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Value Chains Assessment in the Central African Republic

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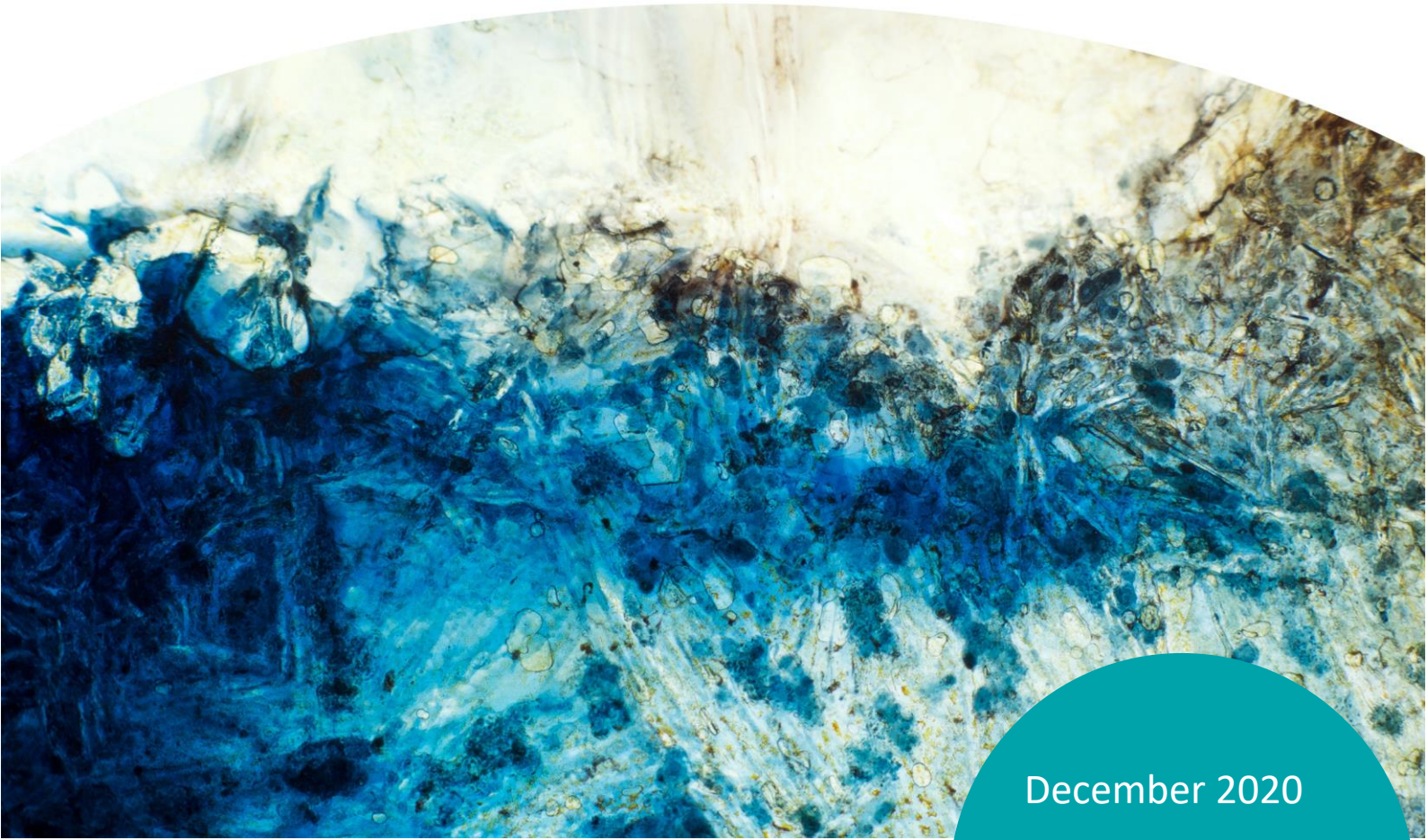

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1. Executive Summary

This assessment and mapping of gold and key agricultural value chains in Central African Republic (CAR) was commissioned by the 'PACE' consortium (www.pace-consortium.org) partners Fifty Eight, War Child UK and World Vision. The overall goal of the assessment is to improve the PACE consortium's understanding of and insights into the barriers and opportunities to expand and improve livelihoods for the local population within the gold value chain and key agricultural chains, as well as to address the challenges around worst forms of child labour connected to them. -

The mapping and assessment was conducted in two stages in order to accommodate restrictions caused by the Covid-19 crisis. The first stage (February – April 2020) included the development of a draft report based on desk based review of existing literature, supplemented by key stakeholder interviews in Bangui, Bossangoa, Bocaranga and internationally. The second stage (May – September 2020) involved the development of a final report, enhanced by field research in Bossangoa and Yaloke (the latter location was chosen after conflict dynamics made research in Bocaranga unfeasible). The field research used qualitative approaches and methods only, building on recent quantitative studies on gold supply chains in CAR, as well as previous work on agricultural value chains and livelihoods.

The report presents the different stages of the gold value chain in CAR from mining to export and further downstream, comparing the regulatory framework with the reality of gold flows and actors involved in gold mining and trade. It then describes both the primary and secondary activities in the value chain, profiling the actors involved, providing a view of livelihoods and revenues at each stage, and highlighting barriers and opportunities related to this. The report shows how gold mining and value chains are connected and integrated with other livelihoods in CAR, not only through secondary and auxiliary services, but through prefinancing and re-investment cycles.

The main driver of child labour in gold value chains is poverty, with children having to support themselves and their families to have enough to eat, but also to pay for expenses such as school fees. In addition, there are several other push and pull factors involved, such as a lack of access to primary education and a dysfunctional school system, which has been compounded by the school closures during the Covid-19 crisis. Furthermore, a lack of access to care services for the youngest means small children accompany their parents to mine sites. For the older children, another key driver is personal ambition and the hope of escaping rural livelihoods and gaining cash to access to consumer goods. Lastly, social norms play a role and could be harnessed to address child labour. There are implicit norms around what tasks children of which age can take on at a mine site. Mine managers, traditional leaders and local mayors, together with the parents, seem to have the power to influence the situation, though are not using this effectively at present. At the same time, traders and buying houses within CAR are aware of issues around child labour, but for the most part do not ask any questions about it in their business transactions.

In terms of governance, there is a regulatory framework for ASM in CAR, though its implementation is hampered by the lack of resources and capacities of government institutions, as well as unclear or overlapping mandates. The gold mining sector therefore remains informal to a large degree. The same is the case for gold trade, with the majority of gold traded informally out of CAR. The gold trade is currently treated through the same regulatory requirements as the trade in diamonds, something which the Government is seeking to change. International requirements and standards around due diligence in gold supply chains are rarely implemented, and on the level of gold mine sites and local traders, the concept of due diligence is virtually unknown.

Beyond gold, agricultural production and related value chains are key livelihoods and economic activities for large parts of the population in CAR. While subsistence farming dominates for households with poorer

backgrounds, there are opportunities for selling products to local markets, especially the growing mine sites and urban centers. Based on an assessment of market demand, potential for value addition, and involvement of a large part of the population in the value chain (including vulnerable households), the report analyses the value chains of peanuts, and cassava, as well as sand and gravel extraction and brick making. In the agricultural chains, children are mainly involved in tending the fields (sowing, weeding, harvesting) to support their family, as well as in processing and trading or selling at markets or door to door. In sand extraction, children are mainly involved in carrying, loading and transporting, and are working at brick making operations.

