶ Fewer livestock diseases are reported but the impact of these can be considerable.
- ▶ Maize, pulses, sweet potatoes, mangoes and onions are the crops most affected by yield losses.
- ▶ Sweet potatoes, potatoes & maize are most affected by output price risks.
- ▶ The macro environment is relatively strong and stable.

### What are agricultural risks?

Agricultural risks are uncertain events that cause farmers significant financial loss or other adverse outcomes. They are different from constraints, which are predictable and constant limitations. Risks can negatively affect rural employment and assets, increase food insecurity, and lead to inefficient private and public sector investment. The purpose of the profile is to provide a high-level quantitative analysis of selected risks. It uses a common methodology, drawing on easily available information. As annual national averages are used, local and seasonal variations cannot be observed. This may underestimate production risks as compared to output price risks. The scope of the analysis is also limited by the lack of output data for livestock products. For Cabo Verde local price data was available only for 1998-2012. A detailed country risk assessment requires a much fuller investigation.

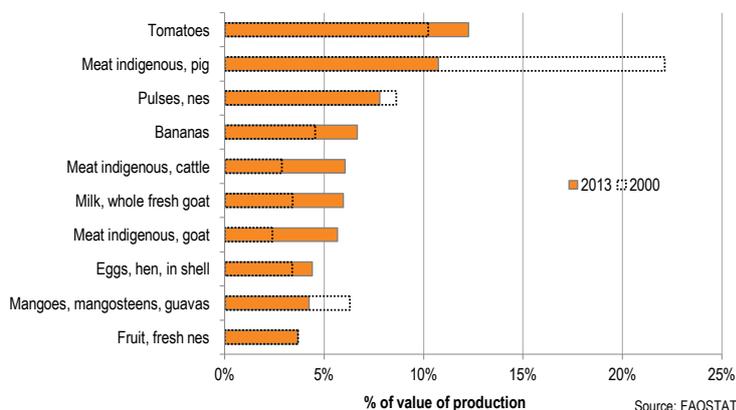
### What role does agriculture play?

Around one-third of the total population of 0.5 million is rural, down from almost 50% in 2000. Agriculture occupies less land and contributes less to GDP and merchandise exports than most African countries. Its contribution to the economy is declining.



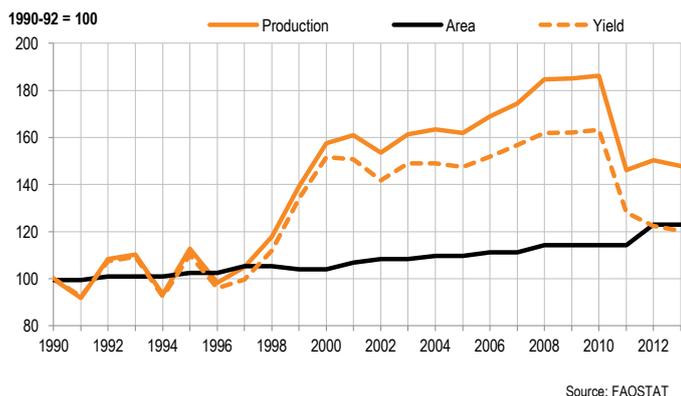
### What products are most important?

Tomatoes, pig meat and pulses are the three most important products. The top ten products represent 68% of production in 2013, with all crops accounting for 82%. Production has risen for most of the top ten since 2000, with the notable exception of pigmeat.



