



Risk Assessment

Cameroon

Agricultural Risk Profile



What are the key findings?

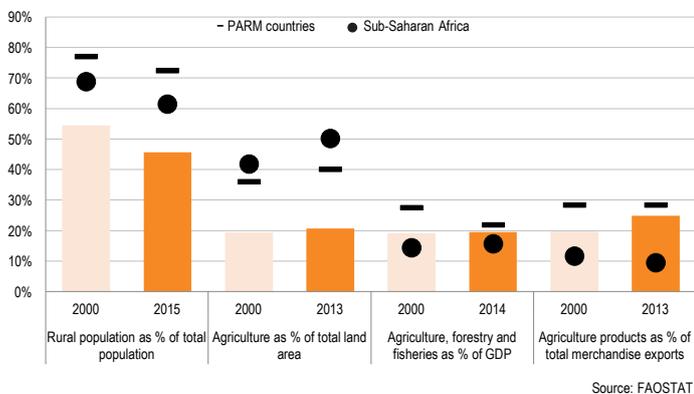
- ▶ The analysis suggests that production risks are greater than output price risks.
- ▶ Weather patterns show that it is getting both warmer and wetter, and this is likely to continue due to climate change.
- ▶ Many livestock diseases are endemic.
- ▶ Bananas, tomatoes and cassava are the crops most affected by yield losses.
- ▶ Yams are most affected by output price risks.
- ▶ Output price risks appear to be falling.
- ▶ While basic requirements are improving, political stability has deteriorated and is relatively low

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 price and output data for livestock products. Price data for crops in Cameroon was available only for the period 1991-2011. A detailed country risk assessment requires a much fuller investigation.

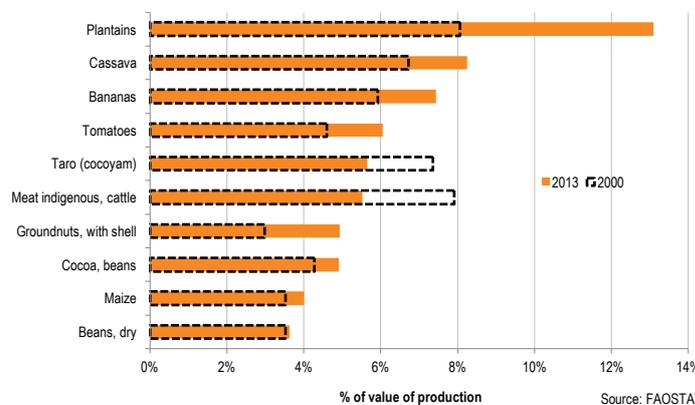
What role does agriculture play?

About 46% of the total population of 23.3 million is rural, less than the Sub-Saharan Africa and PARM countries averages. It also occupies less land than in most other African countries but still accounts for 20% of GDP and 25% of merchandise exports.



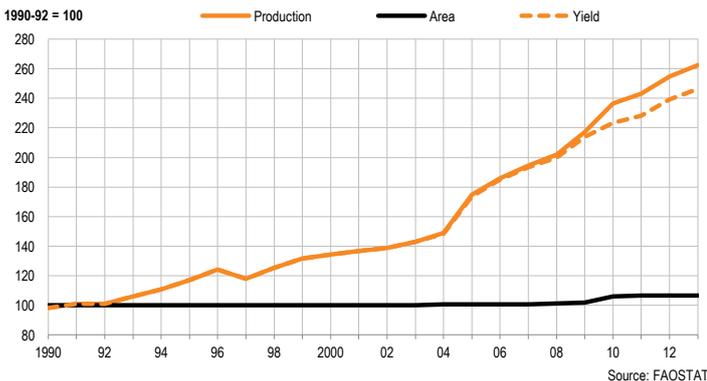
What products are most important?

Plantains, cassava and bananas are the three most important products in terms of value of production. The top ten products represent 81% of production in 2013, with all crops accounting for 86%. Production has increased for most of the top ten since 2000.