The following provides a summary overview of key challenges and opportunities in each of the value chains examined in this report, including key areas for potential interventions, as well as an overview of the types of child labour occurring in each:

Economic activity	**Obstacles to improving livelihoods**	**Opportunities for improving livelihoods**	**Presence of child labour / WCL**
Gold value chain: Artisanal gold mining and gold trade	Informality of mining and trading Uncertainty and unpredictability of income / revenue Low incomes for daily labourers (often women) Dependency on informal (pre-)financing, including smuggling networks Inefficient and often unsafe prospecting, extraction, and processing techniques Health & safety risks increasing household expenditures Limited value addition and refining in producing areas	The ASGM sector is booming and high international prices are increasingly translated upstream Integration with other economic sectors and livelihoods through cross-financing; provides a viable market for agricultural value chains Government has a high interest in formalisation & other partners are already working on it **Areas of intervention**: supporting workers' organisation and voice, access to formal or local financing mechanisms, improved mining & processing techniques, enhance local value addition, support secondary/auxiliary services	U-12: Often present but not working, some auxiliary tasks such as carrying water, selling food, etc 12 – 14: as 14 -18, though less involved in digging 14- 18: digging and removing overburden (boys), transporting/carrying ore, crushing, washing ore (both), moto taxis, fuel provision (mainly boys), petty trade, restaurants & food provision (mainly girls)[1]; carving handles for tools (both); blacksmithing (boys)
Cassava (especially flour) Peanut (especially paste)	Small subsistence producers which are not members of associations Seed production and storage difficult	Both a subsistence and a cash crop, cultivated for economic profitability and food availability. High demand on mine sites and larger towns, including Bangui.	U-12: Supporting on family farm (sowing, weeding, harvesting) – both girls and boys 12-18: Supporting family farms and production (both), carving handles for

[1] Evidence on sex work or sexual exploitation is inconclusive and viewed differently by different stakeholders, including on what constitutes 'sex work' or 'sexual exploitation'.

	Price & demand fluctuations between seasons Risk of spoiling stock during the rainy season, insufficient storage and packaging Costly and difficult transport and storage, value addition facilities	Women involved in value addition and trading, with existing associations and credit/loan schemes **Areas of intervention**: Support or form farmers / traders collectives; support existing forms of credit/loan schemes or access to formal finance; access to equipment (roasting stoves, mills, skinning machines); improve storage and packaging; enhance market links & transport; training and capacity building on business skills, financial literacy, etc	tools (both); blacksmithing (boys); processing and value addition (roasting, milling et), packaging, carrying / transport and trading (market stalls, door to door) (girls)
Extraction of sand and gravel; brick making	Uncertainty and unpredictability of income / revenue, including due to seasonal variations in demand Low incomes for daily labourers (often women) Storage and stock management during the rainy season Costly inputs (firing oven) and transport Health and safety risks increasing household expenditures	High local demand in construction industry fuelled by reconstruction after conflict and increased incomes from the gold sector Value is added locally using local equipment and tools, and value chains are short and transparent **Areas of intervention**: Support existing or form collectives, support existing forms of credit/loan schemes or access to formal finance improved stock management and storage; improved and safer ovens; transport cost sharing	U-12: Often present but not working, some auxiliary tasks such as carrying / transporting, bringing food and water 12-14: as 14 -18, though less involved in digging 14-18: Digging and diving, bagging sand, carrying/transporting and loading trucks, mixing mass and filling in brick forms, supervising the oven

The report provides more detailed recommendations for interventions in each value chain, summarised under the 'key insights' chapters, as well as in the conclusions. These include recommendations for support of specific sub-groups depending on age and gender, as well as more detailed descriptions of potential support activities or interventions that can be implemented by the consortium.

2. Table of contents

3. Acronyms

AMPR	Artisanal Mining and Property Rights Programme (USAID)
ASM	Artisanal and Small-Scale Mining
ASGM	Artisanal and Small-Scale Gold Mining
BECDOR	Bureau d'evaluation et de controle de diamant et or / Office for the evaluation and control of diamond and gold
CAR	Central African Republic
CRAFT	Code of Risk-mitigation for ASM engaging in Formal Trade
DFID	UK Department for International Development – now Foreign, Commonwealth and Development Office
DMCC	Dubai Multi-Commodities Centre
EU	European Union
FAO	Food and Agriculture Organisation
GODICA	Programme on Responsible sourcing of gold and diamonds from CAR (EU/Enabel)
ILO	International Labour Organisation
IPIS	International Peace Information Service
LBMA	London Bullion Market Associations
OECD	Organisation for Economic Cooperation and Development
RJC	Responsible Jewellery Council
RMI	Responsible Minerals Initiative
UAE	United Arab Emirates
USAF	Unite anti-fraude – Anti-Fraud Agency
USAID	United States Agency for International Development
USD	United States Dollar
WGC	World Gold Council
XAF	Central African Franc

4. Background and objectives

This assessment and mapping of gold and key agricultural value chains in Central African Republic (CAR) was commissioned by the 'PACE' consortium led by 50Eight, War Child UK and World Vision. The assessment is to inform and support their implementation of the Effective Approaches in Ending Worst Forms of Child Labour (EAPEC) programme financed by DFID.

The overall goal of the assessment is to improve the PACE consortium's understanding of and insights into the constraints, capabilities and potential to expand and improve livelihoods opportunities for the local population within the gold value chain and key agricultural chains, as well as to address the challenges around worst forms of child labour connected to them. To do so, this assessment aims to provide a detailed map of the gold and key agricultural value chains from source to market, including a description of the key actors, the primary and secondary activities conducted at each stage, insights into income and revenues, the interrelation between formal and informal markets, and the presence of children in the chains.

The assessment focusses on two main areas where consortium partners are already active, namely Ouham and Ouham Pende in north-western CAR. Its main focus is on the gold value chain, supplemented by a discussion of how this sector interrelates with other livelihoods, and a shorter presentation of key agricultural value chains and other economic opportunities in these two areas.

5. Conceptual framework

5.1. Approach

This value chains assessment adapts and builds on general value chain mapping approaches that have been developed in business administration as well as in the agricultural and mining sectors.[2] The assessment examines the following elements that are commonly included in value chain mappings:

- Mapping of primary activities in a value chain, i.e. activities directly associated with the end product. This includes value addition activities.
- Mapping of secondary or auxiliary activities along the supply chain, i.e. the tasks connected to the primary activities but not directly associated with the final product. These can be inputs, services, tools and machinery, etc. This also includes mapping different types of economic linkages associated with a primary activity.
- Identification and mapping of all actors involved at each stage in the chain, for both primary and secondary activities. This includes mapping their relationships, and highlighting the areas where child labour occurs (in particular worst forms of child labour).
- Mapping the flow and transformation of the product through the different stages of the value chain, including barriers and challenges within this flow.
- Mapping the flows of money and finance within the value chain, i.e. prices and payments related to the product, primary activities, as well as secondary activities, including barriers and challenges within this flow.

[2] E.g. DFID 2008: Making Value Chains Work Better for the Poor – A Toolbook for Practitioners of Value Chain Analysis. Another overview of value chain analysis resources and tools can be found here: https://www.marketlinks.org/using-value-chain-development-wiki

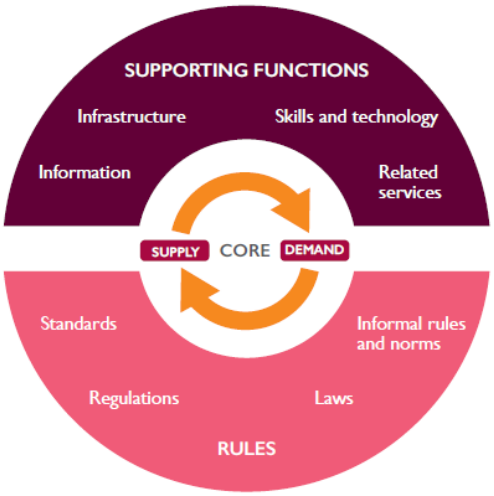

Figure 1: Market system illustration. Source: DFID and SDC, 2008: The Operational Guide on Making Markets Work for the Poor Approach.

- Mapping of the skills and knowledge at each stage, insights into employment and revenue distribution, as well as into opportunities and barriers for youth income generation and employment.

