Value chain analysis for cash crops in Southern Chad

Final Report - February 2023

Agenda

- **Introduction & executive summary**
- Background of study
- Methodology and process, limitations & challenges
- Highlights/Profiles of various actors
- Individual value chain analysis
- Conclusion & program recommendations

Our research covered

7 provinces,

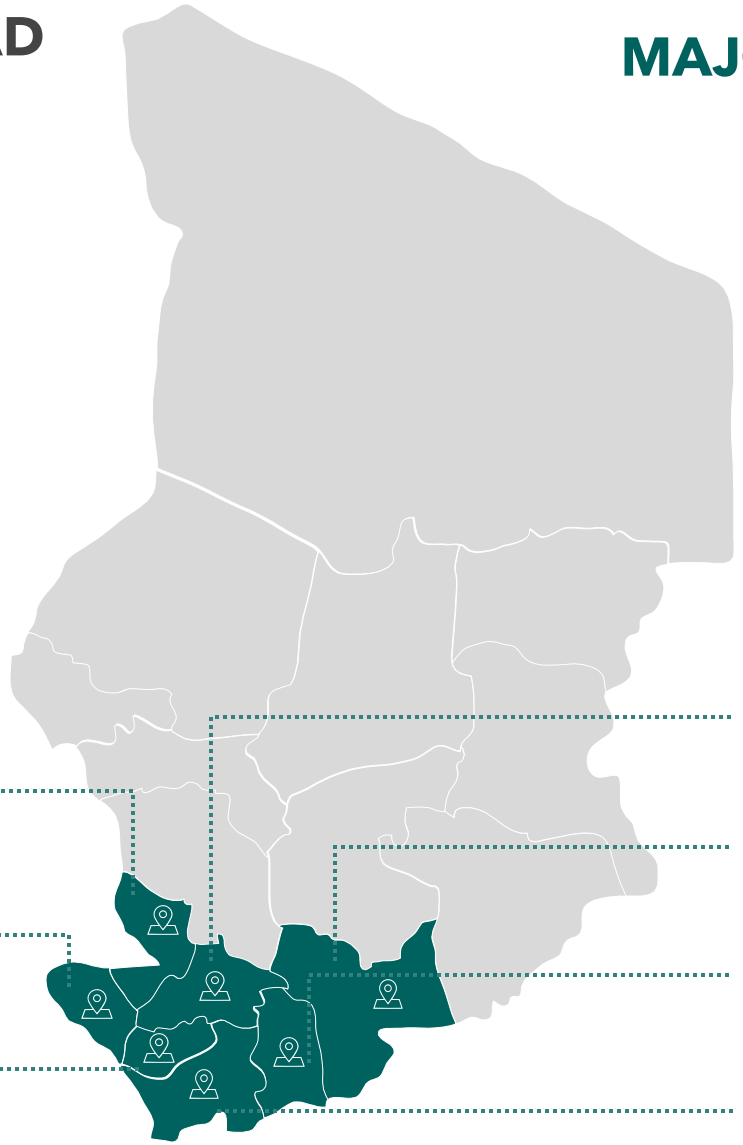
8 value chains and

8 actors

in Southern Chad

SOUTHERN CHAD PROVINCES

MAJOR CROPS



MAYO-KEBBI-EST: rice, sorghum, groundnut

MAYO-KEBBI-QUEST: sorghum, maize, groundnut

LOGONE OCCIDENTAL: groundnut, sorghum, sesame

TANDJILE: rice, groundnut, sorghum

MOYEN-CHARI: groundnut, sorghum, millet

MANDOUL: groundnut, sorghum, millet

LOGONE ORIENTAL: groundnut, sorghum, sesame

Overview

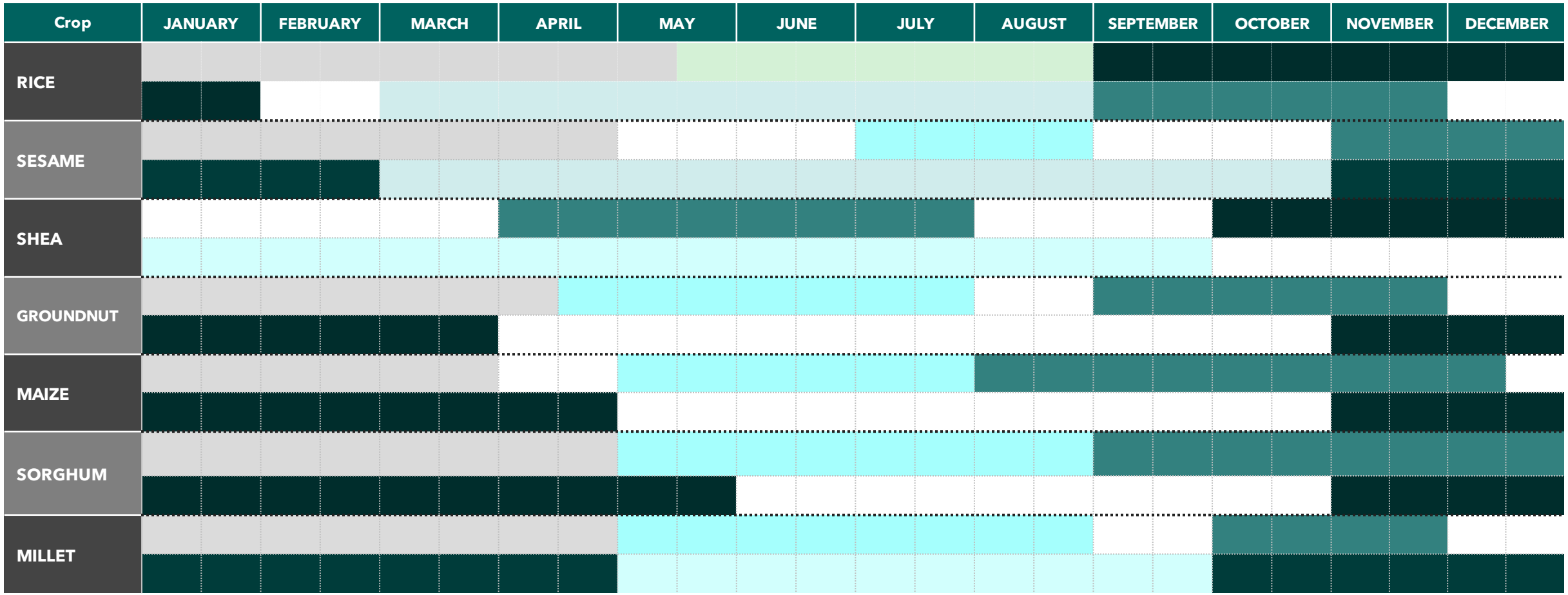
Background	IDH is seeking the support of AFG to plan and conduct a Market Assessment and Value Chain Analysis and recommendations that can inform the **development of viable**, **sustainable and locally appropriate strategies** aimed at **creating viable agricultural value chains** for alternative cash crops, in **Southern Chad**
Methodology	We deployed a combination of secondary and primary research to understand the current ecosystem of each of the crops, and further develop an in-depth understanding from each of the actors concerned with each crop
Selected Value Chains & ranking	We identified 8 crops in total – Sorghum, Maize, Groundnut, Shea, Sesame, Rice, Millet and Fonio, and developed in-depth profiles for each one to determine their viability. The top 3 crops emerged as Sesame, Shea ad Groundnut, based on the market potential potential to establish links (IDH intervention), enabling environment and prospects for women.
Overview of Market Actors	Across board, we identified 8 major actors: Producers, Processers, Middlemen (emerged as a critical link), Traders (Wholesalers, Semi-Wholesalers), Policy makers, Institutional actors, Consumers, Women and Financial institutions (very minimal involvement),
Women & Youth	For all the crops studied across the 7 provinces in Southern Chad, women are moderately engaged at the bottom of the value chain: i.e mainly as farm labor, local market traders or manual processing of some crops such as Shea, Maize and Rice. Shea is the top crop that provides income for women. With the right processing facilities and market access, women could stand to earn substantially from Shea picking
Overview of enabling environment	Although there exists policy institutions such as ITRAD and ANADER to provide regulation, seed, fertilizer and other support to producers in Southern Chad, their involvement (centered around seed development and fertilizer subsidy)is rather minimal and, in most cases, woefully inadequate. Lack of quality standards is also a big barrier to unlocking international markets
Overview of challenges & opportunities for the future	**Challenges:** There is very little organization and links among stakeholders, as well as policy to support each of these crops, though they have high potential. Soil infertility, lack of approved quality standards, lack of processing capacity, lack of access to financing, and devastation of farms by livestock are top challenges faced by producers and traders in Southern Chad
	There exists a vast **opportunity** mainly in the Sesame, Shea and Groundnut value chains to leverage the power of wholesalers to bring structure to these value chains and establish links amongst regional actors. Currently, only Sesame is exported on a large scale to countries like Turkey (94%), India, Nigeria and France. Shea is minimally exported, due to the lack of processing facilities and market access. Export of groundnut has been banned since January 2022 due to food security concerns

We built in-depth profiles and rankings for all value chains/crops to determine their viability

Strong (5 points) Room for improvement (3 points) Weak (1 point)

Dimension	Overall Score by dimension	Sorghum ~ 970,000 Tonnes/yr	Maize ~ 400,000 Tonnes/yr	Groundnut ~ 840,000 Tonnes/yr	Rice ~ 300,000 Tonnes/yr	Sesame ~ 200,000 Tonnes/yr	Shea ~82,800,000 trees	Millet ~ 1,100,000 Tonnes/yr
Source of Income	24 points							
Household Consumption	22 points							
Adaptation to climatic conditions & weather suitability	28 points							
Cost of production (input cost)	22 points							
Access to seeds & other inputs	18 points							
Labor demands & availability	30 points							
Women & Youth engagement	20 points							
Market access - export value	18 points							
Enabling environment for its development	26 points							
Overall score per Value Chain		35	31	35	29	35	35	31

… and developed a combined crop calendar for all 7 value chains



We developed an understanding of how women are engaged across all value chains in Southern Chad & opportunities to explore

Engagement in Farming	• Women are largely engaged as farm labor, working on family farms with less access to productive assets such as land due to social and structural barriers;. There are the most active in the fields/farms. • There are minor changes now where women can rent land, and in some cases, family leaders transferring land ownership to their female children
Engagement in processing & trading	• There was no presence of women in processing except for manual processing of Shea butter, groundnut into oil and paste, pounding of maize and threshing of rice; • Female are more active in retail crop trade
Challenges	• Lack of access to land ownership and processing equipment • Need capacity building in technical skills and especially in entrepreneurial and financial literacy.
Opportunities	• Women are a dynamic and abundant labour force available in all 7 provinces; • Women constitute a melting pot of sustainable business partners due to their social awareness, the role they play in agricultural production, marketing and processing at the traditional level. • Opportunities exist mainly in the Shea value chain where women are dominant in harvesting and manual processing

… as well as the enabling environment for all 8 crops in Southern Chad, impacted by overall environment in Chad

Investments and market access

- The market is largely local, informal and fragmented. Production quantity is not sufficient to meet national demand, whereas the quality produced is usually sub-par, with impurities. Hence, consumption is mainly by low-income households
- Export of Groundnut, one major cash crop is banned impacting local production and profitability. Sesame is nowadays the major export crop.
- Due to fragmented nature of trade, pricing is not standardised and usually based on "who has the most power in the negotiation", leaving producers a short hand

Security and safety

- In Chad, the overall security situation is negatively affecting agricultural production in the seven provinces of the southern zone. In addition, the conflict between farmers and herders, which has multiple causes including climate change, demographic explosion and poor conflict management by local authorities, is a major handicap to the development of agriculture in the seven provinces. Herders' animals are often driven into the fields in full production to graze, thus destroying the farmers' crops.

Access to seeds and other inputs

- Seed and other inputs are very expensive, however ITRAD makes efforts to develop and provides seed producers with basic seeds for multiplication.
- Producers buy them to produce seeds that must be certified by Seeds and plants department (SPD).
- For most crops, producers produce their own seeds, whereas some traders also import seeds from neighboring counties

Policies and regulations

- In previous years, each year, the National Food Security Program (PNSA) distributes free supplies of rice seeds as well as NPK fertilizer and urea.
- Every year ANADER supply fertilizers sales at subsidized prices (60% below market prices) but in limited quantity.
- This effort has however dwindled

Linkages among stakeholders

- The market for food crops and cash crops is largely local, informal and fragmented
- Middlemen have come out as a powerful link in Southern Chad, connecting producers to financing and inputs and providing trading services to the larger traders who prefer to remain anonymous
- There is little to no collaboration amongst all stakeholders

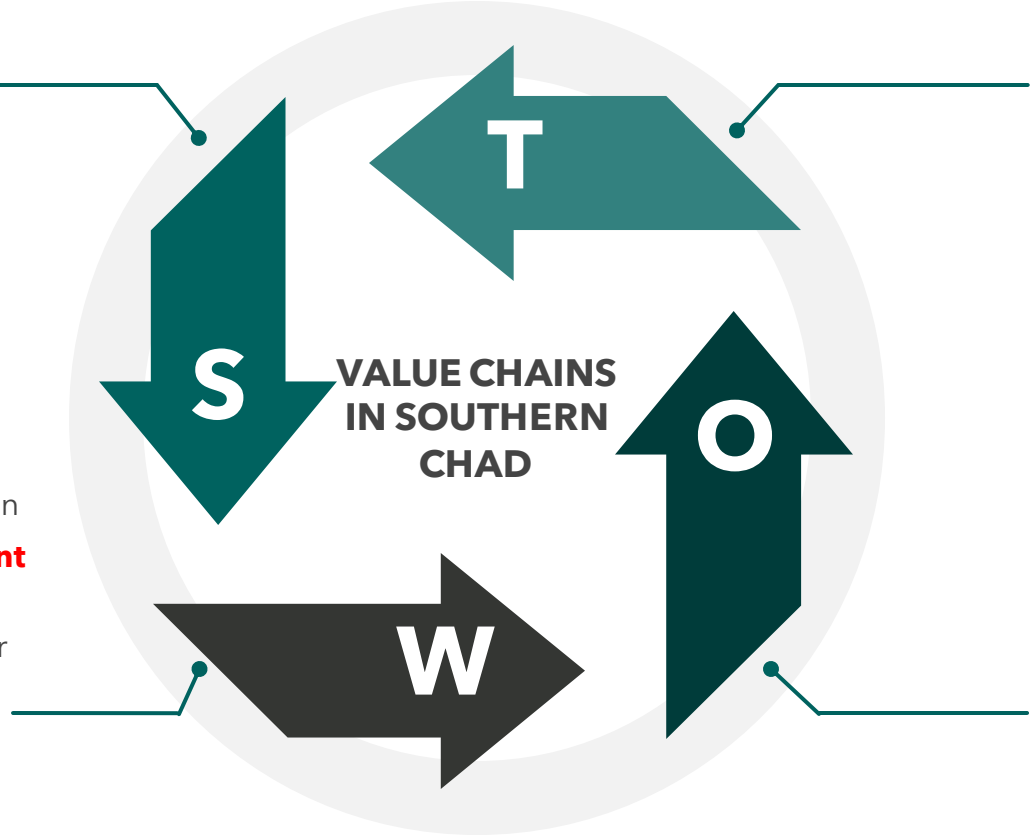
We designed a SWOT analysis highlighting common dimensions for all value chains studied

Strengths

- Efforts to provide **improved seeds** selected by ITRAD ;
- Availability of arable land for most crops
- Existence of **large demand locally**
- Most sectors have been growing rapidly for several years.
- Availability of **natural water as a resource for irrigation**

Weaknesses

- Informal commercial relations and exploitation
- **Lack of a common value chain development program**
- Lack of a platform for innovation, exchange or research/action
- Poor governance of the sectors



Threats

- **Soil Infertility**
- **Extinction of shea trees**
- Destruction of crops by live-stock
- Ban on export of some crops such as groundnut
- Lack of and no road map for sophisticated seed development and processing, to improve quality

Opportunities

- **Leverage the power of wholesalers & middlemen** and engage them to develop groups & create links that can be more organized
- The importance of crop such as sorghum and maize for lean periods and resilience, grown on large areas throughout the region
- Increasing involvement of women
- **Nigeria presents a viable market** opportunity for export of these crops

Based on the above, we identified 3 crops that have the highest potential to be impacted by IDH interventions

	Sesame ~ 200,000 Tonnes/yr	Shea ~ 30 Tonnes in 2021	Groundnut/Peanut Export is banned since 2022 for food security reasons
Production	• There is no formal group of producers • Great interest of exporters in supporting Sesame farmers	• No formal group of producers • Female dominated – women usually pick the shea nuts	• There is no formal group of producers • Mainly family farming – and majority women farmers
Processing	• Small local processors - own individual mills/grinder, Processing into oil & paste - mainly females, on small scale & informal • Large processors (owned by exporters/wholesalers) are mainly involved in Cleaning and own large facilities which they use for their own purposes. Very few of them are open to the public	• Mainly processed into shea butter - • There are smaller mills that grind the nuts into paste and the women process this into oil for household consumption & for sale in the markets • Individuals and micro businesses own these mills : same processes shea oil & peanut into paste	• Grilling is done at home on small scale • Mainly processed into peanut butter and oil • No existing large processors - • Mainly women in the business producing peanut paste
Market Access	• Amongst all the crops, Sesame has the largest exports so far – over 200k tonnes exported in 2021 • Market is mainly controlled by Turkish and Indians • There are many cases of products not meeting international quality standards, and being rejected by buying companies , as there are no certification companies in Chad	• Chad has the largest mass of shea trees in Africa, but lowest export. Women mainly sell the nuts on the market . Retailers buy in bags and bring to the big cities and store in their own places or rent stores in the local market . Few wholesalers are now getting into this space • 30 Tonnes of Shea was exported in 2021, largely from COFEMAK, with support from SWISSAID	• Groundnut used to be a main export for Chad until January 2022 when its export was banned for food security reasons. • However, there is still some black-market export that happens to countries like Cameroon, Nigerian, Congo-Brazavile and DRC. • Turkish companies have also shown interest
Main Actors	• **Exporters/Wholesalers are most powerful here. They are registered SMEs, into other businesses** • They provide financing to farmers via the Middlemen - with repayment in kind (at exorbitant rates). They also get a commission from the wholesaelrs and traders for brokering transactions at the end of the harvest period	• **Women are mainly the shea pickers and traders.** • Rural areas don't have access to cooking gas, so they cut the Shea trees to produce charcoal and use as firewood, which is causing Shea trees to go extinct • There is no certification – inability to meet int'l standards • Problem of market access, they don't get the networks – who to sell to, etc	• Informal exporters • Exported mostly to Cameroon , to Nigeria through Cameroon, Congo –Brazaville & DRC • Interest shown by Turkey too • People have mastered peanut production – a sit used to be exported previously

Agenda: Project background

IDH is seeking the support of AFG to plan and conduct a Market Assessment and Value Chain Analysis and recommendations that can inform the **development of viable**, **sustainable and locally appropriate strategies** aimed at **creating viable agricultural value chains** for alternative cash crops.

Agenda

- Introduction & Executive Summary
- Background of Study
- **Methodology and Process, Limitations & Challenges**
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We deployed a 3-step approach to prepare the study, execute groundwork and generate the study

	1) Preparation of Study	2) Execution of groundwork	3) Generate Study
Objectives	• Understand the current position of data and prepare an efficient methodology for field research to complete data gaps	• Develop strategic interventions for each SMEs to compete and win, and an overall business plan to guide the operations of the SMEs	• Develop a guide for IDH to manage all SMEs and SHFs involved in the program with dedicated activities
Description	• Review existing studies and other relevant documents • Carry out value chain mapping for selected crops • Build in-depth profiles for each shortlisted value chain • Develop longlist of stakeholders to engage for each • value chain • Build interview guides for each group of stakeholders • Compose detailed field work plan for two- weeks ground research	• Conduct interviews and facilitate multi-stakeholder focus group for each value chain • Visitation of market and farms of each value chain for visual documentation • Collection of data for margin and pricing analysis of each crop • Complete documentation and transcription of all findings	• Generate draft report • Complete final report based on client feedback
Output	• **Align with IDH on project scope & objectives** • **Methodology, questionnaire & expected insights** • **Detailed Field Work Plan**	• **Identify value chains** • **Identify stakeholders** • **Carry out field research**	• **Draft Report** • **A comprehensive report on the value chain analysis and market assessment of 3 crops**

We identified a total of 8 value chains

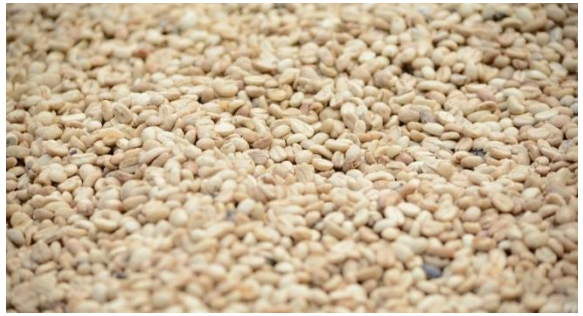
Sorghum

Maize

Millet

Rice

Sesame

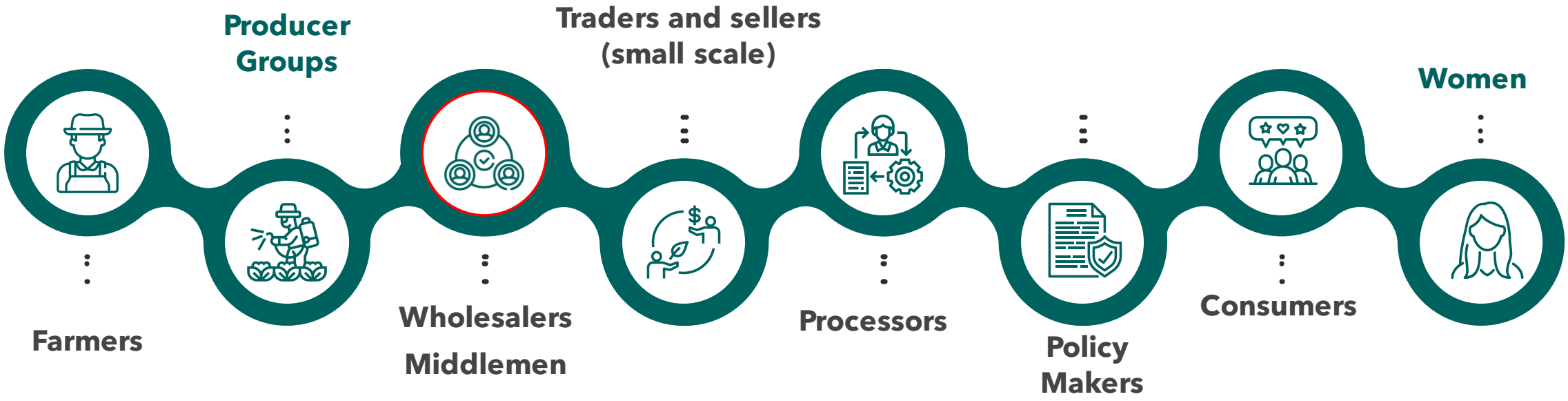


Groundnut

Shea

Fonio

We mapped out 8 groups of actors who are significant to each value chain



We engaged each actor in the field – through **focus groups and interviews**

We **developed a deeper understanding of their current activities, challenges faced, and opportunities identified for each value chain,** and **opportunities to create links**

For each group of actors, we conducted interviews, focus groups and surveys to understand the following:

Market actor	Specific insights to be obtained in the field
 **Farmers**	• Opportunities that are untapped and can be leveraged to increase productivity and incomes, the current ecosystem and how it can be improved • Any links that can be built between farmers and various service providers + other actors • Women and youth involvement in farming – challenges and opportunities • Opportunities and challenges to market linkage
 **Producer Groups**	• The level of formality of the business, their evaluation of the ecosystem and how it can be improved, any links that can be built between them and farmers as well as various service providers + other actors • Their relationship with farmers and how this can be improved, and how for women and youth can be engaged – challenges and opportunities • Opportunities and challenges to market linkage, information exchange and other supporting services
 **Processors**	• The level of formality of the business, their evaluation of the ecosystem and how it can be improved, any links that can be built between them and producer groups as well as farmers and various service providers + other actors • Their relationship with farmers and how this can be improved, and how for women and youth can be engaged – challenges and opportunities • Opportunities and challenges to provision of their services
 **Women & Youth**	• The value chains they are most and least engaged in and why • Their relationship with various actors especially producer groups and service providers and how this can be improved • Their evaluation of the ecosystem and what they would like to see improved to support their growth
 **Middlemen**	• Their role in establishing market linkages and creating market access and how this can be improved • Their perspective on pricing, the ecosystem and what can be improved • Challenges they face in acting as middlemen and what could help make them more efficient • Any opportunities for them to work other stakeholders and market actors for each value chain
 **Traders and sellers**	• The crops they trade in and why, market and pricing analysis from their Point of view, and their primary buyers • Create classifications of traders by value chain, volume of sales , target market and ability to identify market opportunities • Relationship between them and consumers, and how they pass on market information to producers, processers and farmers
 **Consumers**	• Which value chains are preferred and why, challenges in consumption of each value chain and opportunities to be leveraged • Any relationships with any of the actors and how these can be enhanced
 **Policy Makers**	• Their role in designing an enabling environment for the value chain and each of the actors where available • What is being done, what can be done and what will be done in the short, mid and long term to promote and support the value chains

Based on our objectives, we deployed tailored approaches to allow us collect accurate data

S/N	Objective	Methodology
1	Value chain mapping of cash crops in Chad, including crop calendar	Secondary research, attending forums, Focus groups, one on one interviews and observations
2	Identification of producer groups/production areas for the crops	
3	Identification of existing service delivery actors	Focus groups and one-on-one interviews
4	Market sizing and assessment, identify any international actors that are into these value chains for potential engagement with IDH	Focus groups and one-on-one interviews
5	Identification of the enabling environment and improved ecosystems	Secondary Research, One-on-one interviews
6	Identification of specific opportunities for women and youth to be involved	Focus Groups
7	Identification of local businesses (processors, manufacturers) relevant for producers to connect with and what they can offer to the companies	Focus groups and one-on-one interviews
8	Analysis of the supporting functions that are required to make the value chain work	Focus groups and one-on-one interviews
9	Analysis of off takers for each value chain	Focus groups and one-on-one interviews
10	Rank the crops selected from the perspective of the farmers interviewed, according to how they perform in these five criteria: source of income, household consumption, suitability to changing weather, cost of inputs, ease of access to seeds, labor demands, and susceptibility to pests/diseases.	AFG Produced

We targeted specific institutions in each province to get a holistic picture of the environment for each value chain (1/3)

Province	Institutions interviewed	Rural markets visited
Mayo Kebbi Ouest	• GIZ (German Development agency), • BELACD (Bureau d'etudes et de liaison des actions caritatives) • WCS (World Conservation Society), Association NOE, • CELIAF (Cellule de Liaison et d'information des associations feminines)	• Pont Carole • Carriere • Samgoye • Torok and • Lame
Mayo Kebbi Est	• FAO (Food Agriculture organization) • Finadev • World Vision • ACCRA	• Djoumane Mbareizou • Kim • Moulkou • Bariam
Mandoul	• BELACD (Bureau d'etudes et de liaison des actions caritatives pour le developpement) • World Vision • Raps • Finadev (IMF) and Parcec.	• Peni • Bedjondo • Beboro • Matkaga et mourougouleye
Moyen Chari	• BELACD (Bureau d'études et de liaison des actions caritatives pour le développement) • GIZ (German development agencies) • APIDO • PROPAD • RESAP • RAPS et ANADER (government agency of the ministry of agriculture).	• Danamadji • Manda • Kinda • Dopele, • Sako

We targeted specific institutions in each province to get a holistic picture of the environment for each value chain (2/3)

Province	Institutions interviewed	Rural markets visited
Tandjile	• GIZ (German development agencies) • CESADEP • CERDO • BELACD • IHDL (Initiative humanitaire pour le développement local)	• DYh • Galama • Bologo • Dale and Gang
Logone Oriental	• BELACD (Bureau d'etudes et liaision des actions caritatives) • Anader (government agency of the ministry of agriculture) and ITRAD • World Vision • Atader, • Itrad	• Mbodo • Beboto • Begada • Bedjal • Ba
Logone Occidental	• BELACD IHDL (Initiative humanitaire pour le développement local) • World Vision • Finadev (IMF) • Celiaf • Association Ma vie • ID • Anader and ITRAD • IHDL	• Deli • Maibo • Bao • Mbalkabra • Doher • Talla

We developed rubrics for objective value chain evaluation & ranking of the value chains (1/2)

Strong | Room for improvement | Weak

Dimension	Score	Reason
Source of Income	🟢	• Farmers, traders can generate substantial income from selling the produce in the market, and has strong market potential beyond local markets
	🟡	• Farmers, traders can generate some income from selling the produce in the market. However, it is mostly sold in local markets or to smaller traders
	🔴	• Production is mainly for household consumption and is not sold outside the areas of cultivation.
Domestic/Household Consumption	🟢	• Production is mainly for domestic/household consumption in Chad. There is enough production locally to meet national demand
	🟡	• Mainly for domestic/household consumption, however production is not entirely sufficient and needs to be supplemented with some importation
	🔴	• Low production means there is very little for even household consumption
Climate & Land Suitability	🟢	• Climate in Southern Chad is very suitable for the value chain, and land is readily available with no problems of soil fertility. Land ownership is readily available for farmers
	🟡	• Climate is suitable, and soil fertility is good. However, the land is not readily available for farming the value chain. There are efforts however to make more land available
	🔴	• Climate is not suitable for the value chain, and land is also not available, with little to no support for getting additional land
Access to improved seeds & other inputs	🟢	• Improved Seed and other inputs (fertilizer, weedicides) are readily available locally and affordable. Locally efforts are made by research institutes to develop new varieties of seeds for the value chain
	🟡	• Improved Seed and other inputs (fertilizer, weedicides) are available locally but not affordable by farmers. There is some effort to develop seeds locally, but the industry is still nascent and not matured
	🔴	• Seed and other input (fertilizer, weedicides) are not available locally and cannot be easily imported
Cost of Seed & other inputs	🟢	• Cost of seeds and other inputs are moderate, and farmers can easily purchase them directly or via some service providers, on some credit terms
	🟡	• Seeds and other inputs are moderately priced, however farmers are not able to access any supplier credit at the beginning of the season which affects their productivity
	🔴	• Seed and other inputs are very expensive and no financing is available, hence farmers hardly cultivate the value chain

We developed rubrics for objective value chain evaluation & ranking of the value chains (2/2)

Strong | Room for improvement | Weak

Dimension	Score	Reason
Labour demands	🟢	• Value chain is not labor intensive and does not require many farm hands. Processing is also straightforward and not very complicated. Where complicated, there is sufficient local knowledge to process for the market
	🟡	• Value chain is moderately labor intensive but labor is accessible. Processing is also straightforward and not very complicated. Where complicated, there is not sufficient local knowledge to process for the market
	🔴	• Value chain is labor intensive and requires many farm hands. Processing is also complicated, with little local expertise available
Women & Youth Engagement	🟢	• Women are extensively engaged throughout the value chain – with at least 55% women involvement on average from farming, trading, processing and others
	🟡	• Women are moderately engaged (on average between 30% and 40%) throughout the value chain - from farming, trading, processing and others
	🔴	• Poor women engagement – less than 20% on average - rom farming, trading, processing and others
Market access	🟢	• There exists a large market both locally and internationally for the value chain, and it is easy for farmers, traders, producers, processors and middlemen to access these markets in an organized way, cost effectively and at scale
	🟡	• There exists a large market either locally or internationally for the value chain, but not both. It is not easy for farmers to access these markets effectively and at scale, except for a few large processors
	🔴	• The market is very small locally and almost no international demand exists for the value chain
Enabling environment	🟢	• There is adequate support from government, research institutions, NGOs and development organizations. There is also extensive support and collaboration between/among the various actors within the value chain
	🟡	• There is some support from government, research institutions, NGOs and development organizations. There is also some level of collaboration between/among the various actors within the value chain, with room for improvement
	🔴	• There is very little support from government, research institutions, NGOs and development organizations, and little to no collaboration among other actors in the value chain

We encountered some challenges while collecting the data

Secondary research challenges

1. Sourcing specific data on value chain actors in Southern Chad:
2. Difficulty assessing data on the food consumption in Southern Chad for crops such as Groundnut and Rice

Primary research challenges

1. Distrust and insecurity within the regions which affected participants willingness to provide data
2. Level of education and language barrier in deploying the survey

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We engaged over 350 farmers so far across 7 provinces in Southern Chad, highlighting the opportunities and challenges unique to farmers

Production & Processing

- On average harvest 15-25 bags/Ha
- Rice, groundnut and Sesame are coming up as the top value chains farmers prefer. Others such as Sorghum, Millet and Fonio coming up
- Most do not process the crops before they are sold
- Storage is mainly in bags at home or at their shops
- An overwhelming percentage of them indicate needing marketing and distribution support

Market access & Margins

- Farmers currently receive financial support from traders at the beginning of the season
- They pay back the traders in kind with bags of produce at the end of each season.
- The true cost of this is however unbearable as farmers sometimes pay more than 100% interest
- They therefore lose most or all their margin benefits. Any surpluses they have, are sold at bad prices, since they are desperate for cashflow.

