

Analysis of the coffee value chain in Angola

Value chain analyses assist in informing policy dialogue and investment operations. They help the understanding of how agricultural development fits within market dynamics. They permit an assessment of the value chains' impact on smallholders, businesses, society and the environment.

The European Commission has developed a standardised methodological framework for analysis. It aims to understand to what extent the value chain allows for inclusive growth and whether it is both socially and environmentally sustainable.

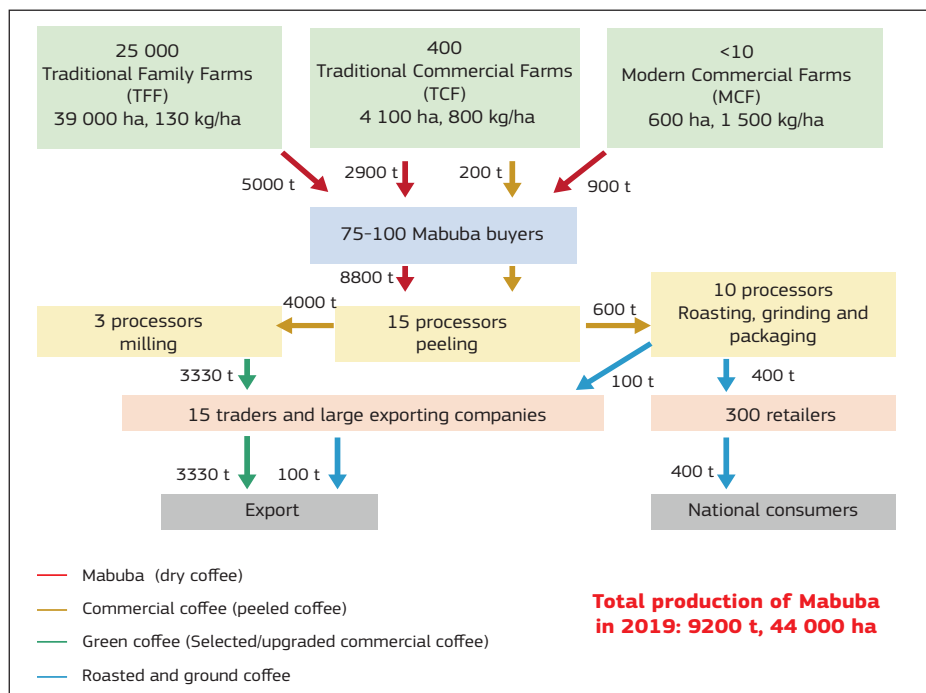
with ~230,000 t annually. Production and exports fell to minimal values in the subsequent decades during the period of internal conflicts (1975-2002) following the country's independence, and resulted in the disruption of market networks and the dismantling of state support and production systems.

As of 2002, coffee production and productivity started to slowly and regularly rise, reaching a production of 9,200 t of *Mabuba* (dry coffee) during the 2018-2019 campaign. Per capita coffee consumption in Angola is low, less than 100 g per year (against for example the 6.5 kg of Brasil), but may raise in the future. One of the major challenges is to replace imports through national production, while at the same time increasing the offer for external markets.

Sectorial context

Coffee cultivation in Angola reached its peak at the beginning of the 1970s, when it became the world's 4th largest producer

For this reason, the Government of Angola aims to relaunch the production, post-production, consumption and exports of the sector, with the objective to approach the volumes of production of the early 70s.



The European Union intervention

In line with the National Development Plan 2018-22, the Government of Angola elaborated the 'Support Programme to Production, Diversification of Exports and Import Replacing' (PRODESI). Through the 11th EDF, the European Union (EU) contributes to its implementation via the 'Private Sector Development Programme in Angola'. One of its components focuses on supporting the coffee value chain (VC) by: a) reinforcing the capacities of the Angolan National Institute for Coffee (INCA) to provide quality services to the different VC stakeholders; b) increasing the quality and quantity of production and of coffee processing; c) promoting and facilitating coffee exports.

Figure 1: Graph of the main flows of the coffee VC in Angola



Functional analysis

Coffee varieties and regions of production

In terms of species, Angola produces mainly *coffea canephora*, generally known by the commercial name of Robusta, that is grown in small plantations in the low-lying regions of the North of the country. **Some local varieties** (Amboim, Ambriz and Cazengo) **are considered as very high quality**. New plantations of Arabica coffee have recently been introduced in the higher altitudes of the Central Plateau.

