European Commission

VCA4D
VALUE CHAIN ANALYSIS FOR DEVELOPMENT

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Value chain analysis of groundnuts in Madagascar

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 environment.

The European Commission has developed a standardised methodological framework for analysis (https://europa.eu/capacity4dev/valuechain-analysis-for-development-vca4d-/documents/methodological-brief-eng). It aims to understand to what extent the value chain allows for inclusive economic growth and whether it is both socially and environmentally sustainable.

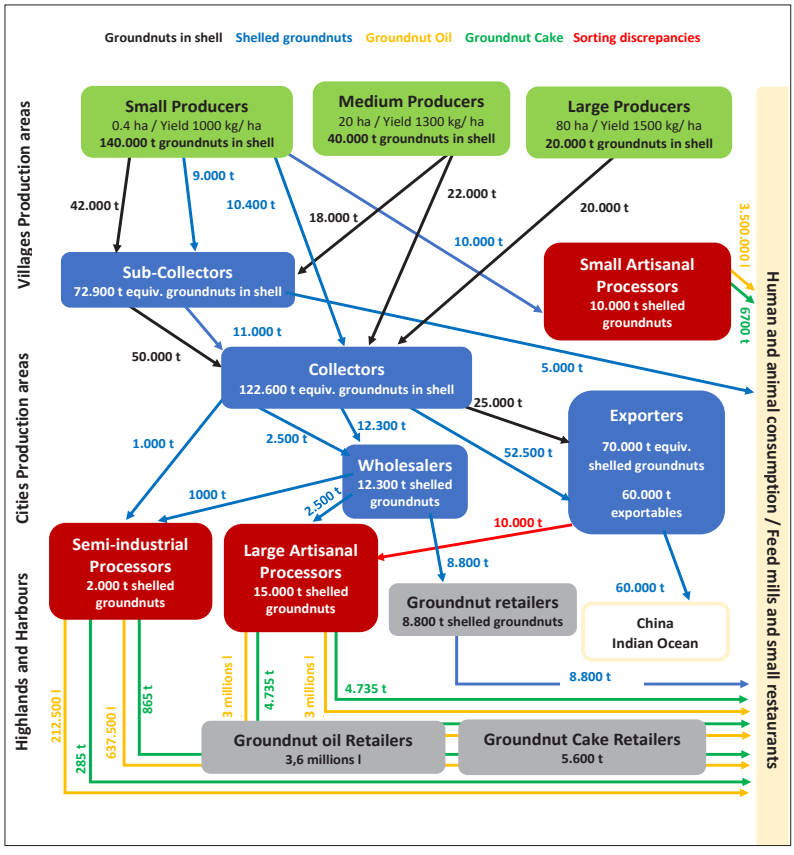


Figure 1. Stakeholders and flows in the groundnut value chain in Madagascar

The value chain context

As both a cash and food crop, and Madagascar's leading oilseed crop, groundnuts play a significant role in the national economy. Approximately 70% of production is marketed domestically or exported, while the remaining 30% is retained for household consumption and seed. Exports to China account for more than half of total groundnut production (Figure 1).
The main production areas are in the dry tropical climate (South-West, Central-West and North-West), whilst processing and consumptio are concentrated mainly in the Highlands. The product is available year-round, with a peak from March to June.

Prior to liberalisation, state-protected industrial crushing dominated the market to ensure self-sufficiency in oil. Currently, the country aims to replace imported edible oils with groundnut oil, the second largest import category after rice.

The European Union intervention

By supporting the groundnut value chain (VC), the EU is aligning itself with several national priorities: the Pact for Food Sovereignty and Resilience (PSAR) (2023–2028), the National Plan for Food Self-Sufficiency (PNAA)(since 2021), the General State Policy (2024–2028), the Ministry of Agriculture's National Seed Strategy (2023–2028), and the national roadmap for the transformation of food systems. However, groundnuts remain a lower priority than rice, maize and cassava.

As part of the 11th European Development Fund (EDF) programme, the EU is supporting the transition of agricultural and food production systems in Madagascar in order to strengthen the country's food sovereignty and reduce its dependence on imports (oil, maize, etc.) through the development of a domestic production sector that is protected and more competitive.