Underpinning this value chains mapping is the perspective of a market systems approach.[3] This means that this assessment attempts to look beyond the value chain and also analyses the two key elements surrounding and underpinning a market or a supply chain:

A) The supporting functions, i.e. skills and technology, services and infrastructure. This can overlap with the analysis of secondary activities in the value chain as described above, but also includes an analysis of infrastructure or initiatives around skills development, capacity building and vocational training, for example, as well as access to financial services (credit, loans, savings) or the existence of cooperatives or other organisations and initiatives established with the aim of improving and enhancing the sector.

B) The 'rules', i.e. the governance of a sector, including the formal regulations and laws, and the informal norms and understandings between supply chain actors. This includes social norms and behaviours influencing the value chain and how the actors behave in it, including regarding child labour.

5.2. Methodology

The research for this report was conducted in two stages in order to accommodate international and national restrictions caused by the Covid-19 crisis. The assessment used mainly qualitative approaches, building on recent quantitative studies on gold supply chains in CAR, as well as previous work on agricultural value chains and livelihoods.

The first stage (February - April 2020) involved the following steps:

- Development of the research framework and tools, including semi-structured interview and focus group guides for all actor groups and submission of an inception report
- Conducting desk based research based on secondary sources and literature
- Conducting initial key stakeholder interviews and focus group discussions through a variety of channels, including: Interviews in Bangui by two local researchers, remote interviews by phone, interviews in Bocaranga by the World Vision team on the ground, interviews in Bossangoa by the researchers of the University of Columbia, as well as inputs and information provided directly by the livelihoods officers and wider teams of World Vision (Bocaranga) and War Child UK (Bossanga). A list of interviews can be found in the Annex.
- Submission of a draft report with initial recommendations, which was taken as the basis for a strategy discussion with the PACE consortium to define next steps.

The second stage (May– September 2020) involved the following steps:

- Adapting semi-structured interview guides to the gaps identified in the draft report

[3] E.g. DFID and SDC 2008: The Operational Guide – Making Markets Work for the Poor Approach.

- First field mission in Bossangoa (6 – 13 August 2020)
- Second field mission in Yaloke (31 August – 7 September 2020). While the second field mission was originally planned for Bocaranga, the resurfacing conflict dynamics and involvement of armed groups in mining sites around that location, meant that Yaloke was chosen as an alternative site for field work. Yaloke also hosts activities by the consortium members and was more easily accessible than Bocaranga.

A list of interviews and focus group discussions conducted during these two field missions can be found in the Annex. In this report, it is highlighted where information is related to Bossangoa, Bocaranga or Yaloke, and it is to be noted that facts from one location may not be the same at another location.

Due to delays in the research plan and logistical challenges, in particular caused by the rainy season, the field missions to Bossangoa and Yaloke only included a limited scope of mine sites. The information and data collected therefore only provides a qualitative snapshot and should be taken as indicative only. Ideally this initial report should be complimented with in-depth insights into specific mine site dynamics once the programme is considering selecting gold mining sites to implement activities at.

6. Gold value chain

This chapter presents the gold value chain in and from CAR, including the value chain stages and geography, primary and secondary activities and actors involved in them, the involvement of youth and children, interrelations with other livelihoods, a view of the governance and regulatory framework, support services and infrastructure, a description of key impacts of the Covid-19 crisis, and a summary of insights and recommendations.

6.1. Background and context

THE GOLD SECTOR IN CAR

Gold is produced in 10 of CAR's 16 prefectures, almost exclusively through artisanal and small-scale mining (ASM), which accounts for 98% of production.[4] In recent years, gold mine sites with large mining populations have emerged, attracting hundreds of miners. Examples of such sites are Sangha mine near Bocaranga, Willy in Korom-Mpoko (Ouham), Gaga-Yaloké (Ombella-Mpoko), Ndolobo and Moboma (Lobaye) in the western part of the country, and Ndassima, Rafaï, Bakouma in the east.[5] The large majority of gold is produced artisanally even on those large sites, and semi-mechanised production was estimated to account for only 7% only in 2018.[6] A few semi-mechanised gold mining companies have started operations in recent years. These are often connected to foreign investors and have been reported to cause large social and environmental impacts,[7] as they frequently operate under a semi-mechanised license when in fact their production methods would fall under industrial mining.[8] Gaining access to these larger semi-mechanised sites has proven difficult for recent studies due to conflict dynamics and other factors, and hence there may be increased mechanization, and related negative impacts, that are currently out of sight.

[4] Interview with Jules Yaganza, 10.04.2020
[5] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[6] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[7] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[8] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

It is estimated that CAR now produces approximately 5,720kg of gold per year.[9] However, official production data is not available.[10] Official gold exports amounted to only 142kg in 2018[11], and to 359kg in 2019 according to statistics from BECDOR (Bureau d'Evaluation et de Contrôle de Diamant et Or, under the Ministry of Mines).[12] This divergence points to a high level of informal extraction, trade and export. Two recent studies estimate that at least 95% gold is smuggled and traded informally out of the country.[13] Gold production also remains largely informal: In 2019, there were only a total of 25 active permits for ASM gold mines (semi-mechanised permits only) across the country, whereas in 2018 there were 70 (7 artisanal permits, 63 semi-mechanised permits),[14] while a study from 2018 estimated a total number of 9,809 mine sites producing gold in the country.[15] Despite this, the rise of the gold sector in recent years is visible even in the official export figures, which amounted to only about 30-40kg per year prior to 2016.[16]

The Government of CAR reportedly earned 247,574,174 XAF (approx. 410,052 USD) in revenues from the 359 kg of gold exports in 2019. But of these, nothing was redistributed to the Provinces, as the tax allocation key does not include provinces and municipalities.[17] Despite this, a baseline study on the ASM sector (both diamonds and gold) from 2018 estimated that ASM might inject around 30 billion XAF (54,458,400 USD) into rural economies in CAR annually[18], with additional multiplicator effects in other sectors of 45 billion XAF (81,687,600 USD). Despite the widespread informality of gold exports, which result in lost revenue for the state, this value injected indirectly also benefits the state, in the form of VAT on goods that are consumed by using this income.[19]

The artisanal gold sector in CAR has been growing ever since the political crisis and conflict in 2013. It is an emerging sector, with around 50% of artisanal miners only having started this activity in 2014. [20] There are several reasons for this new emergence: The first is the continuous downfall of the diamond sector, which caused miners to switch to gold. The downfall of the diamond sector was in turn accelerated by the conflict, which disrupted the relationship between miners and traders as well as pre-financers (most of whom were from the Muslim community), as well as the subsequent partial diamond export embargo under the Kimberley Process. [21]

The conflict also resulted in food insecurity (through a drop in crop output and price hikes), as well as a large displaced population without access to their own land, who struggled to subsist and therefore turned to livelihoods that are less dependent on land ownership and enable the quick, immediate earning of cash to cover emergency needs, i.e. the gold sector. [22] In addition, gold can be and is used directly as a currency and cash,

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[9] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[10] Interview with Jules Yaganza, 10.04.2020
[11] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[12] Interview with Jules Yaganza, 10.04.2020
[13] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[14] Interview with Nathan Beangai, 15.04.2020. The list of permits can be found in the Annex.
[15] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[16] Interview with Jules Yaganza, 10.04.2020.
[17] Interview with Jules Yaganza, 10.04.2020
[18] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[19] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[20] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[21] Interview with Jules Yaganza, 10.04.2020; A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[22]. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version. Also: IPIS 2018: Central African Republic, A Conflict Mapping.

which makes it a convenient sector to combine with other commercial activities and turn further profits. Traders may for example transport gold across borders and use it to buy merchandise, which they then re-import and sell into CAR without losing value on exchange rates, bank fees or taxes, and then use the proceeds once more to buy and trade gold in the other direction.[23]

Another reason for the emergence of the sector is that compared with diamond mining, gold mining also allows for a more regular, predictable and frequent income. Every day it is possible to extract and sell gold, even if in tiny amounts, and its price is fixed internationally. In diamonds, the chances of finding valuable stones are less predictable, less regular and less frequent, and prices are much less easily determinable. Gold mining is therefore less dependent on large sums of pre-financing over the long term, and pre-financing is less risky.[24] Even small sums of pre-financing or financial support can yield returns, as gold mining (at present) requires less input and investment. [25] Therefore even actors with lower capital, i.e. local actors, are able to enter the 'market'. Thus in the gold sector, the pre-financer does not have to be the buyer, as an investor can just be paid back with interest after the gold is sold.[26]

This means that local persons, even with little capital or knowledge can get involved and sponsor gold mining, and subsequently reap the return. In addition, the existence of international fixed prices and thus more standard calculations of price and value, enable the engagement of actors that do not necessarily have a long history and experience in the gold sector – generally, gold mining and trading can be learned more easily and quickly than diamond trade..[27] These are also some of the reasons why historically more women, youth and children have been engaged in gold mining than in diamond mining.