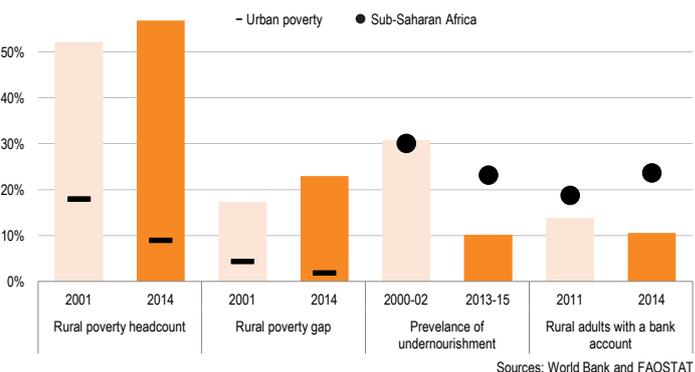
How has the sector grown?

Between 1990 and 2013, agricultural output increased by 160%, an annual increase of over 4%. This is primarily due to rising yields, with the total land area used for agriculture rising just 6%. Crop output has risen twice as fast as livestock.



How vulnerable are people to risks?

Both the rural poverty headcount and gap has increased since 2001, although the absolute number has fallen. This contrasts with an improving urban situation. The prevalence of undernourishment has fallen by two-thirds over the last 15 years.



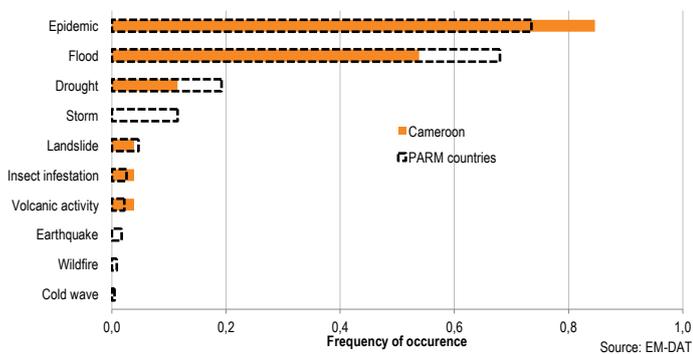
Production risks

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, epidemics were the most frequent disaster to affect Cameroon. A major flood event occurs once every two years, about four times more frequent than a drought. No major storm events were recorded, but volcanic activity occurs.

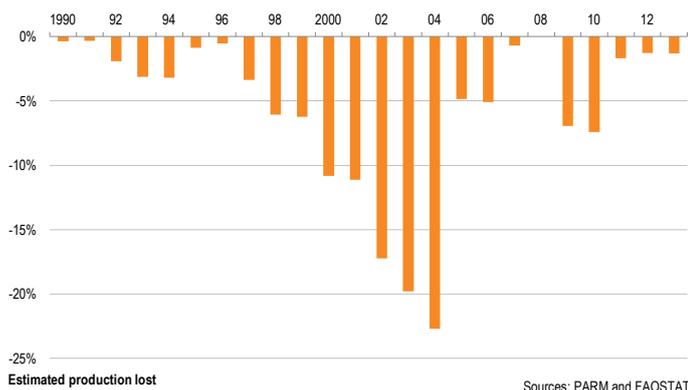


What is the likely impact of future climate change?

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 change over most of sub-Saharan Africa is uncertain due to complex topography. However, models suggest more intense and more frequent extreme rainfall over the Cameroon mountains. Increasing temperatures and changes in precipitation are very likely to reduce cereal crop productivity, and could also adversely affect high-value perennial crops. Pest, weed, and disease pressure on crops and livestock is expected to increase.

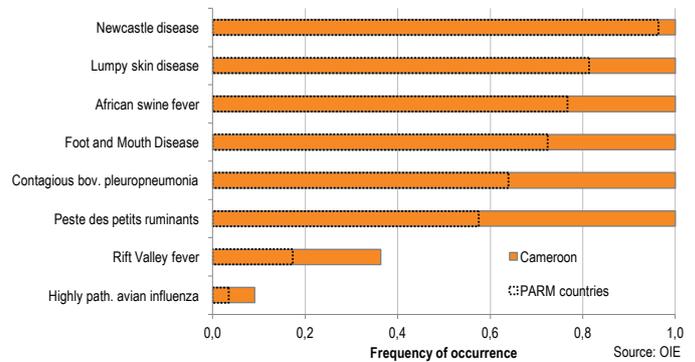
Has the risk varied over time?