Functional analysis

Value chain overview

Between 2010 and 2020, the Madagascan groundnut market underwent a profound transformation. **Exports rose from less than 2,000 t**, mainly destined for regional markets (Mauritius, the Comoros and Mayotte), **to around 30,000 t of shelled groundnut destined for Asia**. Despite an increase in production, this strong growth came at the expense of **oil extraction**, the **volume** of which **fell drastically** (Figure 2). The domestic market (excluding oil extraction), about which less is known, has kept pace with the growth in national production, rising from 15–20,000 t of in-shell groundnuts in the 2000s to 30–40,000 t since 2015, representing a relatively stable share of 40% on average of national production.

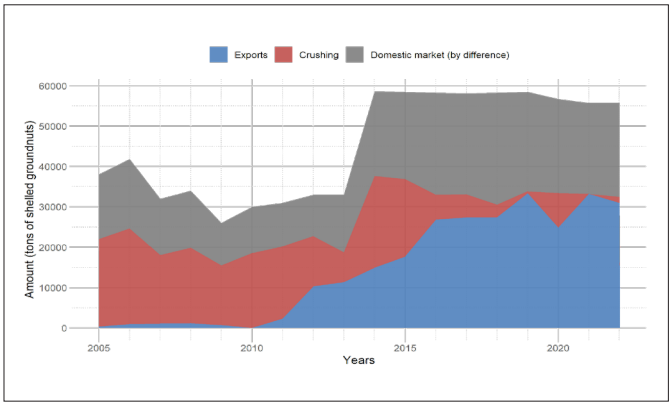


Figure 2. Groundnut production in Madagascar (FAOSTAT, TradeMap)

The latest agricultural statistics date from 2010. A recent survey covering the 2024 season is still being processed, but initial results estimate production at **200,000 t of in-shell groundnuts (equivalent to 140,000 tonnes of shelled groundnuts)**.

According to customs statistics, nearly half of this production, or 60,000 t of shelled groundnuts, is currently exported. Semi-industrial processing has become marginal, accounting for around 2,000 t of shelled groundnuts.

Groundnut oil is consumed entirely locally. This is supplemented by **oil imports**, the volume of which has fluctuated between 160,000 t and 190,000 t per year over the last five years, comprising **66% palm oil and 34% soya oil**.

Products of the value chain

The groundnut value chain in Madagascar generates a wide range of products, five of which have been included in this analysis: **the haulms** and groundnuts in their shells, separated by producers after drying; **the seeds** and emptied **shells**, obtained during shelling; and, when the seeds are pressed, **the oil** and **meal**. Seeds intended for human consumption can be eaten in various forms: roasted groundnuts, groundnut paste, groundnut butter or pastries.

Shelling is carried out partly by small-scale producers, but also by collectors or dedicated operators, who sometimes handle multiple products.

The haulms are mainly used for animal feed, but can be returned to the soil as fertiliser or, more rarely, sold. The shells are of little value: they are generally spread on the ground, added to animal feed or used for road maintenance.

Governance of the value chain

The VC is largely dominated by **captive governance**, characterised by significant power asymmetry. The structure is hierarchical: each level depends on the next, information flows are limited, and producers have virtually no room for negotiation. Prices are set in an opaque manner, often based on decisions taken further down the supply chain.

In response to this imbalance, **collective governance** is developing through cooperatives, producer organisations and federations. They seek to strengthen producers' bargaining power by pooling volumes, sharing costs and improving product quality. Partial vertical integration and the formation of networks are also emerging as ways to reduce producers' isolation and gain access to more profitable marketing channels.

Support for the value chain

Since the rise in the price of imported oils, Madagascar's groundnut sector has been experiencing a new boom. There is a trend towards **consolidating the seed sector** and **supporting the establishment of small and medium-scale oil mills**.

Following pressing national demands and thanks to opportunities for international cooperation, national research into groundnuts has been revived since 2022. Various projects and programmes are working in collaboration with FOFIFA to **develop plant material**.

Generally speaking, there are a large number of projects and programmes directly or indirectly supporting the groundnut value chain in Madagascar.

Despite recent initiatives, the sector still appears poorly structured: stakeholders lack organisation regarding seed procurement, capacity building, individual or collective storage, networking with other economic actors, price monitoring and negotiation, data tracking, etc. The sector is quite lengthy, involving collectors, various types of intermediaries, processors and markets, which makes structuring more complicated, even at an institutional level where several ministries are involved (agriculture, industry, food, health, environment, etc.).