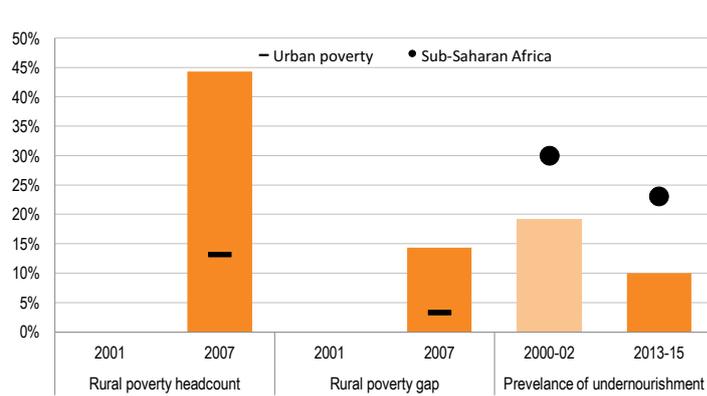
### How has the sector grown?

Between 1990 and 2010, agricultural output increased by 80%, primarily due to rising yields. Since 2010 yield and production levels have decreased dramatically due to a fall in pig meat production. In general, livestock output has risen faster than crop output.



### How vulnerable are people to risks?

Almost 45% of the rural population were classified as in poverty by national levels. This is significantly higher than urban level. The rural poverty gap is also larger. The prevalence of undernourishment has fallen by almost 50% between 2000-02 and 2013-15.





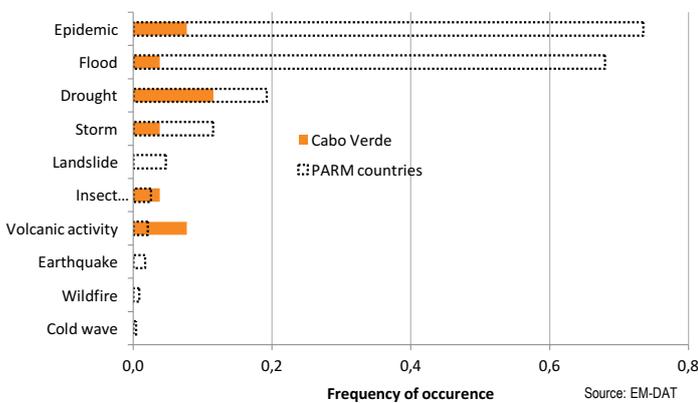
# Production risks

## What are production risks?

A large number of risks affect agricultural production. These include climate related events (such as droughts, floods and cyclones), outbreaks of pests and diseases, and damage caused by animals, windstorms or fire. The geographic and temporal spread of these impacts can vary significantly. Production risks are mostly associated with yield reductions but can also affect product quality.

### How often do major disasters occur?

In the period 1990-2015, droughts were the most frequent disaster to affect Cabo Verde, three times more frequent than floods. Droughts occur less frequently than in other PARM countries; but volcanic activity and insect infestation occur more often.

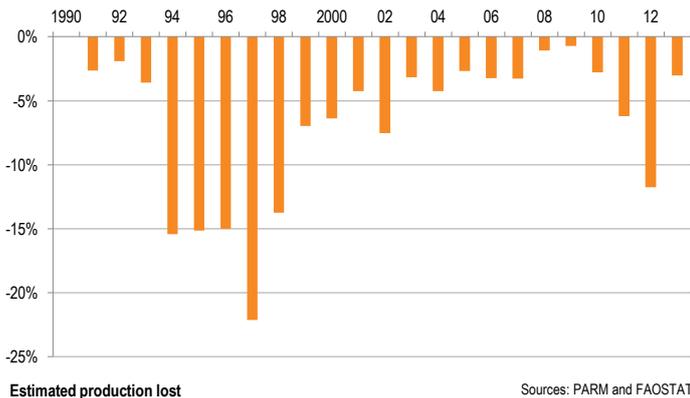


### What is the likely impact of future climate change?

The IPCC 5th assessment report concludes that land temperatures over Africa are likely to rise faster than the global land average, particularly in the more arid regions. Mean average temperatures are likely to be 2°C higher than experienced in the late 20th century. Projected rainfall changes are uncertain. As a small island state with limited rainfall and a dry tropical climate, Cabo Verde is already experiencing fresh water constraints, which are likely to worsen. Increasing temperatures and changes in precipitation are very likely to reduce cereal crop productivity, and could also adversely affect high-value perennial crops. Further, 80% of Cabo Verde inhabitants live in the coastal zone, making them vulnerable to coastal hazards and sea-level rise.