Gold mining and trade in CAR is still frequently associated with armed groups and conflict, and discoveries of gold deposits often attract armed groups from within CAR as well as from other countries, such as Chad.[28] This can lead to violence and grave human rights abuses on and around gold mining sites. [29] In 2018 it was found that in western CAR, firearms at gold sites are prevalent and mining communities arm themselves or seek security from current or former anti-balaka forces, who often operate in collaboration with or in support of local government authorities. Anti-balaka forces may also be directly involved in the gold supply chain, e.g. as financiers and buyers, diggers or site managers.[30] The involvement of armed groups in gold mining and trade (both directly and indirectly by extracting illicit taxes) has been noted prominently in the east of the country, but also in Ouham prefecture.[31]

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[23]. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[24] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[25] Interview with Jules Yaganza, 10.04.2020

[26] A survey found that 70% of mine site managers interviewed also sell to others than their prefinancer – indicating that a prefinancers may just receive their money back with interest. Ndongo, Benjamin et De Jong, Terah (2019). Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.

[27] Interview with Jules Yaganza, 10.04.2020

[28] Interview with Jules Yaganza, 10.04.2020. see also: IPIS 2018: Central African Republic: A Conflict Mapping.

[29] Interview with Jules Yaganza, 10.04.2020.

[30] IPIS 2018: Central African Republic: A Conflict Mapping.

[31] UN Panel of Experts Report on CAR to the UNSG, dated 6 December 2019.

INTERNATIONAL MARKET DYNAMICS

Internationally, responsible sourcing of gold has been a key focus over the past years. While initially the main focus has been the DRC and the wider Great Lakes region, it has moved beyond that to include other conflict-affected and high-risk areas, as well as other contexts. Based on the work done by the OECD (the Due Diligence Guideline) and the trend towards supply chain due diligence regulations in consumer countries (the Dodd Frank Act, the EU conflict minerals regulation, and other efforts in European countries), downstream and upstream industry associations such as the LBMA, the WGC, the RJC, etc have increasingly implemented standards and requirements to identify, assess and mitigate risks in gold supply chains coming from both ASM and LSM. These risks have included the worst forms of child labour, and other forms of grave human rights abuses, and in some cases have been expanded over time to include issues around health and safety as well as the environment.

6.2. Overview of the value chain

In CAR, as elsewhere, artisanal gold mining and the connected supply chains are usually well structured socially and economically, even if a majority of them are operating informally. To provide an initial overview, a generic gold value chain is usually structured roughly as follows:

- **System of production:** At the very beginning of the chain, there is the 'pit' where a team of mine workers extract the ore, coordinated by a team leader or 'chef de puit'. Several pits make up a 'chantier' (i.e. a working area), which is supervised and coordinated by the 'chef de chantier' (i.e. the mine manager), who is also called the 'artisan minier' and is the key person in organising and managing the mining activities. Several 'chantiers' in turn can make up a mine 'area', which is often overseen by a 'chef de site' or 'chef de terre' (i.e. the landowner), who may also be a customary authority in the area.[32] Several mine sites then form a 'foyer minier' which is a term used to designate a geographic cluster of mine sites.
- **System of trade:** The gold produced in the pits by the worker teams is often aggregated at the level of the mine manager, and then traded by himself or others to the nearest village or town, where it may be further aggregated and then traded onward to the larger towns, by several layers of different types of formal and informal traders and buyers. From the larger towns, the gold is then exported formally or informally by informal traders, buying houses, or cooperatives.
- The system of production and the system of trade are interlinked by the flow of the mineral, as well as the **flow of (pre-)finance**. The different types of traders often take the role of financiers in the system of production, but also the mine site manager and other actors outside the chain can act as pre-financiers.[33]

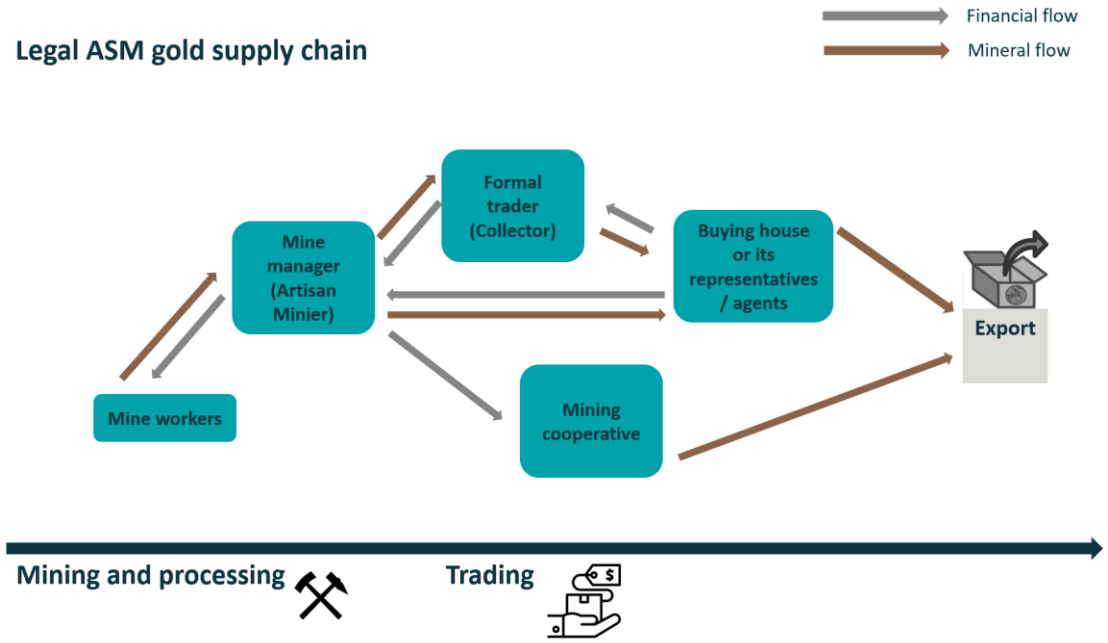
Each of these actors and steps in the value chain is explained in more detail in the following chapters.

