European Commission

VCA4D
VALUE CHAIN ANALYSIS FOR DEVELOPMENT

N°60
JUNE 2026

Analysis of the sesame value chain in Chad

L'analyse des chaînes de valeur aide à la décision dans le dialogue politique et les opérations d'investissement. Elle permet de situer le développement agricole dans la dynamique des marchés et de déterminer l'impact des chaînes de valeur à toutes les étapes sur les petits producteurs, les entreprises, la société et l'environnement.

La méthode d'analyse multidisciplinaire a été élaborée par la Commission Européenne selon un modèle standardisé https://europa.eu/capacity4dev/value-chain-analysis-for-development-vca4d-/wiki/1-vca4d-methodology. Elle vise à comprendre dans quelle mesure la chaîne de valeur contribue à une croissance inclusive et durable socialement et pour l'environnement.

Value chain context

Following rapid growth in the early 2000s (7.7%), the sesame market has continued to grow at a steady rate of 1.6% over the last fifteen years. This growth has greatly benefited the African countries of the Sudano-Sahelian belt, which constitute one of the main export hubs to Asian countries, where demand for sesame is the highest in the world (particularly for sesame oil), followed by the Middle East and the eastern Mediterranean (Turkey, Greece). Globally, there has been rapid growth in competing supply from Latin America (Mexico and Brazil). European imports rose by 2% over the same period but still account for only a marginal share of global trade (5%). Persistent insecurity in North-Eastern Nigeria has, since 2010, led to a shift in the hub for Chadian sesame exports, which has moved from Nigeria (where it was previously exported from) to Chad, via direct exports through Douala. Chad has responded positively to these new opportunities, with a 7% increase in the area under cultivation since 2015. With 103,000 tonnes exported in 2024, Chad has become the world's 10th largest sesame exporter; its main customer is Turkey (88% of exports), followed by the EU (7%). For Chad, sesame has become the second or third largest source of foreign exchange after oil.

EU Intervention

The European Union has supported initiatives aimed at processing sesame into oil but has not yet implemented specific measures to strengthen Chad's sesame export value chain. The EU considers that further development of this sector could contribute to the deeper integration of the Chadian economy into regional and international markets, while also enhancing the returns on investments it has co-financed to reduce the country's geographic isolation, notably through the Chad–Cameroon road corridor. In addition, the EU is assessing the potential of the sesame value chain to attract European investment in Chad's agri-food sector under the Global Gateway strategy.