Coffee passes through several stages - **cherry, Mabuba, commercial, green, roasted and ground** - before being consumed (Table 1). The VC is, therefore, composed of a diversity of actors linked to the various stages of coffee production, processing and marketing.

Farmers

There are 3 main types of farmers (Figure 1) with great performance disparity:

- **Small and medium Traditional Family Farms (TFF)**, correspond to more than **95% of coffee growers**. They produce **54% of the country's Mabuba coffee**. They combine coffee production (often from old plantations) with other cash and self-consumption crops. In general, they do not use any form of mechanisation or agro-chemicals nor hire permanent workers, opting rather for occasional workers for weeding and harvesting. The average age of producers is high (> 50 years).
- **Large Commercial Farms** that use **Traditional** production systems (**TCF**). In these farms (inherited or under concession), coffee is not the main activity, with production amounting to **36% of the country's Mabuba coffee**. Some also process into commercial coffee to improve their profits. They pay attention to the productivity of their plantations by renewing the coffee plants. They combine permanent workers with "handymen" for weeding and harvesting.
- **Large Commercial Farms** that use **Modern** production systems (**MCF**). A few farms began to invest in coffee, innovating their production from a business and technological point of view and entering the export circuit with their own brands. They create permanent and seasonal jobs. They currently produce about **10% of the country's Mabuba coffee**, a percentage going to increase as the new plantations enter full production.

Intermediaries and processing

The role of **intermediaries** is particularly important in transporting coffee to the **small local peeling industries** (transforming *Mabuba* into commercial coffee), for **roasting** (transforming commercial coffee into roasted and ground coffee) or **transporting it to national markets and to Luanda**, from where it goes out to consumer countries.

Commercial coffee also goes through a **selection/milling**

process (turning it into green coffee). It is subsequently bagged to be sold directly in the international market. **Some large commercial farms control many stages of the VC**: they transform cherry coffee directly into commercial coffee, going through the roasting and packaging in the agro-industrial structure itself.

Given that the quality validity period is relatively short and the **lack of a national industry** with the capacity to process the coffee produced in the country, roasting occurs in general in the destination countries (Portugal, Lebanon and Spain, among others). As such Angola is exporting volume instead of higher value products.

Prices and infrastructures

Prices (Table 1) vary according to four main factors: product quality and quantity; local processing capacities; the INCA reference price; the state of roads and logistical infrastructures.

Every year INCA sets the reference prices for Mabuba and commercial coffee. There are cases of small local traders and processors (peeling and roasting) that set lower prices and agree with these small farmers systems of credit and compensatory informal services (health aids, support for funerals, etc.), replicated from colonial times.

Due to the **lack of rural infrastructures**, part of the produced coffee is stored without being valued or is even lost. In addition, the poor state of the road networks makes transport problematic. Some of the TFF are particularly isolated and their income depends on the uncertain opportunity to be visited by a buyer.

Coffee stage	Volume equivalence	Price kz/kg
Cherry	8,1	Not sold
<i>Mabuba</i>	3,0	128-145
Commercial	1,5	450
Green	1,25	521-780
Roasted & ground	1,0	2.000-4.500

Table 1: Transformation coefficients and coffee prices

Governance

Besides setting reference prices, **INCA** collects different basic data related to coffee production (areas, yields, prices, etc.), supports marketing, creates and distributes new plants (seedlings) for varieties more resistant to pests and provides technical assistance to TFF and TCF. Its intervention capacities need to be strengthened in order to become more efficient and reach a greater number of producers.

Other institutions linked to the VC governance and/or with coordination functions such as cooperatives, chambers of commerce, or other types of networks, have weak intervention capacities and low social representation.



Economic analysis

Economic profitability for the actors

In the 2018-19 agricultural campaign, **all the VC actors obtained profits** from coffee. However, the VC's economic sustainability is limited by the low quantities and quality of the coffee. In the case of **TFF**, despite state subsidies, **the low annual net operating profit (on average 2,300 kwanzas (kz) or €4.6 for 200 kg)** is due mainly to the low yields and the low price of the Mabuba coffee at farm gate. A typical TCF obtains greater profits (57,000 kz or €114 for 7.2 t if it produces only Mabuba and 1.4 million kz or €2,800 for 25 t for those that transform into commercial coffee), followed by a MCF (300,000 kz or €600 for 22.5 t), given that investments in new plantations are recent. **The return on turnover is less than 15% for the three types of farmers.**

A transformer/processor usually obtains the highest profit, oscillating (depending on the type of processing) between 17 million kz (€34,000) and 58 million kz (€116,000); but the **return on turnover is low**: 14% for industrial peeling players and 8% for the milling ones. In order to be competitive, they need to renew their equipment to improve the industrial processes. **Companies**, such as those that produce roasted and ground coffee, **are the ones with the highest return on turnover** (36%), operating in both the domestic and foreign markets.