6.3. Value chain stages

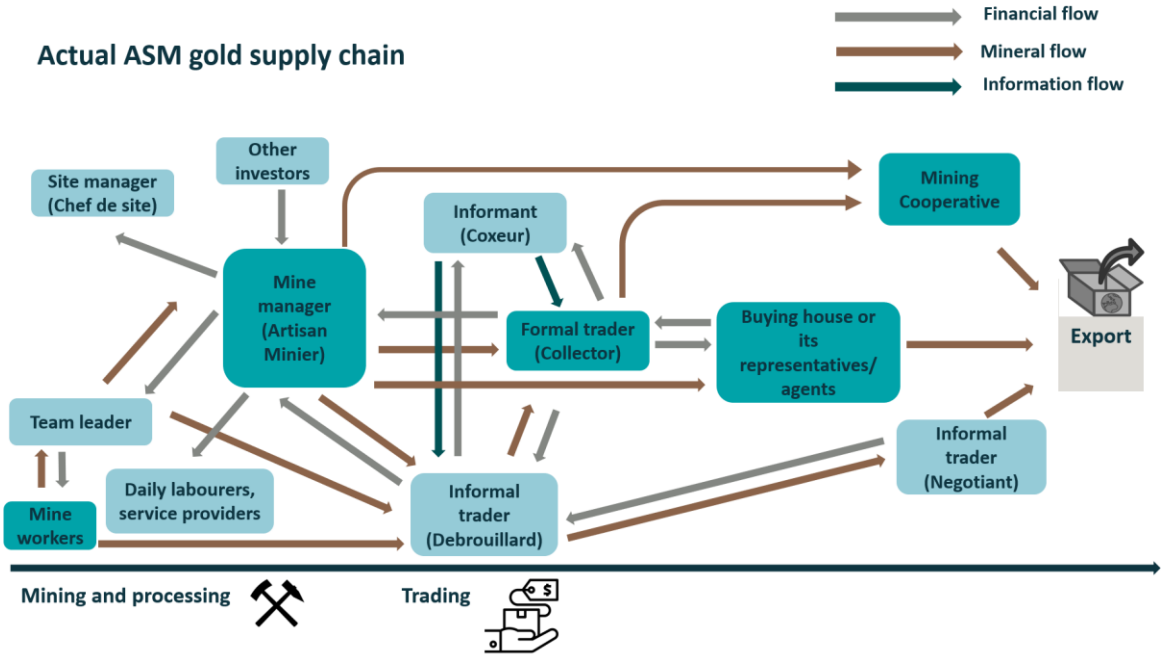
The following diagrams provide a general overview of the stages of the gold value chain in CAR, including the main actors and the flow of gold and finance. A different picture emerges between what the value chain is supposed to look like according to the legal framework (which is applied to diamonds and gold in the same manner), and what a depiction of a typical value chain looks like in reality.

[32] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[33] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

Value chain as foreseen by the legal framework, depicting the actors that are officially 'recognised' by the regulator through the licensing system:



A typical gold value chain in reality:



6.4. Primary activities and actors

Primary activities are those directly related to the product (gold), including activities aimed at value addition such as processing and refining. At each stage of the chain, the actors involved are profiled, and the respective activities are described in detail. Interactions between the formal and informal chains are highlighted, as well as aspects of livelihoods and income and barriers to markets. The role of youth and children in the chain is discussed in a separate chapter, as is the interactions between artisanal gold mining and other livelihoods, such as agriculture.

6.4.1. MINE WORKERS

The mine workers are the main and largest labour force within the upstream gold supply chain. The workers ('ouvriers') are usually organised into teams with a team leader (called chef d'équipe or chef de puit), exploiting a particular pit on the mine site. They typically conduct the tasks associated with the entire mine life cycle. This usually includes the following activities, depending on the type of mining, i.e. hard rock or alluvial:

Figure 2: Generic lifecycle in ASGM, showing the different tasks ASM workers generally conduct. The cycle usually differs slightly depending on the type of ore and mining – e.g alluvial mining may not require much digging or crushing. Transport is also a key task, often taken on by women or children, between the pit or tunnel, the crushing area and the washing areas.

Prospecting, clearing the land from forest and shrubs, digging and removing the overburden until the mineralised layer or the ore is reached, pumping out groundwater, breaking the ore-bearing rock into smaller pieces and transporting it to the surface, crushing and grinding the ore into smaller pieces, transporting it to a water source and washing the ore to recover gold. From the first clearing of land to the first recovery of gold, up to 3-4 weeks may pass.[34]

The worker teams commonly do most of the work required in the mining process jointly. Only on larger sites are the workers specialised in conducting certain tasks, such as clearing of the land, removing the overburden (digging), transporting the ore, washing, etc.[35]

[34] Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020
[35] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

In most cases, workers are not formally 'hired'. Worker teams are formed informally and based on verbal agreements, and often there can be differences between sites – a pre-financer may put together a team of trusted workers, or a landowner may send his family members, or the site manager may be determining who works where within the site. Since there are often no formal hiring processes, agreements with workers often depend on social or family relationships and trust.

Mine workers can be distinguished into 'permanent workers' and daily labourers, also called '*kataman*'. Permanent workers usually form part of a mining team and are paid by a share of the production (see below), while daily labourers usually migrate from site to site or work on several sites at the same time,[36] and are paid a fixed fee without a share in production.

In 2019, it was estimated that between 150,000 and 200,000 people are employed as ASM workers in CAR overall[37]; while another study from 2018 set the number at approximately 272,000.[38] Due to the dynamic development in the sector, accurate numbers are difficult to obtain; but this is a significant decrease from estimates in the pre-crisis period before 2013.[39] Of these, between 31,540 and 40,000 people are estimated to work on gold mining sites, and between 18,900 and 23,650 on sites that produce both gold and diamonds, while the reminder works on diamond sites.[40]

The recent growth of the gold sector, as described above, has caused a shift in **demographics** within the sector. Prior to the conflict, gold mining was done mainly by women and also children, often panning for gold as a by-product near diamond sites, whereas men focussed on diamond mining.[41] As the recent quantitative studies have found, by now the majority of mine workers in the gold sector are men, even though the proportion of women and children is still higher than on average across all mine sites (including diamond and mixed sites): 53% of workers on gold sites are men, 33.6% are women, and 13.4% are estimated to be children below 15 years.[42]

	Men workers	Women workers	Children below 15 years (estimate)
Gold sites only (excluding diamond or mixed sites)	21,200	13,600	5,200
	53%	34%	13%

The majority of the **women** present at a mine site are providing daily labour or secondary, auxiliary services (see chapter below). But women are also directly involved in the gold supply chain. The quantitative study from 2019 found that on 47% of mine sites, women are part of the digging teams like the men, but only on 9% of the

[36] Ndongo, Benjamin et De Jong, Terah (2019). *Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic*. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ. Also: Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[37] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[38] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[39] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[40] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[41] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[42] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

sites do they also work underground. On 89% of mine sites, women wash the ore and on 80% of the mine sites they also transport the ore. On 66% of the mine sites, women process the mineral, i.e. crushing or grinding ore. They may also be involved in other activities such as collecting and providing leaves that stop the mineralised sand from flowing out of dams in riverbeds.[43] According to a survey on gold and diamond sites in western CAR in 2019, 70% of respondents stated that women are paid the same as men, be it as daily labourers or as part of a mining team.[44] However, women are more frequently engaged in tasks that are done by daily labourers, and are also much more represented in auxiliary tasks (secondary tasks not directly within the value chain, such as food provision or petty trade), thus resulting in lower incomes generally, as a result of the roles and tasks women take on in and around the gold value chain. [45]

Determining **mine worker's incomes** is a relatively difficult task, due to the wide variety of payment modalities employed at mine sites. A variety of calculation models has been employed, resulting in different estimates.

Calculation model	Compensation of mine workers as a share of sales		Per week
IPIS study: Average value generated per worker as an indication of income per worker (2020)	Estimated average production per site * estimated average price per site Divided by: Average number of workers per site	= Average value generated per worker	8.67 – 18. 4 USD
	Average value generated per worker minus expenses, fees (from prefinancing, informal taxation, etc) divided by distribution model between workers and site manager (different at most mine sites)	= Estimated average income per worker	6.82 USD (in a standard, average calculation) Or 36% of generated value at site level.
	Estimated average income per worker Plus average daily stipend of 5,000 XOF	= Estimated average income per worker, including stipends	16 USD
IPIS study: Qualitative insights (2020)	Miners' responses at different mine sites		4.58 – 19.62 USD
UNDP quantiative baseline (2018)	Miners' survey		19 USD

Figure 3: Overview of different calculation models and findings with regards to mine workers' incomes (compensation as a share of sales).