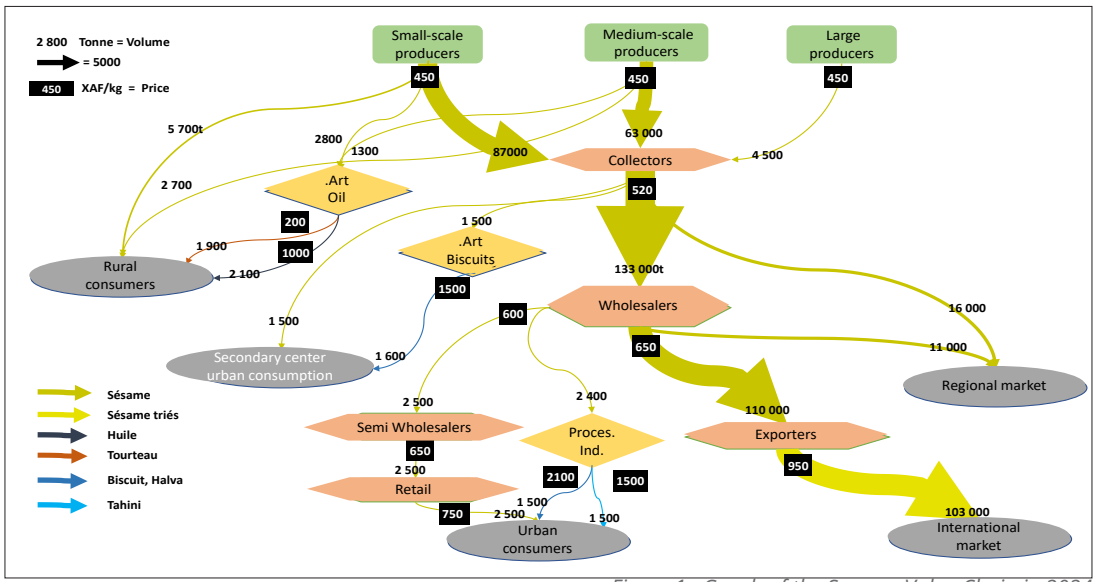

Figure 1 : Graph of the Sesame Value Chain in 2024

Functional analysis

Based on field observations, discussions with key informants and an assessment of technical constraints (soil fertility, reduced fallow periods, low use of inputs), the analysis is based on a yield of 300 kg/ha rather than 500 kg/ha as per official data. Adjusted sesame production in 2024 is estimated at 168,000 tonnes, of which 10% would be set aside for seed, 13% consumed in Chad, 15% exported to neighbouring countries (Nigeria, Sudan) without being recorded, and 62% officially exported to the global market. Only the portion consumed in Chad is processed into paste for sauce, oil, biscuits and tahini.

Production

In N'Djamena and other towns, sales to consumers are made by the sack or at retail. Retailers, mostly women, have little capital and often buy on credit from semi-wholesalers, whom they repay after resale, making a small profit on the difference between the sack price and the retail price.

Marketing

Around 5,000 collectors operate independently or are recruited by wholesalers. It is estimated that some thirty wholesalers based in the wholesale markets of N'Djamena and Moundou drive the value chain. They supply exporters and market vendors in N'Djamena and a few other urban centres for local consumption. Wholesalers provide storage facilities to assemble consignments for exporters, in line with the seasonal nature of exports (February–April). Exporters (around 20 formal and operational companies) have invested in equipment for cleaning and mechanically sorting sesame seeds to meet the quality standards required by international demand.

The distribution of sesame on the local rural market relies mainly on direct sales, either by producers or by collectors at rural and secondary urban markets in areas where there is a shortage. In the markets of the main towns and the capital, sesame is distributed by semi-wholesalers (250 individuals) and retailers (2,500 individuals).

Processing

A small proportion of sesame is processed on a small-scale basis, mainly in rural areas into oil (4,200 workshops) and biscuits (5,000 workshops). Finally, two factories in N'Djamena process sesame into tahini and halva portions, for both the local and regional markets.

Governance

Governance of the value chain is predominantly private, constituting a 'spontaneous value chain' with limited public support: both in research (two approved improved varieties) and in the provision of phytosanitary control services, which are inadequate (no systematic testing for salmonella and aflatoxin in exported consignments). The value chain does, however, benefit from investments to improve the road network, which reduces selling prices. The sesame boom is supported by the National Development Plan (PND) 2025–2030 – 'Chad Connection 2030' – which includes explicit targets for increasing foreign investment.

Trade operates mainly through the long-established merchant networks of wholesalers in N'Djamena and Moundou and through the diversification of import-export companies (gum arabic, agri-food products), often in partnership with foreign operators (from Sudan and the Middle East) familiar with the international market. Turkish and Chinese importers have also set up their own processing and packaging facilities for export in Chad. There are signs of attempts at vertical integration, combining collection and export, but these have not been very successful.

What is the contribution of the value chain to economic growth?

Financial viability of the actors

Taking the average prices for the year 2024 as a benchmark, all stakeholders create added value and have a positive Net Operating Profit (NOP). As sesame is only lightly processed, intermediate consumption accounts for just 23% of the 132,000 MXAF generated by the value chain. The bulk of the value added produced is redistributed in the form of net operating profit (69%); wages, paid mainly by producers, account for 15%; and various taxes (customs duties, corporation tax and local taxes) account for 13%.

Small and medium-sized producers generate more than half of the value added (36% and 23% respectively). The collection, wholesale/storage and export processes are the second-largest source of wealth creation; the value added generated by these categories accounts for 7%, 11% and 19% of total value added respectively, highlighting the central role of these actors in the value chain.

The export subsystem of the value chain generates 75% of the value chain's value added. Its relative weight is greater in terms of financial costs (87%), but above all in terms of taxes paid, which account for 89% of all taxes paid by the value chain.