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

Sustainability of economic activities

The **value chain's activities are viable**, with annual incomes ranging from 247,000 Ar (€51) for small-scale producers who do not shell their own nuts, to 19 billion Ar (€3.9 million) for exporters. Profit margins range from 7% for collectors to 49% for small-scale producers. No activity is operating at a loss, but the current **downward** trend in **groundnut prices could put certain stakeholders at risk**.

Small-scale groundnut farmers' income amounts to less than 8% of the minimum wage, as groundnuts are just one crop among many and some households have other sources of income. The situation would be a cause for concern for those who rely on it as their main source of income.

Processors face occasional increases in the price of seeds whilst having to align themselves with the fluctuating prices of imported oils, which threatens their economic viability.

Comparison of sub-chains

The **semi-industrial sub-chain is not very viable**. The profitability of the semi-industrial oil miller is less than 10%, compared with over 20% for the large artisanal oil miller. Its depreciation and labour costs are high. Unit energy costs are similar for both models, but consumables and services (filters, packaging, maintenance, parts, inspections, advertising, etc.) account for a larger proportion of costs for the semi-industrial model. The artisanal model also benefits from cheaper raw materials, thanks to the sorting residues purchased from exporters. Even though the semi-industrial model sells its oil at a better price, this advantage is not enough to offset its high production costs.

The semi-industrial sub-chain is also less attractive than the export sub-chain as it generates higher costs (4,676 Ar or €0.97 per kg shell equivalent compared to 3,730 Ar or €0.77) and yields margins (or net operating income) distributed among the various actors that are slightly lower (1,184 Ar or €0.246 per kg shell equivalent compared to 1,219 Ar or €0.253). However, the margins in this sub-chain benefit solely domestic actors.

Impact on the national economy

The main actors contributing to the creation of direct value added (VA) are small producers (34%) and exporters (25%), and to a lesser extent medium-sized producers (11%) and various types of collectors (10%) (Figure 3). **Total VA amounts to 546 billion Ar** (€113 million). Operating revenues (67%) and wages (32%) are the main components of this total VA, and to a lesser extent taxes on transactions (7%) (Figure 4).

The groundnut value chain contributes more than 7% to the country's agricultural GDP, to public finances and, above all, to the trade balance, with a **surplus of nearly 363 billion Ar** (€75 million). Its rate of integration into the national economy is high at 88%, meaning that the sector generates indirect income within the national economy and incurs few foreign exchange losses linked to imports of consumables.

The value chain is viable and competitive in the international economy. Madagascar sells its groundnuts to China at a price four times lower than that of Mozambique.