The profits of **traders** vary between 1.7 million kz for a retailer (€3,500) and 21 million kz for an exporter (€42,000); **their returns on turnover are quite high**, respectively 37% and 51%. Exporters are not capturing all the value potentially available on international markets due to the relatively high transaction costs compared to other exporting countries.

Impacts on the national economy

The **total value added (VA)** of the coffee VC was **3.8 billion kz (€7.6 million)** in 2019. **The VC represents 0.06% of agricultural GDP** (agricultural GDP corresponding to 13% of the total national GDP).

The two main components of the direct VA are the profits of VC actors (49%) and wages (44%) (Figure 2).

The VC's contribution to public finances is only 60 million kz (€120,000), corresponding to the difference between taxes (municipal and on exports) and state subsidies.

The VC's balance of trade is positive, at 2.3 billion kz (€4.6 million), corresponding to the difference between coffee exports for the 2018-19 agricultural campaign and import of intermediate consumption for the VC. However, the coffee balance of trade in the country can be considered in a deficit because the value of coffee imports for Angolan consumers is higher than that of its exports.

Viability within the international economy

The competitiveness indicators – the Nominal Protection Coefficient <1 and the Domestic Resource Cost Ratio (which compares the value of the invested domestic factors with the economic value created at international prices) of 0.48 – prove the viability of VC in the international economy. **Angola has all the attributes needed to access value markets** (for example branded - certified Roasted and ground coffee) for which the country could compete with Brazil and Vietnam. However, the specific analysis of the VC for the 2018-19 campaign, leads to the supposition that this is a fragile sustainability.

Employment

The VC generates ~55,200 jobs in full-time equivalent. Farmers contribute the largest number of workers (54,000 full-time), followed by processors (> 1,200 permanent) and traders (~3,000 part-time).

Wages are the largest component of VC's VA, totaling 1.6 billion kz (€3.1 million) annually. **Farmers are the main contributors (57% of the total wages)**. However, the average wages paid by farmers are notably lower than those paid by processors and traders.

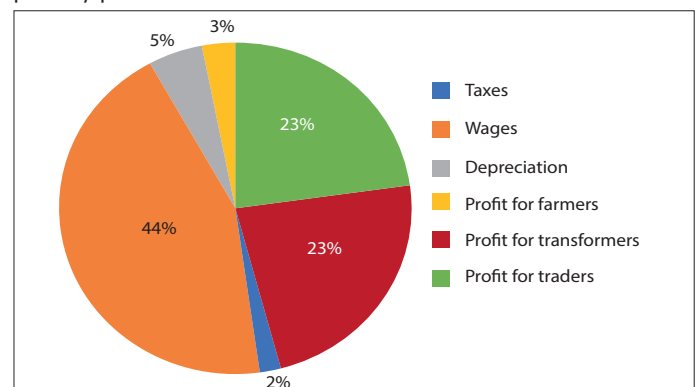


Figure 2: Direct VA composition

WHAT IS THE CONTRIBUTION OF THE VC TO ECONOMIC GROWTH?

The VC's contribution to Angola's economic growth is currently insignificant and fragile, due to the low productivity of farmers, the low volumes of industrial activities given the lack of raw material (*Mabuba* coffee), the low quality of production for all actors and a weak commercial network.

Meanwhile, the new plantations from the large commercial farms, whose production will increase in the next two agricultural campaigns, represent a window of opportunity that will allow the coffee VC to progress in the near future and to contribute more significantly to the Angolan agricultural GDP.

Social analysis

The following graph and table provide an image of the situation in the 6 strategic domains of the social analysis.