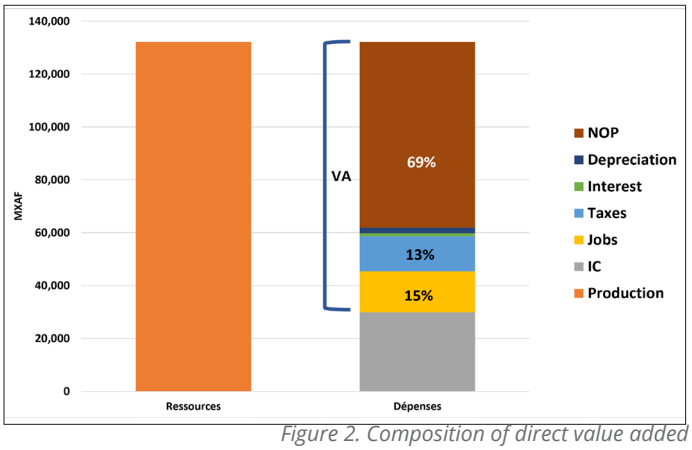

Figure 2. Composition of direct value added

Impact on the national economy

From a macroeconomic standpoint, the value chain has limited dependence on imported intermediate consumption, with 89% of its output translating into direct and indirect value added generated throughout its supplier network. However, the low level of intermediate consumption results in a low multiplier effect of the VC on the Chadian economy: for every 1 XAF of value added created by the VC, only 0.16 XAF will be generated indirectly. The total value added by the VC accounts for just 1.06% of GDP, whilst the value of sesame production accounts for 5 per cent of GDP. However, the trade balance of

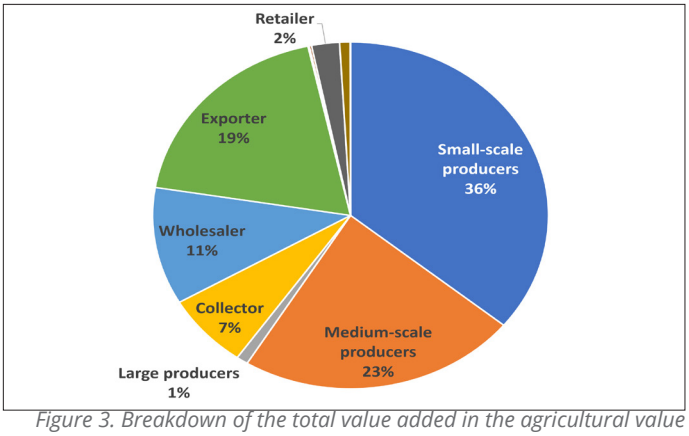

Figure 3. Breakdown of the total value added in the agricultural value chain

the agricultural value chain accounts for 8.5% of Chad's overall trade balance (including hydrocarbon exports). Sesame is therefore a strategic commodity for the diversification of foreign exchange earnings, which are heavily dependent on hydrocarbon exports.

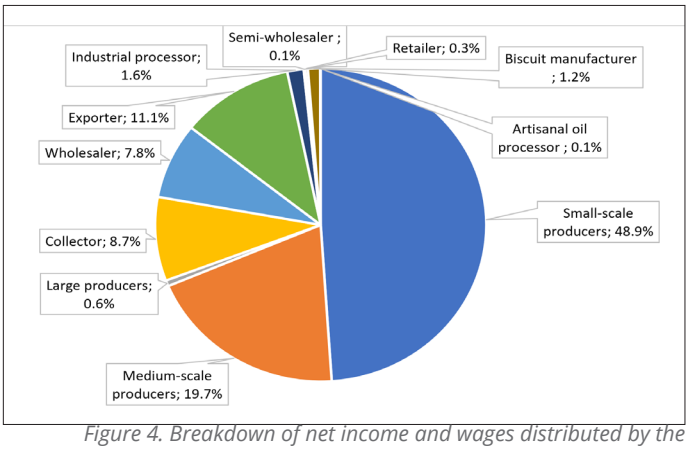

Figure 4. Breakdown of net income and wages distributed by the agricultural value chain

The sesame value chain in Chad is competitive and contributes significantly to the trade surplus. It is able to absorb significant price fluctuations on the world market. However, it has a limited knock-on effect on the Chadian economy as it makes little use of intermediate consumption. The bulk of the value added is distributed in the form of net operating profit, whilst wages account for only 15% of value added. Finally, it contributes 13% of value added to public finances.