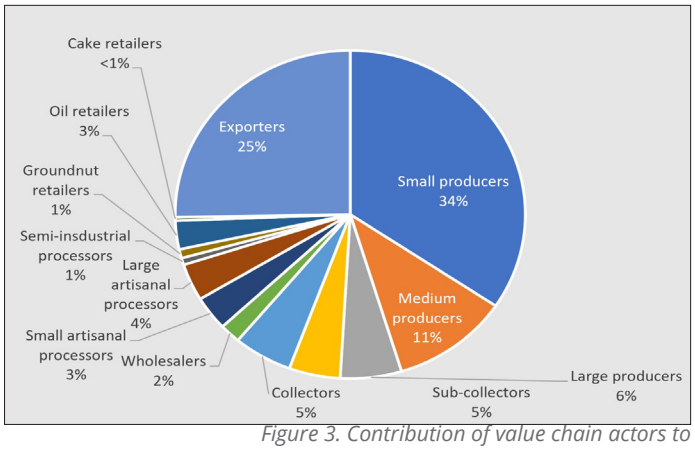


Figure 3. Contribution of value chain actors to creation of direct VA

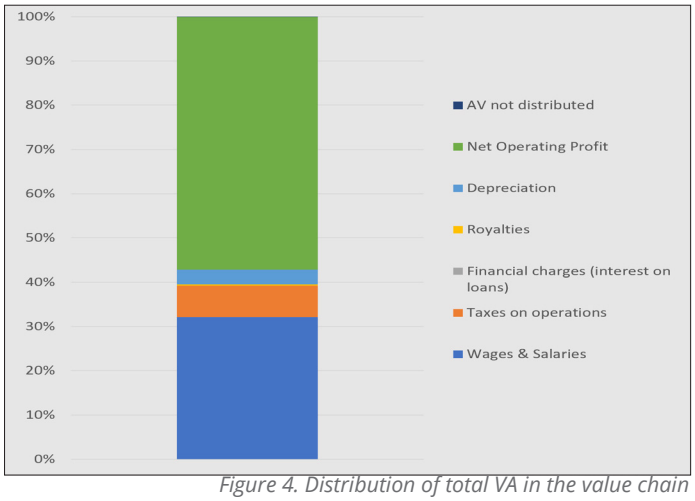


Figure 4. Distribution of total VA in the value chain

Despite significant revenues, actors in the chain are weakened by price uncertainty at various stages of the sector; prices vary greatly depending on the strategies of shelled groundnut exporters, with Madagascar acting as an adjustment variable for Asian importers, and oil importers, who are themselves dependent on the international market. The contribution of groundnut production to GDP has increased in recent years, driven by exports; however, the economic impact of processing has declined since the dismantling of industrial oil mills following liberalisation. The current, smaller-scale industries are struggling to regain momentum, despite the ambitions set out in public policy.

Is the economic growth inclusive?

The growth generated by the VC is inclusive in the sense that there are actors of varying sizes with highly variable operating incomes, but there are no actors who capture a significant share of the income whilst creating proportionally much less value added. The main beneficiaries of operating income are small producers (around 350,000) and a handful of exporters, accounting for 33% and 27% respectively.

The sector accounts for a total of around **364,000 jobs**, comprising 352,000 agricultural producers, nearly 10,000 traders and 2,100 oil millers.

Producers, in addition to their own activities, create many jobs within the sector, as they account for 87% of the distribution of wages and other remuneration.

In total, the groundnut value chain in Madagascar also employs around **343,000 temporary and permanent full-time equivalents (FTEs)**. Temporary employment is by far the most prevalent, accounting for 74% of the FTEs created by the sector's activities. The sector creates both rural and urban jobs.

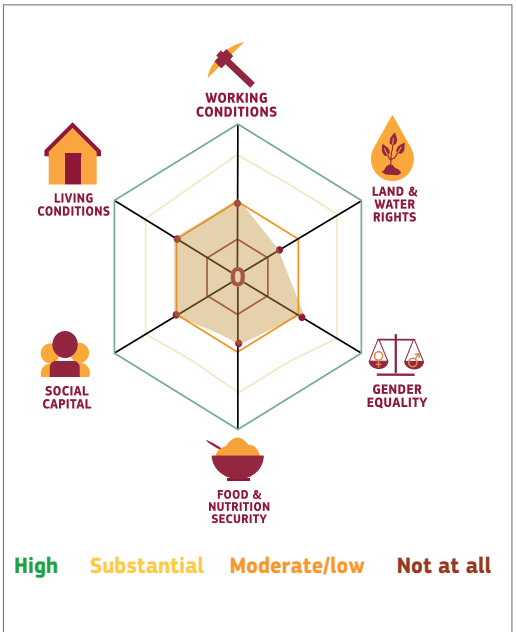
Based on the assumptions developed, **women are as numerous as men in the value chain**, both among entrepreneurs and as employed labour; however, men, due to the roles they occupy, generate more value added (72%).

The groundnut value chain can serve **as a tool for spatial planning and the reduction of spatial inequalities**, in that the largest share of VA is generated in regions on the periphery of the Highlands, which are rather overpopulated and land-constrained.

The economic growth generated by this value chain is fairly inclusive as it provides supplementary agricultural income to a large number of small-scale producers in rural areas. It also provides work for a network of artisanal processors and small traders across the country. The sector's activities rely on a significant workforce. Women are very active in this chain and collective action is on the rise.

Is the value chain socially sustainable?

The groundnut value chain is socially sustainable (Table 1, Figure 5), within a general context of human and social development that is rather problematic in Madagascar.



NB. The further away from the centre of the radar, the more sustainable the VC is from the perspective of the area under review

Figure 5. Social profile of the value chain

Working conditions	▪ An economy largely based on the informal sector, where formal employment rules are rarely applied.
Land and water rights	▪ Much rural land is held under customary law, which can offer protection, particularly if owners hold land certificates proving ownership. However, it is still possible for outsiders to enter and occupy communal land.
Gender equality	▪ Women are fairly well represented in the VC. They play a major role in production and shelling, as very few resources are required to produce groundnuts. Some women are involved in collection, trade, retail and processing.
Food and nutrition security	▪ Groundnuts are a cash crop whose sales generate resources enabling the purchase of rice and more nutritious foods, as well as investments and social obligations; however, they can also be consumed, providing a significant source of protein and fat. ▪ Palm oil is replacing groundnut oil in urban areas.
Social capital	▪ Agricultural organisations are widespread in the sector and provide training and access to resources, particularly for women, which producers would not be able to access on their own.
Living conditions	▪ Living conditions for many households in rural areas are deplorable, but access to a significant portion of the money from groundnut sales allows producers to invest in improving them.