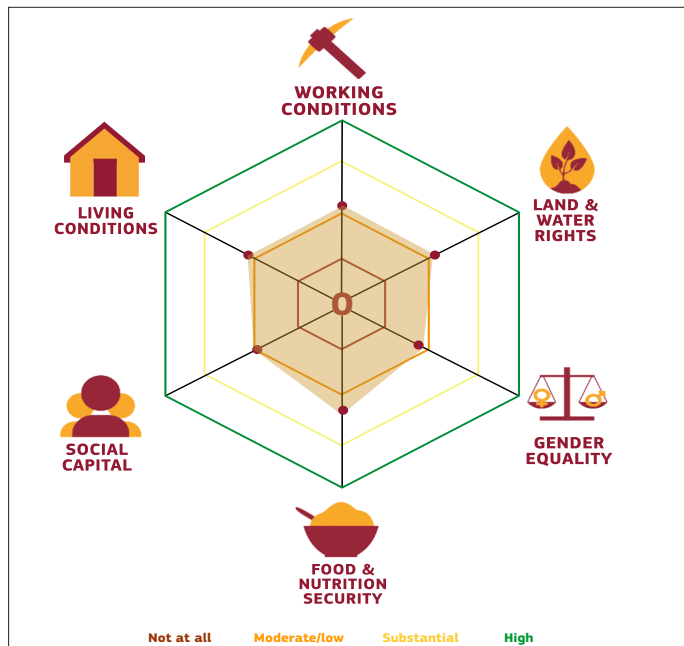


Figure 3: Social profile of the coffee VC in Angola

Working Conditions	<ul style="list-style-type: none"> The coffee VC generates jobs. It is essentially based on family structures without formal employment relationships. In the non-school period, child labor is used. The legalization of workers and discounts for Social Security are recent and incipient. There are risks of animal bites and accidents with tools during production. The coffee sector is not particularly attractive for young people.
Land and water rights	<ul style="list-style-type: none"> Being a permanent crop, coffee needs the land ownership to be fully legalised. Legalisation processes are time-consuming and expensive. Traditional authorities (sobas) play an important role in negotiations on land use and legalisation, not always to the benefit of communities. There is evidence of recent investments in areas where communities have been forced to move.
Gender equality	<ul style="list-style-type: none"> Coffee cultivation is perceived by women as a "male" crop, therefore they favour food crops as there is a greater need. Women participate mainly in the production phase, including the harvest. Women find it more difficult to obtain identification documents, land titles and credit. Women's participation in decision-making is weak, with the exception of administrative structures where they have a prominent presence.
Food and nutrition security	<ul style="list-style-type: none"> The people interviewed said that there were no periods of food shortage. Being a cash crop in mixed production systems, coffee makes it possible to purchase a greater quantity and diversity of food. In a situation of food shortage, coffee is subordinated. There is a serious problem of malnutrition, especially in children (low protein diets). The population of coffee-growing areas has difficulty accessing food markets (problems with road networks and currency devaluation with consequent decreases in purchasing power).
Social Capital	<ul style="list-style-type: none"> There are not many services provided by the few existing associations or cooperatives. The different actors do not dialogue with each other, reflecting some disorganisation of the productive and commercial structure of this VC. The prevailing forms of social assistance are family relationships. The producers get together to carry out specific works, but they cooperate little when it comes to commercialization. Traders benefit from the incipient associative structures for establishing client relationships with producers.
Living Conditions	<ul style="list-style-type: none"> There are no indicators of well-being being higher in the coffee regions compared to the national average. Health services are a major problem. Agro-industrial companies sometimes guarantee services such as accommodation, education and health.

IS THIS ECONOMIC GROWTH INCLUSIVE?

Growth in this value chain is currently far from inclusive. Trade and transformation players each earn 47% of the VC direct profit. Together all agricultural farmers only benefit from 3% of direct VA (Figure 2) and 6% of direct profit. The sale price of coffee does not allow agricultural farmers (in particular TFF) to have a viable activity. TFF profits are much lower than the minimum (already low) wage in rural areas (€ 40 per month). These small producers only survive if they have access to state subsidies. The increase of the farm gate price for higher quality coffee and the access to shared forms of mechanised peeling would be the most reachable driving forces for a greater inclusion of the most vulnerable actors.

However, the potential for job creation presents good prospects. The expansion of both forms of farming (family and business), together with the improvement of agricultural practices and a better purchase price for coffee in the case of the former, as well as the increase of the cultivated area for the latter, may make this VC more inclusive and enable greater integration of women and youth.

IS THE VC SOCIALLY SUSTAINABLE?

The main weakness to the social sustainability of the coffee VC is its current sidelining compared to other food crops, inhibiting women from greater involvement. Its weak attractiveness, especially for youth, also calls into question the generational takeover in the case of TFF. The failure of associative/cooperative systems and the weak social participation of small producers perpetuates forms of clientelism that accentuate vulnerability.