Totalling the annual value of production losses for the 12 crops provides an indicative production risk profile for the period. Annual production losses averaged 6%, ranging from 0-22%. The largest estimated losses occurred in the first five years of this century.



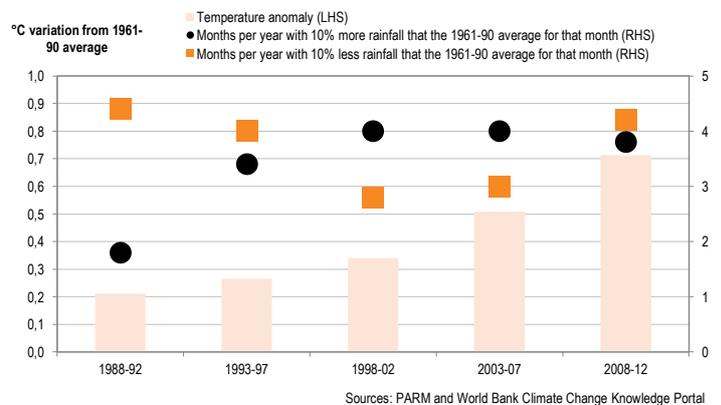
What animal diseases are present?

Of the eight animal diseases analysed over the period 2005-2015, six could be considered as being endemic in Cameroon. The frequency of occurrence in Cameroon was higher in all cases than for PARM countries on average.



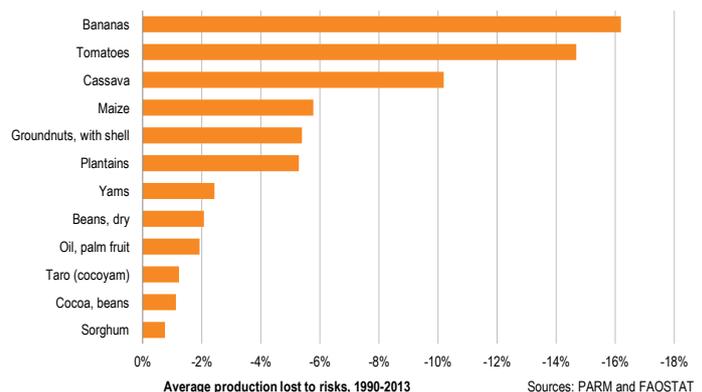
Are weather anomalies increasing?

Temperature levels are rising, with the 2008-12 average 0.7°C warmer than the 1961-1990 average. There is no clear change in rainfall patterns although the number of wetter than average months has remained consistently higher since the early 1990s.



Which crops appear most at risk?

Bananas, tomatoes and cassava are the crops most affected by yield losses as estimated by the impact on production. Annual production losses averaged over 10% of production for these three crops (average losses of 30-40% once every three years).





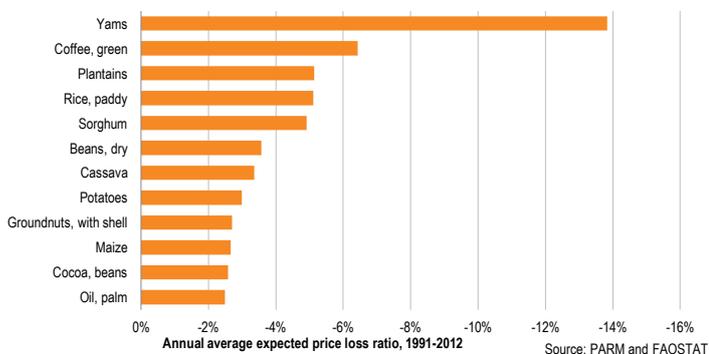
Market risks

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?