### Has the risk varied over time?

Totalling the annual value of production losses for the 12 crops provides an indicative production risk profile for the period. Annual production losses averaged 8%, ranging from 0-22%. The largest estimated losses occurred in the mid to late 1990s.

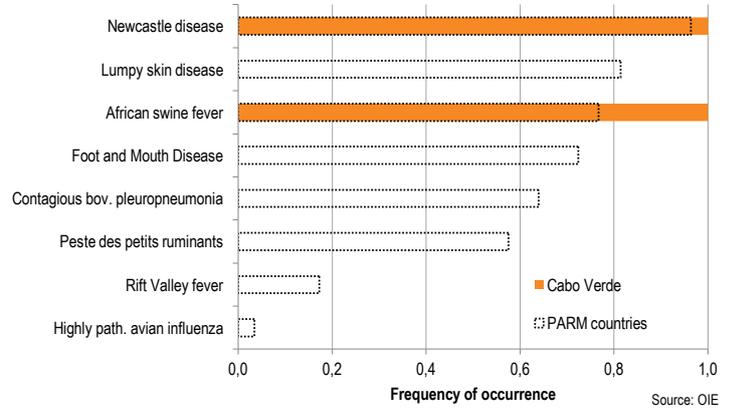


Estimated production lost

Sources: PARM and FAOSTAT

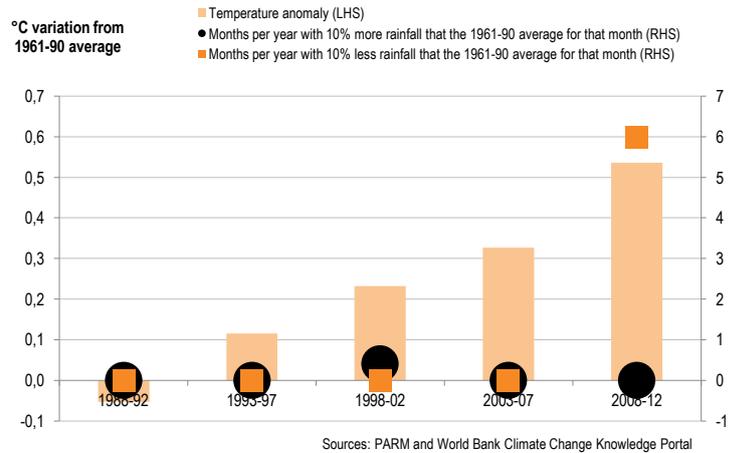
### What animal diseases are present?

Of the eight animal diseases analysed over the period 2005-2015, two could be considered as being endemic in Cabo Verde: Newcastle disease and African swine fever. The others have never been reported or notified as being absent.



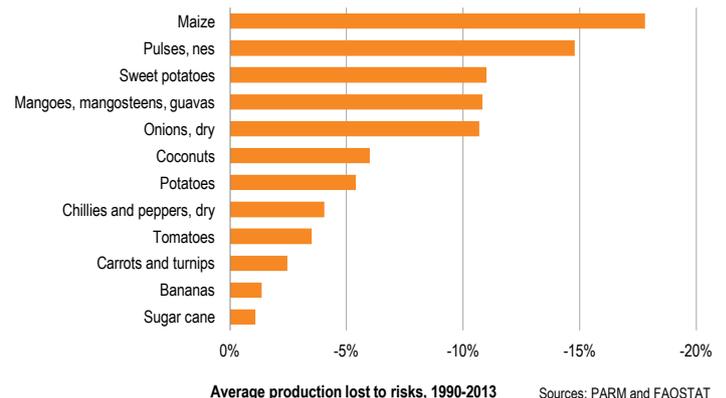
### Are weather anomalies increasing?