Environmental analysis

Environmental impacts vary significantly depending on the production system. 4 systems (TFF, TCF, mixed TCF, MCF) were analysed by 3 functional units (FU): FU1: 1 kg of green coffee, available in Luanda; FU2: 1 kg of roasted and ground coffee, processed in the provinces and available in Luanda; FU3: 1 kg of roasted and ground coffee, processed and available in Luanda.

Comparison of the impacts of green coffee production

FU1 measures the impacts of production and first-stage transformation (Figure 4). The **EFT system** - despite a low use of agro-chemicals, that occurs only during the immature phase - **scores worst on ecosystem quality**, due to high land use derived from low productivity. MCF have high yields and efficient land use but have high impacts on human health (due to agro-chemical inputs) and resource depletion (inputs, mechanization, irrigation). **The TCF system has a more balanced environmental profile**, due to a **better plantations management**, with more frequent and complete harvests, higher yields and, like the TFF, no use of any agrochemical inputs.

Comparison of the impacts of packaged roasted and ground coffee

FU2 and FU3 refer to the second-stage coffee transformation (Figure 5). This implies an additional use of diesel, transport and packaging materials. In the case of TCF, this second transformation increases the final impact values by 26% (ecosystems) and 66% (in human health, due to the impacts on global warming). The differences between FU2 and FU3 related to transport variations, are not significant.

The impacts of MCF are generally higher, except those that affect the ecosystem quality, as this is strongly determined by the land use that MCF use more efficiently when compared with TCF.

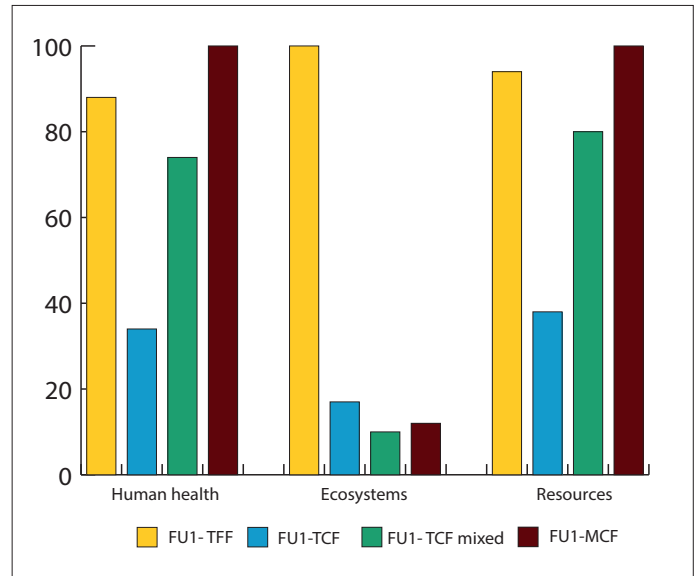


Figure 4: Contribution to impacts for FU1

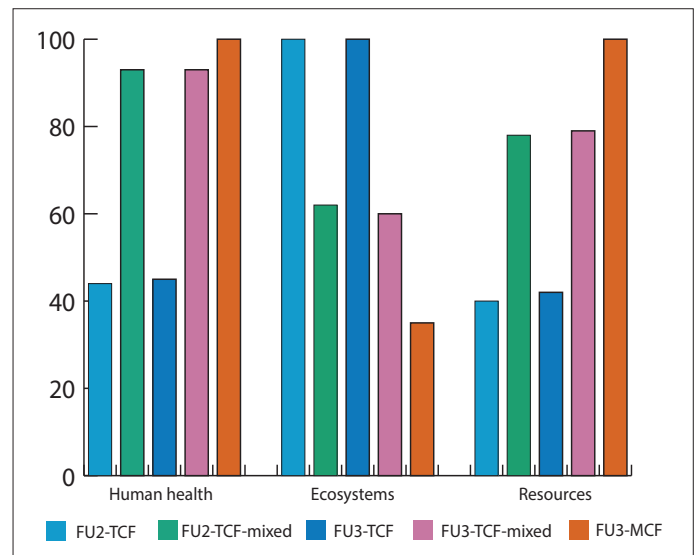


Figure 5: Contribution to impacts for FU2 and FU3
NB: mixed TCF, with features from TCF and MCF

IS THE VC ENVIRONMENTALLY SUSTAINABLE?

