



Agricultural yields and production in the Comoros



The agrifood sector in the Comoros

The Comoros, a small island developing state ranking among the poorest nations in Africa, faces many challenges that make it particularly vulnerable to food insecurity: as an isolated, net food-importing country with a small landmass, limited agricultural land and high exposure to natural disasters, the Comoros' food security is particularly vulnerable to external shocks. While being a net food-importing country, agriculture is a key sector and source of income, contributing 30 percent to the gross domestic product (GDP) in 2015.

This makes the Comoros, a rare exception among SIDS. Therefore, investing in and increasing the efficiency of the Comoros' agrifood systems is essential to enhance food security. To date, the significant lack of data on the Comorian agriculture sector has limited the scope of rigorous analyses. FAO's Technical Cooperation Program "Technical Assistance for Knowledge and Information Management" (TCP/COI/3704), addressed this data gap in 2021 by collecting comprehensive data on the agricultural sector, covering 51 crops and mapping more than 4 000 agricultural plots (see Figure 1). The objective is to provide an overview of the agricultural sector in the Comoros, particularly agricultural production and crop yields and the use of fertilizer and pesticides.

Data on agriculture

In 2021, FAO, in cooperation with the Comorian Ministry of Agriculture, Fisheries and the Environment (MAPETA), collected representative, spatially detailed and explicit data on agriculture, food security and poverty, with the objective to improve the data base on agricultural yields. The data is representative at the intervention zones of MAPETA's principal agricultural extension agency, i.e. at the level of the 19 Centres for Economic Development (CRDE), that are based in the main agricultural zones and well spread across Grande Comore, Anjouan and Mohéli. In total, some 1 710 farmers participated in the survey (see Figure 1), that is 19 percent of the agricultural population of the CRDE.

KEY MESSAGES

- ▶ Banana and cassava are the most important crops in terms of agricultural production and yields; a high percentage of farmers engaged in production.
- ▶ Use of fertilizer, organic and chemical, pesticides show a relatively low level of input use in Comorian agriculture.
- ▶ Lack of ownership of advanced farm equipment indicates a low level of mechanisation and a high prevalence of manual labour.

FIGURE 1. Spatial distribution of agricultural parcels across Grande Comore, Anjouan and Mohéli, sampled in 2021



Source: Google Earth Engine. 2023. Google Earth Engine. [Cited 30 June 2023]. <https://earthengine.google.com>, modified by the author based on data collected from the Technical Cooperation Program 3704.

Agricultural productions, yields and fertilizer use in the Comoros

The results indicate that the most important crop in terms of total production is banana (all varieties), with an estimated annual production of 6 338 tonnes, followed by cassava, with an estimated annual production of 3 158 tonnes. We estimate average yields of banana at the farmer level at 21.5 tonnes/ha, while we observe a yield of 10.1 tonnes/ha at the farmer level for cassava. Banana and cassava are by far the most important crops, both in terms of quantity of production and in terms of the high percentage of farmers in the sample engaged in production.

Taro is in third place with an estimated production of 575 tonnes and average yields of 6.8 tonnes/ha. In addition, we find that the total estimated production of sweet potatoes is 242.9 tonnes, with average yields of 4.9 tonnes/ha at the farmer level. For pigeonpea, we estimate a total annual production of 87.1 tonnes and an average yield of 2 tonnes/ha.

For vegetable crops, the most widespread crop is tomato, with a total annual production of 660 tonnes, with an average yield of 11 tonnes/ha. This is followed by cabbage, with an estimated annual production of 295 tonnes and yields of 30 tonnes/ha, and onions, with an estimated production of 41 tonnes and an estimated average yield of 6 tonnes/ha.

Regarding cash/export crops, we estimate a total annual production of 18.30 tonnes of vanilla, and an average yield of 0.37 tonnes/ha. This underscores the importance of vanilla as a cash crop and, therefore, as a source of income in Comorian agriculture.

Agricultural inputs

With respect to agricultural inputs, some 20 percent of the farmers in the sample use fertilizers (organic or chemical) and pesticides. Fertilizers and pesticides are mostly used in vegetable crop production. There are differences in the use of organic fertilizers on the one hand and chemical fertilizers and pesticides on the other, especially when looking at spatial distribution, with some areas having much higher use of organic and chemical fertilizers and pesticides than others. Overall, the findings indicate a relatively low level of input use in Comorian agriculture.

With respect to farm mechanisation, we find that the vast majority of farmers owns farm equipment, but mostly manual farm equipment, such as knives and machetes, while there is little to no ownership of more advanced technical equipment, such as power tillers or tractors. The adoption of more advanced farm equipment remains, hence, very low, indicating an overall low level of mechanization and a high prevalence of manual labour.

Policy recommendations

Overall, both production and yield estimates reflect observations on product flows, availability or shortage on local markets, and the importance of crops in terms of imports. Most estimated yields are low or almost half compared to the average yields observed in other countries.

This is likely due to the practices applied by the producers, notably the prevalence of manual farming, an aging agricultural workforce, low levels of literacy (over 30 percent of male and 50 percent of female farmers are illiterate), non-optimization of agricultural inputs, such as fertilizers and phytosanitary products, no rational use of input, the lack of mastery of production techniques. In this regard, improving knowledge on agricultural practices, and providing more extensive support to farmers seems a first priority to improve productivity.

Furthermore, spatial comparisons across production zones and on the use of agricultural inputs can help to better understand differences in fertilizer use adoption, as well as equipment ownership, to identify best practices and to target policies, training, and interventions, with the objective to increase agricultural production.

This analysis represents a first step in the analysis of data collected, mainly based on descriptive statistics, with the objective of providing an overview of agricultural production in the Comoros, given the significant lack of up-to-date data on the agricultural sector. Additional research and more in-depth econometric analyses are needed to answer more specific questions, for example to understand productivity differences across farmers, islands, and regions. At the same time, the parcel maps generated will enable the use of innovative technologies, such as spatial econometrics and the use of remote sensing data, for example, to estimate and monitor agricultural production and yields.



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