Although the general social conditions for those involved in the sector could be significantly improved, there are no major social factors that are truly hindering investment by international donors in Madagascar's groundnut value chain. Such investment can improve social welfare, particularly if more resources were devoted to strengthening producers' organisational capacity, encouraging stakeholders to collaborate more closely, facilitating producers' access to improved seeds, and supporting efforts to reduce aflatoxin.

Is the value chain environmentally sustainable?

Resources, ecosystems, human health

Four key environmental issues dominate the value chain's potential impacts: climate change and, to a lesser extent, fine particulate matter formation, which affect human health; land use, which affects ecosystem quality; and fossil fuel consumption, which contributes to resource depletion. The activities driving these four impact categories are presented in Figure 6.

Groundnut cultivation accounts for over 90% of the impacts on climate change and land use, due to the significant expansion of cultivated areas over the last 20 years, which has major consequences in terms of carbon storage.

With regard to the depletion of fossil resources, the harvesting and transport of groundnuts, which can involve long distances across the country, constitutes the main resource consumption in the value chain.

Finally, nearly 70% of fine particulate matter formation is linked to seed crushing, through the consumption of firewood in artisanal processes.

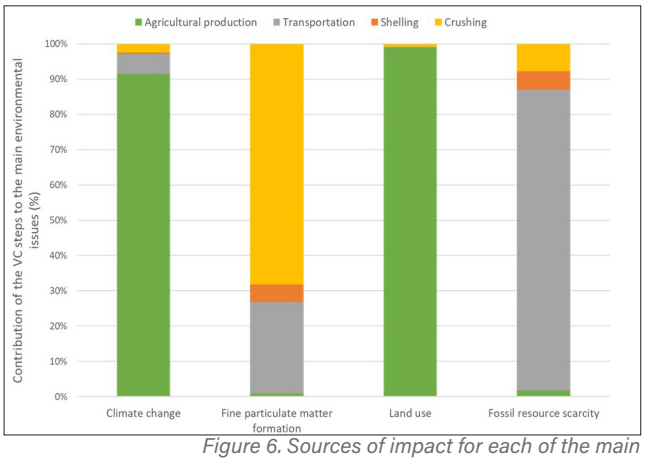


Figure 6. Sources of impact for each of the main of the VC

Comparison of environmental impacts by processor

The comparison between semi-industrial and artisanal crushers depends on the environmental issue under consideration. By using more fossil fuels, semi-industrial crushers have greater impacts on resource depletion and climate change, whilst artisanal crushers, which mainly use firewood, have greater impacts on fine particulate matter and land use.

Absolute assessment of environmental sustainability

The application of the absolute environmental sustainability assessment framework, developed by the European Commission, confirms that land use and climate change are the major environmental issues for VC (Figure 7).

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Nevertheless, the, **VC falls within the 'safe space',** meaning that its impacts are within a range compatible with the maintenance of major global environmental balances.

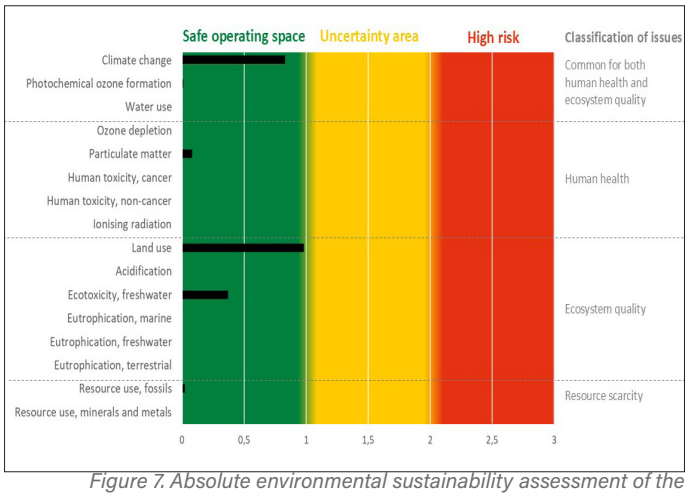

Figure 7. Absolute environmental sustainability assessment of the groundnut VC in Madagascar (Foodprint Environmental Method 3.1)