Challenges

1. Soil infertility
2. Lack of quality seeds
3. Poor weather
4. Lack of adequate affordable financing
5. Devastation of fields by livestock
6. Inadequate transportation from farms - are the main reason why most farmers are not more profitable

- Over 80% of farmers indicate not receiving any support from producer groups . The 20% receive mostly fertilizer and training

Opportunities

- Potential to grow other crops or rotate crops in the off season
- Provide financial support that is tailored and affordable
- Opportunity to build stronger links with producer groups
- Provide storage solutions to allow farmers increase their margins
- Build stronger relationships with ANADER and other government institutions to develop seeds, improve soil fertility and train farmers

We engaged over 140 traders and sellers across in 7 provinces in Southern Chad & N'djamena, highlighting the opportunities and challenges

Demography & Business Overview

- Most traders are female (62%)
- Only ~20% have registered businesses, less than 20% keep financial records, with over 70% keeping pen and paper records
- Average income is below 50,000F
- Half do not belong to any associations or organizations
- SILC/CECI, **Groupement Al mach**, Coopérative Al sabr, GPMENT LEYETO, Association APJFET, Association E-EFIMA, Association Taissoum pour le dévéloppement rural, Groupement agricole Taïki, Association Alrat de Dourbali, Groupement agricole Al chifa

Market access & Margins

- 70% sell on credit
- However, ~50% indicate not receiving any credit from suppliers
- Average price is 33000F – 35000 F
- Average profit of 5000F/bag
- Mostly sell to individual buyers, friends and family, Travellers and local market vendors

Challenges

1. Transporation from the farm to the market
2. Price fluctuations/instability
3. Poor quality of produce
4. Lack of adequate affordable financing
5. Lack of supporting infrastructure
6. Poor policy and support from other actors
7. Lack of storage facilities

Opportunities

- Create structured market access – with price regulation
- Provide infrastructure and storage support
- Links with financial institutions to provide adequate financing
- Increasing local demand for many value chains presents an even greater opportunity for coordination across actors to ensure market access at profitable prices

We interviewed one large exporter*, highlighting the opportunities and challenges

Demography & Business Overview

Company name: Tchadex

Founder: Helene Doumro

Number of employees: 45

Contact number: 66 39 01 33

About the company: Tchadex is a company specializing in the export of sesame and gum arabic. It is based on a network of 4,545 rural producers divided into 131 groups and cooperatives, 26 of which are exclusively women.

Challenges

1. Transporation from the farm to the market
2. Price fluctuations/instability
3. Poor quality of produce
4. Lack of adequate affordable financing
5. Lack of supporting infrastructure
6. Poor policy and support from other actors
7. Lack of storage facilities

Opportunities

- **Increasing Demand:** For Tchadex clients, it must be said that demand is greater than supply. The customers are more Indian, Turkish and lately Chinese. The Europeans are also our customers, but Tchadex's big customers are Indians.
- **Market Access:** Tchadex found customers very easily in the beginning as it was one of the first companies to have sesame cleaning machines in Chad. The director of the company is well connected with clients through the Chamber of Commerce and the networks of friends and former colleagues. Helene Doumro is a former employee of Exxon Mobil for more than 15 years in the United and France, showing a wealth of experience and prominent network
- **Provides Pre-finance Support**: Tchadex pre-finances the producers through the focal points by giving advances ranging from 12,500 to 20,000 francs per 80 kg bag of sesame. The company relies on the canton and village chiefs to collect the sesame.
- **Storage and cleaning facilities:** The company has storage warehouses in Sarh, Moundou and N'djamena and owns 7 sesame cleaning machines with a capacity of 38 tonnes per day.

*We interviewed Tchadex. Other exporters we contacted were unwilling to have a conversation about their business

We interviewed one large cooperative (COFEMAK), highlighting the opportunities and challenges

Demography & Business Overview

Cooperative name: COFEMAK

Year Founded: 2005

Cooperative Structure: Comprises 59 groups with 700 women and 3 men

About the company: The cooperative is based in the Mandoul province. The 59 groups are divided geographically into 5 units, namely the kol unit, the kemkian unit, the matekaga unit, the koumra unit and the Biri unit. COFEMAK's main activity is the collection, cooking, drying of nuts, and the processing of the nuts into shea butter.

Challenges

1. Lack of supporting infrastructure
2. Poor policy and support from other actors
3. The lack of customers
4. Marketing difficulties

Opportunities

- **Access to Processing Plant:** The COFEMAK processing plant housed in the Koumra unit, is not strictly dedicated to the processing of the cooperative's shea kernels but also to the public who would like to process their shea nuts into oil.
- **Operation Led by Women:** The operation of the small unit in Koumra is carried out by 55 women members in the month who take turns. The daily processing capacity of nuts per day is 10 bags of 100 kg per day or about 2.5 drums of shea butter per day.
- **Certification in Burkina Faso**: COFEMAK has been able to have its products certified by CECOCDA and by an institution in charge of certification in Burkina Faso

Agenda

- Introduction & Executive Summary
- Background of Study
- Methodology and Process, Limitations & Challenges
- Highlights/Profiles of various actors
- **Individual value chain analysis**
- Conclusion & Program Recommendations

Agenda - Sesame Value Chain Analysis

→ Production analysis – geography & volumes

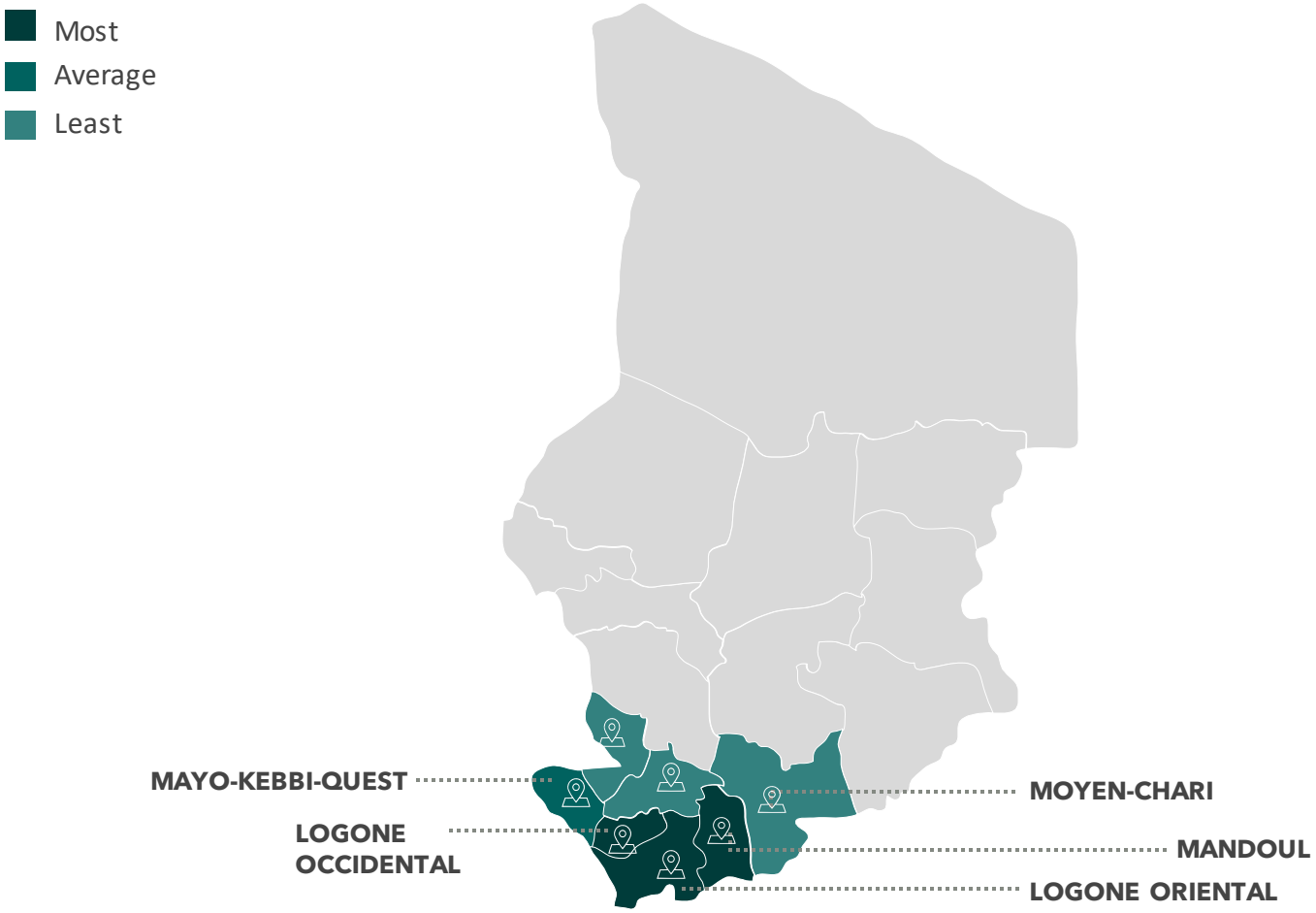
→ Crop calendar

→ Stakeholder mapping

→ Margin analysis

→ Crop profile & SWOT analysis

Map of areas where sesame is most cultivated



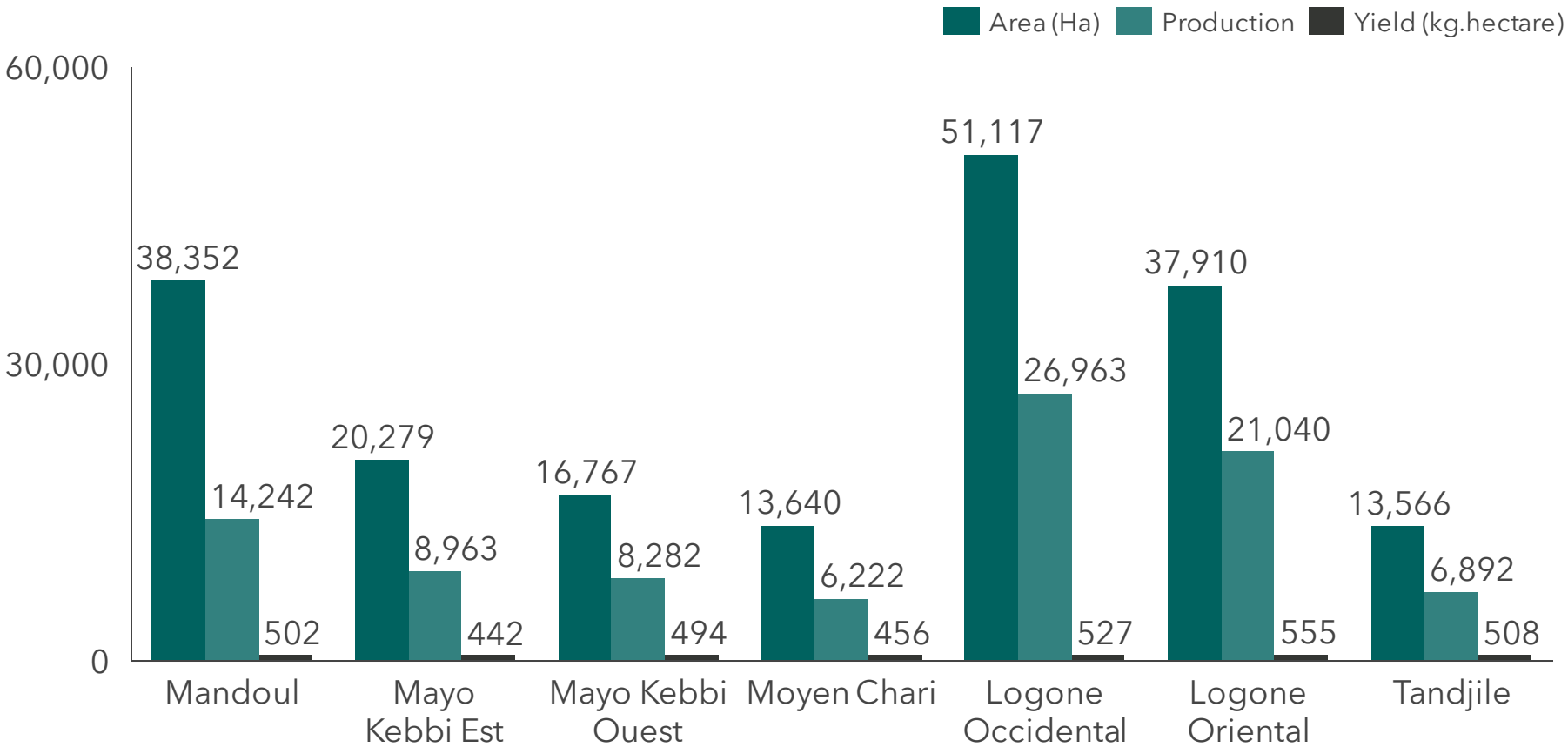
For several decades, production systems in the seven target provinces were structured around the cotton sector. In a few years, sesame production has gone from small to large areas and from being a cash crop to satisfying the purchasing needs of the populations of the target provinces for manufactured goods, sugar, salt and other consumables.

To date, according to figures provided by the National Agency for Investment and Export (ANIE) and the Directorate of Production and Agricultural Statistics, **200,000 tonnes of sesame have been exported in 2021, overtaking cotton.**

* Institut Tchadien de Recherche Agricole pour le Développement

Sesame production in the Southern Chad 7 provinces

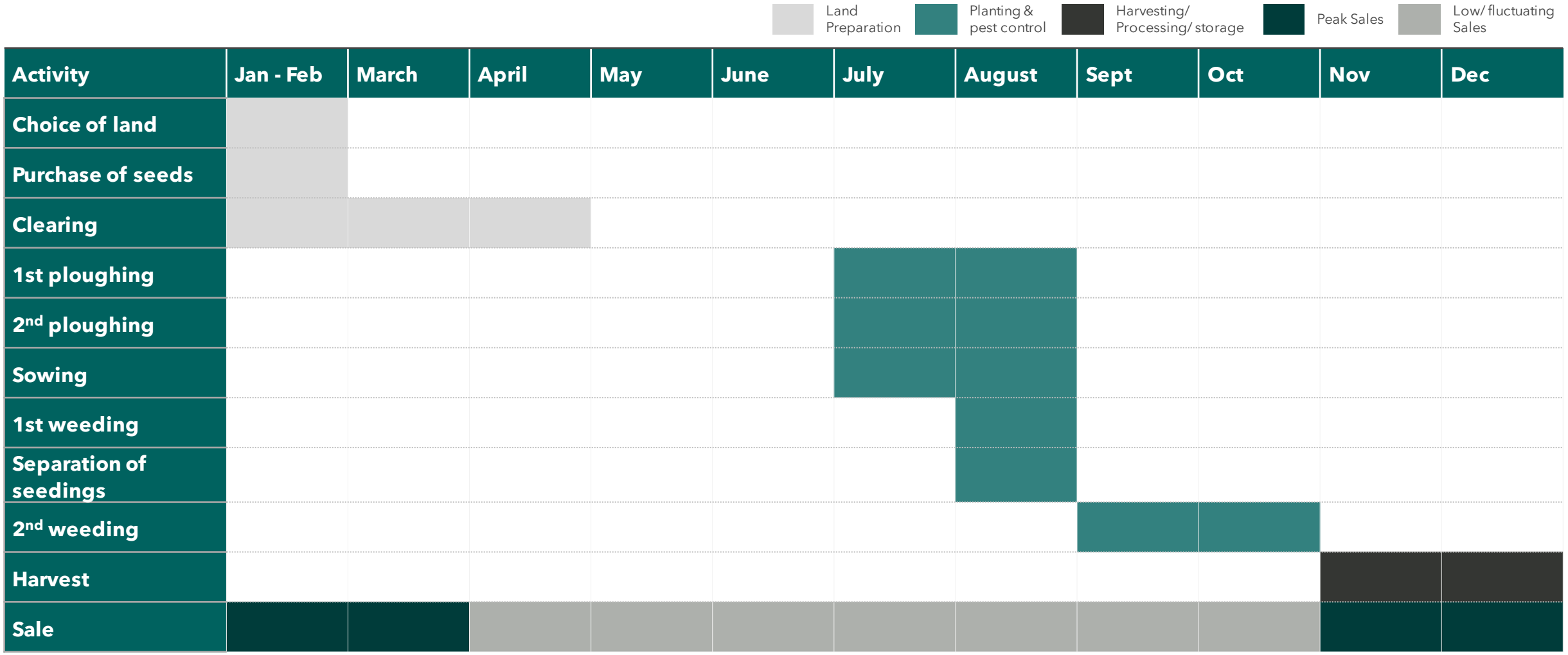
Sesame production in the Southern Chad 7 provinces 2020/2021



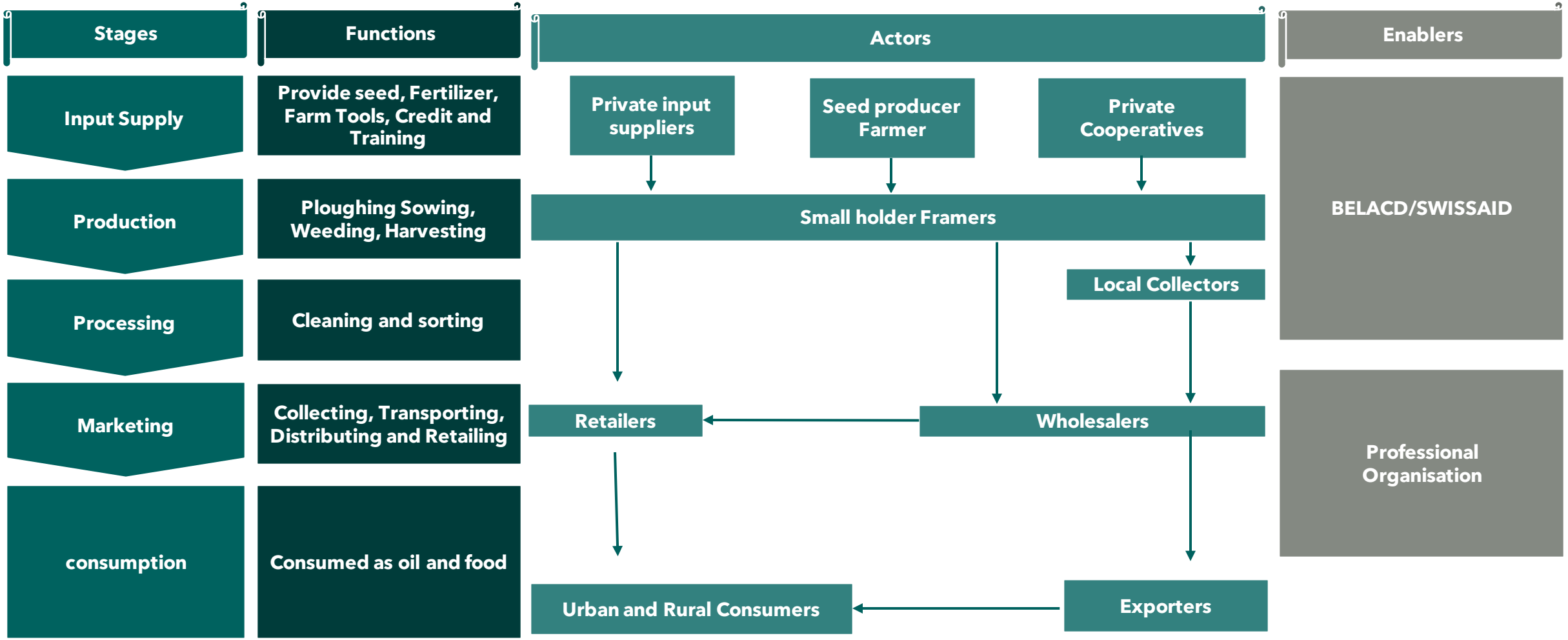
All seven provinces covered by the study, including Tandjilé, Logone Occidental, Logone Oriental, Moyen Chari, Mandoul and Mayo Kebbi Ouest, grow sesame.
ITRA identified about 30 different ecotypes in these regions, which provide more than 80 % of Chad's sesame production

DPSA, Crop year review report, 2019

Based on our engagements with farmers and other relevant actors, we developed a sesame value chain calendar …



… and a sesame value chain map, showing linkages among stakeholders



We collected data for a detailed margin and pricing analysis for the sesame value chain (1/2)

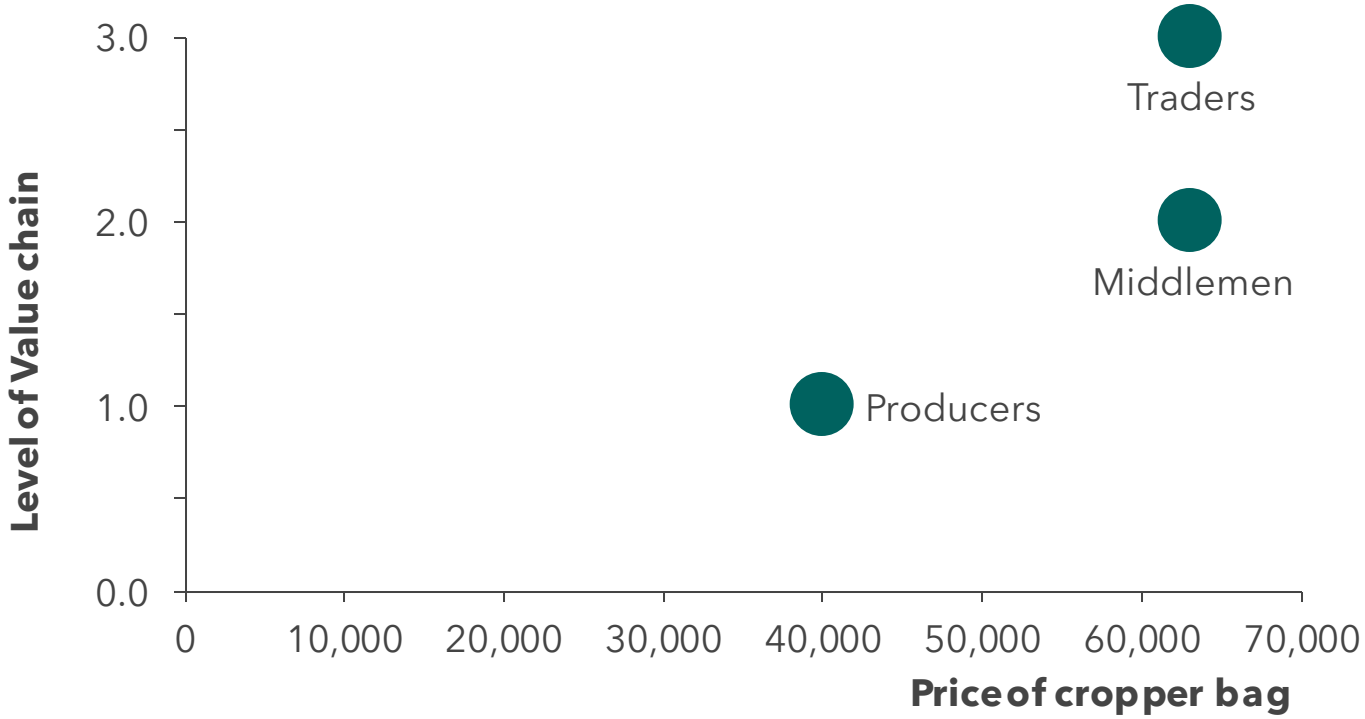
The average total cost of cultivating a hectare of sesame is over 180,000 CFA

ONE HECTARE (1 HA) FARM ACCOUNT				
TYPE OPERATION	**UNIT**	**QUANTITY**	**UNIT COST**	**TOTAL COST**
RENTAL OF LAND	Hectare	1	10,000	10,000
SEED	Bag	1	10,000	20,000
FARM CLEARING	Ha	1	10,000	10,000
PLOUGHING	Ha	1	25,000	25,000
SEEDING	Ha	1	10,000	10,000
WEEDING (1)	Ha	1	25,000	25,000
WEEDING (2)	Ha	1	25,000	25,000
HARVESTING	Ha	1	45,000	45,000
THRESHING AND WINNOWING	Pile	1	20,000	20,000
TOTAL				180,000

PRODUCTION VALUE		
Average yield in bags/ha	Average price per bag of paddy (FCFA)	Production value (FCFA)
8	40,000	320,000

We collected data for a detailed margin and pricing analysis for the Sesame value chain

Pricing analysis for sesame



Output: The average prices for each level of the value chain

Margin analysis for sesame

Based on the pricing analysis, we carried out a margin analysis for relevant stakeholders

	Farmers	Middlemen	Traders
Average prices (CFA Franc)	40,000 CFA	63,000 CFA	63,000 CFA
Margins	43.8%	17.5%	83.3%

List of Sesame exporters in Chad to explore partnerships with

Major Exports Companies	Responsibles	Products	Average Exported Quantity Of Sesame (Tonnes) Entre 2016 Et 2022	Average Value of Exported Sesame Per Year	Average Income Per Year
Abouhassanein	Ali Annadif	Sesame	2000	285,714,2857	285 714 286
Société Commerciale Anama Import- Export SA	Ahmat Anama Youssouf	Sesame	3400	485,7142857	485 714 286
King Le Select	Khadidja Kolingar	Sesame	400	57,14285714	57 142 857
Garaye Internation Export Limited	Brahim Abakar	Sesame	4000	571,4285714	571 428 571
Société D'exportation De La Gomme Arabique	Annour Abakar	Sesame	20000	2,857,142,857	2 857 142 857
Africa Guim	Hassan Adam Kissine	Sesame	4000	571,4285714	571 428 571
Alwaha	Tahir Hassan	Sesame	600	85,71428571	85 714 286
Africa Import-export Compangy Limited	Youssouf Tahirou Djonouma	Sesame	3500	500	500 000 000
Tchadex Sa	Helene Doumro	Sesame	3500	500	500 000 000
Amal Global	Habib Cherif	Sesame	6000	857,1428571	857 142 857
Sotera Sarl	Saleh Ben Nassour Hassan	Sesame	3200	457,1428571	457 142 857

Sesame Chad export data

Country	Chad Share in Export 2021	Share in Import 2021 for each Individual Country	Export Value 2021 ($)	List of possible Suppliers/Buyers importing Sesame
Turkey	**94.47%**	**38.20%**	**$108.89M**	ADN COMPANY GIDA SANAYI MEDITERRA AGRO TARIM TICARET ANONIM SIRKETI Istanbul Agro Bakliyat Gda Sanayi Ticaret ltd Turkey Dalal CO. LTD DelWin Maia Foods Bozkurt Organik Tarim Tasty Foods Terka Baharat Sifali Bitkiler Ltd Urun Tarim Ltd Koska
Germany	**2.07%**	**2.38%**	**$2.28M**	H.A. & Gustav Küchler (Acomo Group) SIGCO (Acomo Group) Tampico Trading Voicevale Naturkost Uebekhoer GMBH & Co. Blumental Bayern GmbH Eberhard Romberg GmbH

Companies highlighted in green are confirmed to import sesame from Cha to Turkey

Sesame Chad export data

Country	Chad Share in Export 2021	Share in Import 2021 for each Individual Country	Export Value 2021 ($)	List of possible Suppliers/Buyers importing Sesame
Egypt	1.40%	4.96%	$1.62M	Giza Seeds & Herbs S.A.E - Kato Investment Group
				Altayeb Company
				Ashriya Trading Industrial Ltd
				Agro Star Group
				Elmotimz for Herbs
				3M for Imp & Exp
				Grass Co. Herbs and Spices
				Alsamoon
				Delta Spice Egy
United Arab Emirates	0.83%	>0.5%	$953.89K	Glabs FZE
				Treunut
				Nuragro
				Ruchi group
				Tulsidas Lalchand General Trading L.L.C
				Som Seed Agri Fzco
				PJS Group
				Kyra Trade DMCC
				DOA Trading DMCC
Austria	0.82%	8.90%	$943.33K	Coros Trade GmbH

Sesame Chad export data

Country	Chad Share in Export 2021	Share in Import 2021 for each Individual Country	Export Value 2021 ($)	List of possible Suppliers/Buyers importing Sesame
Greece	0.31%	0.54%	$362.09K	Talianis SA
				Dimfil Ltd
				Matis Bros S.A
				Tzanidis
				Apostollou Spices SA
				Bally Nuts Michail Balamoutsos
				Dryfo - Menexopoulos Bros
Nigeria	0.02%	9.70%	$25.98K	Atius Synergy Global
				Pevina Invest Ltd
				Greenweb International Resources Limited
				Revv Global Services Limited
				Tropical Plants Limited
				Folen Multi Projects Ltd
				Timesellers Ltd
				Dallaz Agricultural Trading Service Limited
				Lanbruk Global Integrated Services Limited

We combined all the above insights and built an in-depth profile for the sesame value chain

Strong | Room for improvement | Weak

Dimension	Score	Reason
Source of Income	🟡	• Farmers, traders can generate some income from selling the produce in the market. However, it is mostly sold in local markets or to smaller traders, and poor quality affects their margins
Household Consumption	🟢	• Sesame production has gone from being a cash crop to satisfying the purchasing needs of the populations of the target provinces for manufactured goods, sugar, salt and other consumables
Weather suitability	🟢	• Weather and land is suitable for the value chain, with abundance of readily available irrigation water, with presence of areas suitable for irrigated and rainfed sesame production
Input cost	🟡	• Improved Seed and other inputs (fertilizer, weedicides) are available locally but not affordable by farmers. • There is some effort to develop seeds locally, but the industry is still nascent and not matured
Access to seeds & other inputs	🟡	• Seed and other inputs (fertilizer, weedicides) are available locally but not easy to access and cannot be easily imported. There is some effort to develop seeds locally, but the industry is still nascent and not matured
Labor demands	🟢	• Value chain labor intensive , however, there is sufficient and low-cost labor available in the rural areas where rice is cultivated.
Women & Youth engagement	🟡	• Women are moderately engaged (on average between 30% and 40%) throughout the value chain - from farming, trading, processing and others
Market access	🟢	• There exists a large market locally for the value chain. Sesame is also one of the only crops that is produced in large enough quantities for export. Chad, however, has little weight on the international market for Sesame
Enabling environment	🔴	• lack of a common value chain development program; There are no platforms for innovation, exchange or research/action dedicated to sesame; Poor governance of the sector and deficit in infrastructure maintenance (facilities, tracks, shops, etc.)