Estimates have been made in recent studies by using the proxy of the 'value generated per worker' in a gold mine. This is an approximate indication, which is based on an estimate of the average production per mine site, divided by the average number of workers on a site. According to this, the value generated per worker amounts to an average of 18.64 USD per week, though the actual amount might be lower given that the median value is 8.67 USD per worker per week. [46]

[43] Ndongo, Benjamin et De Jong, Terah (2019). Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.

[44] Ndongo, Benjamin et De Jong, Terah (2019). Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.

[45] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[46] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

However, the value generated per worker is not the same as a worker's *income*, since from that amount, the service providers (i.e. motor pumps, food deliveries) and daily labourers need to be paid, as well as other fees and commissions (e.g. informal taxation). Thus, to determine the **mine workers' income**, the exact model of payments and distribution of revenues within a mine site's organisation and hierarchy needs to be known, and these seem to vary considerably between different sites. [47]

Using a standard model of a site with 10 workers, and assuming a standard/average distribution model within the site, a quantitative study from 2019 estimates that the mine workers may be making 6.82 USD per week, which is about 36% of the value generated at the site.[48] Additional qualitative research showed that there can be wide differences though, with some workers earning as much as 19.62 USD or as little as 4.58 USD per week. These estimates include both the share in sales as well as the weekly stipend received from the pre-financer, which again differs widely per site and can range from 2,000 to 10,000 XAF per week (3.6 – 18 USD). [49]In Yaloke, mine managers and collectors said their weekly stipend to each worker amounts to 10,000 XAF (18 USD), and is complemented by providing coffee at the sites and paying for health expenditures of the workers and their families.[50]

Taking these considerations together, it is estimated that on average, a gold miner can earn between 6.82 and 16 USD per week, though many may actually earn between 3-12 USD per week, as per the table below:[51]

	Average (USD)	Median (USD)
Value generated per worker per week	18.64	8.67
Estimated weekly income (36% of value generated)	6.82	3.12
Estimated weekly income + estimated daily stipend of 5,000 XAF	16 (=2.9 USD per day)	12 (=1.7 USD per day)

An earlier study had estimated the income of mine workers at 19 USD per week or 978 USD per year on average, which is approximately in line with the per capita income of CAR.[52] However, 48% of the earlier study's worker sample still earned less than the international poverty line of 1.25 a day.[53] It also needs to be considered that incomes for mine workers are relatively unpredictable and inconsistent, and include periods where no income is made at all. The ambivalence in mine workers' income and revenues calculations is also underscored by the

[47] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[48] This is calculated by taking an average value generated by 10 workers per week (186.40 USD), deduct 50 USD for motorpump and other services and fees, and assume that the remaining amount (136.40 USD) is divided equally between the mine manager and the workers, which means the workers then divide 68.20 USD by 10.

[49] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[50] Interview with collectors in Yaloke, September 2020.

[51] As calculated in A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[52] In 2018, the GNI per capita in CAR stood at 920 USD per year, adjusted for purchasing power. World Bank, at: https://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD?locations=CF (06.05.2020); Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

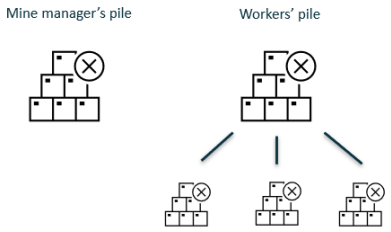
[53] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

finding that mining households show better levels of food consumption, but not necessarily greater wealth, indicating that for many workers, ASM's livelihood potential remains limited to subsistence.[54]

Notwithstanding these calculations, it needs to be considered that not all workers are paid in a share of the value of the production. The **daily labourers and service providers' income** is usually paid as a fixed fee per day. Most commonly, this was found to be 1.71 USD per day, which results in an income of 9.45 USD per week, or 491 USD per year.[55] This is lower than the average incomes for workers paid in a share of sales. While this is for both male and female service providers, women are more commonly employed as daily labourers than as part of a team receiving shares from sale.

Compensation of daily labourers and service providers (both male and female): Fixed fees	
Per day	1.71 – 2.14 USD
Per week	9.45 – 11.77 USD

In addition, other payment arrangements can exist even for the worker teams. They may be compensated in a **share of production before its value is clear**: The pile of ore extracted, before washing, may be divided into two piles, one for the workers and one for the site manager. This is done without knowing how much gold will be found in each pile. Sometimes also service providers are paid in that way, especially women who transport or wash ore: A woman may be paid in a number of pans full of ore, which she can then wash herself and whatever amount of gold is found in these pans, she can keep as a remuneration.[56] Their income is thus difficult to estimate and depends on the mineralisation of the ore, the time needed to wash the ore, and the purity of the gold extracted. It also needs to be noted that while most ASM sites know the function of mine manager, there are also workers teams that extract ore independently without manager, and distribute their earnings equally amongst themselves.[57]

Compensation of mine workers and service providers in share of production:	
	Incomes / revenues are difficult to estimate in this model, as this depends on: • the mineralisation of the ore • the time needed to extract or wash the ore • the purity of the gold extracted

Interestingly, it has been found that incomes of mine workers do not vary significantly between the wet and dry seasons[58], which points to the fact that mining is a livelihood done year round. The same quantitative study also suggests that the incomes do not vary much between miners with a lot of experience and those with less, or

[54] IPIS 2018: Central African Republic: A Conflict Mapping
[55] This is calculated by taking the average value generated by 10 workers per week (186.40 USD), deduct 50 USD for motorpump and other services, and assume that the remaining amount (136.40 USD) is divided equally between the mine manager and the workers, which means the workers then divide 86.20 USD by 10.
[56] This is calculated by taking the average value generated by 10 workers per week (186.40 USD), deduct 50 USD for motorpump and other services, and assume that the remaining amount (136.40 USD) is divided equally between the mine manager and the workers, which means the workers then divide 86.20 USD by 10.
[57] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[58] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

between young and old miners, those with more or less education, or even between men and women.[59] An overview of how the income from mining is spent and invested into other livelihoods and economic activities can be found in the chapter on interrelations with other livelihoods below.

6.4.2. MINE MANAGERS

The mine manager is often called 'chef de chantier' or is defined as 'artisan minier'. The mine manager is the key person in the artisanal mining production system, as he organises the labour force, the capital, the tools and machinery as well as the services that are needed to exploit gold.[60] He (or in fewer cases, she) would organise and supervise one or several teams of workers, who are then usually obliged to sell their production to him. Only 4.3% of mine managers are women.[61] While women can be mine managers or pit managers, this is often by way of their husband's position or ownership. In Yaloke for example, customary law stipulates that women cannot directly inherit the assets of their husbands, and ownership would usually pass to the husband's brothers or grown up male children. If there are underage male children, the woman may be authorised to manage the assets and mine sites until the children have grown.[62]

The mine manager either self-finances or receives pre-financing from traders or other investors in order to pay for the labour, services and tools required in producing gold, and is then required to either sell the gold to the trader in return or pay back the investor with interest. ASM in CAR is still largely organised on a community basis, thus most commonly, ASM sites are operated by an enlarged family (84%)[63], where the mine managers also act as the (pre-)financiers, i.e. on 90% of sites where they are present.[64] This was confirmed in Yaloke, where collectors stated that they and their peers are at the same time mine managers and use their own funds to finance mining operations instead of receiving prefinancing or investment from other actors further down the chain.[65] Around 13% of mine sites were found to be mid-sized, where the mine manager commonly works with an external financier.[66] These financiers can be the formal and informal gold traders or traders' agents, or sometimes even local traders (not gold related) and shopkeepers.[67] Only 3% of ASM sites are large enough to accommodate several formal or informal traders or a large investor such as a buying house.[68]

With regards to formality, a study from 2019 found that more than half of the mine managers have documents showing their ownership of a site. However, these documents are often not recognised as being official by the Government, as they are issued by customary authorities for example.[69] Similarly, it was reported in mid-2018 that out of an estimated 35,000 mine managers in CAR, only around 2,000 were licensed, i.e. had an active '*patente*'. Per the Mining Code, this permit is to be renewed annually. Mine managers cite the main advantage