Is the economic growth inclusive?

The value chain enables 234,000 self-employed individuals to earn an income, in addition to approximately 50,000 full-time equivalent employees. These groups account for around 74% of the total net income distributed by the value chain, which therefore encompasses a significant number of Chadian households.

Intermediary functions between collectors and exporters account for 23% of net income. This corresponds to net margins of 8 to 12% on sales made by these actors. These margins do not necessarily reflect rent-seeking behaviour, and a certain level of competition prevails at every stage of the marketing process. However, this net income relates only to 5,200 traders, including around 50 wholesalers and exporters, each of whom markets several thousand tonnes per year. The distribution of this net revenues is therefore concentrated in the export subsystem (Gini coefficient of 0.60) and more equitable in the local market supply subsystem (Gini coefficient of 0.31), which is characterised by a greater number of downstream players (retailers, processors).

Producers' lack of bargaining power prevents these asymmetries in net income across the value chain from being reduced. Producer groups and cooperatives lack both the technical knowledge and sufficient financial resources (problems with working capital and credit for storage and access to transport) to be able to negotiate prices. This stems in part from the heterogeneity of producers, which leads to different marketing arrangements (batches of varying sizes, sales spread out or concentrated over time).

The value chain is a source of income for at least 300,000 Chadians. Intermediaries' margins do not necessarily reflect rent-seeking behaviour, but income concentration is high (Gini coefficient = 0.60). Improving producers' capabilities (collective sales, financing for storage, information) would help to reduce these inequalities. Finally, paid agricultural work, predominantly carried out by women, is low-skilled, arduous and poorly paid.

Is the value chain socially sustainable?

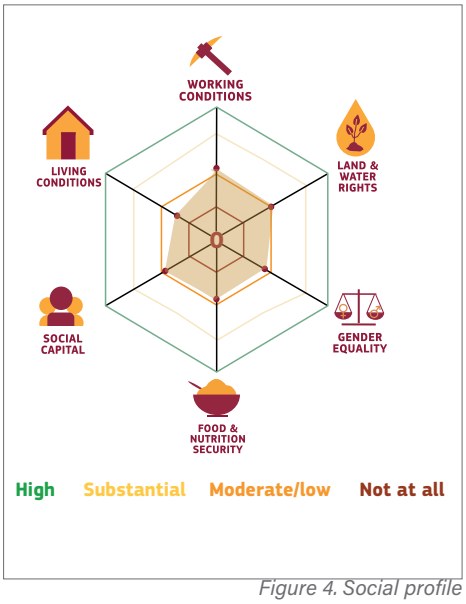

Figure 4. Social profile

The sesame value chain does not have the social impact one might expect given the wealth it generates. It relies on a salaried workforce (as threshing and harvesting cannot be mechanised), who work in very precarious conditions for low pay. Furthermore, access to land is a crucial issue for a value chain whose production is expanding mainly through an increase in the area under cultivation. These negative effects particularly affect women.

Working conditions	▪ Working conditions for agricultural labourers remain basic, with significant differences depending on whether the workforce consists of local or nearby workers (family helpers or paid labour from the neighbourhood) or migrant workers from more distant regions outside the family. There is no oversight of working conditions, which remain very difficult. This poses a risk factor should the area dedicated to sesame monoculture expand.
Land and water rights	▪ Access to land rights is characterised by significant social and gender inequalities. ▪ Access to water for villagers and labourers is a cause for concern in areas where village water systems (in terms of availability and maintenance) are failing to keep pace with agricultural and population growth.
Gender equality	▪ Women's substantial agency is exercised within a constrained framework of access to activities, capital, resources and land, and under a heavy workload.
Food and nutrition security	▪ Sesame's high exposure to market prices and international competition from producing countries is now a source of vulnerability, made all the more damaging by the fact that the high quality of Chadian sesame is not commercially valued.
Social capital	▪ The spontaneous nature of the value chain has eluded the attention of the administration and producer organisations, which have merely included sesame in their portfolio of activities without, in most cases, deriving significant representativeness or political clout from it. ▪ The expansion of the value chain has not been accompanied by a wider dissemination of information, with producers having little knowledge of downstream dynamics (such as developments in the global market, etc.) ▪ Producers have not improved their bargaining power or their access to information; they report that networks of trust remain largely traditional in nature.
Living conditions	▪ Improvements in living standards resulting from sesame income are vulnerable to fluctuations in international prices. ▪ In rural Chad, individual and household incomes from sesame do not compensate for the lack of basic amenities, goods and services, nor for isolation and the absence of collective protection.