Depending on the actor, the main environmental impacts are due to low yields, use of chemical inputs, irrigation and coffee processing.

The differences in impact between the three production systems are significant and their environmental sustainability depends, to a large extent, on the yields obtained and on proper agricultural management. TFF producers would benefit from replacing old Robusta plantations and implementing best practices for better productivity. Although they do not use chemical inputs in production, they have a significant impact on land use and methane emissions linked to the first transformation. MCF producers have significant impacts related to chemical inputs and irrigation. These impacts are mitigated by high yields, but they should reinforce the implementation of agro-ecological practices to improve their sustainability. TCF producers perform best because they take care of old plantations without applying inputs. Nonetheless, as plantations are old, this system may be unsustainable.

A mixed TCF system, combining rehabilitated and new plantations, and implementing agro-ecological practices could represent the most ecologically sustainable system in the long run.

Main findings and recommendations

Coffee represents an excellent opportunity for Angola given that the sector is dynamic, very promising and capable of attracting innovation and investments, but its sustainability and, above all, its inclusiveness should be strengthened. **Most TFF currently survive only with access to state subsidies.** Industrial and trade players are more economically sustainable, even if this is not solid and depends heavily on the quantity and quality of production. **Women and youth are poorly integrated**, considering the sector not attractive.

It is recommended to formulate a common **national strategy on coffee**, through a participatory process. In particular:

Improving governance and infrastructure

- **Strengthen government institutions, in particular INCA**, and develop their capacities, making their mission more effective and transparent;
- **Set transparent system for collecting and disseminating comprehensive and accurate information** on farmers, plantations, agricultural practices and yields, building an online database to be permanently updated;
- **Improve the road network and encourage the development of means of transport.**

Increasing the VC attractiveness: creating economic and administrative incentives

- **Build a transparent pricing mechanism** to make the market more genuine and solid, in particular by setting higher reference prices for Mabuba coffee and controlling their enforcement;
- **Accelerate the access to land titles** and to credit, reducing the vulnerability of small farmers to the expansion of agro-industry;
- **Strengthen women's rights** including landownership and access to credit. Women should be encouraged to form women associations as coffee plantation owners but also as primary processors with access to hulling and

roasting technologies;

- **Build a digital platform with information about the local market**, focusing on volumes, prices, locations of operations and other commercial conditions, in addition to information related to international markets;
- **Establish a tax regime that encourages investments** in this VC;
- **Develop knowledge transfer strategies** accessible mainly to young people.

Increasing the productivity and quality and improving the commercial marketing of coffee

- **Rehabilitate old Robusta plantations** by promoting seedlings, according to the mixed TCF model;
- **Improve agronomic and plantation management practices** mainly for TFF to increase sustainable productivity; disseminate also modern processing techniques capable of limiting environmental impacts;
- **Improve waste management**, promote the use of coffee straw as a cover to control weeds and improve soil quality in coffee plantations;
- **Improve harvesting and post-harvest activities** by promoting an extension program focused on improving yield and economic profitability of production, reducing losses and increasing the frequency of harvests; improving the quality of drying processes for a higher quality of Mabuba coffee;
- **Improve the commercial strategy of coffee**, valuing the diversity of products and their regional specificity;
- Promote **product traceability systems**, including registered designations of origin or protected geographical indications.



Value Chain Analysis for Development (VCA4D) is a tool funded by the European Commission / DEVCO and is implemented in partnership with Agrinatura.

Agrinatura (<http://agrinatura-eu.eu>) is the European Alliance of Universities and Research Centers involved in agricultural research and capacity building for development.

The information and knowledge produced through the value chain studies are intended to support **the Delegations of the European Union** and their partners in improving policy dialogue, investing in value chains and better understanding the changes linked to their actions. VCA4D uses a systematic methodological framework for analysing value chains in agriculture, livestock, fishery, aquaculture and agroforestry. More information including reports and communication material can be found at: <https://europa.eu/capacity4dev/value-chain-analysis-for-development-vca4d->

This document is based on the report "Análise da cadeia de valor do café em Angola" 2020, by Cécile Bessou, (CIRAD), Margarida Lima de Faria (ISA), Bernardo Piazzardi (U. Austral), Carlos Figueiredo, Fernando Pacheco, João Pedro Pina (ISA) and Didier Snoeck (CIRAD). Only the original report binds the authors.