Temperature levels are rising, with the 2008-12 average 0.5°C warmer than the 1961-1990 average. Rainfall patterns have been relatively stable over the period, with the exception of a high number of dry months during 2008-12.



### Which crops appear most at risk?

Maize, pulses, sweet potatoes, mangoes and onions are the crops most affected by yield losses. Annual yield losses averaged over 10% of production for these crops, with average losses of 40-50% once every 3 years for maize and pulses.



Average production lost to risks, 1990-2013

Sources: PARM and FAOSTAT



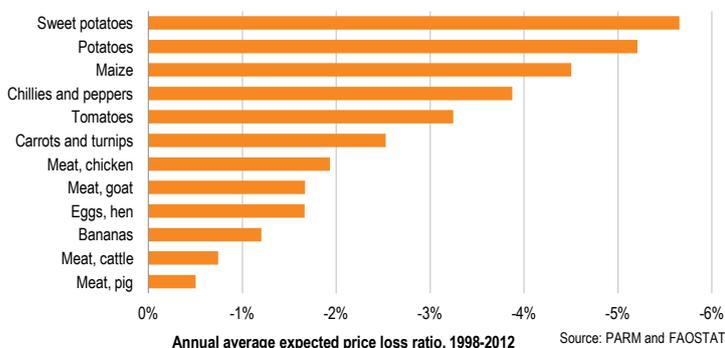
# Market risks

## What are market risks?

Market risks are issues that affect the price and availability of outputs and inputs. Commodity markets can have a high degree of volatility caused by changing local and global supply and demand. Producers are concerned about low prices (reducing their income); consumers are worried by high prices (raising their expenditure). Other market risks include exchange rate volatility, which can affect the price of outputs and inputs.

## Which products appear most at risk?

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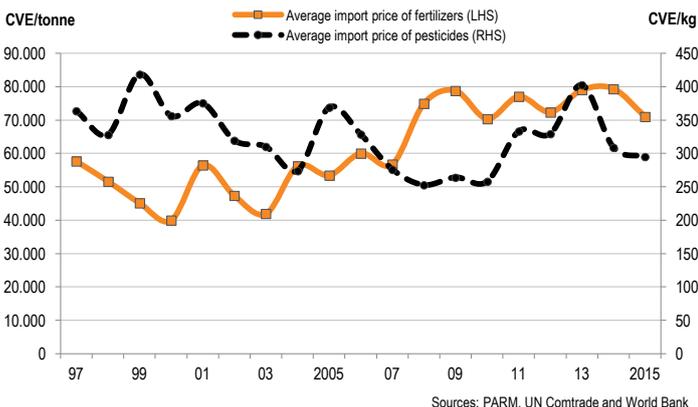
**How are the product and temporal risks estimated in this profile?**  
Indicative estimates of production and output price risks are calculated in a similar way. A loss threshold of 0.33 times the standard deviation below the trend value in either yield or prices is calculated to set a benchmark for identifying the losses resulting from production and market risks respectively.

To calculate product specific risk values, the average yield or price loss below the threshold level and the frequency of these occurrences are multiplied to obtain average production and price loss ratios. This is done for the 12 most important crop and livestock commodities for which data was available.

To calculate the risk profile over time, the individual loss for each respective year is added together across the crop commodities only.

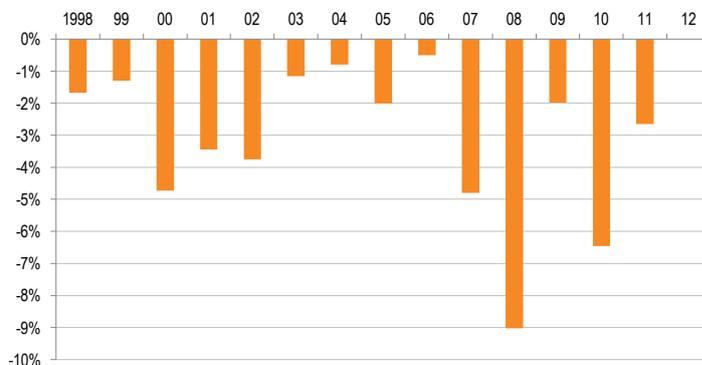
## How variable are input prices?