Biodiversity and soil health

The main risks posed by the groundnut VC to biodiversity in Madagascar stem from two interconnected issues: low **groundnut yields and the expansion of this crop**. The lack of detailed agricultural statistics prevents a comprehensive assessment of these risks, but regions such as Menabe, Atsimo Andrefana and Boeny require heightened vigilance. Indeed, these regions are both particularly rich in biodiversity and at risk of deforestation, as they correspond to areas where groundnut cultivation is expanding.

Groundnut cultivation in the Menabe and Atsimo Andrefana regions also poses risks to soil health. These risks stem from limited understanding of the crop's agronomic characteristics—particularly its nitrogen-fixing capacity—the widespread practice of monoculture, and the low return of organic matter to soils that are already severely degraded.

The groundnut value chain in Madagascar can be considered environmentally sustainable, but requires particular attention regarding the expansion of cultivated areas. Two major challenges—climate change and land use—emerge from the analysis. Land use, given the agricultural nature of the chain, is not considered critical and could be offset, at the national level, by other economic activities with a lower land footprint. Climate change, however, requires specific actions to reduce its impact. The province of Toliara appears to warrant particular attention, given the risks the value chain poses to biodiversity and soil health.

Main findings and recommendations

To improve sustainability and inclusivity in the groundnut value chain, a number of recommendations can be considered:

Formulate and implement a national policy specifically for groundnut VC

The groundnut sector, which is regarded as a priority, lacks a clear policy for its protection and development, unlike the rice sector, particularly with regard to price regulation and product quality. To address this, inter-institutional coordination and dialogue between the relevant stakeholders are required.

Developing a specific strategy for groundnut oil

It is crucial to facilitate access to groundnut oil for vulnerable populations by reducing certain costs within the sector. At the same time, a strategy targeting more affluent households should focus on quality and marketing. Countries such as Sudan and Senegal have already restricted the export of raw seeds to encourage local processing. The strategy could combine exports and processing.

Improving local governance to support the groundnut sector

The management of agricultural rebates remains opaque: although intended for local development, their use is unclear and their collection uncertain. In groundnut-growing areas, they are supposed to improve yields and storage according to the regulations, which is not the case. A clear strategy to support the groundnut sector is needed.

Diversify and expand export markets

Certain markets such as the Comoros, Mauritius and Mayotte have shrunk, even though shelled groundnuts are sold there at much higher prices than in Madagascar. Standardisation is essential to meet market requirements. An improvement in quality, particularly regarding aflatoxin, would enable re-entry into the European market.

Combating aflatoxin and changing the image of groundnuts among consumers

Aflatoxins, powerful liver carcinogens, pose a major threat to the health of Malagasy consumers. Control measures, such as training on prevention practices, improved drying methods, the distribution of Aflasafe, and the establishment of testing laboratories, are necessary.

Strengthening efforts to support stakeholders in the sector

Stakeholders in the groundnut sector must be better supported, both technically and organisationally, to improve agricultural production, processing and the marketing of products. It is essential to expand the supply of quality seeds, optimise production methods to increase yields, enhance quality assurance and promote economic partnerships.

Preserving carbon stocks and reducing the sector's contribution to climate change

Better soil improvement can reduce the climate footprint by increasing yields and soil carbon. Monitoring groundnut areas is crucial, and the use of GIS would ensure regular monitoring and limit the risks of expansion that is harmful to soil health and biodiversity.

Improving the level of information on the sector and evaluating successful models

More broadly, support for the sector remains hampered by a lack of data. It seems essential to improve production data (work currently underway at MINAE) and to establish a lighter, regular monitoring system for the sector, alongside an analysis of other data — on stakeholders, their coordination, flows and prices — drawing on resources such as universities or ESSA.

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 "Analyse de la chaîne de valeur arachide à Madagascar", by Dabat MH., Ahoudjo S., Benoist A., Coote C., Razafimandimby S.. 2026. Report for the European Union, DG-INTPA Value Chain Analysis for Development Project (VCA4D CTR 2017/392-417), 135p + annexes.