Is the value chain environmentally sustainable?

The sesame value chain in Chad is characterised by very low use of external inputs, notably mineral fertilisers, fossil fuels and water. This situation is linked to a low level of mechanisation, predominantly rain-fed production and limited processing. However, this low level of intensity should not be interpreted as the result of intentional environmental sustainability, but primarily reflects structural constraints.

Fertility management

Soil fertility management is a major concern: even where mineral fertilisers are used, the quantities are extremely low, organic inputs are irregular, and integrated soil fertility management practices are largely absent. This results in a gradual decline in soil fertility and low, unstable yields. Furthermore, climatic variability and pest pressure are significant constraints that limit sesame yields. At the same time, the use of pesticides, particularly insecticides, is widespread, including products that are moderately to highly hazardous. Combined with informal supply chains, inadequate regulation and a lack of knowledge among producers, this situation poses significant risks to human health and the environment.

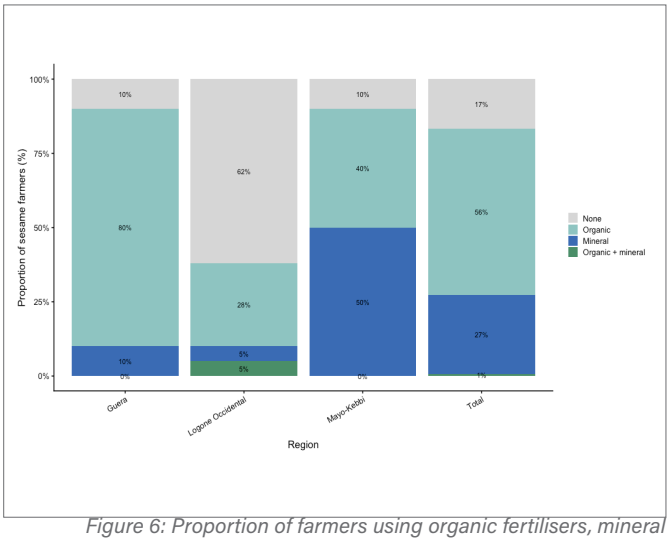

Figure 6: Proportion of farmers using organic fertilisers, mineral fertilisers, both, or neither for sesame production, by region

Yields

Low and highly variable yields constitute a key (environmental) challenge. They vary considerably across regions and farms, due to a combination of constraints related to soil fertility, rainfall variability and pest pressure. Although these constraints vary by region, their effects are consistently exacerbated by economic constraints, notably limited access to inputs and financial resources, which reduce farmers' ability to cope with biophysical challenges. Consequently, low productivity reduces the efficient use of land and other resources, and increases the risk of agricultural expansion at the expense of natural habitats.

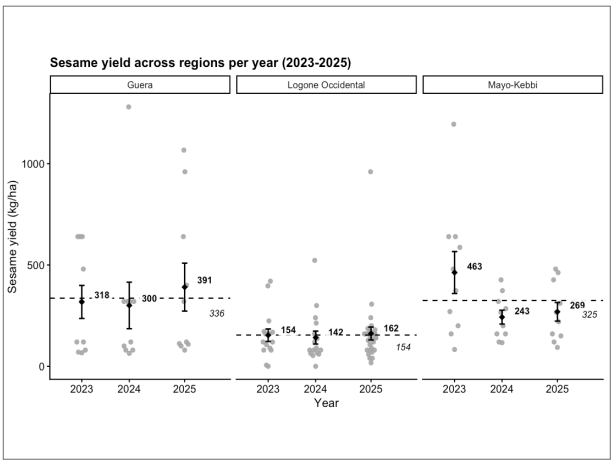

Figure 7: Average sesame yields (kg/ha) and interquartile range (IQR) by region over several years (2023–2025) in Chad