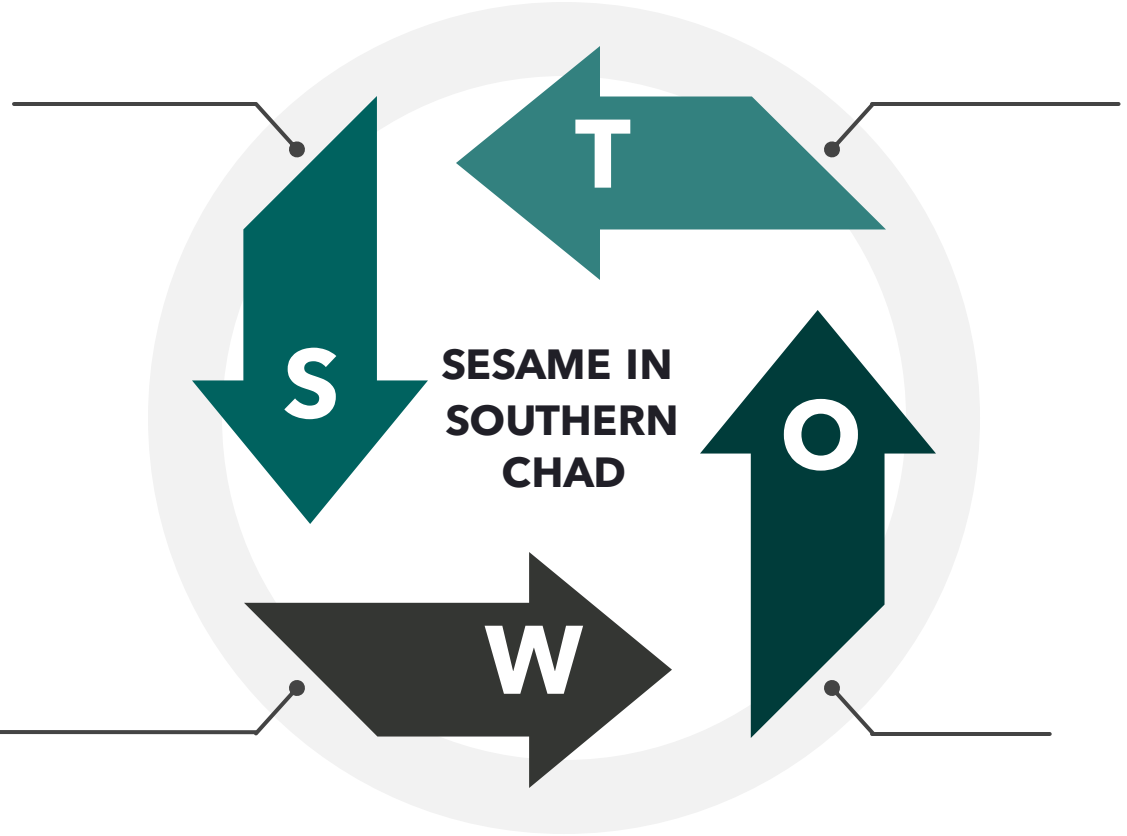
… and designed a SWOT analysis for the Sesame value chain

Strengths

- Availability of arable land
- A sector that has been growing steadily for several years
- Existence of improved speeds selected by ITRAD

Weaknesses

- Soil infertility
- Weak capacity of producers
- Informal commercial relations and exploitation
- A lack of communication within and between links
- Lack of a common value chain development program
- Lack of a platform for innovation, exchange or research/action
- Poor governance of the sector
- Deficit in infrastructure maintenance (facilities, tracks, shops, etc.)



Threats

- Farmers at some level will get discouraged and abandon sesame production because of interest rates set up by loan sharks' traders;
- If appropriate solutions are not found to the problem of soil infertility, future yields will decrease, and prices will expensive.

Opportunities

- Sesame prices are more remunerative than other cash crops. E.g. 47% of sesame traders earn above 700k CFA compared to the 29.5% of rice traders who earn above that amount
- Increased of world demand for sesame
- Availability of skilled labor and low cost

Agenda - Shea Value Chain Analysis

→ Production analysis – Geography & Volumes

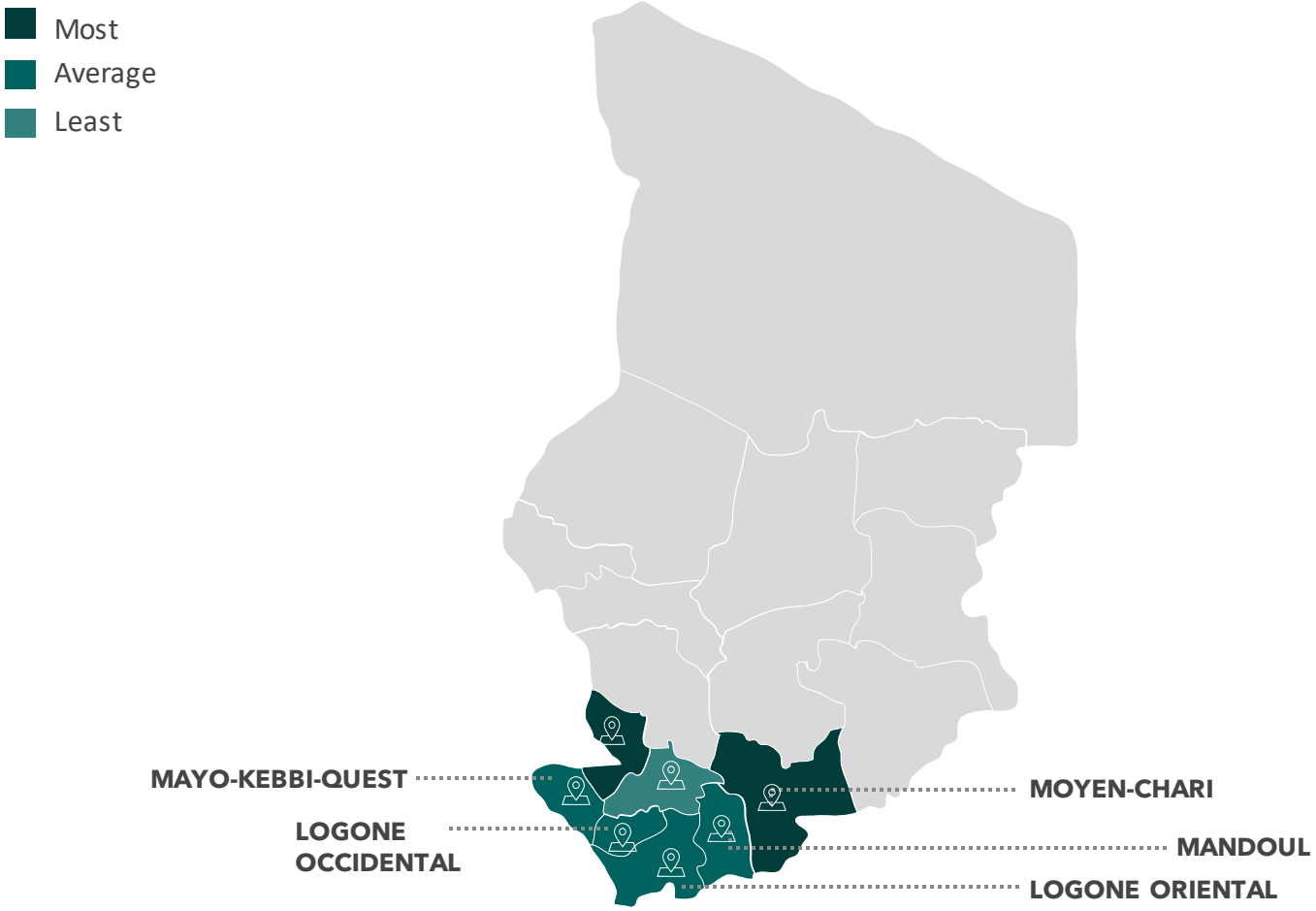
→ Crop Calendar

→ Stakeholder mapping

→ Margin analysis

→ Crop Profile & SWOT analysis

Map of areas where shea is most cultivated

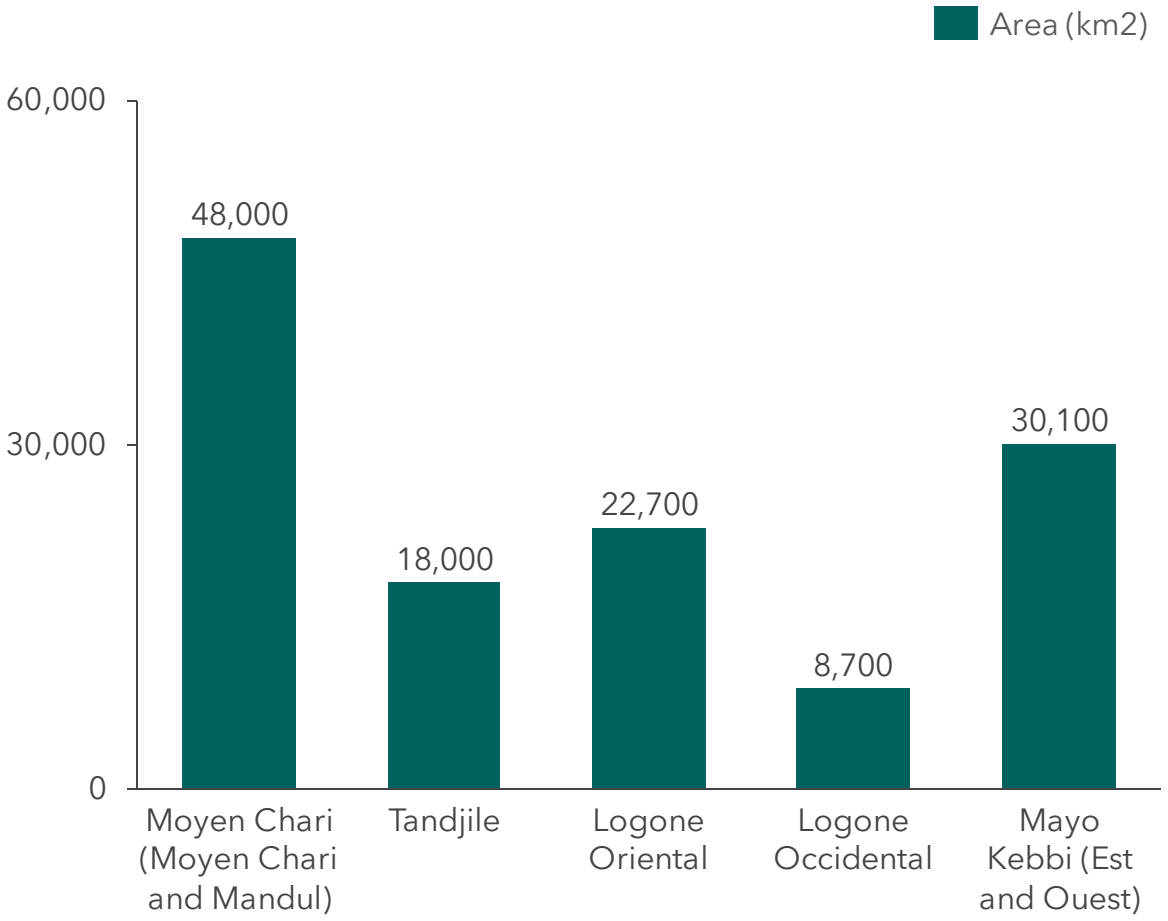


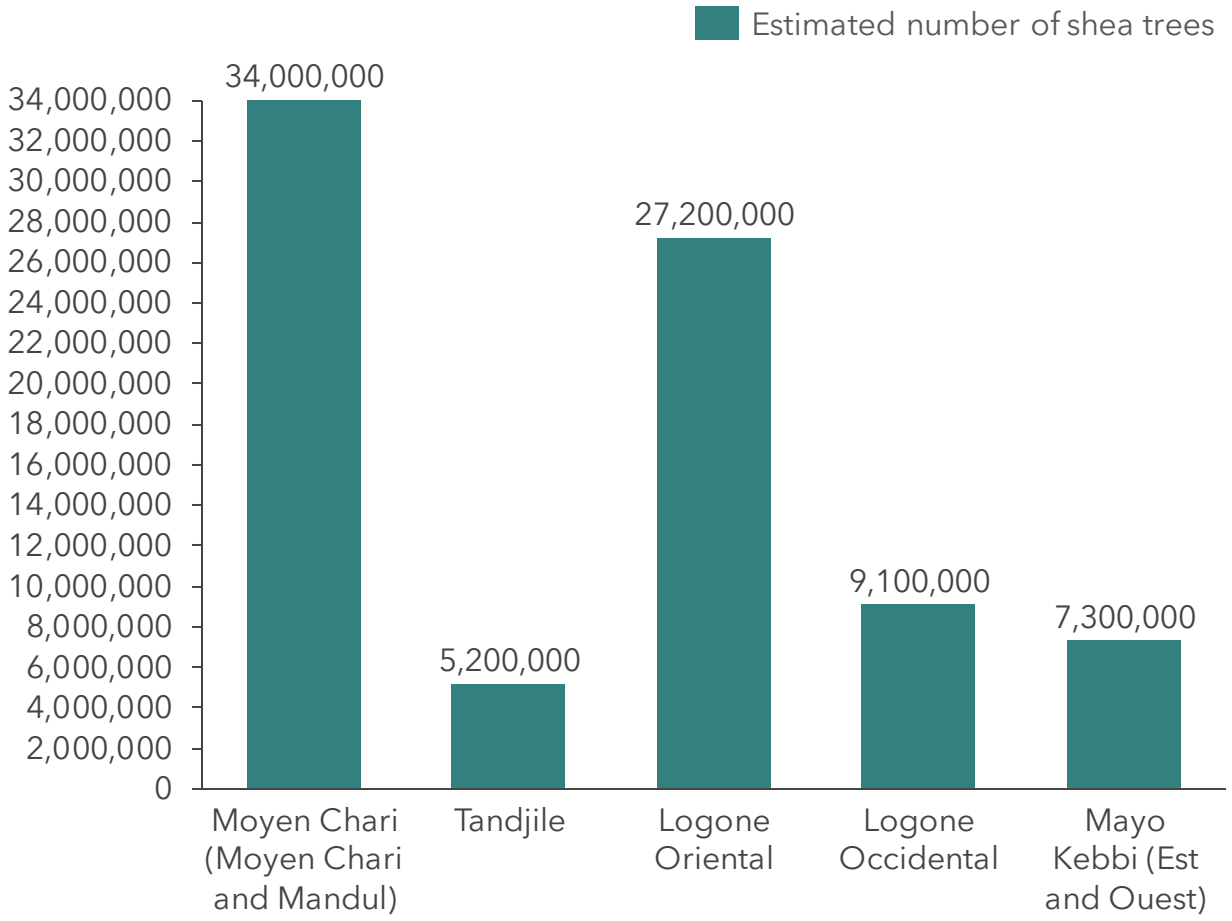
In Chad, shea is found in the sudania, zone in the seven provinces covered by the study namely Tandjilé, Logone Occidental, Logone Oriental, Moyen Chari, Mandoul and Mayo Kebbi Ouest, where it covers an area of 127,500 km2 with more than 80 million feet estimated in 1999 by the Ministry of the Environment. Shea is essentially a harvested product collected by small farmers in the forest. Shea is found in the wild.

* Institut Tchadien de Recherche Agricole pour le Développement

Shea production in the Southern Chad 7 provinces

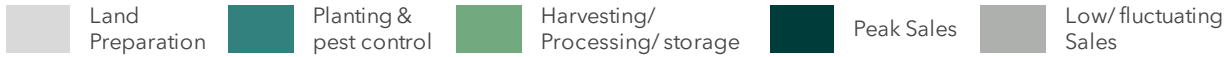
Shea production in Southern Chad 7 provinces 2020/2021





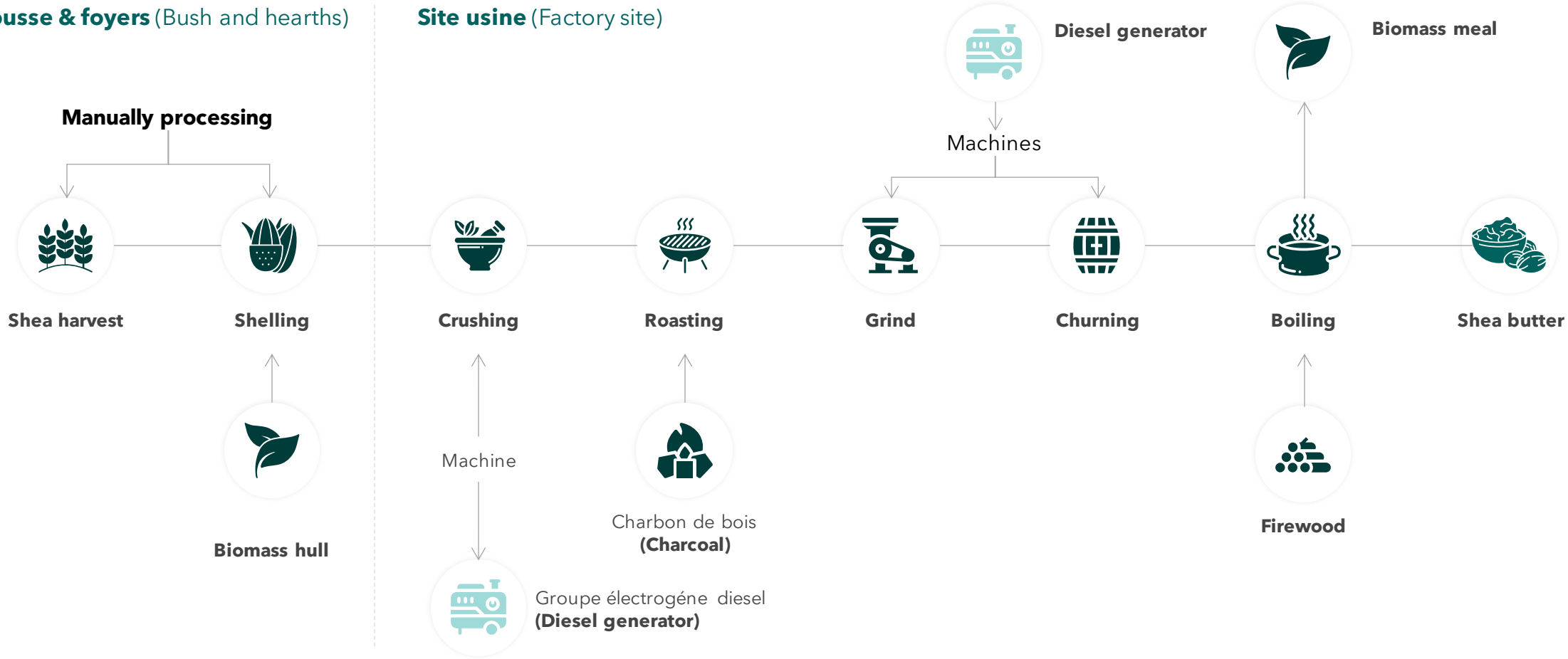
DPSA, Crop year review report, 2019

Based on our engagements with farmers and other relevant actors, we developed a shea crop calendar …

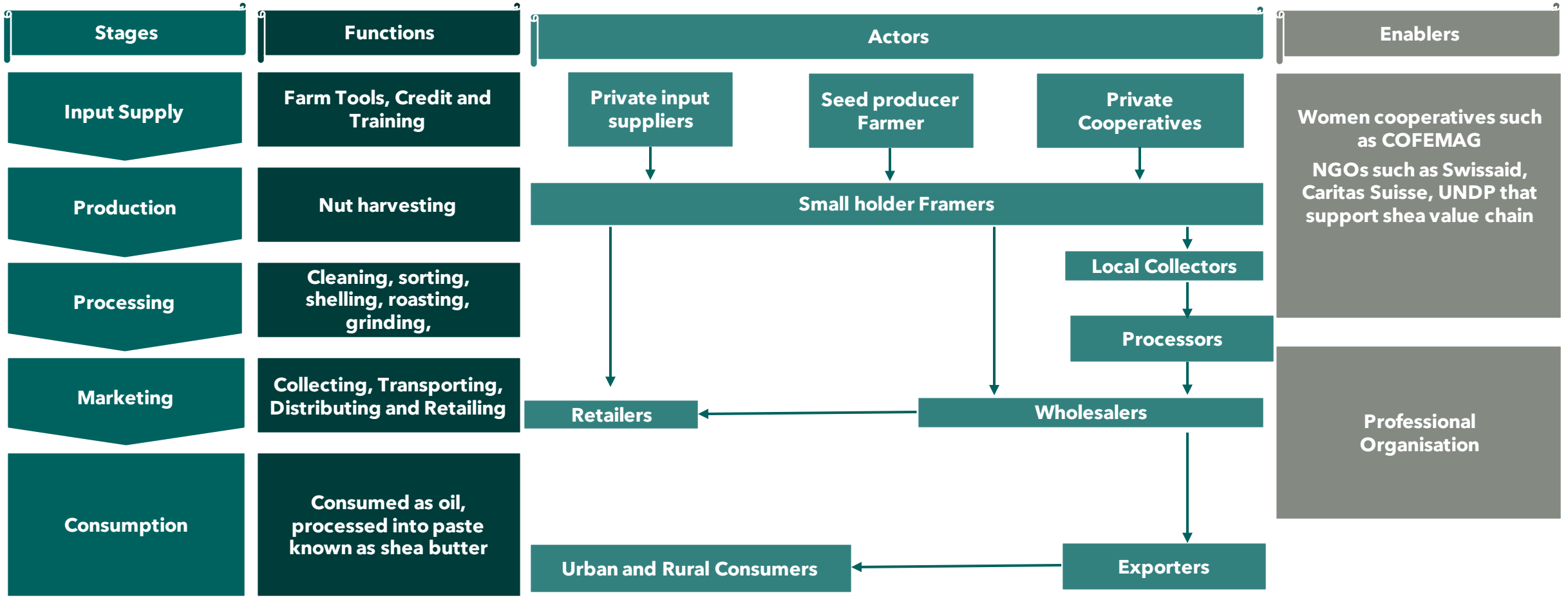


Activity	Jan - Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec
Nut Harvesting											
Peak of Shea butter processing											
Shea butter processing											
Shea butter sales											

and a shea process flow, showing the process flow to obtaining shea butter

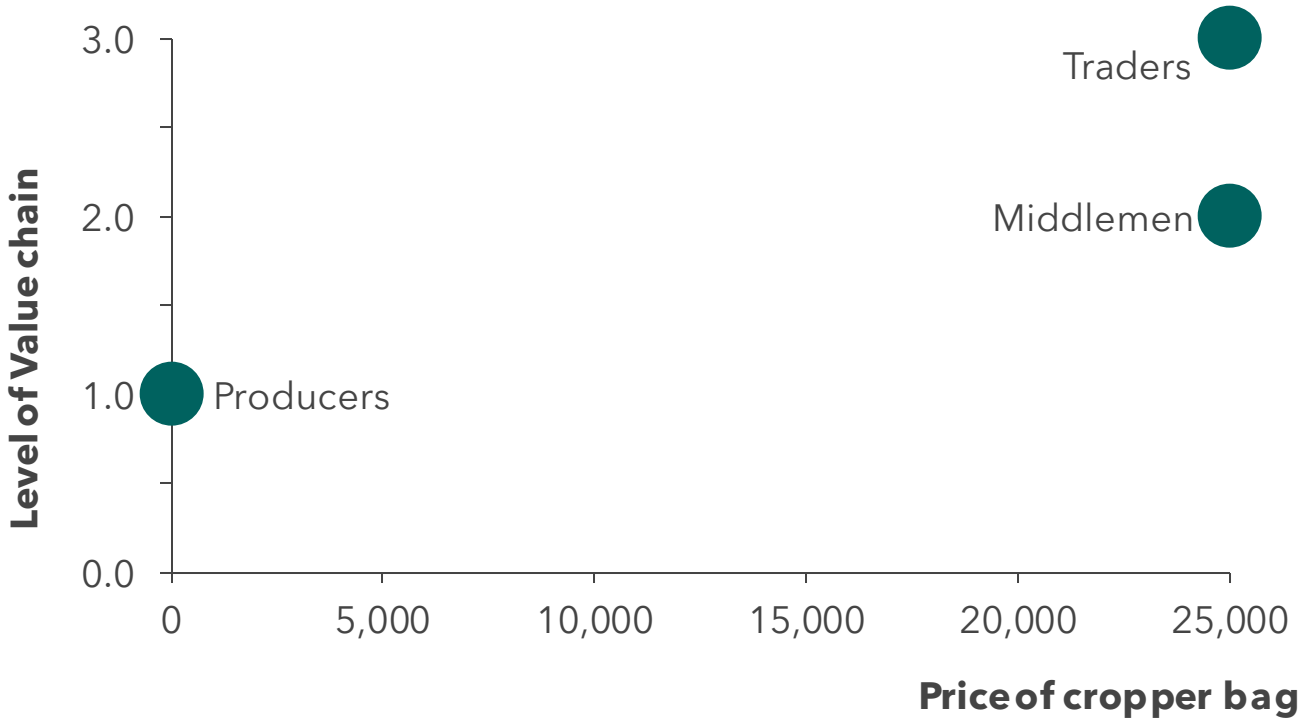


… and a shea value chain map, showing linkages among stakeholders



We collected data for a detailed margin and pricing analysis for the shea value chain

Pricing analysis for shea



Output: The average prices for each level of the value chain

Margin analysis for shea

Based on the pricing analysis, we carried out a margin analysis for relevant stakeholders

	Farmers	Middlemen	Traders
Average prices (CFA Franc)	0 CFA	25,000	25,000
Margins	0%	0.25%	142%

We combined all the above insights and built an in-depth profile for the shea value chain

Strong | Room for improvement | Weak

Dimension	Score	Reason
Source of Income		• Farmers, traders can generate some income from selling the produce in the market. However, it is mostly sold in local markets or to smaller traders.
Household Consumption		• Shea is intended for local consumption. this is the most common gift that rural women give, and shea oil is what is used predominantly for local cooking
Weather suitability		• Shea, unlike the other cash or cash crops covered by this study, is a forest product. Drought and deforestation of shea in the western Logone is contributing to the extinction of shea trees
Input cost		• Shea is found in the wild. But at present, some farmers are beginning to plant and domesticate this shrub in the fields. It is therefore possible to find seedlings in the fields as well as at the edge of the forest and in the villages.
Access to seeds & other inputs		• There is not clear focus on developing seeds for further shea development as this crop grows in the wild.
Labor demands		• Value chain is dominated by women and there is sufficient and low-cost labor available in the rural areas where harvested
Women & Youth engagement		• Women are highly engaged (by at least 55%) throughout the value chain - from farming, trading, processing and others
Market access		• With the support of the SODEFIKA project, for the year 2021, the COFEMAK Group of Koumra was able to export 30 tons of shea butter to Switzerland. Shea does not sell well on national markets due to processing costs
Enabling environment		• NGO like SWISSAID, Caritas Suisse, UNDP that support shea value chain. COFEMAG succeeded in exporting 30 tones of shea butter in 2021, thanks to SWISSAID

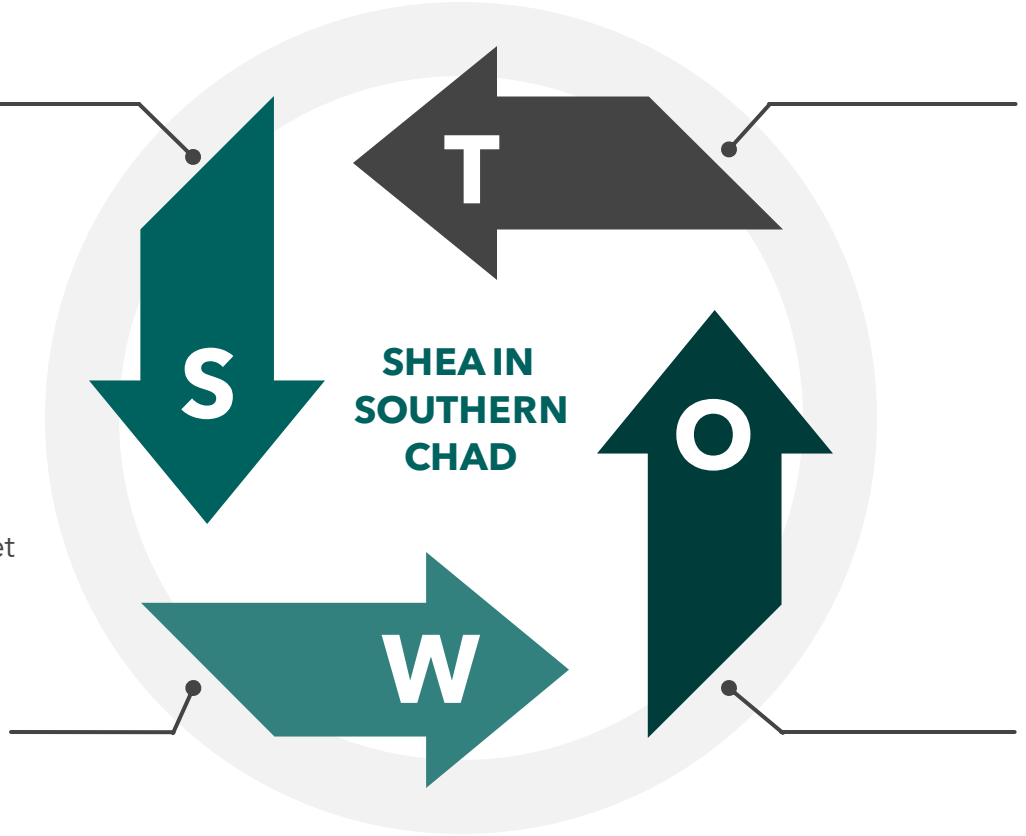
We designed a swot analysis for the shea value chain

Strengths

- Existence of a large shea forest in the 7 target provinces (80,000,000);
- Availability of a large workforce of women in charge of collection and processing

Threats

- Extinction of shea forests.
- Disappearance of a major source of income for women in the Sudanian zone.