[59] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[60] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[61] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[62] Interview with mine manager in Yaloke / Zawa, September 2020.
[63] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[64] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[65] Interview with collectors, Yaloke, September 2020.
[66] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[67] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[68] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[69] Ndongo, Benjamin et De Jong, Terah (2019). Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.

of owning such a permit as helping to avoid having problems with authorities.[70] At the same time, they state that the reason for their low formality is that the costs of this license are too high and that their production is too low to be able to make enough margin to pay for its annual renewal.[71] The following table provides an overview of costs involved in operating a formalised artisanal mine site:

Item	Timeframe	Cost
'Patente' – Artisanal miner's permit	Yearly renewal	20,000 XAF (34 USD)
'Carte d'ouvrier' – Mine workers card, for each miner	Yearly renewal	2,000 XAF per worker (3.36 USD)
'Cahier de production' – production booklet	One off	5,000 XAF (8.4 USD)
'Autorisation d'exploitation' – Exploitation permit	One off	100,000 XAF (186 USD)
Exploitation permit renewal	Every two years	15,000 XAF (25 USD) per hectare (20% of which should go to the local community)
Surface area taxes	Yearly	5,000 XAF (8.4 USD) per hectare

In terms of revenues, a study from 2018 found that a mine manager retains about 91% of the international gold price (London fix) on average.[72] However, there are large differences between eastern and western parts of the country: In the east it might be as low as 63% of the international price, whereas in the west, sometimes as much as 104% is paid.[73]

A mine manager at the large Willy site near Bossangoa gives an example of how revenues and expenditures from the site would be distributed[74]: He states that 3 weeks of mining and washing can result in 1-3 grams of gold produced by his workers. He has an pre-established agreement with the workers that he will buy the gold from them at a price of 15,000 XAF (25.6 USD) per gram, of which he will take 3,250 XAF (5.55 USD) himself, and 3,250 XAF (5.55 USD) will go to the metal detector owner, leaving 7,500 XAF (12.8 USD) for the workers to distribute amongst themselves. The mine managers also provides a stipend of 2,500 XAF (4.27 USD) per day for the workers and organises food for 10,000 XAF (17 USD) per week. This is paid through the margin he makes by selling the gram of gold to traders who might pay around 25,000 XAF (42.7 USD). This should be taken as an approximation and illustration only, since this calculation results in the mine manager making a loss per week.

[70] Ndongo, Benjamin et De Jong, Terah (2019). Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.

[71] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[72] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[73] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[74] Interview with mine manager at Willy site near Bossangoa, August 2020.

Example of revenues and expenses of a mine manager at Willy site near Bossangoa[75] (to be taken as illustration and approximation only as this results in a loss for the mine manager)	
Production:	1-3 grams per 3 weeks = 1 gram per week (for calculation purposes)
Pre-established agreement of mine manager for gold sale with workers:	1 gram bought at 15,000 XAF (25.6 USD), of which • 7,500 XAF (12.8 USD) for workers to be distributed amongst themselves • 3,250 XAF (5.55 USD) for mine manager • 3,250 XAF (5.55 USD) for metal detector owner
Potential net profit of mine manager:	1 gram sold to trader at 25,000 XAF (42.7 USD) = around 10,000 XAF profit per week (17 USD)
Additional expenses of mine manager:	2,500 XAF (4.27 USD) or 15,000 XAF (25.6 USD) per week in a 6 day work week, to be distributed amongst workers 10,000 XAF (17 USD) per week for food for the team

In relation to the above, it must be noted that understanding the purity levels at different steps in ASGM supply chains, is very difficult, especially without technical equipment and without having gained the trust of supply chain actors (which would go beyond the scope of this study). And while purity is one aspect determining the prices paid, and thus incomes earned, in upstream ASM chains other factors also play a role, including where traders may trick and cheat (e.g. by manipulating exchange rates, weight/scales, deduction of pre-investment, etc). This makes it even more difficult to analyse who makes what kinds of profits where in the value chain, even if the purity levels where known.

6.4.3.LANDOWNERS

The landowner is called 'chef de terre' or 'chef de site'. Frequently, he is a traditional authority or chief of the local community and owns the land on which mine sites are located. Usually, mine managers or mine workers need to gain the landowner's permission to extract gold on their land. In addition, the chef de terre is often called upon to manage disputes or conflicts arising at the mine site. Thus they can be relatively influential figures, even if they are not directly involved in gold production or trade. However, the role of the 'chef de site' seems to be more common in eastern CAR than in the western part of the country.[76]

In some cases, the landowner receives a contribution from the mine managers operating on his land and mine site. Rather than a fixed fee, this contribution is often determined by the amount of production or value of the sales. Interestingly, this contribution is much less common on gold than diamond mining sites: It is the case

[75] Interview with mine manager at Willy site near Bossangoa, August 2020.
[76] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

only on 26% of gold sites, whereas the payment is made on 47% of mixed sites and 73% of diamond sites.[77] It is unclear however why this is the case.

6.4.4. TRADERS AND TRADE FACILITATORS

As described in the value chain overview, there are different types of gold traders in CAR, both formal and informal. The formal traders, as recognised by the legal framework, are the licensed 'collectors' and the agents or representatives of the buying houses (see below). They play the intermediary between the producer, i.e. the mine manager, and the exporter. Some of the collectors work independently, but most are connected to and working for a buying house, acting as their agents.[78] Interestingly, on 42% of mine sites, women are involved in trading minerals as well.[79] Formal trader are required to obtain and renew yearly a trading license:

Cost for collectors[80]	Timeframe	Cost
'Patente de collecteur' – trading permit	Yearly renewal	680,000 XAF (1,166 USD)

Gold trading is also done by other, informal types of traders, often in several trading steps: The 'débrouillard' is usually a smaller, unlicensed trader who buys directly on the mine site and then sells to a collector, or to the second type of informal trader, the 'négotiant'.[81] The négotiant is a larger informal trader who moves gold to larger trading towns or smuggles it to neighbouring countries. The 'coxeur' is also informal actor, who provides a service to all types of traders by gathering and sharing information on production levels or gold discoveries in exchange for a commission for a gold sale or buy.[82]

The traders, whether formal or informal, are often linked to the production cycle through **pre-financing flows.** This system works as follows: A buying house or a larger trader might advance a certain amount of money to their agent or a smaller trader, who is then obliged to return the equivalent amount in gold based on a fixed price that is determined between the two actors in advance. Within this, it is the smaller trader's own risk to see if and how he can make a margin. The small trader therefore bears the risk or profit from gold price fluctuation, as well as the risk of production levels or purity levels at the mine sites he chooses to invest in, and the risk of theft or 'leakage' out of his chain. The smaller trader would then finance a mining operation by providing money to the mine manager for tools and equipment, food or daily stipends to the workers, in return for the social obligation to sell their gold production to him. In order for the smaller trader to recover the pre-financing investment and make a margin, he would typically offer a slightly lower price per gram when buying gold at the mine site than when selling the gold in the main towns. This inferior price then frequently leads to mine managers or even workers trying to sell their gold to other (informal) traders, who have not invested in the mine and thus can offer a higher price, or sell the gold directly in town. [83] This is apparently particularly pronounced for (informal) Cameroonian traders, who have been reported to be able to undercut other traders and licensed

[77] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[78] Matthysen, K. and Clarkson, I. 2013: Gold and diamonds in the Central African Republic.
[79] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[80] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[81] Ndongo, Benjamin et De Jong, Terah (2019). Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.
[82] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[83] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

collectors (who have to be Central African by law) by offering slightly higher prices, since buying gold in CAR and selling it in Cameroon can be highly lucrative.[84]

The tendency for informal traders to pay slightly higher prices than others (in some cases close to the international fixed price even though the gold has not been refined yet) may also be connected to the fact that margins in gold value chains are made mostly on the volume – thus the more gold they can attract, the better for their profit. In a more worrying scenario, this may also point to money laundering activities.[85] Or, most likely, it could be an indication of the way the gold traders make their profits and revenues elsewhere, thus allowing them to pay a higher price than would be merited in order to attract more volume; i.e. by cheating on currency exchange rates, weight or purity when buying gold from miners, or by selling consumer goods that they bought and informally imported from other countries by using their gold revenues, thus avoiding foreign currency restrictions, exchange rate differences and taxes.