Biodiversity

At the landscape scale, the main environmental pressure stems from the ongoing expansion of areas devoted to sesame, driven by the economic attractiveness of the crop against a backdrop of low agricultural productivity. This trend is likely contributing to habitat degradation and biodiversity loss. Overall, the main environmental challenges are not linked to over-intensification, but rather to low productivity, soil degradation, climate variability and weak input supply systems. Reducing the environmental impact will therefore require strengthening integrated soil fertility management, combining organic and mineral inputs, extending fallow periods or incorporating legumes, and gradually phasing out soil-depleting practices such as the burning of crop residues – particularly through improved access to suitable mineral fertilisers – in order to increase productivity and potentially reduce the pressure associated with the expansion of agricultural land. Furthermore, the use of pesticides, particularly insecticides, is widespread, including products that are moderately to highly hazardous. Combined with informal supply chains, inadequate regulation and a lack of knowledge amongst producers, this situation poses significant risks to human health and the environment.

The value chain has a negative environmental impact due to poor fertility management. This shortcoming encourages the expansion of cultivated areas onto new land and/or the reduction, or even disappearance, of fallow land, which increases pressure on biodiversity. This low fertility affects yields, which are variable and low. The high prices of sesame associated with the boom have not encouraged producers to change their practices.

Main findings and recommendations

The current dynamics of the VC sector face significant constraints and risks: a decline in the attractiveness of production due to intensifying international competition, growing pressures on the labour market (arduous working conditions) and on access to resources (land), and an irreversible decline in productivity (soil fertility). In this context, pursuing further 'mining-style' growth in production, leading to a greater concentration of income, has no future. As Chadian sesame enjoys a strong reputation amongst operators on the global market, capitalising on this asset must be at the heart of the development strategy and must enable the country to address social and environmental challenges.

Enhancing the quality of Chadian sesame requires improved quality management, not only at the export stage but throughout the entire supply chain. This necessitates strengthened phytosanitary controls, improved storage facilities and the preservation of seed stock, which forms the basis of Chadian sesame's distinctive characteristics.

Sustainable and effective quality enhancement can only be achieved by promoting more inclusive governance that strengthens the shared interest of all stakeholders in this strategy. There is a need to promote inter-professional consultation frameworks, as well as the coordination and harmonisation of practices. Given sesame's favourable storage properties, the introduction of a warehousing system for producers can strengthen their interest in value creation by stabilising and increasing their income.

Better value for the product also requires an improvement in working conditions and pay, which are essential to ensure employees' commitment to more sophisticated practices. The implementation of this strategy cannot rely solely on the interests of wholesalers and exporters and requires a fairer distribution of the expected benefits amongst producers. Its feasibility depends on secure access to land resources for a large number of people in particular. Finally, the discriminatory effect of prioritising quality for export on less resource-endowed stakeholders must be anticipated by supporting alternative sources of income, particularly through the processing of sesame for the local market.
From an environmental perspective, this strategy of prioritising quality must be used to develop incentives to restore and better manage soil fertility. This restoration requires improved access to fertilisers and inputs, better regulation of pesticide use, and the production of seeds which, whilst preserving local characteristics, enable producers to adjust their cropping schedules to better adapt to climate change. Fertility management through sustainable intensification should help to reduce land expansion and the impact on biodiversity.

Value Chain Analysis for Development (VCA4D) is a tool funded by the European Commission / INTPA 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 by Ahoudjo S.K., Ancey V., Broeckhoven I. Koï Djintou, M. ; 2026. Analyse de la chaîne de valeur Sésame au Tchad. Report for the European Union, DG INTPA. Value Chain Analysis for Development Project (VCA4D CTR 2018/392-417), 108pp + annexes. Only the original report binds the authors.