Weaknesses

- Very limited access to the international market (ANIE);
- High mortality of shea trees (ministry of environment);
- Deforestation of shea in the western Logone;

Opportunities

- Increased of world demand for shea.
- More than one million women work passionately in the shea butter industry.

Agenda - Groundnut Value Chain Analysis

→ Production analysis – Geography & Volumes

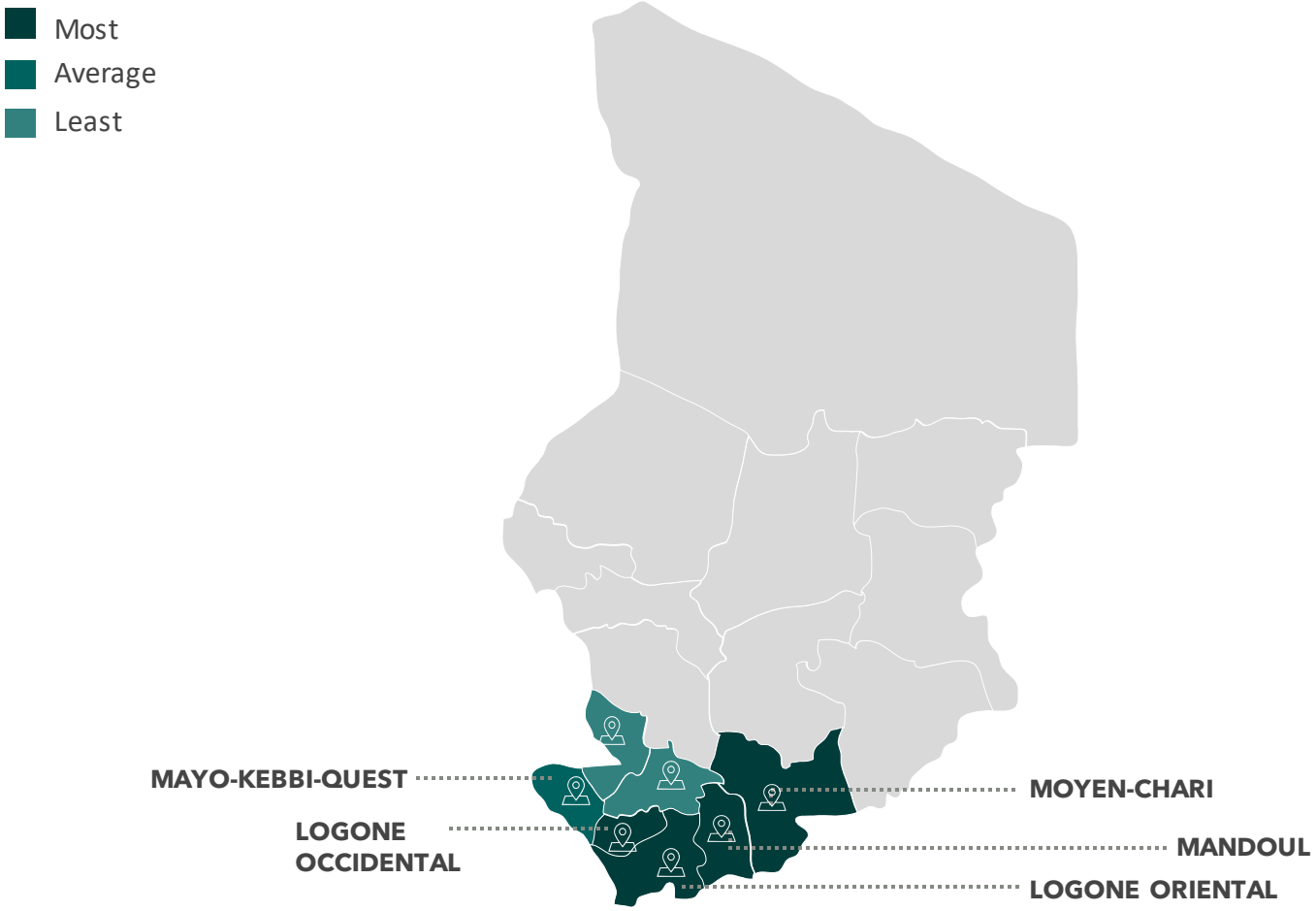
→ Crop Calendar

→ Stakeholder mapping

→ Margin analysis

→ Crop Profile & SWOT analysis

Map of areas where Groundnut is most cultivated



All seven provinces covered by the study, including Tandjilé, Logone Occidental, Logone Oriental, Moyen Chari, Mandoul and Mayo Kebbi Ouest, grow groundnut

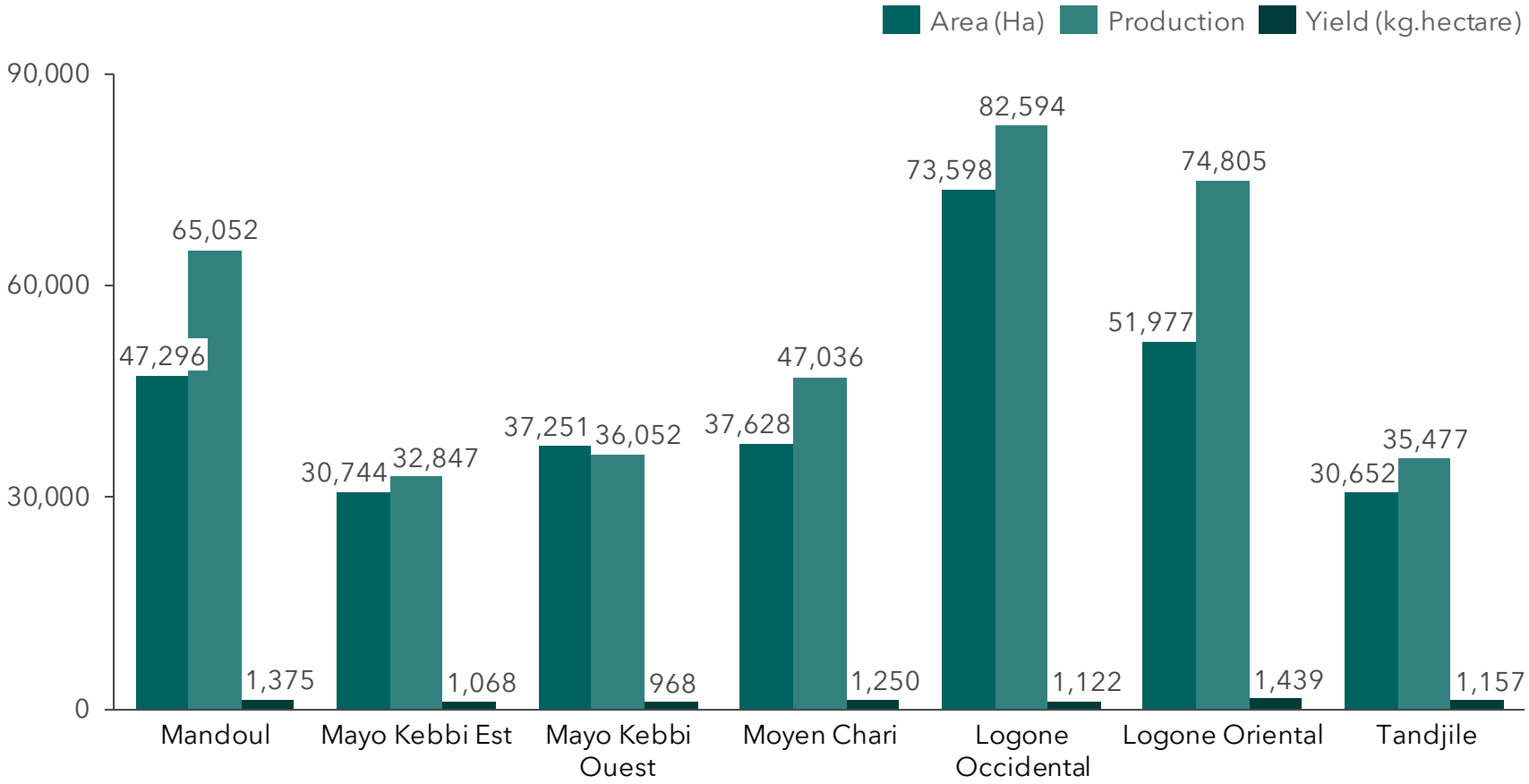
For a long time, groundnuts have supplied markets in Cameroon, Central Africa, Congo, Gabon and Nigeria. More than 100,000 tonnes were exported to these countries. Unfortunately, in recent years, the Chadian government has banned the sale of groundnuts internationally, given the importance of groundnuts in the diet of every Chadian.

Some traders interviewed in the Mandoul groundnut basin confirmed that, despite this ban, there are more and more fraudulent exports to Cameroon, which in turn supplies the Central African Republic, Congo and Gabon markets. According to ANIE, Chad does not currently import groundnuts. This export restriction has led to a drop in production in 2021.

* Institut Tchadien de Recherche Agricole pour le Développement

Groundnut production in the Southern Chad 7 provinces

Groundnut production in the Southern Chad 7 provinces 2020/20213



After the cotton crisis, groundnuts became an alternative cash crop for farmers in the different groundnut basins of the seven (07) provinces covered by this study. Groundnuts were exported to countries such as Cameroon, Nigeria, Central African

Republic (CAR), Congo Brazzaville and Gabon.

Today, the restriction of the Chadian state to export groundnuts, which it considers an essential foodstuff for Chadian households, has led to a drop in national production, as

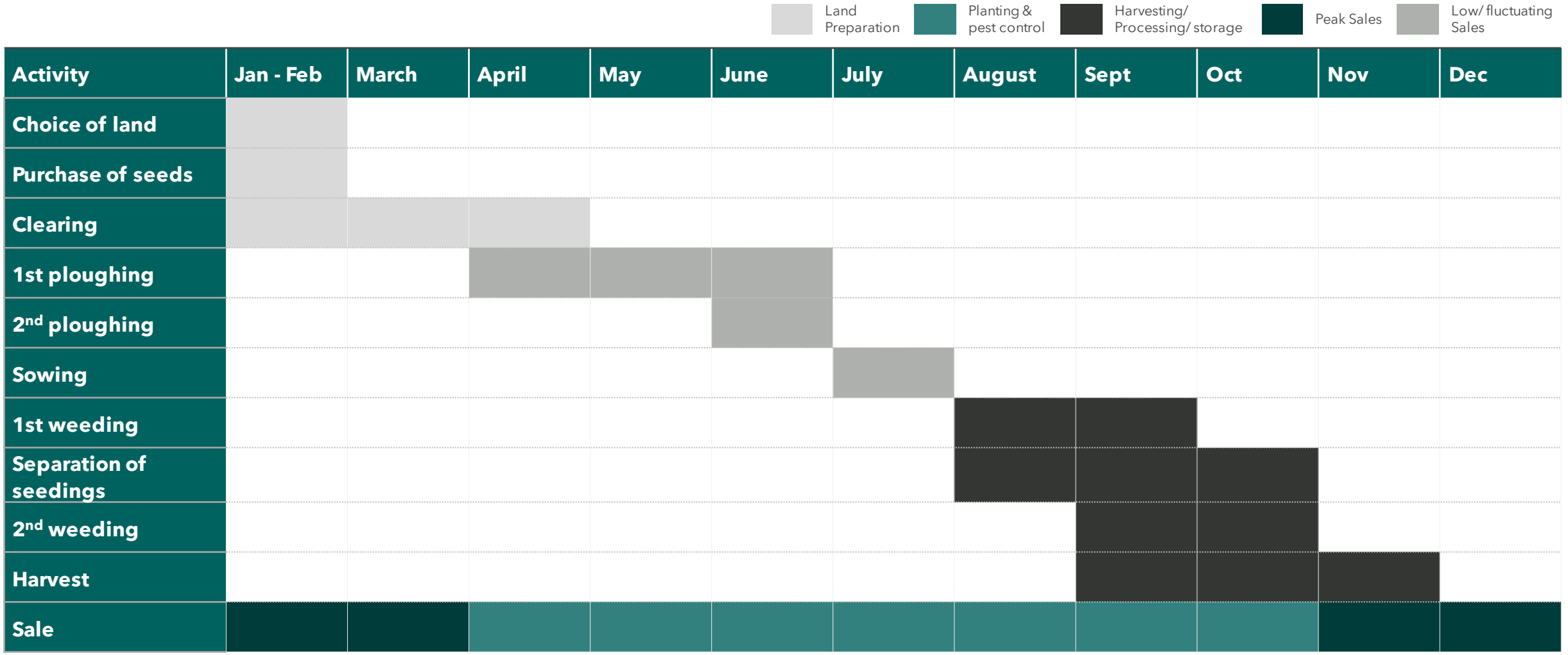
you can see from the statistics presented above.

In terms of marketing, prices vary according to the level of the markets. On the village markets, a coro (2.5 kg container) costs CFAF 1,000, or CFAF 40,000 per 80 kg bag.

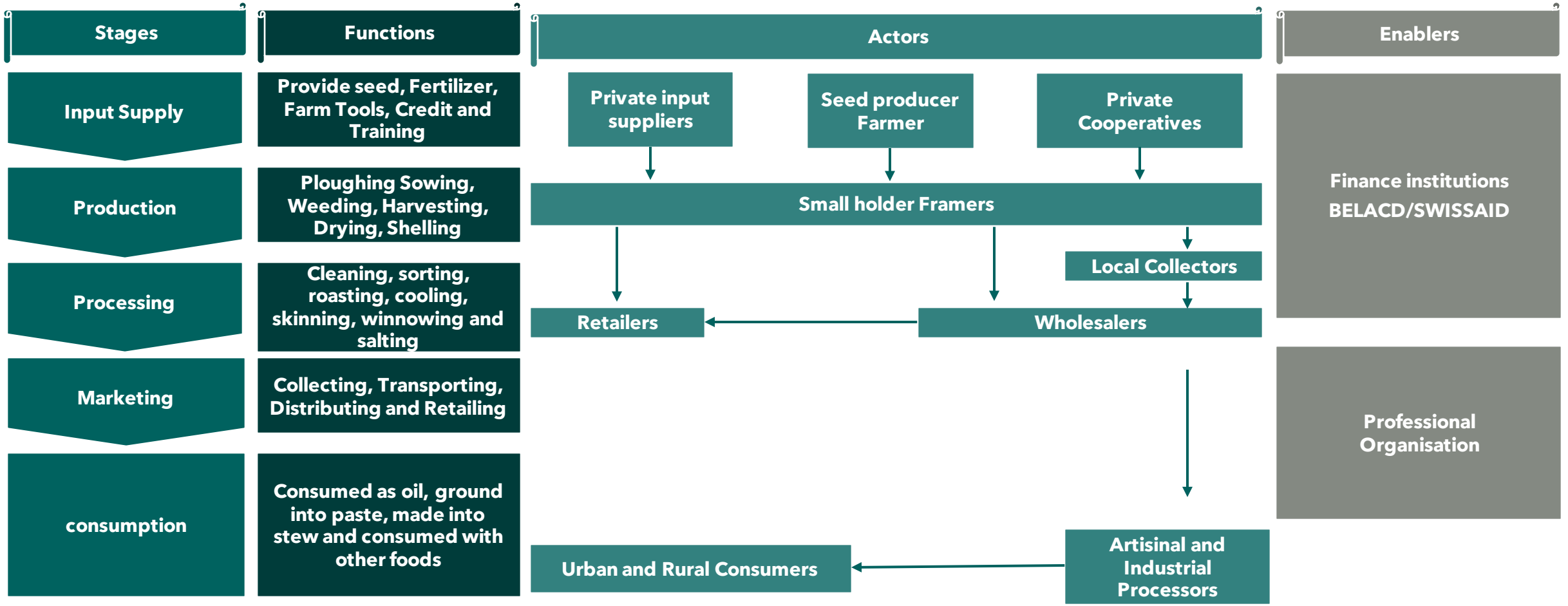
On the weekly market at the cantonal level, the coro costs 1100 FCFA at 44 000 FCFA per bag.

DPSA, Crop year review report, 2019

Based on our engagements with farmers and other relevant actors, we developed a groundnut value chain calendar …



… and a Groundnut value chain map, showing linkages among stakeholders



We collected data for a detailed margin and pricing analysis for the groundnut value chain (1/2)

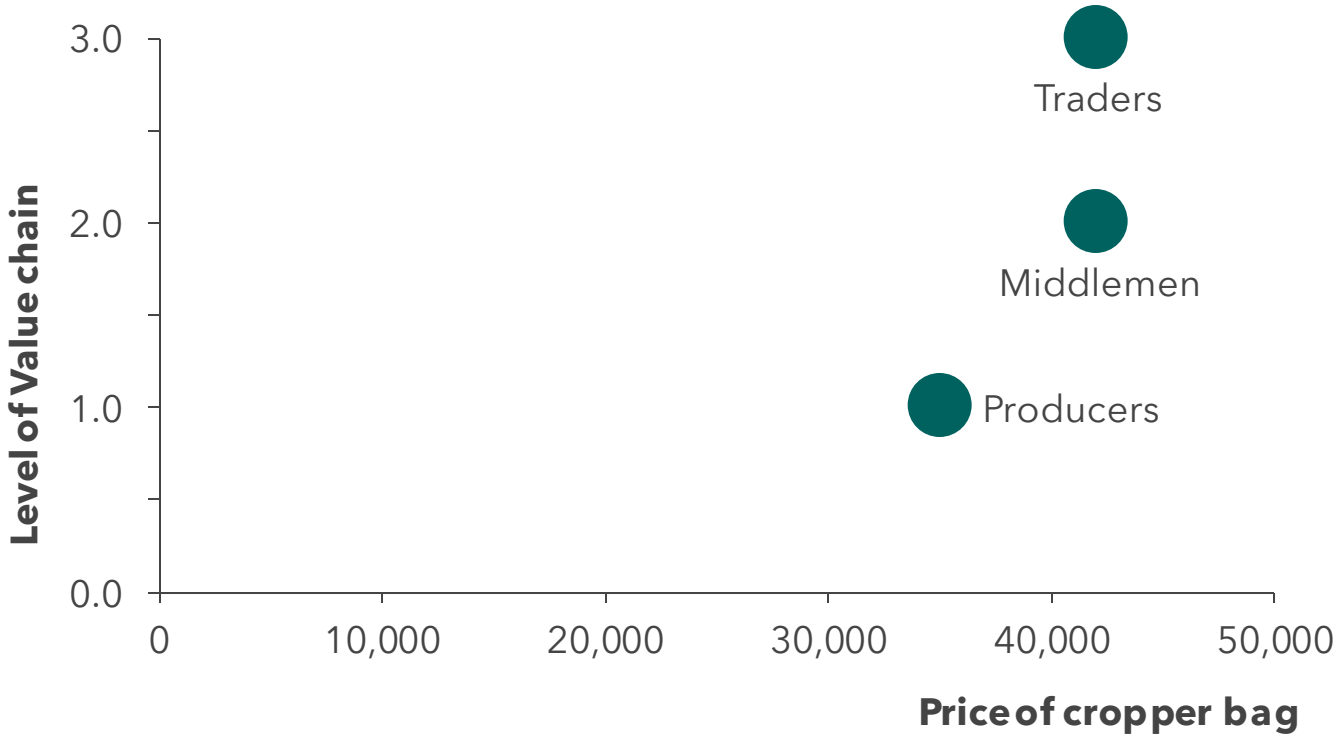
The average total cost of cultivating a hectare of groundnut is over 256,000 CFA

ONE HECTARE (1 HA) FARM ACCOUNT				
TYPE OPERATION	**UNIT**	**QUANTITY**	**UNIT COST**	**TOTAL COST**
RENTAL OF LAND	Hectare	1	10,000	10,000
SEED	Bag of 100kg	1	45,000	45,000
FARM CLEARING	Ha	1	10,000	10,000
PLOUGHING	Ha	1	20,000	20,000
SEEDING	Ha	1	5,000	5,000
WEEDING (1)	Ha	1	20,000	20,000
WEEDING (2)	Ha	1	20,000	20,000
HARVESTING	Ha	1	100,000	100,000
DRYING	Pile	1	5,000	5,000
SHELLING	Pile	14	1,000	14,000
BAGGING	Bag	14	450	6300
WIRE ROLLER	Unit	2	600	`1,200
TOTAL				256,500

PRODUCTION VALUE		
Average yield in bags/ha	Average price per bag of paddy (FCFA)	Production value (FCFA)
8	35,000	490,000

We collected data for a detailed margin and pricing analysis for the groundnut value chain

Pricing analysis for groundnut



Output: The average prices for each level of the value chain

Margin analysis for groundnut

Based on the pricing analysis, we carried out a margin analysis for relevant stakeholders

	Farmers	Middlemen	Traders
Average prices (CFA Franc)	35000 CFA	42,000 CFA	42,000 CFA
Margins	47.6%	12.5%	142.9%

We combined all the above insights and built an in-depth profile for the shea value chain...

Strong | Room for improvement | Weak

Dimension	Score	Reason
Source of Income		• Farmers, traders can generate substantial income from selling the produce in the market, and has strong market potential beyond local markets
Household Consumption		• More than 100,000 tonnes were exported to other African countries. Unfortunately, in recent years, the Chadian government has banned the sale of groundnuts internationally, given the importance of groundnuts in the diet of every Chadian. ong time, groundnuts have supplied markets in Cameroon, Central Africa, Congo, Gabon and Nigeria.
Weather suitability		• Weather and land is suitable for the value chain, with abundance of readily available irrigation water, with presence of areas suitable for irrigated and rainfed sesame production
Input cost		• Improved Seed and other inputs (fertilizer, weedicides) are available locally and sold on local markets
Access to seeds & other inputs		• Seed and other inputs (fertilizer, weedicides) are available locally and easy to access . There is some effort to develop seeds locally, with significant resources from government and NGOs allocated to this
Labor demands		• Value chain labor intensive , however, there is sufficient and low-cost labor available in the rural areas where groundnut is cultivated.
Women & Youth engagement		• Women are moderately engaged in retail and artisanal processing in the value chain. Large trade (wholesale, semi-wholesale) is male dominated
Market access		• There exists a large market locally and internationally for groundnut. However, the government has recently banned the export of groundnut to focus on local consumption. There is still significant illegal market international trading in spite of this ban.
Enabling environment		• There is support from government, research institutions, NGOs and development organizations. There is room for more collaboration amongst these organizations to further develop the groundnut sector

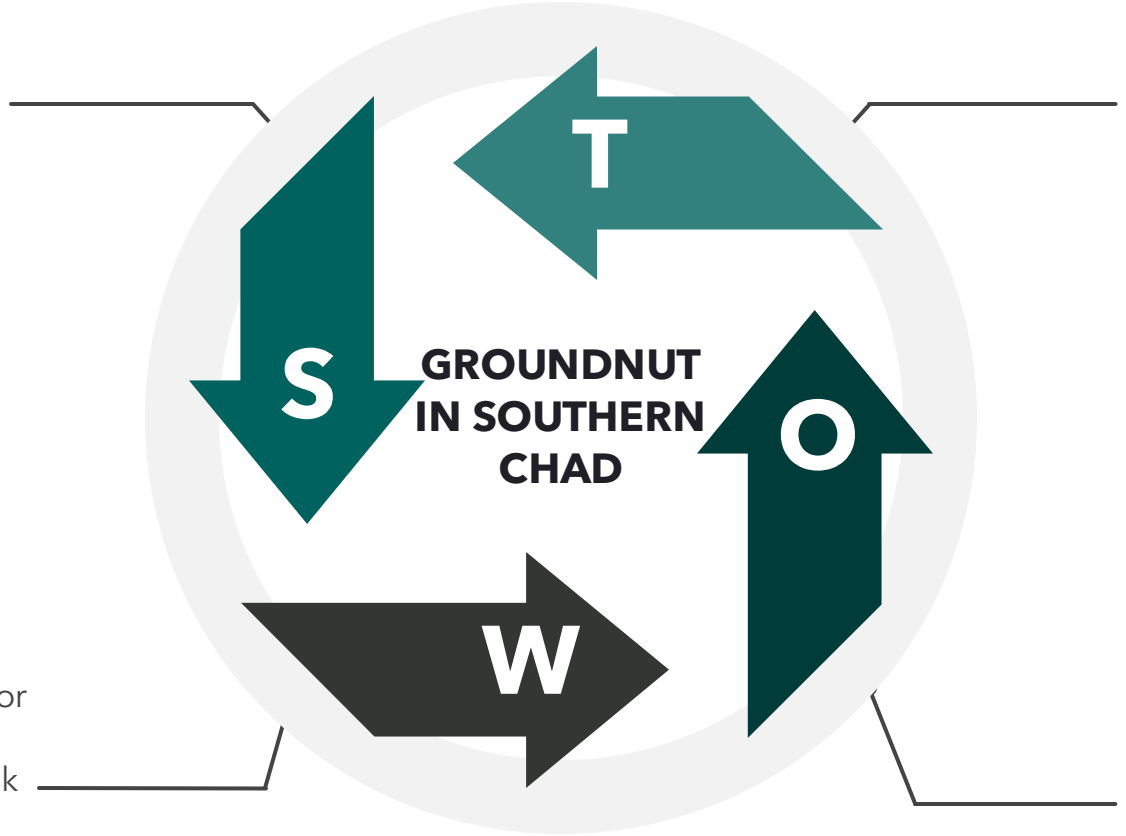
… and designed a swot analysis for the Groundnut value chain

Strengths

- Availability of arable land
- Existence of improved speeds selected by ITRAD

Weaknesses

- Soil infertility
- Weak capacity of producer organizations to play their role as interlocutor of the production link
- Informal commercial relations and a lack of fairness in exchanges that do not preserve the balance of the sector (traders/exporters and other negotiators generally abuse the weak bargaining power of producers operating individually)
- Poor governance of the sector



Threats

- If appropriate solutions are not found to the problem of soil infertility, future yields will decrease farmers will be discourage to farm groundnut;
- Without sustainable solutions to farm devastation by livestock, farmers ground production will hardly be developed.

Opportunities

- Groundnut prices are remunerative.
- Increased demand for groundnut at national level
- Availability of skilled and low cost labour

Agenda - Sorghum Value Chain Analysis

→ Value Chain Map, Profile & Crop calendar

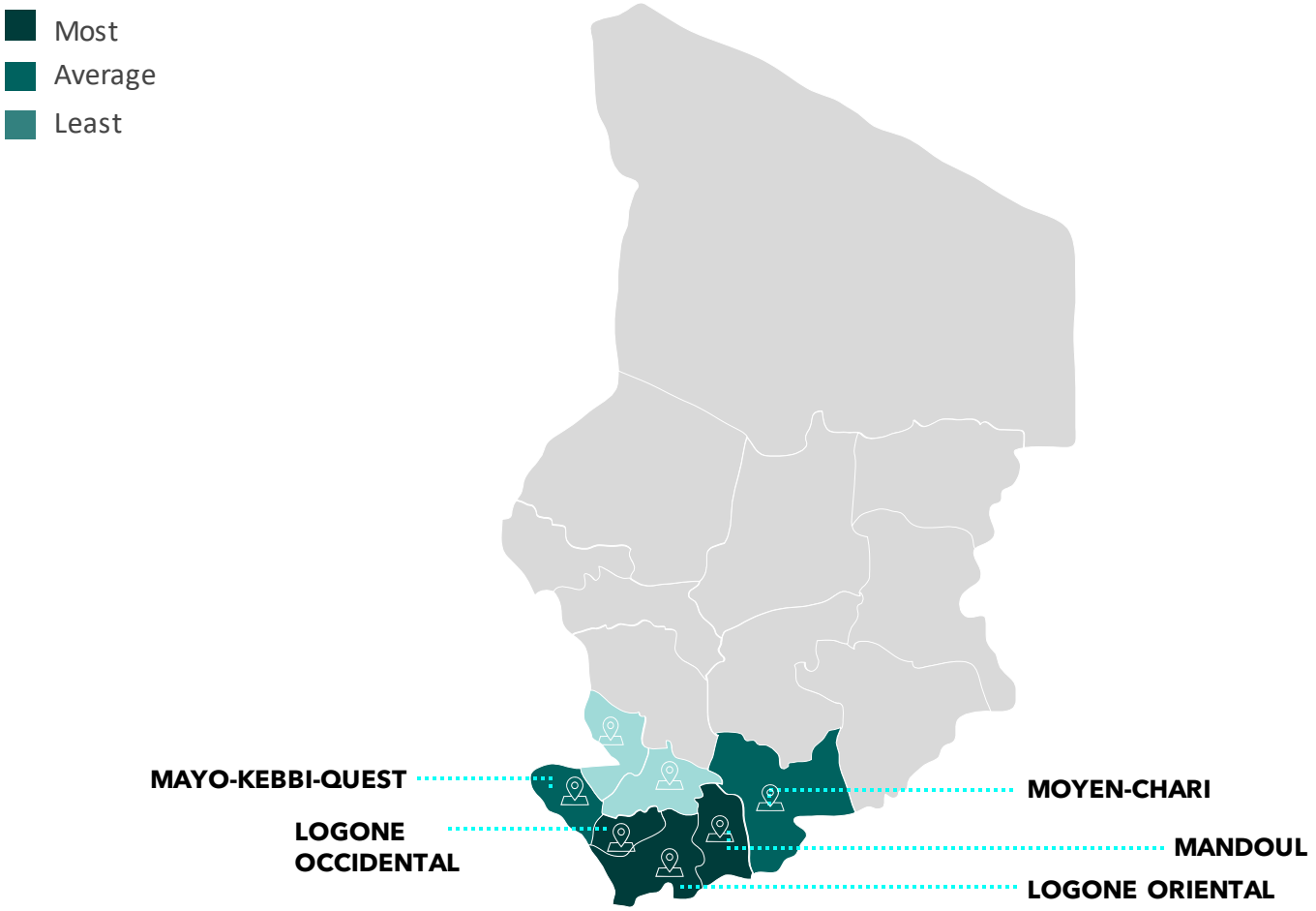
→ SWOT, potential for growth & profitability

→ Analysis of actors and their relationships

→ Analysis of enabling environment

→ Analysis of women & Youth engagement

Map of areas where sorghum is most cultivated



Sorghum ranks first among the cereals grown in the seven provinces because of its volume of production and the size of the area under cultivation.