Variations in annual average import prices suggest farmers face input price risks. The import price of fertiliser almost doubled between 2003 and 2009 but has since levelled off. Import pesticide prices have risen by 15% or more at least once every five years.



## Has price risk changed over time?

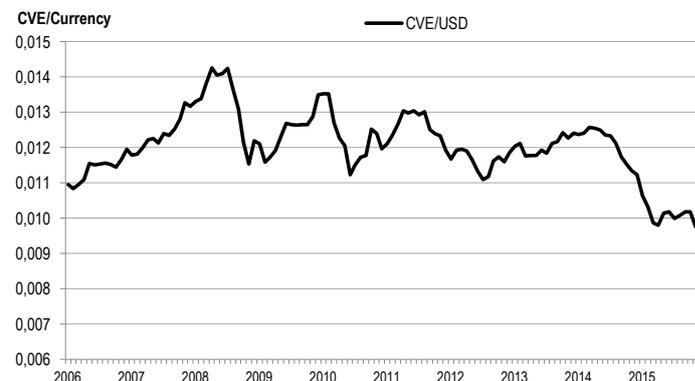
Totalling the estimated revenue lost due to output price risks for the crops provides an indicative market risk profile for the period. The average annual revenue loss is 3.5%, with a maximum loss of 9% in 2008. No trend over time can be observed.



Estimated revenue lost Source: PARM and FAOSTAT

## Is there an exchange rate risk?

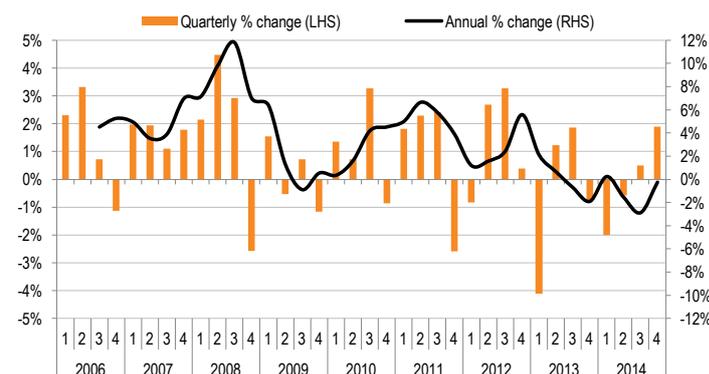
Cabo Verde's currency, the escudo (CEV), is pegged at a fix rate to the Euro. The vast majority of Cabo Verde's exports are to Europe so there is little exchange rate risk. Against the USD, the CEV has fluctuated within a 30% range since 2006.



Source: OANDA

## Do food prices vary for consumers?

Over 2006-14, the food component of the consumer price index recorded an average annual increase of 3%. The highest annual rate of 12% was recorded in September 2008. Prices have risen more slowly since 2010 but fluctuate more.



Source: ILO

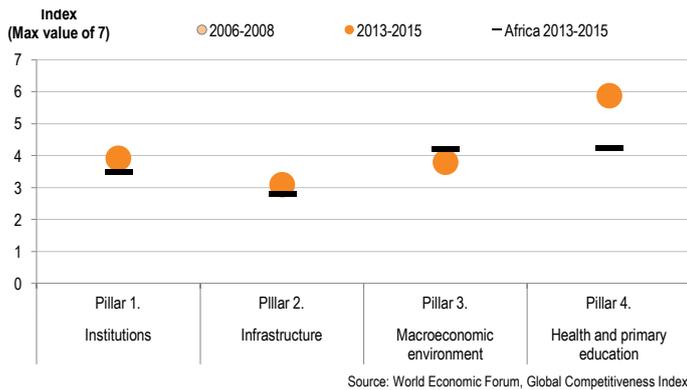
# Macro level risks

## What are macro level risks?

Macro level risks cover unexpected changes in the broader economic environment in which agriculture occurs. It can include changes in government or business regulations, fiscal and monetary policy settings, external trade restrictions, political instability, corruption, regional conflict and domestic unrest.