Yams appear to be the crop most affected by output price risks. Yams have an annual average price loss of 14%, twice that of coffee, the next most affected commodity. This is due to a higher severity of price falls (average loss of 34% and frequency of 0.4).



How are the product and temporal risks estimated in this profile?

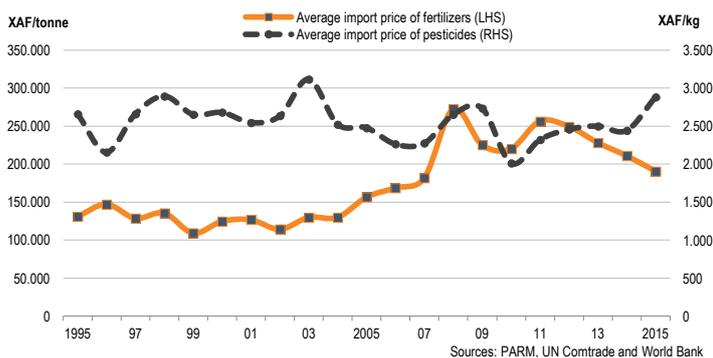
Indicative estimates of production and output price risks are calculated in a similar way. A loss threshold of 0.33 times the standard deviation below the trend value in either yield or prices is calculated to set a benchmark for identifying the losses resulting from production and market risks respectively.

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 are added together across the crop commodities only.

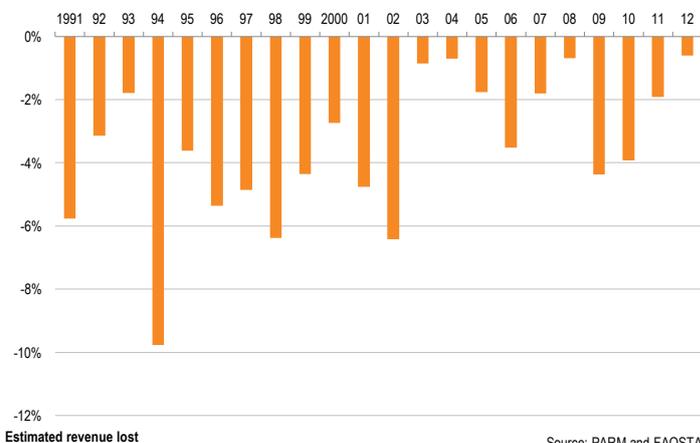
How variable are input prices?

Variations in annual average import prices suggest farmers face some input price risks. The import price of fertiliser almost doubled between 2004 and 2011 but has since fallen 25%. Import pesticide prices have risen by 15% or more at least once every four years.



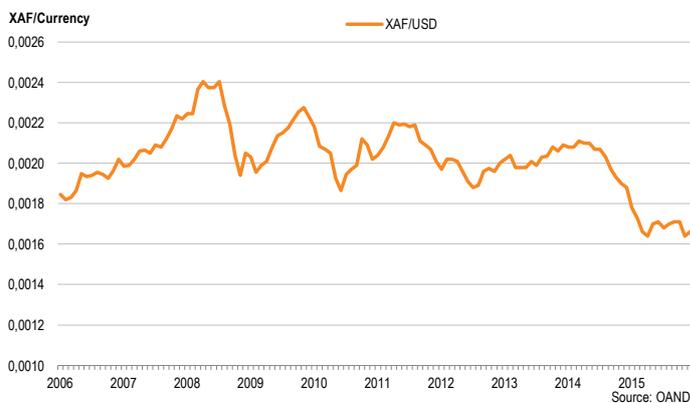
Has price risk changed over time?

Totalling the estimated revenue lost due to output price risks for the individual commodities provides an indicative market risk profile. The average annual revenue loss is 5% over the period 1991-2012. The risk appears to be falling, being 50% lower since 2000.