Its national production for the 2020-2021 season is 970,242 tons. The predominance of sorghum cultivation is partly explained by the plant's wide varietal diversity and its adaptability to low rainfall (200-600 mm), marginal soils and high temperatures.

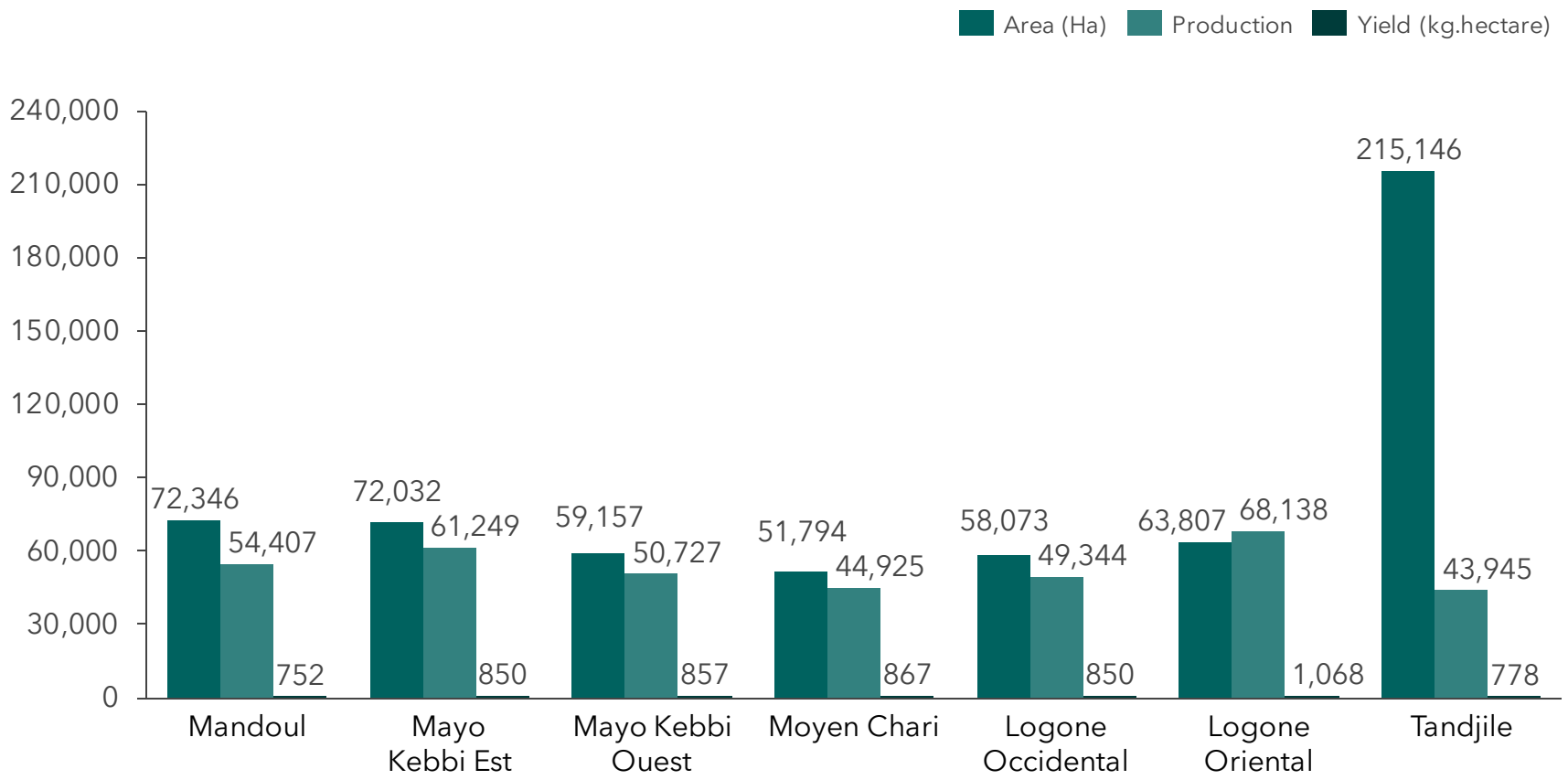
The success of sorghum is also linked to the dietary habits of the populations of the seven target provinces. Indeed, it is consumed in different forms depending on the province.

In general, it is used in the form of whole grain or processed into flour for the preparation of porridge, couscous and alcoholic drinks (Bili Bili)

* Institut Tchadien de Recherche Agricole pour le Développement

Sorghum production in the Southern Chad 7 provinces

Sorghum production in the Southern Chad 7 provinces 2020/2021

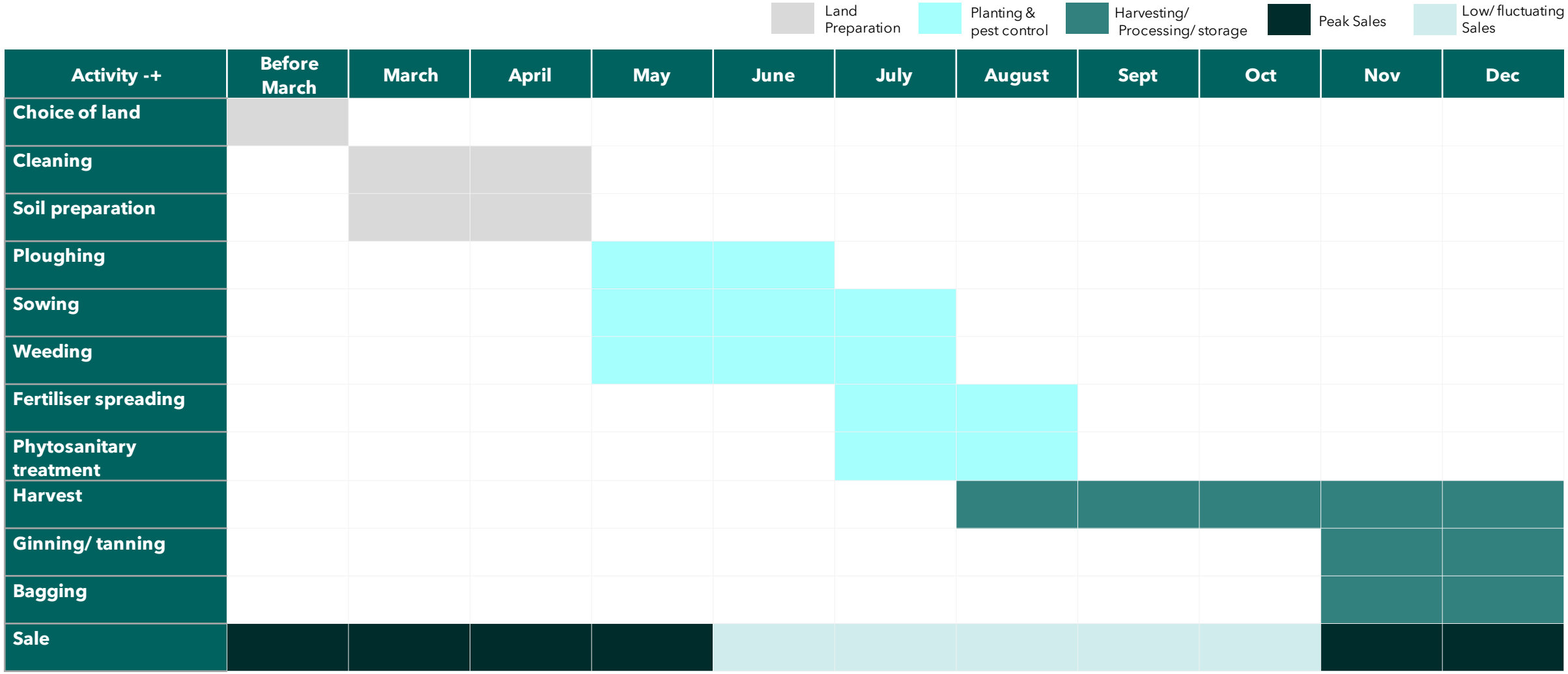


In the 7 provinces covered by the study, short-cycle (3 ½ months) or semi-late-cycle (4 ½ months) sorghum is found.

These sorghums, called Kouran in Sara dialects, are grown near the huts and are mainly used for beer. Later types (5 to 6 months) are also grown in the provinces but are very sensitive to climatic hazards.

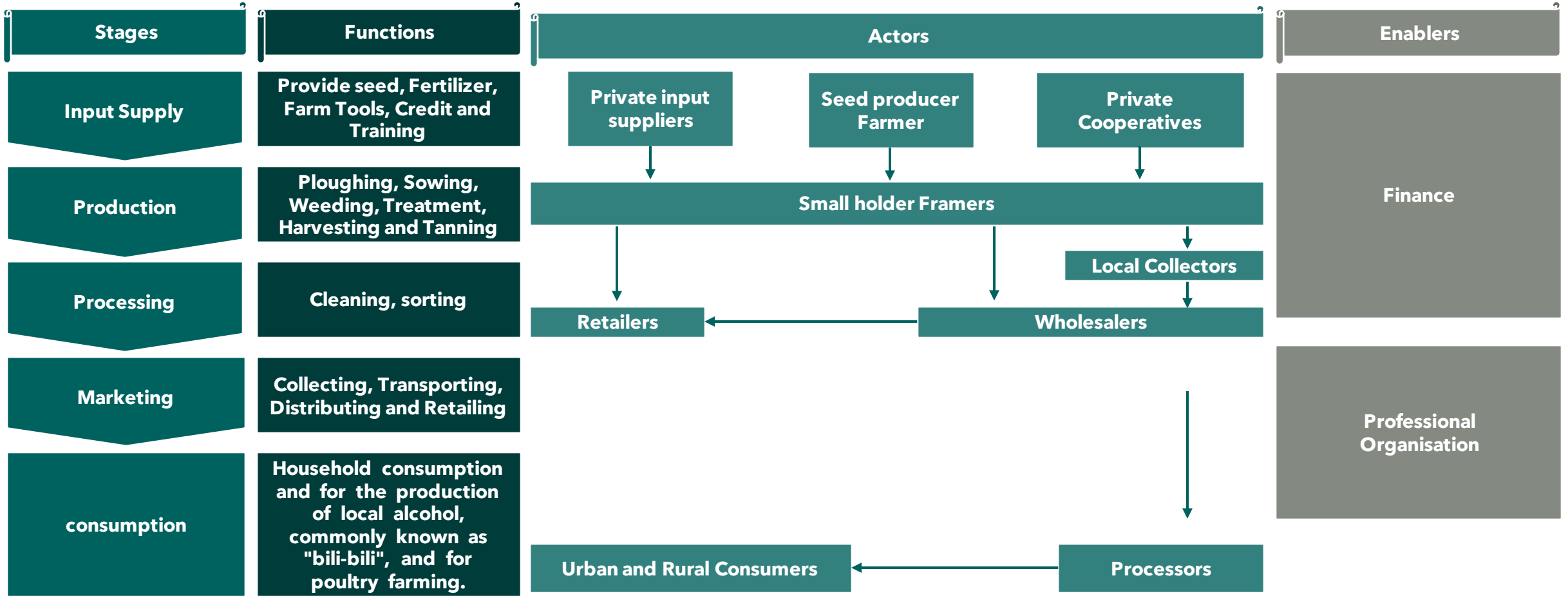
DPSA, Crop year review report, 2019

Based on our engagements with farmers and other relevant actors, we developed a sorghum value chain calendar …



Activity -+	Before March	March	April	May	June	July	August	Sept	Oct	Nov	Dec
Choice of land											
Cleaning											
Soil preparation											
Ploughing											
Sowing											
Weeding											
Fertiliser spreading											
Phytosanitary treatment											
Harvest											
Ginning/ tanning											
Bagging											
Sale											

… and a Sorghum value chain map, showing linkages among stakeholders



We collected data for a detailed margin and pricing analysis for the sorghum value chain (1/2)

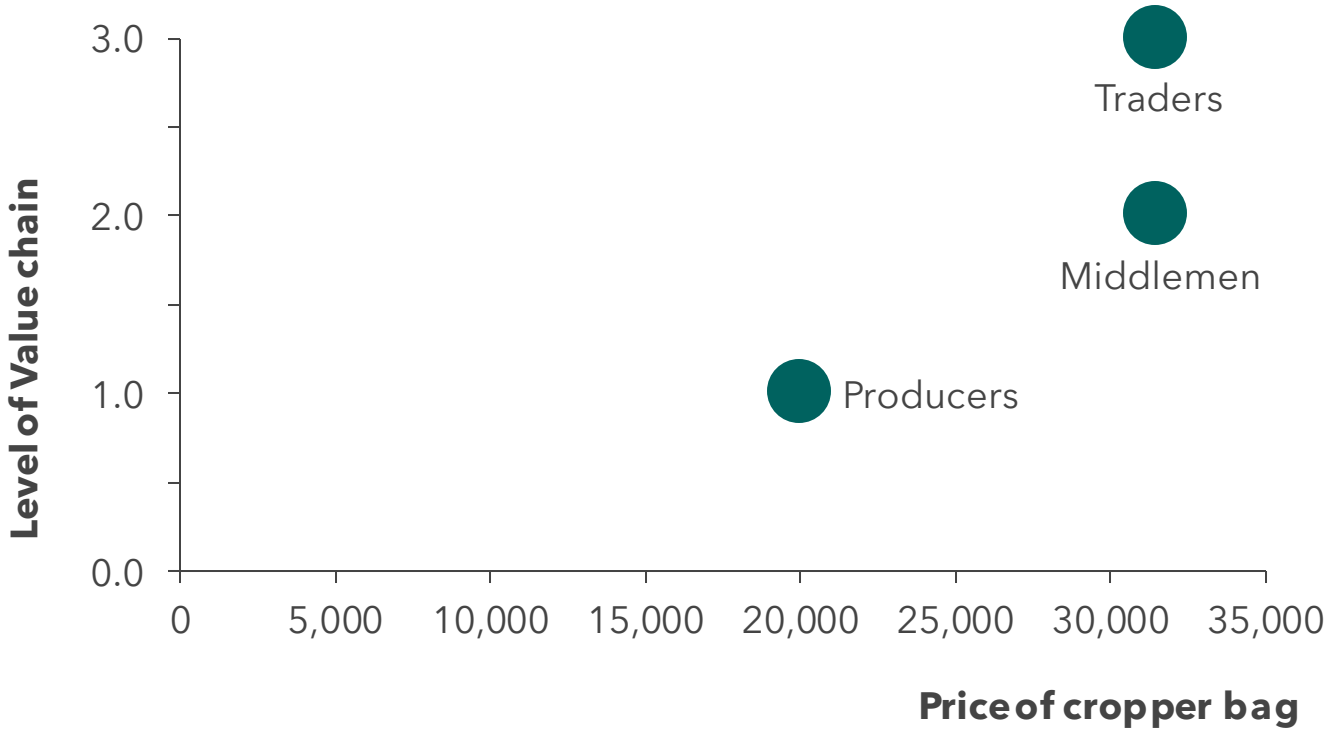
The average total cost of cultivating a hectare of sorghum is over 92,000 CFA

ONE HECTARE (1 HA) FARM ACCOUNT				
TYPE OPERATION	**UNIT**	**QUANTITY**	**UNIT COST**	**TOTAL COST**
RENTAL OF LAND	Hectare	1	10,000	10 000
SEED	Coro	5	1,000	5 000
FARM CLEARING	Ha	1	5,000	5 000
PLOUGHING	Ha	1	20,000	20 000
SEEDING	Ha	1	7,500	7 500
WEEDING (1)	Ha	1	10,000	10 000
WEEDING (2)	Ha	1	10,000	10 000
HARVESTING	Ha	1	10,000	10 000
THRESHING AND WINNOWING	Bag	15	1,000	15 000
TOTAL				92.500

PRODUCTION VALUE		
Average yield in bags/ha	Average price per bag of sorghum (FCFA)	Production value (FCFA)
15	20,000	300,000

We collected data for a detailed margin and pricing analysis for the Sorghum value chain (2/2)

Pricing analysis for sorghum



Output: The average prices for each level of the value chain

Margin analysis for sorghum

Based on the pricing analysis, we carried out a margin analysis for relevant stakeholders

	Farmers	Middlemen	Traders
Average prices (CFA Franc)	20000 CFA	31500 CFA	31500 CFA
Margins	69%	16.67%	93.75%

We combined all the above insights and built an in-depth profile for the sorghum value chain

Strong | Room for improvement | Weak

Dimension	Score	Reason
Source of Income		• The 2013 Five-Year Agriculture Development Plan in Chad shows that the sorghum sector has helped reduce poverty in areas where there is a yearly food shortage and has significantly promoted the development of family farming in the rural sector.
Household Consumption		• Chadian sorghum has never been exported; it is used for household consumption , production of local alcohol and for poultry farming. Chad's total production only moderately meets national needs. Chad does not import sorghum to fill the gaps. demand has increased as price of maize has started to increase.
Weather suitability		• Weather and land is suitable for the value chain. Sorghum has a wide varietal diversity and is highly adaptable to low rainfall (200-600 mm), marginal soils and high temperatures
Input cost		• Improved Seed and other inputs (fertilizer, weedicides) are available locally but not affordable by farmers. • There is little to no effort to develop seeds locally, but the industry is still nascent and not matured
Access to seeds & other inputs		• Mainly sold by traders not specialized in the sale of agricultural inputs. They collect inputs on the various markets in specific zones or on the markets of neighbouring countries and sell them on the local markets
Labor demands		• Value chain is not labor intensive, and there is sufficient and low-cost labor available in the rural areas where sorghum is cultivated.
Women & Youth engagement		• Women and young people are very involved in production and are present at all levels of production activities, with a predominance of sowing and post-harvest activities.
Market access		• There exists a large market locally for the value chain locally. It is neither imported nor exported.
Enabling environment		• There is insufficient support from government, research institutions, NGOs and development organizations, and little to no collaboration among other actors in the value chain

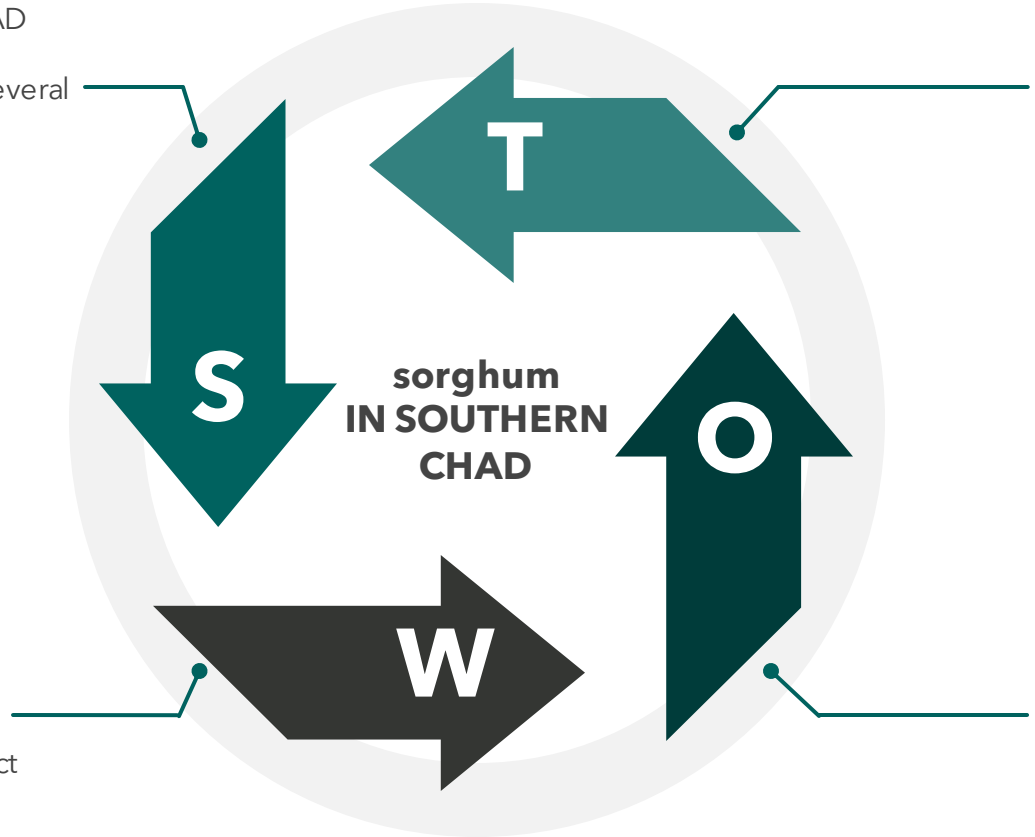
We designed a SWOT analysis for the sorghum value chain

Strengths

- Existence of improved seeds selected by ITRAD
- Availability of arable land
- A sector that has been growing steadily for several years
- Available manpower
- Agricultural subsidies
- Adaptation of varieties to production areas
- Tolerance to dry pockets
- Existence of improved high-yielding varieties
- Capacity for job creation in rural areas
- Participation in rural food security.

Weaknesses

- Low input use
- No irrigation
- Low financial resources
- Cost of seed supply
- Lack of credit line to support producers
- Extensive production system
- Weak capacity of producer organizations to play their role as interlocutor of the product ion link;



Threats

- Degradation of roads not conducive to rapid transport;
- Farmer-herder conflicts
- Urban demand is increasing faster to all ow for the production of local alcohol
- Climate change
- Predominance of traditional practices
- Soil degradation
- Enclavement of production areas
- Lack of organization of the sector.

Opportunities

- The importance of sorghum for lean periods and resilience, grown on large areas throughout the province;
- Arable land is available;
- Growing consumer interest in sorghum
- Sorghum prices are cheaper than other cereals;
- Strong local beer brewing activity;
- High consumption at national level ; Creation of a framework for exchange and consultation between the players in the sector.

Agenda - Rice Value Chain Analysis

→ Production analysis – Geography & Volumes

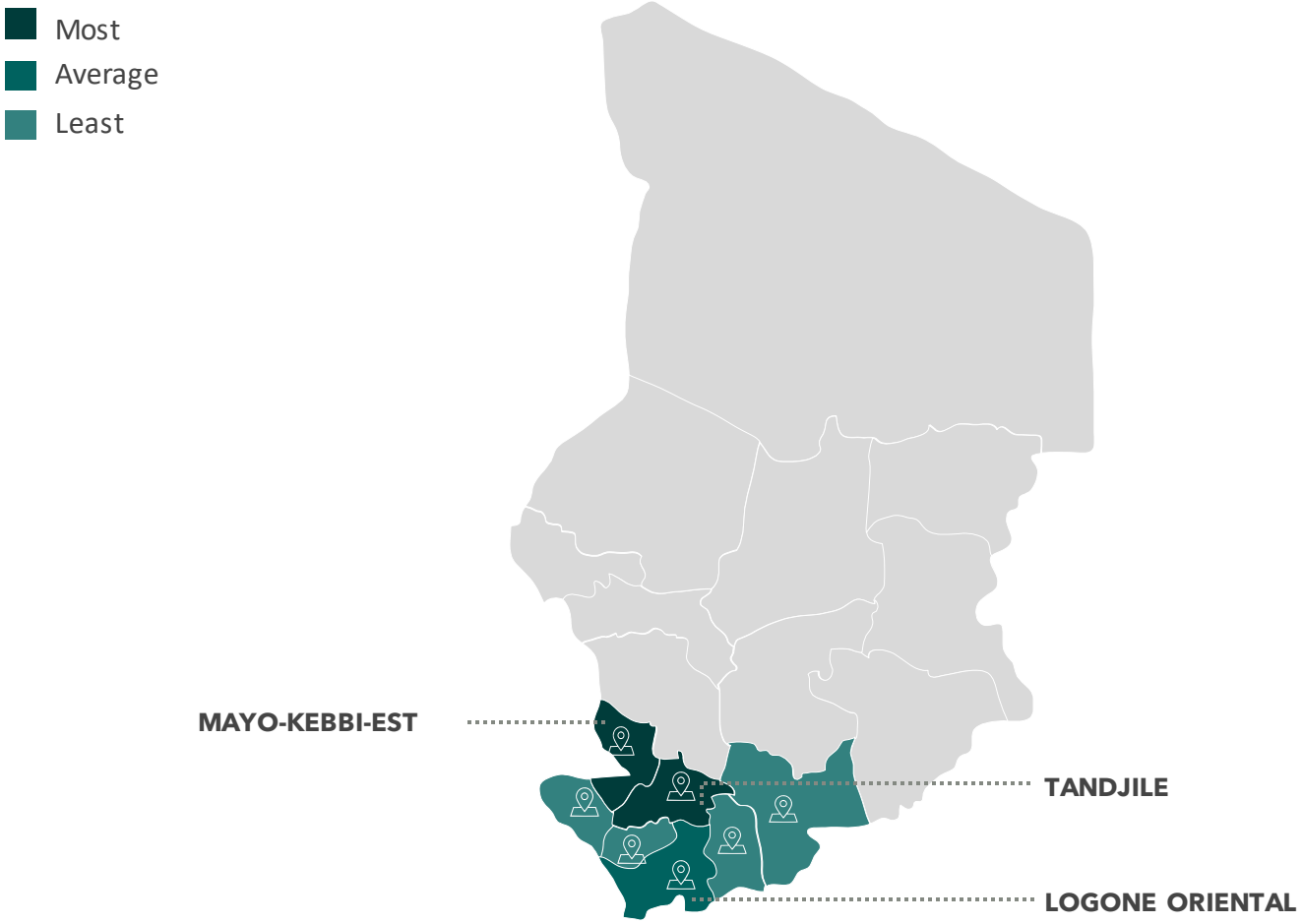
→ Crop Calendar

→ Stakeholder mapping

→ Margin analysis

→ Crop Profile & SWOT analysis

Map of areas where rice is most cultivated



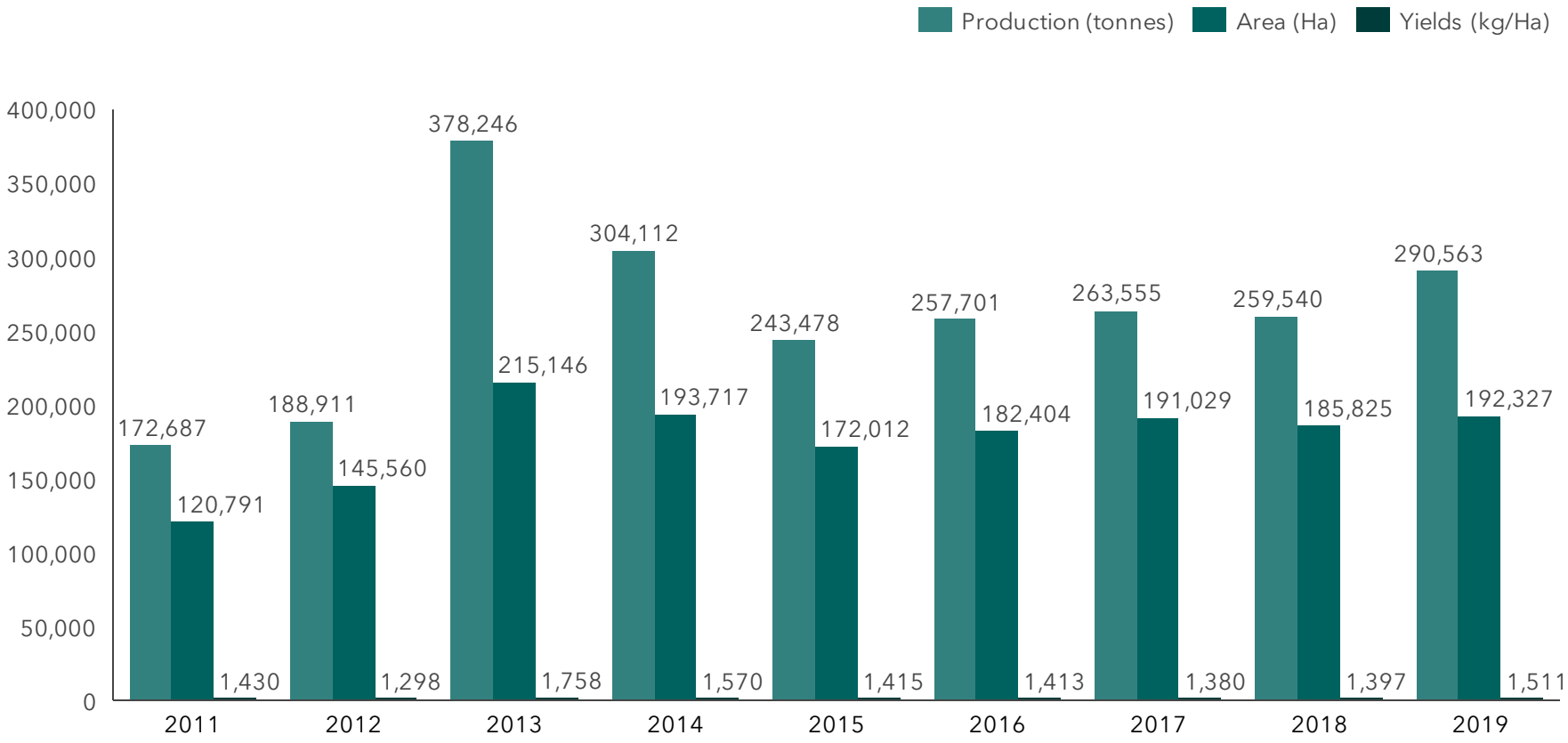
According to ITRAD*, rice is the fourth most cultivated cereal after sorghum, maize and millet. Like all agricultural activities in Chad, rice production remains essentially informal.

In the seven provinces covered by the current study, rice is grown mainly in the provinces of Mayo Kebbi East, Tandjilé and Logone Oriental. Production activities in the other provinces exist but are minor. The Logone floodplains of Tandjilé and Mayo Kebbi East provinces (Sudanian zone) account for most of the exploitable area of rice in Chad.