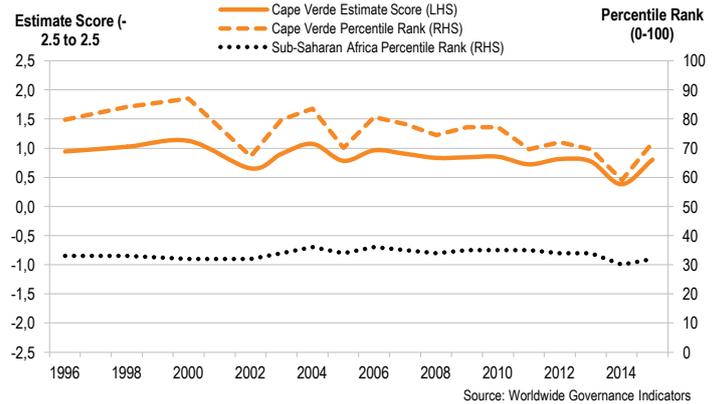
### Are basic requirements in place?

Index scores for the basic requirement pillars place Cabo Verde well above the African average for health and primary education. It does not score as well for the macro-economic environment (government deficit, credit rating, etc.).



### Is the political environment stable?

Cabo Verde scores well above the Sub-Saharan Africa average in the political stability and absence of violence index. However, there has been a fall in the ranking since 2000. It has fallen from the top 20% of countries to the top 40%.



# Overall risk assessment

## The PARM process

A detailed risk assessment is carried out as part of the PARM process, in partnership with NEPAD and the relevant African government. It is a rigorous consultation process involving a risk assessment report drafted by international and local experts, followed by a national validation workshop with the participation of stakeholders including farmers, private sector companies and government. Risks are identified at a detailed level, e.g. droughts, raids, etc.

A detailed risk assessment has yet to occur for Cabo Verde. Consequently, the overall risk assessment is conducted at a higher level based on the analysis contained in this profile.

## What are the main agricultural risks?

The analysis suggests that overall production risks are greater than output price risks. The frequency of yield losses associated with production risks and their severity, both on average and in the worst-case scenario recorded, are greater than for output price risks.

RISK	VARIABLE	AVERAGE FREQUENCY	AVERAGE SEVERITY	WORST-CASE SCENARIO
PRODUCTION	RAW SCORE	0.38	-19%	-47%
	RISK LEVEL	● HIGH	● MEDIUM	● HIGH
OUTPUT PRICE	RAW SCORE	0.29	-12%	-20%
	RISK LEVEL	● HIGH	● LOW	● MEDIUM

## What are the linkages between risks?

Managing risks in agriculture is particularly challenging, as many risks are highly correlated, resulting in whole communities being affected at the same time. Impacts on yield that are widespread and have a significant impact on total market supply can have profound effects on market prices. Due to its limited water resources, drought is a clear example of one risk that can trigger others in Cabo Verde. Droughts can aggravate some pests and diseases, cause food prices to spike and led to conflicts with other sectors over water use.

**What is PARM?** The Platform for Agricultural Risk Management (PARM), an outcome of the G8 and G20 discussions on food security and agricultural growth, is a four-year multi-donor partnership between developing nations and development partners to make risk management an integral part of policy planning and implementation in the agricultural sector. PARM operates a process to achieve this through risk assessment, policy dialogue, tools assessment and capacity development.

**PARM Secretariat** International Fund for Agricultural Development (IFAD)

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