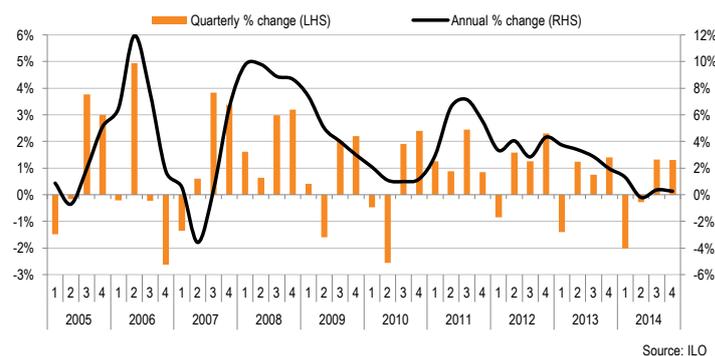
Is there an exchange rate risk?

Cameroon's currency is the Central African Franc (XAF), which is pegged at a fix rate to the Euro. The vast majority of Cameroon's exports are to Europe so there is little exchange rate risk. Against the USD, the XAF has fluctuated within a narrow range since 2006.



Do food prices vary for consumers?

Over 2005-14, the food component of the consumer price index recorded an average annual increase of 4%. The highest annual rate of 12% was recorded in June 2006. Prices have risen more slowly since 2010 but fluctuate to the same extent.



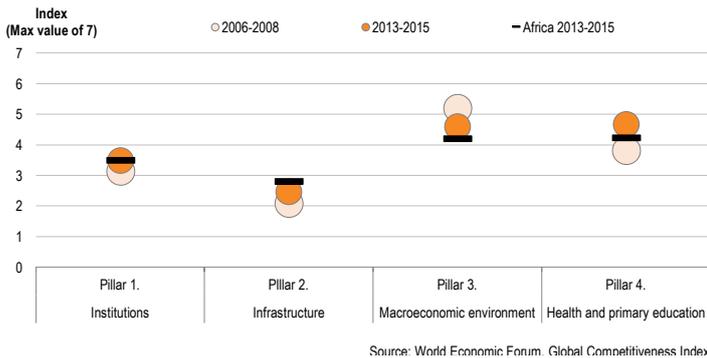
Macro level risks

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.

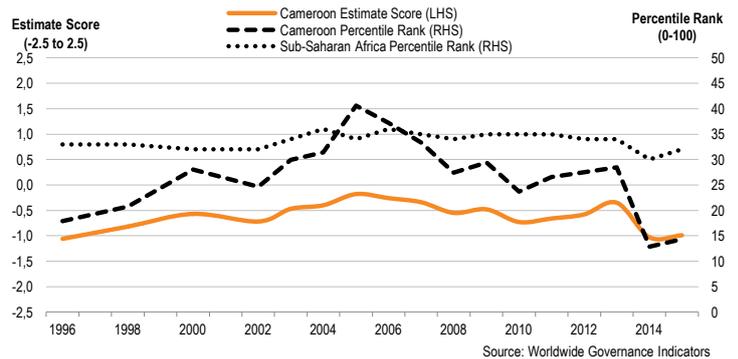
Are basic requirements in place?

Index scores for the basic requirement pillars place Cameroon very close to the African average across all four pillars. Index scores have lifted for three, with a slight deterioration in the macro-economic environment (government deficit, credit rating, etc.)



Is the political environment stable?

Cameroon generally scores below the Sub-Saharan Africa average in the political stability and absence of violence index. Its ranking has deteriorated markedly since 2005, falling from a percentile ranking of 40 to 15, the same ranking as in 1996.



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 Cameroon. 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. While output price risks occur more frequently, their severity is not as large as the extent of yield losses associated with production risks, both on average and in the worst case scenario recorded.

RISK	VARIABLE	AVERAGE FREQUENCY	AVERAGE SEVERITY	WORST CASE SCENARIO
PRODUCTION	RAW SCORE	0.29	-20%	-45%
	ION	● HIGH	● MEDIUM	● HIGH
OUTPUT PRICE	RAW SCORE	0.35	-11%	-24%
	OUTPUT PRICE	● 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. Drought is a clear example of one risk that can trigger others, aggravating some pests and diseases (additional production risks), leading to spikes in food prices (market risks) and even stimulating conflicts over water and pasture (macro level risks).

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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