* Institut Tchadien de Recherche Agricole pour le Développement

We developed an understanding of how rice production has evolved in Chad

Rice production in Chad 2011 - 2019



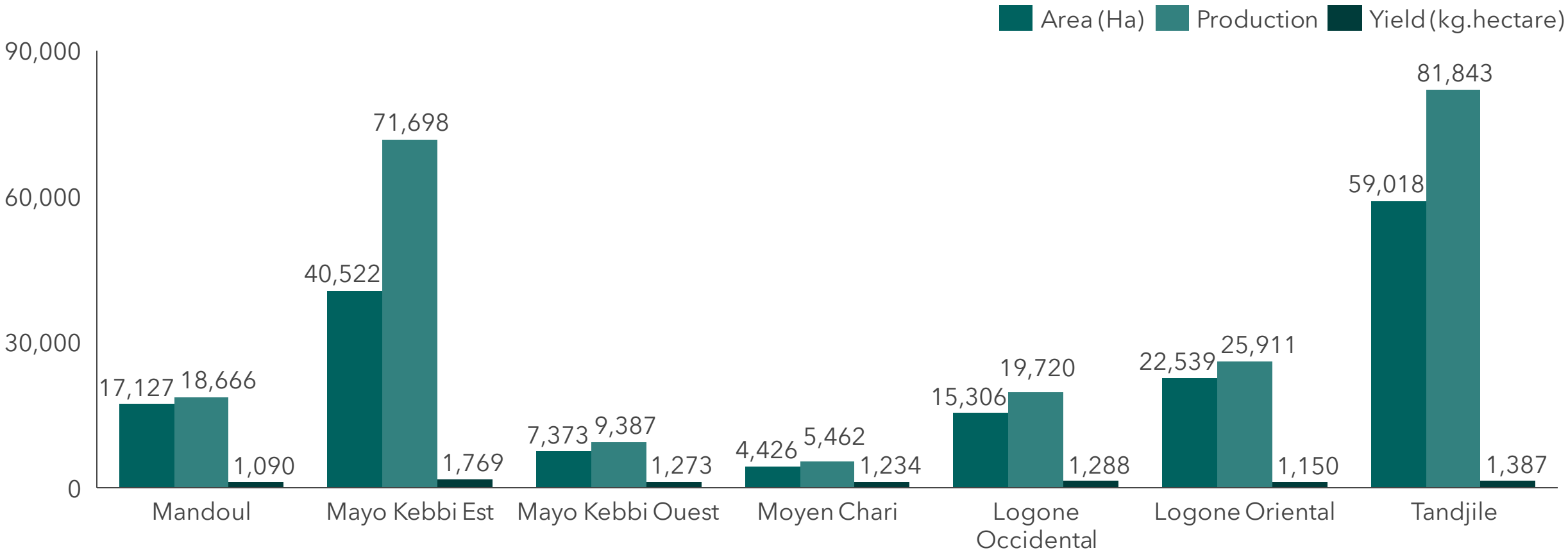
Following the evolution of policies to support rice production (creation of the National Food Security Programme (PNSA 2010) and the strengthening of the capacities of technical support services, rice production has continued to increase (Five-Year Agricultural Development Plan).

Growth rate (2011 to 2019) %.	Average annual growth rate (%)
68,26	7,58
59,22	5,66
5,66	0,63

DPSA, Crop year review report, 2019

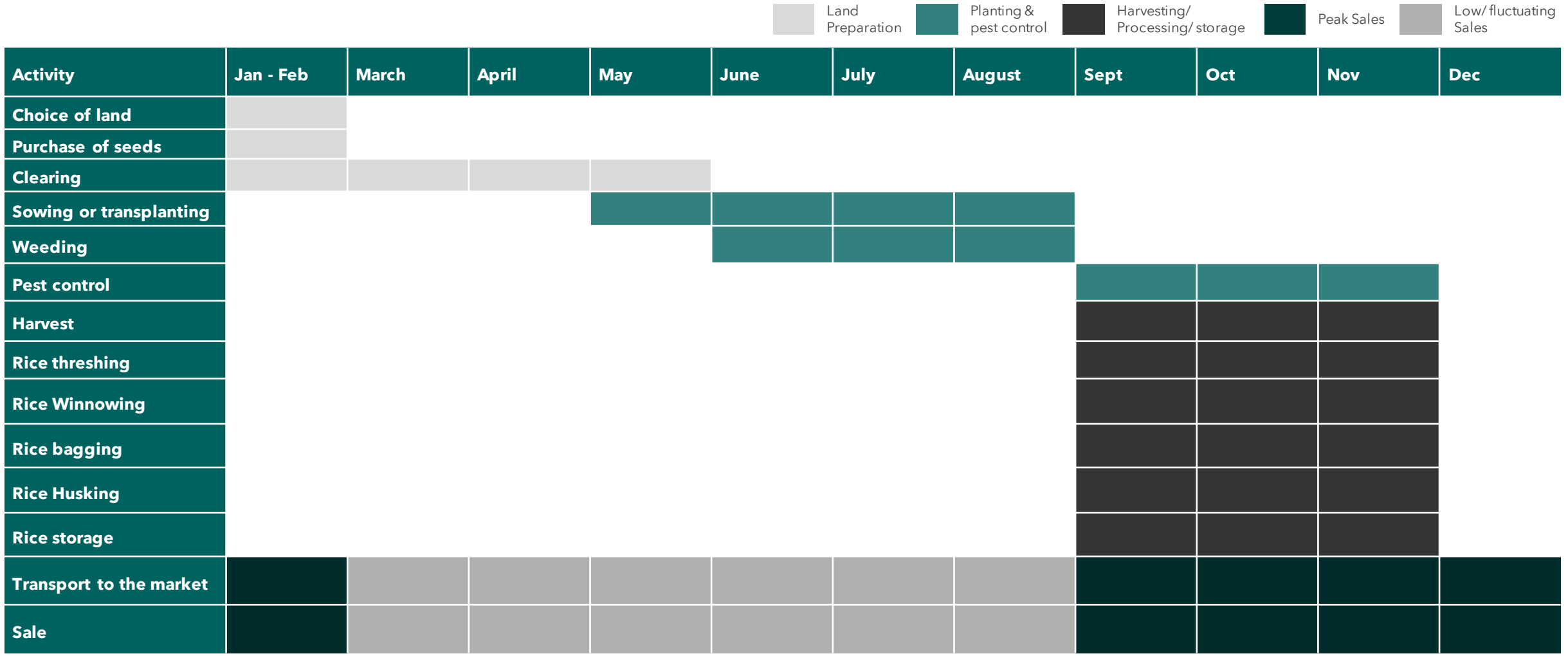
Rice production in the Southern Chad 7 provinces

Rice production in the Southern Chad 7 provinces 2020/2021

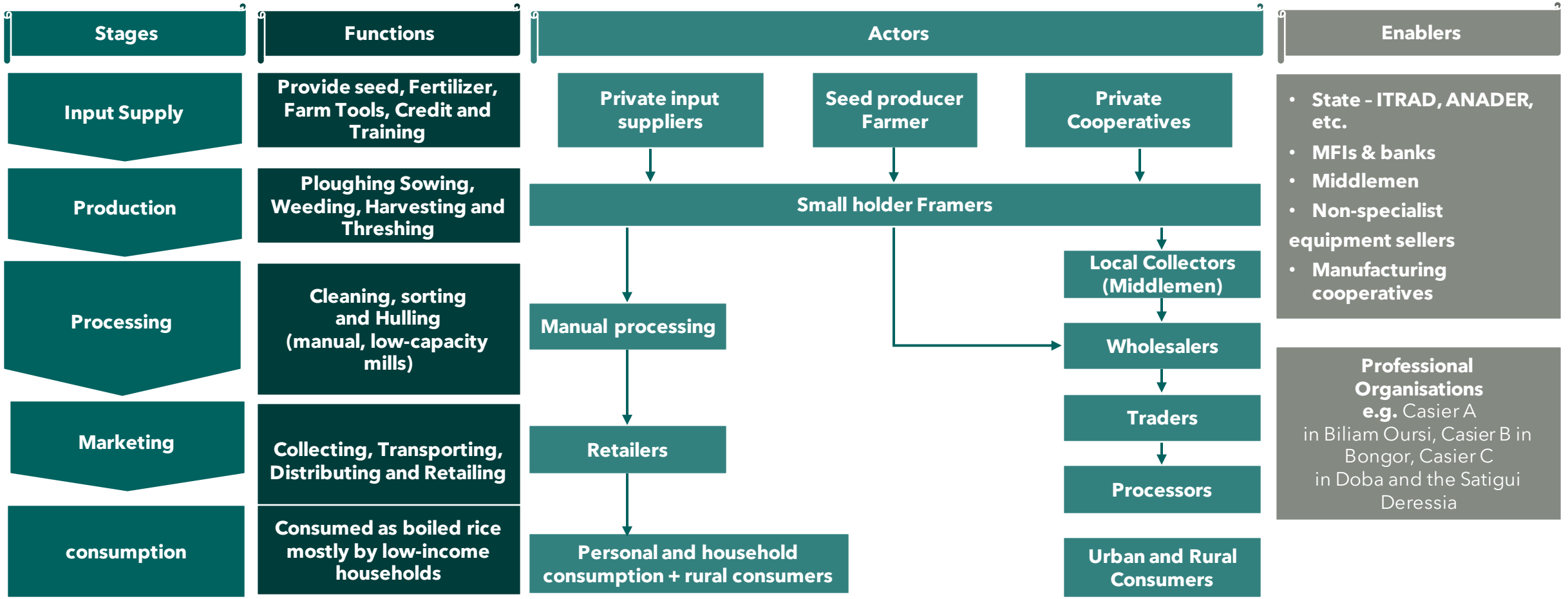


DPSA, Crop year review report, 2019

Based on our engagements with farmers and other relevant actors, we developed a rice value chain calendar …



… and a rice value chain stakeholder map, showing the process flow & stakeholders engaged



We collected data for a detailed margin and pricing analysis for the rice value chain (1/2)

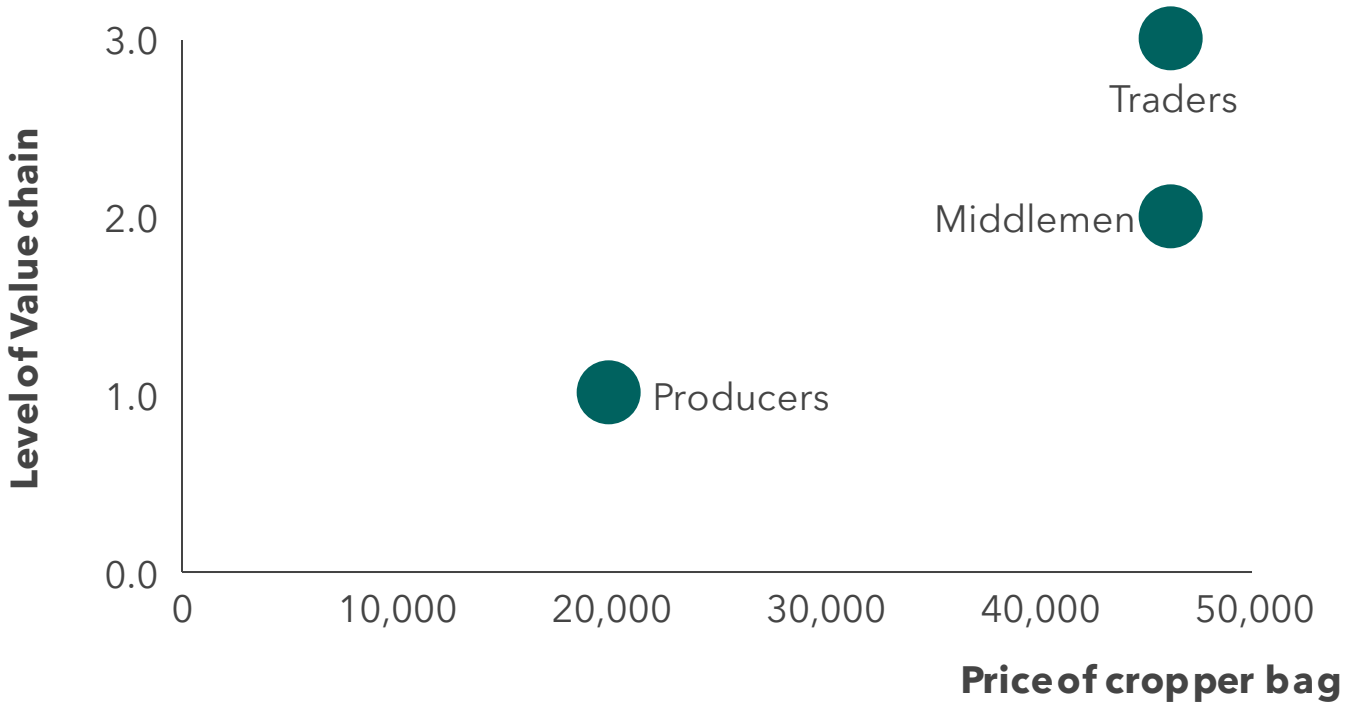
The average total cost of cultivating a hectare of rice is over 550,000 CFA

ONE HECTARE (1 HA) FARM ACCOUNT				
TYPE OPERATION	**UNIT**	**QUANTITY**	**UNIT COST**	**TOTAL COST**
RENTAL OF LAND	Hectare	1	15,000	15,000
SEED	Bag	1	30,000	30,000
FARM CLEARING	Ha	1	10,000	10,000
PLOUGHING	Ha	1	20,000	20,000
SEEDING	Ha	1	10,000	10,000
WEEDING (1)	Group/d ay	1	20,000	20,000
WEEDING (2)	Group/d ay	1	20,000	20,000
HARVESTING (cutting, drying)	Group/d ay	1	25,000	25,000
PILING UP	Pile	5	15000	75,000
THRESHING	Pile	5	20,000	100,000
WINNOWING	Pile	5	5,000	25,000
BAGS	Bag	30	350	10,500
BAGGING	Bag	30	250	7,500
WIRE ROLLER	Unit	2	600	1,200
TRANSPORT	Km	30	500	15,000
SHELLING	Unit	1	1200	1,200
WORKER'S FOOD TO PROVIDE	Package	1	75,000	75,000
PESTICIDES	Box	1	10,000	10,000
FERTILIZER	Bag	4	20,000	80,000
FERTILIZER APPLICATION	Unit	1	2,500	2,500
TRAVELING COST FROM HOME TO FARM	Package	1	20,000	20,000
MISCELLANEOUS LOSSES	Package	1	12,578	12,578
TOTAL				585,478

PRODUCTION VALUE		
Average yield in bags/ha	Average price per bag of paddy (FCFA)	Production value (FCFA)
35	20,000	700,000

We collected data for a detailed margin and pricing analysis for the rice value chain (2/2)

Pricing analysis for rice



Output: The average prices for each level of the value chain

Margin analysis for rice

Based on the pricing analysis, we carried out a margin analysis for relevant stakeholders

	Farmers	Middlemen	Traders
Average prices (CFA Franc)/ bag	20,000 CFA	46,200 CFA	46,200 CFA
Margins	16.4%	10.2%	70.96%

We combined all the above insights and built an in-depth profile for the rice value chain…

Strong | Room for improvement | Weak

Dimension	Score	Reason
Source of Income	🟡	• Farmers, traders can generate some income from selling the produce in the market. However, it is mostly sold in local markets or to smaller traders, and poor quality affects their margins
Household Consumption	🔴	• Considered a cash crop mainly for household consumption in Chad. There is not enough production locally to meet national demand. Chad imports 30% of its rice needs from Asia to make up for the shortfall
Weather suitability	🟢	• Weather and land is suitable for the value chain, with abundance of readily available irrigation water, with presence of areas suitable for irrigated and rainfed rice production
Input cost	🟡	• Seed and other inputs are very expensive, however ITRAD makes efforts to develop and provides seed producers with basic seeds for multiplication. Producers buy them to produce seeds that must be certified by Seeds and plants department (SPD).
Access to seeds & other inputs	🟡	• Seed and other inputs (fertilizer, weedicides) are available locally but not easy to access and cannot be easily imported. There is some effort to develop seeds locally, but the industry is still nascent and not matured
Labor demands	🟢	• Value chain labor intensive , however, there is sufficient and low-cost labor available in the rural areas where rice is cultivated.
Women & Youth engagement	🟡	• Women are moderately engaged (on average between 30% and 40%) throughout the value chain - from farming, trading, processing and others
Market access	🟡	• There exists a large market locally for the value chain. However, productivity is too low to meet demand, and quality is often a problem with farmers offering up to 20% discount on prices due to poor quality
Enabling environment	🟡	• There is some support from government, research institutions, mainly around seed production and regulation development. However, there is more room to build linkages between producers and consumers and support to build more processing units

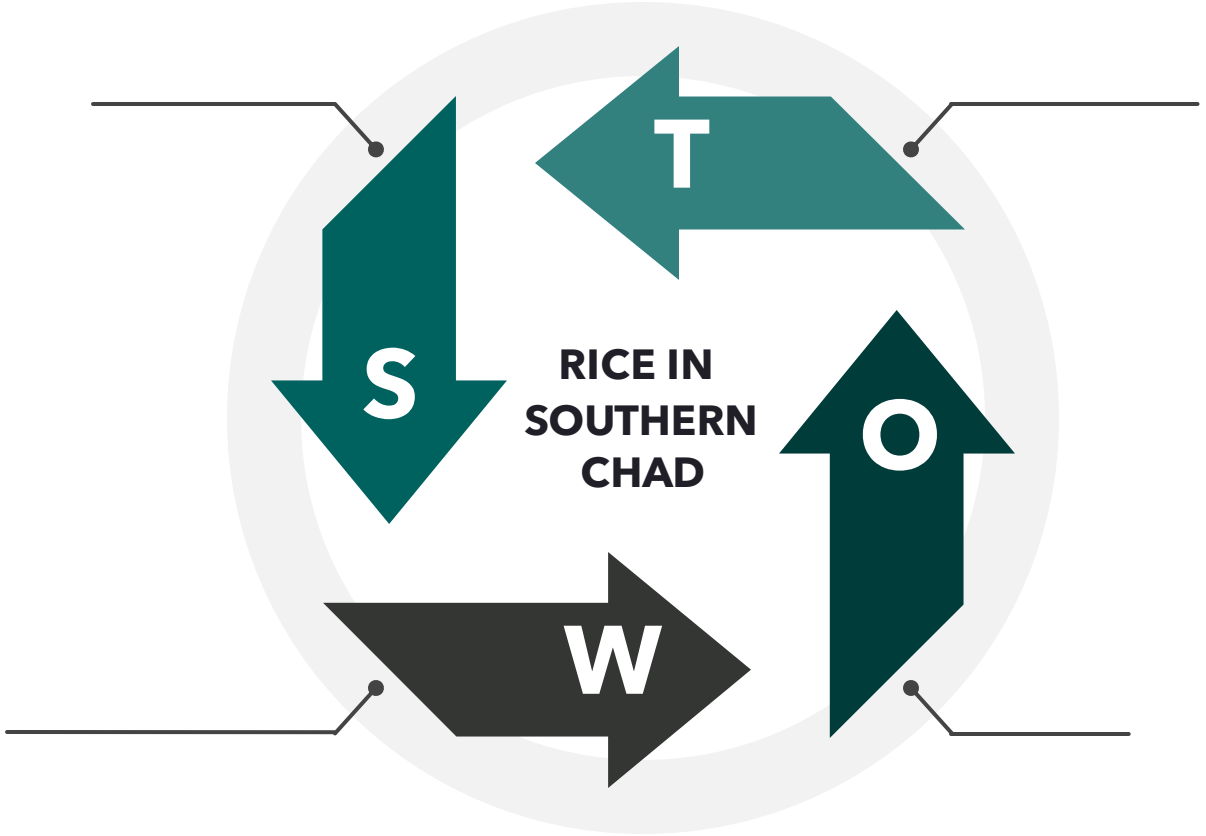
… and designed a SWOT analysis for the rice value chain

Strengths

- Availability of arable land
- Abundance of surface water for irrigation
- Sector has been growing steadily for several years
- Existence of improved seeds selected by ITRAD

Weaknesses

- Weak capacity of producer organizations to play their role as interlocutors of the production link
- Poorly structured sector
- Deficit in infrastructure maintenance (facilities, trucks, shops, etc.)
- Production does not meet national consumption demands



Threats

- Farmers at some level could get discouraged and abandon rice production because of interest rates set up by loan sharks and traders . This will imply further importation to meet national consumption needs

Opportunities

- Rice prices are more remunerative than other cereals
- Increased consumption of rice at the national level
- Availability of skilled labor at low cost
- Increase women engagement throughout the value chain

Agenda - Maize Value Chain Analysis

→ Production analysis – Geography & Volumes

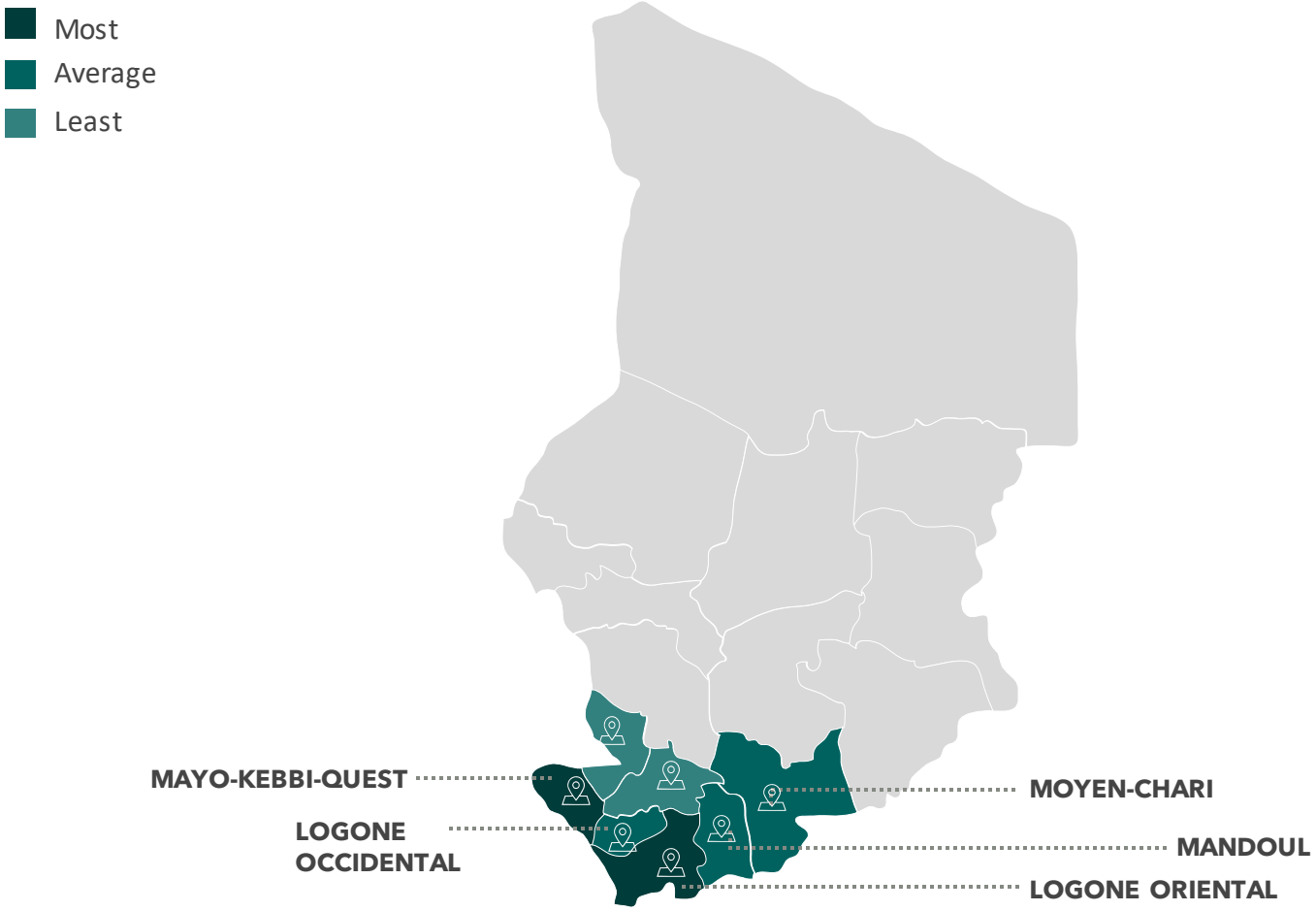
→ Crop Calendar

→ Stakeholder mapping

→ Margin analysis

→ Crop Profile & SWOT analysis

Map of areas where maize is most cultivated



In Chad, maize is one of the most popular cereals among Chadian households. According to ITRAD,

maize production is increasing in the south and east of the country. It is the second most grown cereal in Chad.

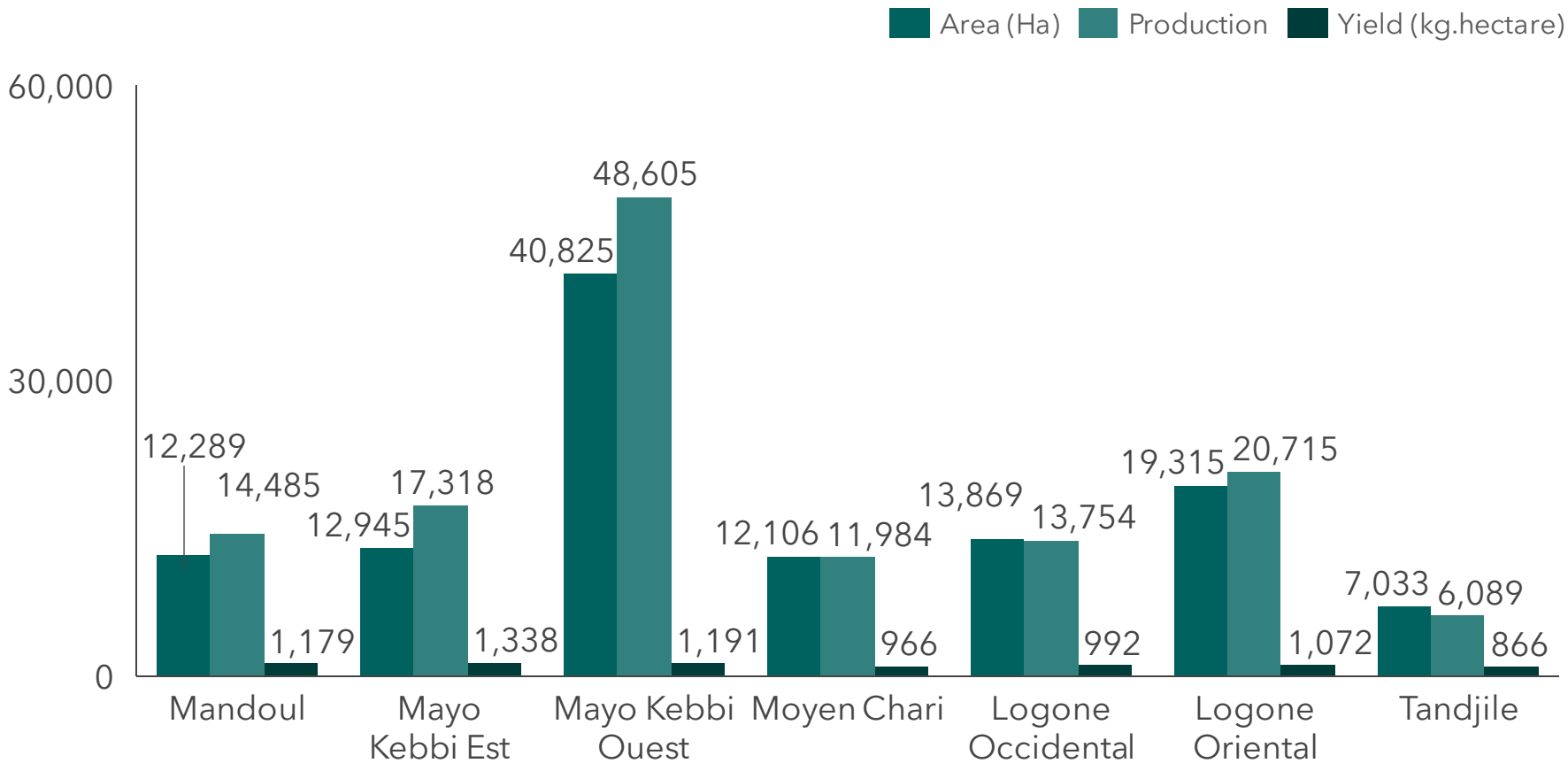
As with other agricultural activities in Chad, maize production is still informal.

Analyses of the ECOSIT3 report, jointly adjusted with the 2013 Five-Year Plan for the Development of Agriculture in Chad, show that the maize sector has made it possible to drastically reduce extreme poverty and gradually promote the development of family farming.

* Institut Tchadien de Recherche Agricole pour le Développement

Maize production in the Southern Chad 7 provinces

Maize production in the Southern Chad 7 provinces 2020/2021

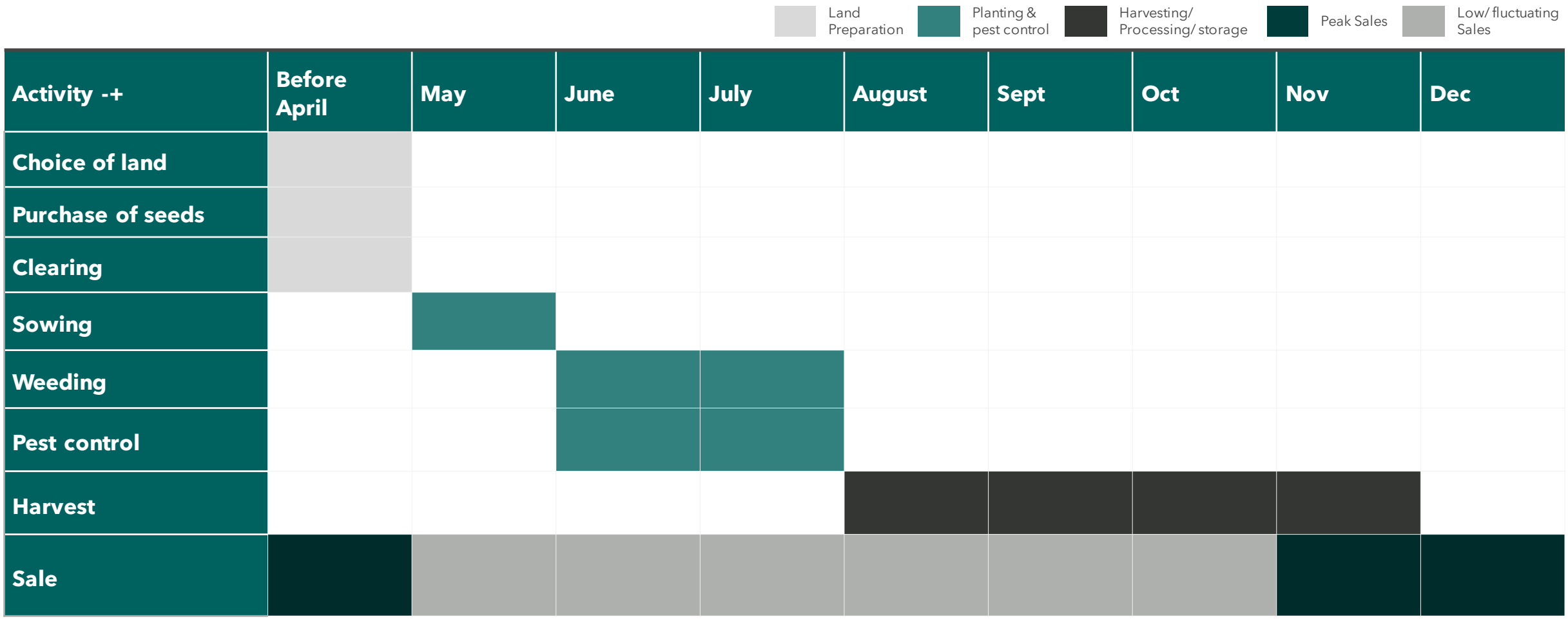


In most cases, the maize sector contributes to household food security and to the employability of women (those involved in operations such as storage, crushing, marketing etc.). Its exact share in the net contribution to national GDP is not always known. However, cereals as a whole are estimated to account for about 23% of national GDP.

The current study in the 7 target provinces, concerning the maize sector, shows that maize is most often grown in the provinces of Mayo Kebbi Est and Logone Oriental.

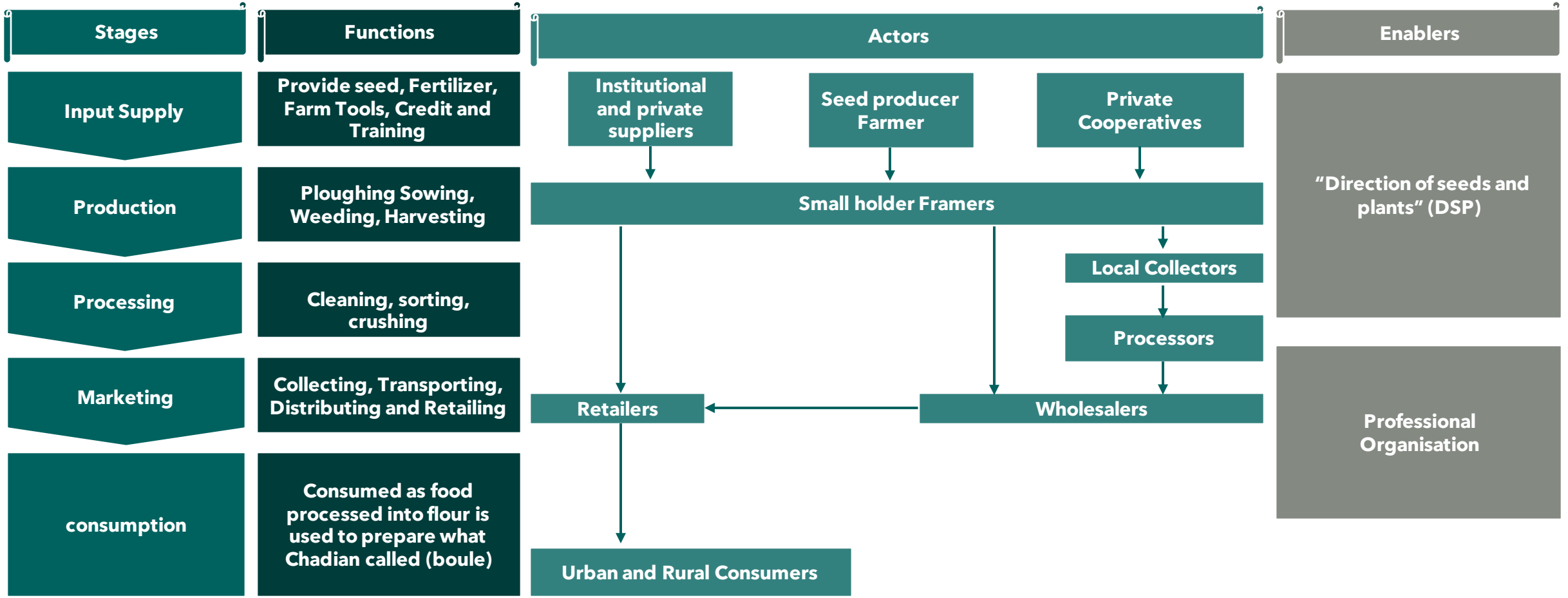
DPSA, Crop year review report, 2019

Based on our engagements with farmers and other relevant actors, we developed a maize value chain calendar …



Activity -+	Before April	May	June	July	August	Sept	Oct	Nov	Dec
Choice of land									
Purchase of seeds									
Clearing									
Sowing									
Weeding									
Pest control									
Harvest									
Sale									

… We designed a Maize value chain map, showing linkages among stakeholders



We collected data for a detailed margin and pricing analysis for the maize value chain (1/2)

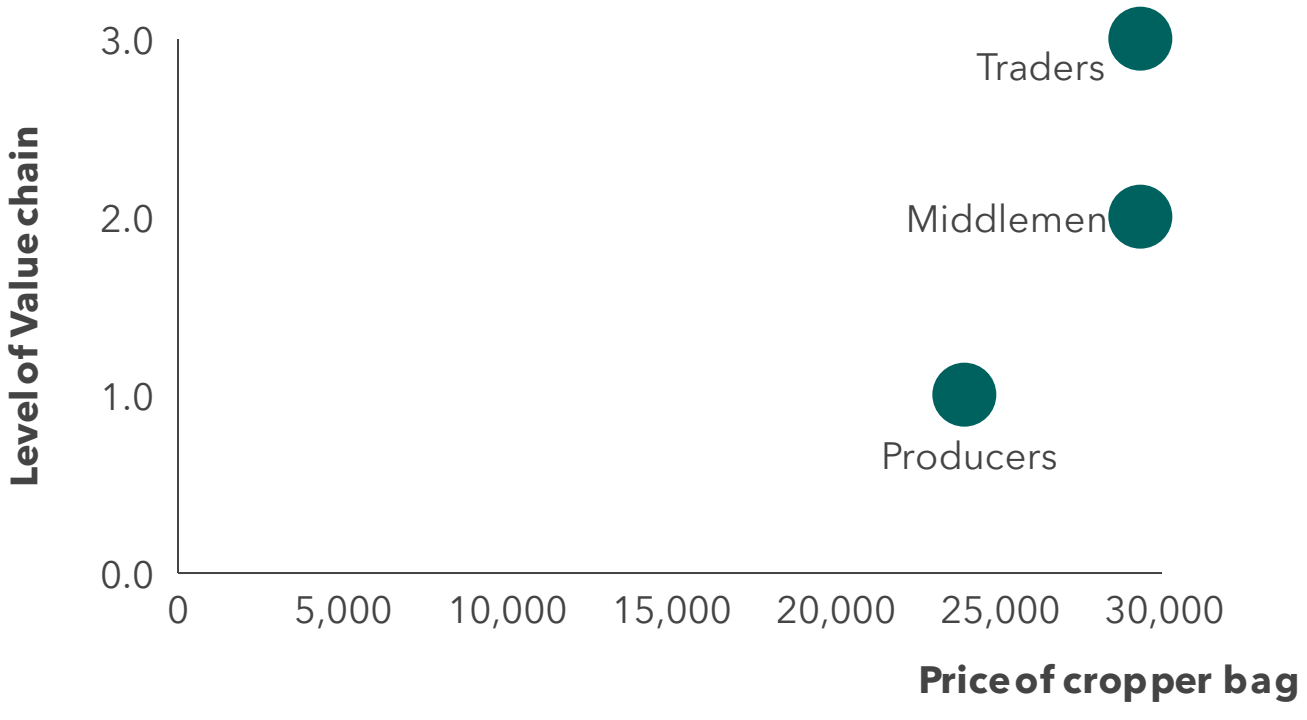
The average total cost of cultivating a hectare of maize is over 160,000 CFA

ONE HECTARE (1 HA) FARM ACCOUNT				
TYPE OPERATION	**UNIT**	**QUANTITY**	**UNIT COST**	**TOTAL COST**
RENTAL OF LAND	Hectare	1	10,000	10 000
SEED	Coro	25	750	18 750
FARM CLEARING	Ha	1	10,000	10 000
PLOUGHING	Ha	1	20,000	20 000
SEEDING	Ha	1	8,000	8 000
WEEDING (1)	Ha	1	15,000	15 000
WEEDING (2)	Ha	1	15,000	15 000
HARVESTING	Ha	1	10,000	10 000
THRESHING AND WINNOWING	Bag	25	2,400	60 000
TOTAL				166.750

PRODUCTION VALUE		
Average yield in bags/ha	Average price per bag of sorghum (FCFA)	Production value (FCFA)
25	24,000	600,000

We collected data for a detailed margin and pricing analysis for the maize value chain (2/2)

Pricing analysis for maize



Output: The average prices for each level of the value chain

Margin analysis for maize

Based on the pricing analysis, we carried out a margin analysis for relevant stakeholders

	Farmers	Middlemen	Traders
Average prices (CFA Franc)	24000 CFA	29400 CFA	29400 CFA
Margins	72.3%	21.4%	87.5%

We combined all the above insights and built an in-depth profile for the maize value chain

Strong Room for improvement Weak

Dimension	Score	Reason
Source of Income	🟢	• Farmers, traders can generate substantial income from selling the produce in the market, and has strong market potential beyond local markets
Household Consumption	🟡	• More than 100,000 tonnes were exported to other African countries (Cameroon, Central Africa, Congo, Gabon and Nigeria.) In recent years, the government has banned the sale of maize internationally, given its importance in local diet
Weather suitability	🟢	• Weather and land is suitable for the value chain, with abundance of readily available irrigation water, with presence of areas suitable for irrigated and rainfed sesame production
Input cost	🟡	• Maize requires high application of fertilizer. The state, through ANADER, sells products, especially fertilizer to producers at subsidized prices and provides free plant protection products
Access to seeds & other inputs	🟡	• There is some effort to develop seeds locally, but insufficient. ITRAD and the DSP are unable to meet the demand for seed from producers. According to ANADER agents in PALA, more than 80% of the seeds used are farmers' seeds
Labor demands	🟡	• Value chain labor intensive , however, there is sufficient and low-cost labor available in the rural areas where maize is cultivated.
Women & Youth engagement	🟡	• Maize sector contributes significantly to women employment as labor, retailers and local processors (usinf mortar and pestle to crash maize). There is room for improvement to involve women across other areas.
Market access	🟡	• Chad sometimes imports maize from the Far North of Cameroon via the MAÏSCAM company to make up the local shortfall. The volume of imports has decreased in recent years, as maize is now grown everywhere in the agricultural zones.
Enabling environment	🟡	• Besides seed & fertilizer support, there is very little support from government, research institutions, NGOs and development organizations, and little to no collaboration among other actors in the value chain

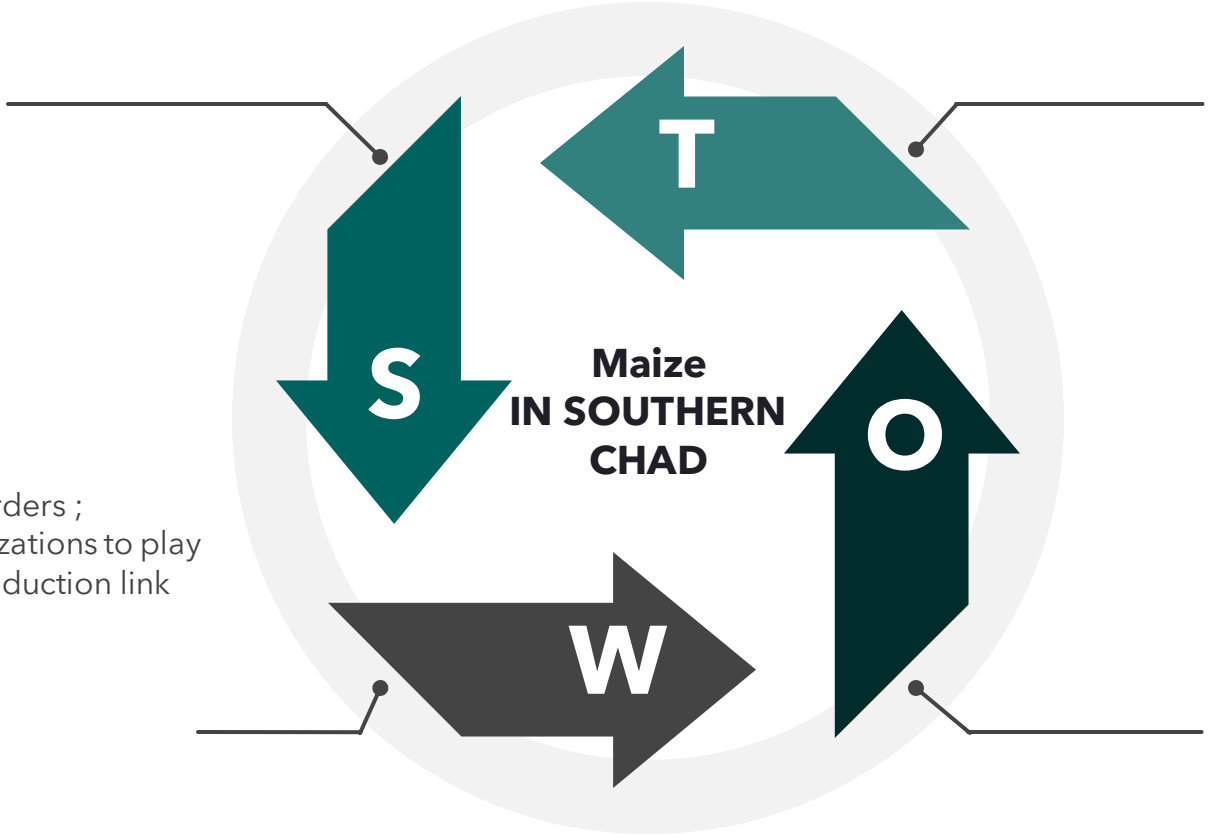
We designed a SWOT analysis for the maize value chain

Strengths

- Existence of improved seeds selected by ITRAD ;
- Large proportion of available land with sandy-clay soils suitable for maize cultivation;
- A sector that has been growing rapidly for several years.

Weaknesses

- Conflicts between farmers and herders ;
- Weak capacity of producer organizations to play their role as interlocutor of the production link
- Late or irregular rainfall.
- Climate hazards ;
- High post-harvest losses;
- Soil fertility



Threats

- Farmer-herder conflicts are a real bottleneck to the development of the maize sector in Chad;
- With the current rate of deforestation and the current plowing system, soil infertility will increasingly pose a threat to the development of maize cultivation.

Opportunities

- Area of high rainfall favorable to maize cultivation;
- Short-cycle maize in lean season management and resilience, grown on large areas in the 7 provinces;
- Arable land is available, as well as a skilled family and wage labor force;
- Maize prices are more remunerative than those of other cereals during the lean season

Agenda - Millet Value Chain Analysis

→ Production analysis – Geography & Volumes

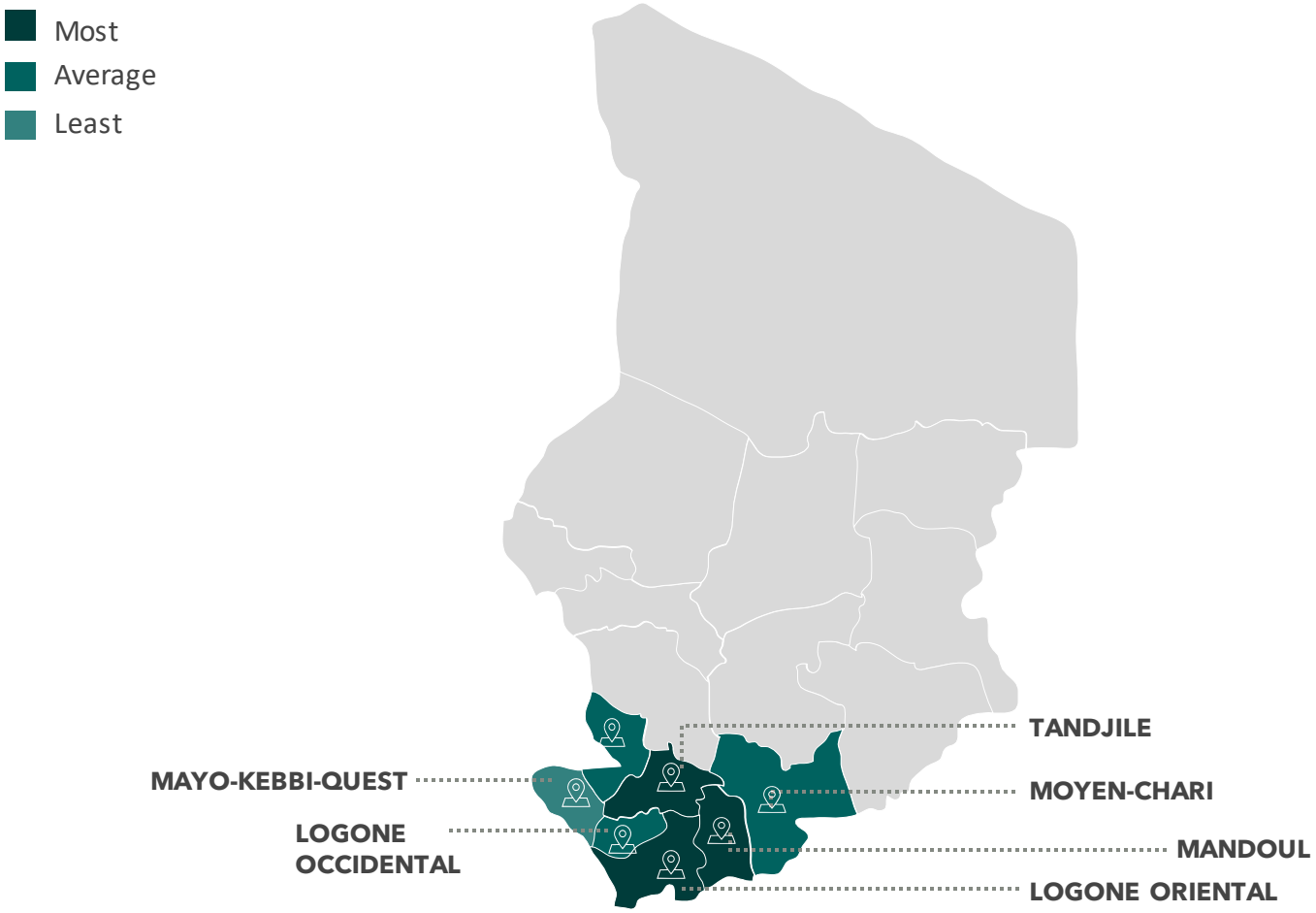
→ Crop Calendar

→ Stakeholder mapping

→ Margin analysis

→ Crop Profile & SWOT analysis

Map of areas where millet is most cultivated



Millet is one of the oldest agronomic group of grasses that serve as a nutritious staple food in the 7 provinces. The small millet variants are particularly suited to the Chadian climate, due to their resilience and ability to grow under marginal soil fertility and moisture conditions.

Before the introduction of improved corn seed, small millets use to be farmed by most farmers in theses regions because there was high demand of millet in big cities. According to Indian scholars, small millets are rich in polyphenols, antioxidants, and fibers that are important for healthy body functioning.

They also have the lowest glycemic index when compared to other cereals, such as rice and wheat, and has no gluten. In addition, cultivation of this crop has been recently shown to have the lowest global warming potential when compared to wheat, rice, and maize.

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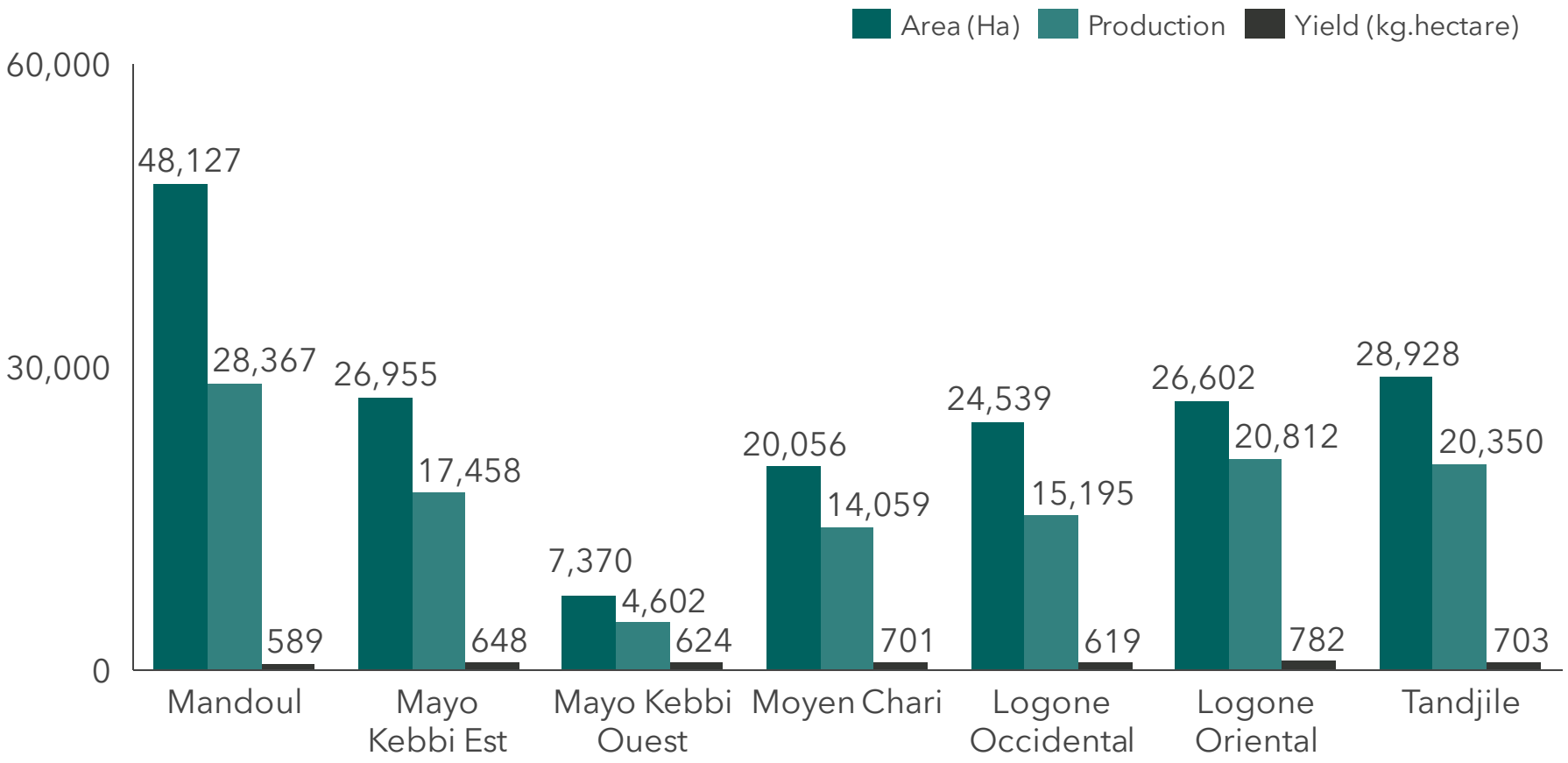
Millet production in the Southern Chad 7 provinces

Millet production in the Southern Chad 7 provinces 2020/2021

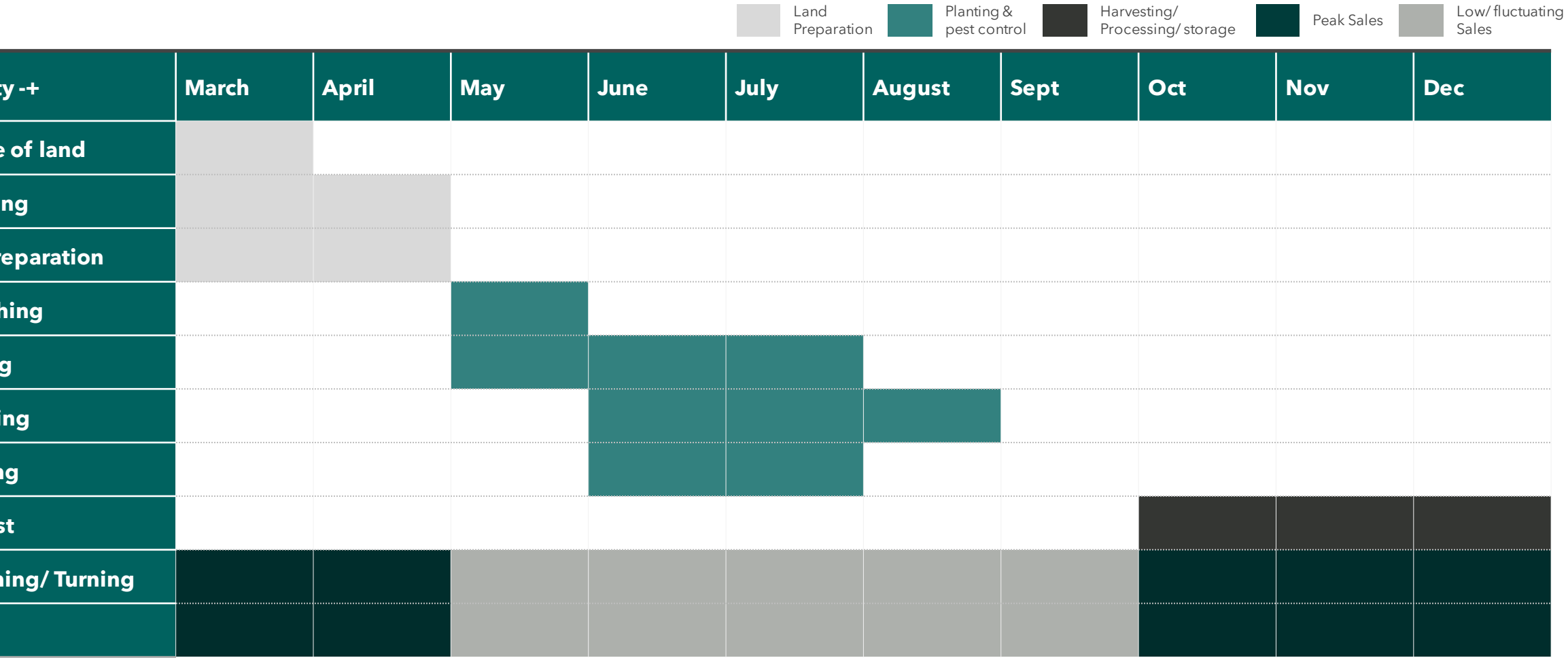


However, despite these substantial benefits, the small millets production has declined, due to several factors that can be attributed to a lack of demand stimulation, and a decreasing cultivation of small millets.

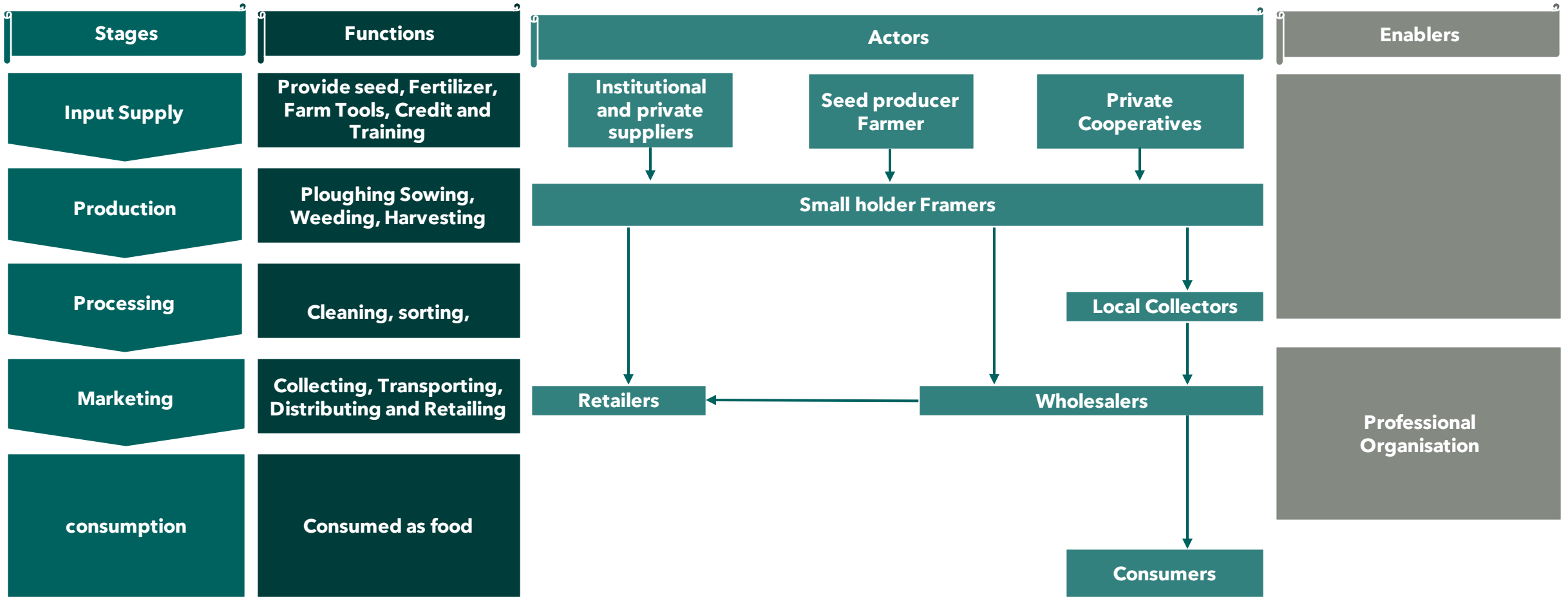
This situation has led to a perpetual replacement of small millets by other cereals, such as rice and wheat, in the diet of the population in those provinces. According to farmers, low demand for small millet in big cities is due to its high glycemic index compare to rice and corn, what reveals no to be true according to Indian studies.

DPSA, Crop year review report, 2019

Based on our engagements with farmers and other relevant actors, we developed a millet value chain calendar …



We designed a Millet value chain map, showing linkages among stakeholders



We collected data for a detailed margin and pricing analysis for the millet value chain (1/2)

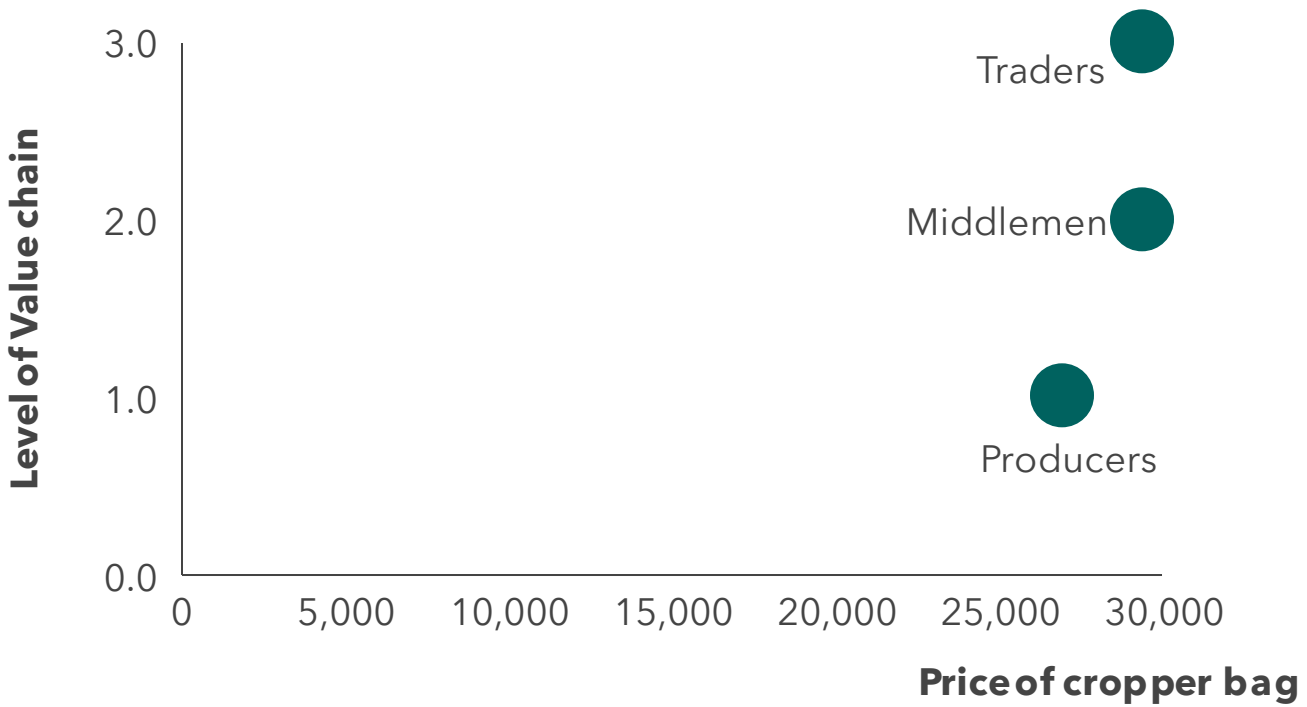
The average total cost of cultivating a hectare of sorghum is over 92,000 CFA

ONE HECTARE (1 HA) FARM ACCOUNT				
TYPE OPERATION	**UNIT**	**QUANTITY**	**UNIT COST**	**TOTAL COST**
RENTAL OF LAND	Hectare	1	10,000	10 000
SEED	Coro	2	700	1,400
FARM CLEARING	Ha	1	7,000	7,000
PLOUGHING	Ha	1	10,000	10 000
SEEDING	Ha	1	10,000	10,000
WEEDING (1)	Ha	1	20,000	20,000
HARVESTING	Ha	1	30,000	30,000
THRESHING AND WINNOWING	Bag	10	750	7,500
TOTAL				95.900

PRODUCTION VALUE		
Average yield in bags/ha	Average price per bag of millet (FCFA)	Production value (FCFA)
10	27,000	270,000

We collected data for a detailed margin and pricing analysis for the maize value chain (2/2)

Pricing analysis for maize



Output: The average prices for each level of the value chain

Margin analysis for maize

Based on the pricing analysis, we carried out a margin analysis for relevant stakeholders

	Farmers	Middlemen	Traders
Average prices (CFA Franc)	27000 CFA	29400 CFA	29400 CFA
Margins	64.5%	17.9%	87.5%

We combined all the above insights and built an in-depth profile for the millet value chain

Strong | Room for improvement | Weak

Dimension	Score	Reason
Source of Income		• The constant decrease in production and decline has an impact on the farmer's and trader's source of income
Household Consumption		• Millets production has declined, due to several factors that can be attributed to a lack of demand and decreased cultivation. This drop in consumption is mainly linked to the introduction of improved maize varieties, the collective belief that millet is the cause of diabetes and the decrease in millet yield per hectare
Weather suitability		• The small millet variants are particularly suited to the Chadian climate, due to their resilience and ability to grow under marginal soil fertility and moisture conditions
Input cost		• Millets are one of the oldest agronomic group of grasses that serve as a nutritious staple food in the 7 provinces.
Access to seeds & other inputs		• There is the existence of improved seeds selected by ITRAD
Labor demands		• The labour force used in the production process is of the family type. The value chain labor intensive is sufficient and low-cost available in the rural areas where cultivated.
Women & Youth engagement		• Millet sector contributes significantly to women employment as labor, retailers and local processors. There is room for improvement to involve women across other areas.
Market access		• There exists a declining market locally for the value chain locally. It is neither imported nor exported
Enabling environment		• Besides seed & fertilizer support, there is very little support from government, research institutions, NGOs and development organizations, and little to no collaboration among other actors in the value chain

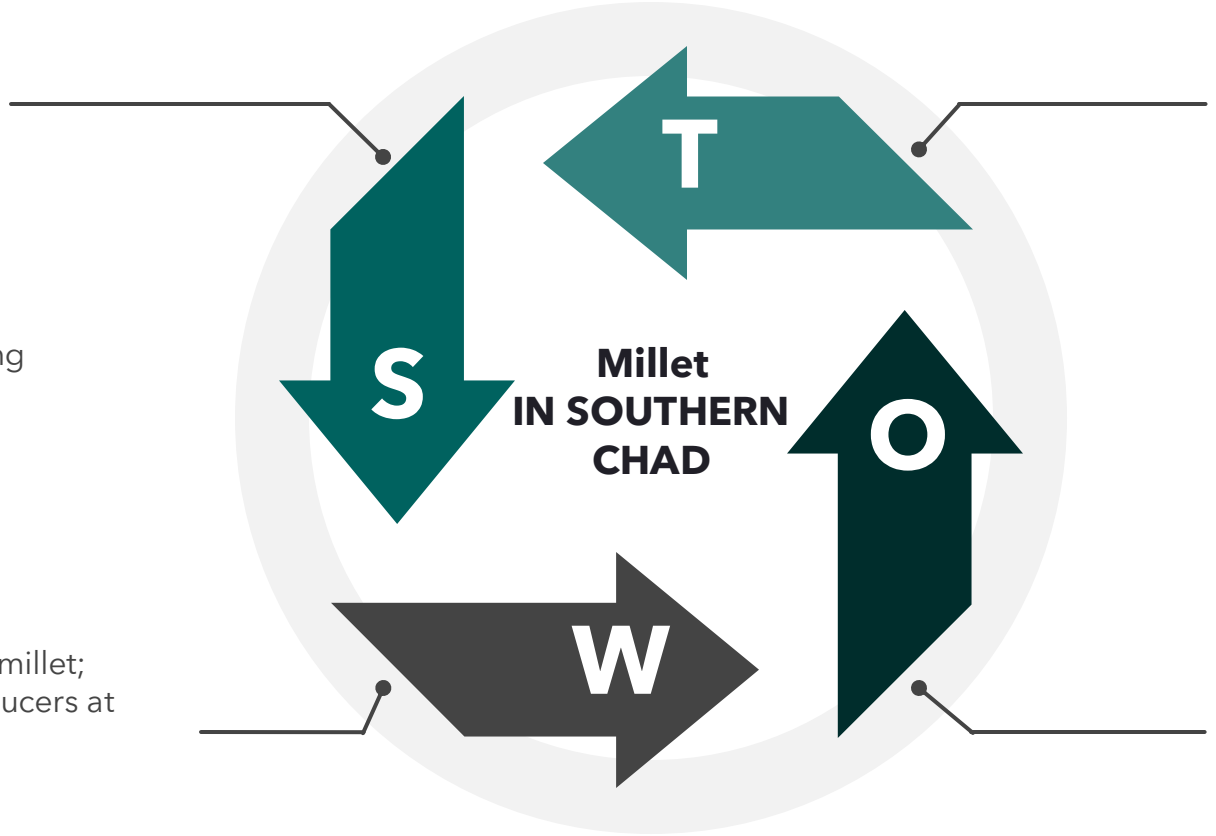
We designed a SWOT analysis for the millet value chain

Strengths

- Existence of improved seeds selected by ITRAD;
- Availability of arable land;
- Agricultural subsidies;
- Adaptation of varieties to production areas;
- Tolerance to drought pockets;
- Existence of improved high-yielding varieties;
- Participation in rural food security.

Weaknesses

- Low input use;
- Lack of irrigation;
- Degressive consumption of small millet;
- Lack of credit line to support producers at bank level;
- Extensive production system;



Threats

- Climate change ;
- Repeated conflicts between farmers and herders leading to a decrease in the yield of millet per hectare because of a late harvest;
- Lack of interest from farmers to continue millet production, which has less and less market.

Opportunities

- The importance of millet for lean periods and resilience;
- Arable land is available;
- Arable land are available ;
- Millet prices are cheaper than other cereals;
- Reintroduction of millet into the Chadian diet.

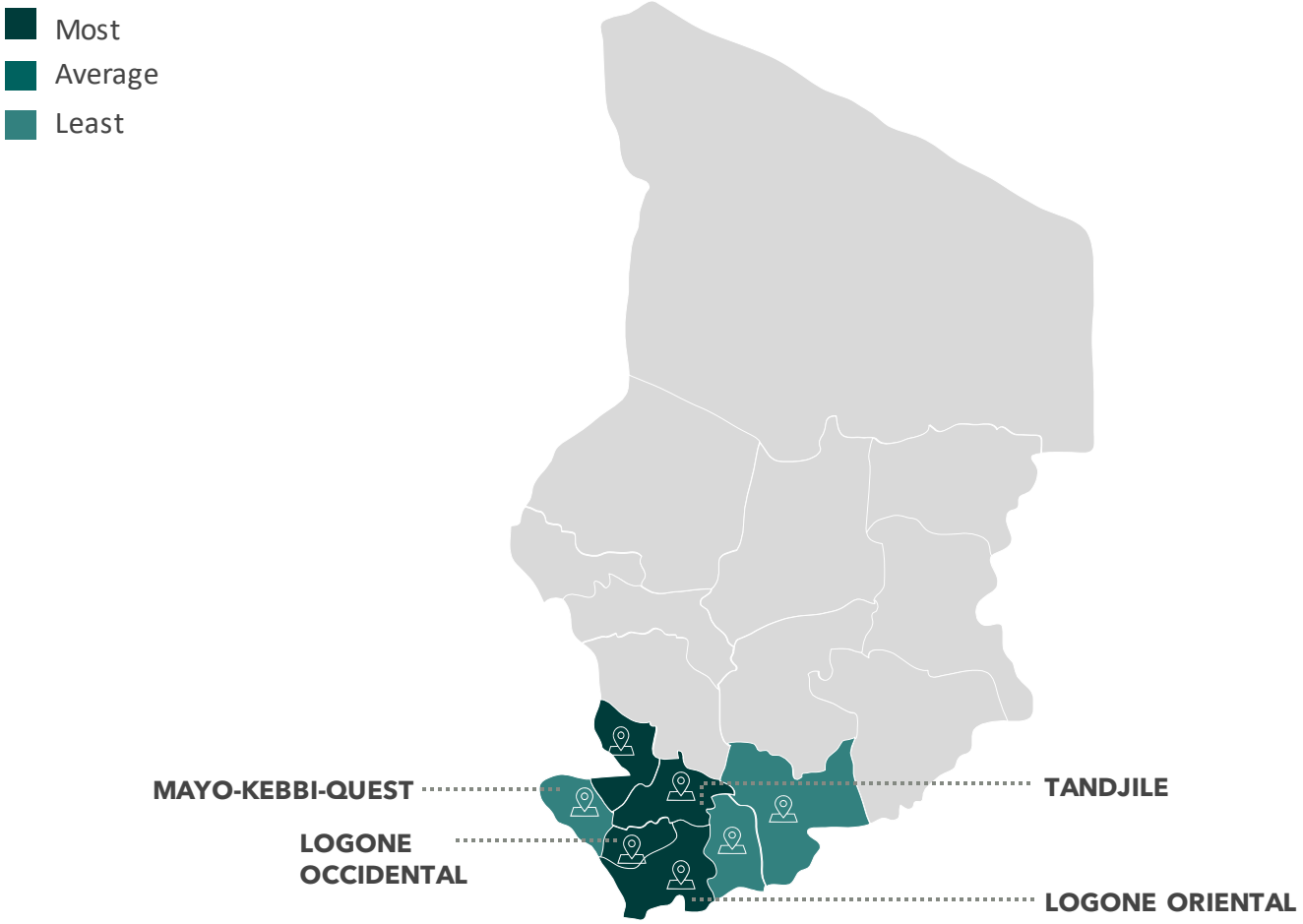
Agenda - Fonio Value Chain Analysis

→ Production analysis – Geography & Volumes

→ Consumption and production information in Chad

→ Crop Profile & SWOT analysis

Map of areas where Fonio is most cultivated



Fonio is a crop grown in a tropical climate with a dry season and average temperatures of 25°C to 30°C and rainfall of 800 mm to 1000 mm. Fonio is a highly appreciated culinary and dietary foodstuff. Very digestible, it is traditionally recommended for the diet of children, the elderly and people suffering from high blood pressure and diabetes in the provinces of Tandjilé, Western Logone and Eastern Mayo Kebbi where it is grown.

Fonio is generally grown on light soils (sandy to stony soils) outside the crop rotation. It is not very demanding and can be grown on poor soils or bad land, especially for the late varieties. Richer soils are used for the early varieties. Fonio can also be grown in rotation, often after rice, millet/sorghum or groundnuts.

Fonio is still mainly grown by hand. When the first rains come, it is sown "on the fly" on a superficially loosened soil at a density of 10 to 30 kg/ha. Some practice relatively dense sowing (30 to 50 kg/ha) to reduce weed pressure at emergence. The seeds are buried at a shallow depth by harrowing or covering with a daba. Germination is rapid and maintenance of the crop is limited to one or two weedings.

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Fonio consumption and production in Chad

Production

The Ministry of Agriculture does not have figures on fonio production. A social enterprise called "MOOS AFRIKA" is the institution that has conducted fonio surveys in the province of Logone Occidentale. According to the Director General of MOOS AFRIKA, fonio production can be estimated at around 100 tons a year in the targeted provinces

The market

It should be noted that fonio is very rare on the local market and is most often sold in Coro (2.5 kg). There are no fonio wholesalers because the production of fonio is very small. Fonio is harvested and transported by producers to the weekly markets. The price setting mechanism always follows the law of supply and demand. For fonio, at harvest time, the coro costs 2,500 francs and can rise to 5,000 francs in the rainy season. Producers, retailers and consumers regulate the fonio market

Consumption

Fonio is the staple food of people living with high blood pressure and diabetes in the large urban areas of Chad. Fonio is served in rural areas to malnourished children and elderly people. It is important to note that fonio is not very well known in Chad. It is now that the company MOOS AFRIKA is promoting it.

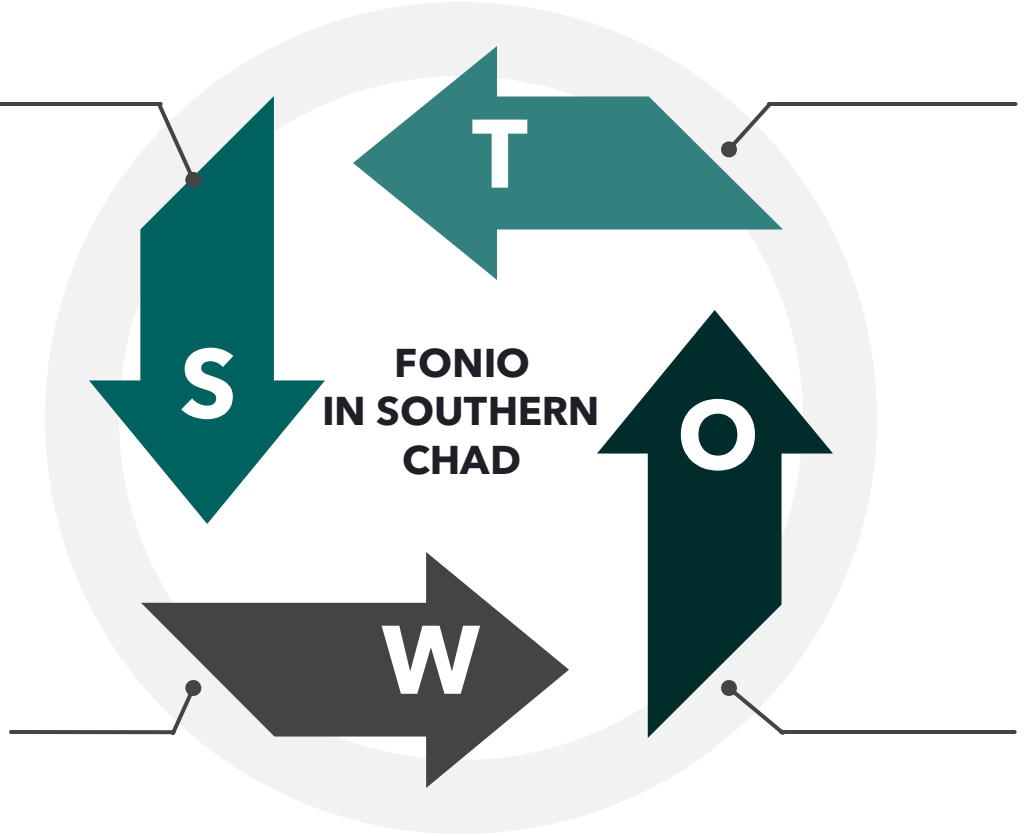
We designed a SWOT analysis for the Fonio value chain

Strengths

- Availability of arable land
- High demand for fonio by people living with high blood pressure and diabetes
- Available labour force
- Tolerance of pockets of drought;
- Capacity to create employment in rural areas;
- Participation in rural food security.

Weaknesses

- Poor mastery of the fonio technical itinerary;
- Fonio production on small areas;
- Production techniques remain traditional;
- Lack of support from ANADER to the fonio sector
- Lack of studies carried out by ITRAD on fonio.



Threats

- The devastation of the fields is a major obstacle to the development of the fonio sector in Chad;
- Soil degradation;
- The lack of organization of the fonio sector in Chad;
- Climatic hazards.

Opportunities

- Fonio is a global alternative against food insecurity;
- The cultivation of fonio is a real lever for development for the men and women of the production area;
- The demand for fonio is growing in the country;
- Fonio is a major solution to acute malnutrition in children.

Agenda

- Introduction & Executive Summary
- Background of Study
- Methodology and Process, Limitations & Challenges
- Highlights/Profiles of various actors
- Individual value chain analysis
- **Conclusion & Program Recommendations**

In summary, the three value chains most relevant to focus on for IDH are sesame, groundnut and shea

Strong (5 points) Room for improvement (3 points) Weak (1 point)

Dimension	Overall Score by dimension	Sorghum ~ 970,000 Tonnes/yr	Maize ~ 400,000 Tonnes/yr	Groundnut ~ 840,000 Tonnes/yr	Rice ~ 300,000 Tonnes/yr	Sesame ~ 200,000 Tonnes/yr	Shea ~82,800,000 trees	Millet ~ 1,100,000 Tonnes/yr
Source of Income	24 points							
Household Consumption	22 points							
Adaptation to climatic conditions & weather suitability	28 points							
Cost of production (input cost)	22 points							
Access to seeds & other inputs	18 points							
Labor demands & availability	30 points							
Women & Youth engagement	20 points							
Market access - export value	18 points							
Enabling environment for its development	26 points							
Overall score per Value Chain		35	31	35	29	35	35	31

We see opportunity areas that IDH can leverage for its planned interventions in Southern Chad for the 3 identified crops:

Major crops

- The most viable crops in ascending order are **Sesame, Shea and Groundnut.**
- These crops have substantial local demand, are currently exported, relatively easy to produce, adaptable to climate change and suitable for the weather and have a moderately efficient enabling environment

Major barriers

- Soil infertility
- Extinction of tress
- Lack of quality standards
- Fragmented market with no clear path to organization
- No fair market pricing
- Low production unable to meet demand
- Concentration of power with Wholesalers/ exporters

Opportunities to leverage links

- Though we did not identify any producer groups, we identified that **wholesalers are perhaps the most important actors** in the supply chain; they are **well funded and provide financing** at the beginning of each cycle. They also own their own processing plants and can sell to exporters.
- They are mostly **individual businesses or well structured organizations**, usually registered
- There are some organisations like **SWISSAID that provide structured support for farmers**, by putting them into cooperatives.
- We believe these are **opportunities IDH can leverage to provide further support and strengthen the ecosystem**

We have identified three first ideas for potential IDH interventions

Due to the ban on groundnut export, our recommendations are focused on the Sesame and Shea value chains

Based on the **potential for export markets, enabling environment, women engagement and IDH scope of intervention that can be value driven and sustainable**, we have 4 program recommendations for IDH's consideration, that we believe can be leveraged to **create viable Sesame and Shea value chains** in Southern Chad,

01 **Carbon offsetting program** for European sesame importers to cut on emissions through local semi-processing

02 **Regional Grains for Growth Program:** Regional partnerships & production development

03 **Shea processing & export development program** in collaboration with large cosmetics companies

1. Carbon offsetting program for European sesame importers

Value chain focus: Sesame

- Currently **94% of Sesame produced in Chad is exported to Turkey**, to companies like ADN COMPANY GIDA SANAYI and MEDITERRA AGRO TARIM TICARET ANONIM SIRKETI, and **the remaining to other European countries**.
- Chadian importers however cannot command desirable prices because their processing is sub–international standards. The importers must further process these crops prior to selling/export to final consumers/offtakers.
- We see an **opportunity to work with some of these importers to establish certified processing capacity of the Chadian exporters**, as processed goods are proven to reduce carbon emissions by up to 80% as they weigh less and burn less fuel, hence reduced emissions from this value chain.
- Given that **most European companies are now looking at Net zero and carbon emissions closely**, IDH can partner with some of these companies to have some of their processing happening in-country, and acquire carbon credits as a result

Program Development

- We have identified **11 local exporters who IDH can partner with for this program**. Please see page 35 for details on their estimated volume and value of exports. We engaged one (Tchadex) and have shared their insights on Page 26
- We have also identified a corresponding **list of importers who we identified as confirmed and potential companies who import Sesame from Chad**. Please see pages 36, 37 & 38. Exporters are unwilling to share details hence these were gotten from secondary research
- This will involve **extensive collaboration with other actors outside the value chain**, such as independent bodies who can assess the real carbon reductions resulting from processing in-country
- Importers in Europe would need to have buy-in with **well-designed cost-benefit analysis** of them self-processing **versus processing locally to earn carbon credits**

2. Regional Grains for Growth Program (G4G) with African partners such as Sudanese processor (Maghoub Sons Group)

Value chain focus: Sesame

A. Regional partnerships
Enhancing market access, capacity building and training

- Like the G4G program in Ghana, there is an opportunity to **develop a relationship with regional importers and companies who have large scale use for Sesame** such as Maghoub Sons Group (MSG), a Sudanese company with over 35 years' experience in agriculture – production, processing and packaging – that earns about 200million revenue per year

- MSG could be a **partner to IDH and provide sustainable support towards capacity building, training and aggregation to facilitate access to much needed financing** towards improving processing and production capacity of the Chadian companies. Since the output from the Chadian companies will directly feed its packaging in Sudan, where it produces Sesame bars for export.

- This will be a **self-sustaining approach** as MSG can continue even after IDH intervention is over.

B. Production development scheme
Farmer financing and engagement in collaboration with AfDB

- Wholesalers/exporters are currently the most powerful actors locally in the Sesame value chain. They mostly work with middlemen who are their representatives, providing financing to farmers and receiving payment in kind. They ran a system akin to out grower schemes.

- However, their support does not extend beyond financing. They also have need for improved quality produce and increased quantity from farmers.

- Like G4G, the relationship between exporters/wholesalers, middlemen and farmers can be re-structured, where middlemen act as extension officers, who provide training on best agricultural practices, especially towards enhancing soil fertility and improving the quality of produce. Partnership with AfDB will strengthen this partnership to provide enhanced financing and other support such as mechanization

3. Shea processing & export development program in collaboration with Unilever or other large cosmetics companies

Value chain focus: Sesame

- The **Shea value chain unlike Sesame is predominantly run by women**, from picking of Shea nuts to processing. Their main challenges to growth is lack of processing and access to market.
- Most of the **processing is currently manual and small scale.** Even though Chad has the largest land mass of Shea trees in Africa, it also has the lowest volume of processed Shea exporters.
- We see an **opportunity to design a program that continues the work SWISSAID** is doing via COFEMAK to provide processing resources for the women, which enabled them to export 30 tons in 2021.
- IDH could **leverage its relationship with large cosmetic producers such as Unilever** to build market access for the women in Southern Chad. This would encourage more women to engage in the sector and empower them by increasing their incomes.

Insights from COFEMAK

- The **cooperative was created in 2005 and comprises 59 groups with 700 women and 3 men**. These groups are divided geographically into 5 units, namely the kol unit, the kemkian unit, the matekaga unit, the koumra unit and the Biri unit.
- COFEMAK's main activity is the collection, cooking and drying of nuts, and the processing of the nuts into shea butter, which is carried out by the Koumra unit, which houses the processing plant. The operation in Koumra is carried out by 55 women members in the month who take turns. **The daily processing capacity of nuts per day is 10 bags of 100 kg per day or about 2.5 drums of shea butter per day.**
- The COFEMAK processing unit is also open to the public
- The biggest challenge is access to market. There are few local customersS because most Mandoul women process shea butter. At the regional and international level, COFEMAK has few contacts to reach the international market except through the SODEFIKA, a project financed by SWISSAID

Considerations for the future

Next value chains to look out for

- **Groundnut:** Groundnut used to be a cash crop produced for export until January 2022 when its export was banned due to food security concerns; it is worthwhile ***monitoring the regulatory development*** around this value chain
- **Sorghum, Millet & Fonio:** For a country that is struggling with soil infertility as a threat to its continued ability to produce food crops and cash crops, ***"climate-smart crops" like pearl millet and sorghum*** can be incredibly reliable. They typically do not require as much water to grow as other crops and can grow under challenging conditions . It could be worthwhile to pay attention to developments in these value chains in the future, for possible interventions

Sustainability of agricultural production

- While we currently have **identified opportunities to improve processing and market access**, it is worth noting that there are also critical challenges with production that need to be resolved, lest there will be little to no produce for processing and export
- **Soil infertility** has **consistently come up for every value chain as a challenge**, due to the poor agricultural practices by farmers in Southern Chad. Coupled with soil degradation, destruction by livestock and extinction of shea trees.
- Close attention should be paid to identify opportunities in the future to **leverage links in the value chain to improve these**, especially soil infertility

Africa Foresight Group

APPENDIX

We also developed rubrics for objective profiling producer groups to determine level of formalization (1/2)

Strong Room for improvement Weak

Management Processes	Indicator	Summary remarks
Operations Management		• Very glaring breaches of operations management best practices (eg; no/limited routine monitoring of machines, weak quality control methods)
		• The operations management is well aware of QC protocol but needs additional support to streamline QC across operations
		• Operations are optimized to maximize efficiency and there is a clear adherence to QC protocol across production, processing, warehousing, and transportation
Innovation & Digitization		• The SME strategy is understood only by management, and there are weak systems in place to routinely track and adapt the strategy
		• Management has a good idea of its goals and there is some system in place to routinely track and adapt strategy
		• There is a clear, documented, short-term and long-term strategy (3-year, 5-year) • The strategy is understood across the entire organization and the SME is effective at routinely tracking and adapting its strategy
Governance & HR Management		• There is no structured approach to track employee KPIs, and regular appraisals are not done with an existing board that does not have oversight of the key strategic decisions of the company
		• The management team has a system for employee appraisal that needs to be structured
		• Systems for hiring top talent are in place, and there is a clear structure and regular routine for employee appraisal and promotion, The SME has a board that meets routinely, makes key strategic decisions about the organisation and is also fully compliant with Ghana business regulations
Financial Planning and budgeting		• The company relies mainly on manual financial reporting procedures
		• Systems for tracking financial decisions and budgeting are in place, but need additional support to be robust
		• The company is effective at tracking the results of its financial decisions and taking corrective actions and has a robust budgeting and financial reporting system aligned with the strategy

We also developed rubrics for profiling producer groups to determine level of formalization (2/2)

Strong Room for improvement Weak

Operations	Indicator	Summary remarks
Farmer selection	🔴	No documentary evidence of most of the following: procedure for community entry and sensitization, farmers willingly registering and gender policy in farmer selection and preferably farmers working in groups of 5 – 25 members
	🟡	Documentary evidence of some of the following: procedure for community entry and sensitization, farmers willingly registering and gender policy in farmer selection and preferably farmers working in groups of 5 – 25 members
	🟢	Documentary evidence of most of the following: procedure for community entry and sensitization, farmers willingly registering and gender policy in farmer selection and preferably farmers working in groups of 5 – 25 members
Out grower mgt/ contracting	🔴	No or very little Evidence of the following: written contract on agreed terms, level of support services (seed, fert, mechanization, extension and recovery) and fairness and accountability clauses
	🟡	Evidence of some of the following: written contract on agreed terms, some level of support services seed, fert, mechanization, extension and recovery and fairness and accountability clauses
	🟢	Evidence of most of the following: written contract on agreed terms, support services seed, input, mechanization, extension and recovery and fairness and accountability clauses
Provision of inputs	🔴	No or very little input support to contract farmers
	🟡	Evidence of Provision of some level of input support (Seed, fertilizer, agrochemicals etc) to contract farmers
	🟢	Evidence of High level of input support (Seed, fertilizer, agrochemicals etc) to contract farmers
Provision of mechanization	🔴	No or very minimal provision of equipment/machinery support services to contract farmers
	🟡	Provision of some level of equipment/machinery support services to contract farmers
	🟢	High level of equipment/machinery support services to contract farmers
Field mgt /Extension	🔴	Promotion /dissemination of GAP with little or no inclusion of other support services with very high farmer to extension agent ratio
	🟡	Promotion /dissemination of GAP with inclusion of some level of support services (inputs, mechanization and market linkages) with low to medium farmer to extension agent ratio
	🟢	Extension service that go beyond promotion/dissemination of GAP to include services like, inputs, mechanization and market services with lower extension/farmer ratio