The financers (who are sometimes the traders, but often also the mine managers) thus play a key economic role in enabling the extraction of the mineral, and bringing the necessary investment to remote areas. They finance the extraction work in the early stages of the mining cycle when the overburden needs to be removed and no gold is produced yet, thus advancing the incomes of workers and capital needed for equipment.[86] In addition they also play a social role: A quarter of miners operating under a financier receive money to cover their medical and health expenses, as well as other support in-kind, for example the maintenance of equipment, fuel, or social assistance.[87] However, their role is seen as ambivalent by mine site managers and workers, as the trader-prefinancier may offer lower prices to recover his investment, and attempts by the miners to sell to other traders may be punished by harassment.[88]

The trading landscape has changed significantly in recent years, due to the impact of the conflict. Prior to the outbreak of hostilities, traders were often from Muslim communities who had specialised in their role over many years (especially in the diamond trade). More recently, both as a response to the gap created by the conflict and the rise of gold mining, trading activities have been taken up by other actors in the chain, including the mine managers themselves:[89]

It is key to note that in the gold sector, many collectors seem to be mine site managers at the same time, and use their own funds to invest in mining activities instead of depending on pre-finance from other actors (larger negotiants or buying houses). They use the funds and profits they have made in other economic activities, such as petty trade, moto taxi services, hardware stores or hospitality services[90], to invest in gold mining – thus resulting in a virtuous investment cycle across several economic sectors. Such a cycle is made possible more easily in the gold sector than in the diamond sector, for reasons stated at the outset (higher risk of loss of investment, thus need for more capital upfront). Collectors who are self-funding the mining activities have expressed their wish to form collectors' cooperatives in order to gain access to formalised sources of credit and banking services, in order to be able to expand their investment in the gold sector and finance additional workers' teams.[91]

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[84] IPIS 2018: Central African Republic: A Conflict Mapping.
[85] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[86] Matthysen, K. and Clarkson, I. 2013: Gold and diamonds in the Central African Republic.
[87] Ndongo, Benjamin et De Jong, Terah (2019). Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.
[88] Matthysen, K. and Clarkson, I. 2013: Gold and diamonds in the Central African Republic.
[89] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[90] Interview with collectors in Yaloke, September 2020
[91] Interview with collectors in Yaloke, September 2020

6.4.5. BUYERS AND EXPORTERS

The legal framework recognises two types of actors that are allowed to export gold: Buying houses and cooperatives. Négotiants, as mentioned above, are informal traders who also export gold, but through informal or illicit channels.

Buying houses are located in Bangui, and have offices and agents in major trading towns. They centralise gold buys, refine gold into ingots, and are supposed to export through formal channels. Currently, there are 11 licensed buying houses, for both diamonds and gold.[92] There are also 3 additional foundry and smelter houses specifically for gold (Kotto Mines, Gonga, Sawa Sawa); and Adama Swiss acting as both buying house and smelter.[93] Setting up a formal buying house requires large investment and financial liquidity, even without counting the operational and running costs[94]:

Item required to establish a buying house	Timeframe	Cost
Capital stock	One off	50 mio XAF (85,786 USD)
Deposit to the treasury	One off	50 mio XAF (85,786 USD)
Investments in real estate	One off	350 mio XAF (600,000 USD)
Construction of a headquarters	One off	150 mio XAF (257,000 USD)

It is key to note that at present, the refining of gold and the forging of ingots is largely conducted at the level of the buying houses in Bangui, or outside the country in some of the key smuggling destinations. There is few to none refining capacity or tools at the level of the artisanal mine sites beyond washing and aggregation, and even collectors tend to sell their gold in powder form to the buying houses in Bangui.[95] This also means that mine workers, mine managers and collectors only learn about the purity levels of gold after refining has been done by the buying house; which opens the door for cheating on gold prices. Collectors state that the only way they can test whether or not gold is fake (e.g. coated iron) is by using their teeth or acid.[96] Commonly, there seem to be no tools or equipment to test the purity of gold or to refine it into ingots and add value in the producing areas; as this is currently done at the level of the buying houses or in neighbouring countries or smuggling destinations. Therefore, mine site managers, collectors and negotiants have expressed the desire to enhance their knowledge and capacity in gold refining, and stated the need for improved refining equipment and techniques in the gold producing regions themselves. [97]

ASM cooperatives are another entity that is legally allowed to export gold. Per the law, cooperatives are only allowed to sell gold and export it, but not to buy it (since they are supposed to be producers' organisations). But in reality, cooperatives buy, sell and export and thus compete with the traders and buying houses.[98] Because of this, most ASM cooperatives in CAR are entities that are not necessarily directly involved in mining and

[92] The list of buying houses can be found in the Annex.
[93] The list of buying houses can be found in the Annex.
[94] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[95] Interview with collectors in Yaloke, September 2020.
[96] Interview with collectors in Yaloke, September 2020.
[97] Interview with collectors in Yaloke, September 2020.
[98] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

production, and are thus not grassroots mine workers' collectives, but rather function as businesses and intermediary buyers in the chain.[99] A survey confirms that only around 3% of miners state that they are part of a cooperative, even though several hundred cooperatives are registered in the country.[100]

This has led to the emergence of the so-called 'cooperative banco', which designates mining cooperatives often created in Bangui by actors who are not active in the diamond or gold mining sector, but aim to capture revenues from mining resources. These actors may be senior political figures (i.e. former ministers, mayors of mining and forestry communes, civil servants), or even family members of sitting ministers.[101] These 'cooperatives banco' sometimes also 'lend' their cooperative agreement (and hence their permit to produce and export gold) to foreign investors or semi-mechanised gold mining operations, e.g. of Chinese origin. These can then operate under the guise of an entity that is supposedly owned by CAR nationals and operate semi-mechanised or even semi-industrial mines under the cover of an artisanal or semi-mechanised permit.[102]

It is key to note that cooperatives have become more popular with the emergence of the gold sector[103], which may also be connected to the issue of the 'cooperative banco'. While the organisation of artisanal miners into cooperatives is recommended by Government actors as a key tool for formalisation, they also see the emergence of such 'cooperatives banco' as an impediment to forming 'real' miners cooperatives at the grassroots level, which results in continuous informality of the sector, continuous poverty of artisanal miners, and contributes to corruption and fraud in the gold sector.[104]

6.4.6. NATIONAL AND REGIONAL GOLD TRADING HUBS

The flow of gold from CAR usually passes from the point of extraction to the point of processing (both on the mine site), then to smaller villages or towns where it is aggregated by buyers and traders, then onwards to trading hubs in larger towns, and from there to broader crossings to Cameroon, Chad or other neighbouring countries, or to Bangui, where it is refined into ingots, and from there to international gold markets.

While the illicit trade in diamonds from CAR has received a lot of attention through the Kimberley Process[105], much less is known about the flows of gold out of CAR and onwards from its main smuggling destinations. Cameroon is the main destination market not only for main gold trading towns in CAR but often also directly from mine sites. Garoua-Boulay and Mbai Mbou seem to be key trading links within Cameroon. Tchad also seems to play a role as a transit country for gold from CAR, as well as South Sudan.[106]

Despite this, it is reported that some quantities of gold is sold in Bangui, because the buying houses have their trader and collector networks in the main trading towns around the country.[107] The small percentage of formal gold exports from Bangui buying houses are mainly destined for Dubai.[108] Gold buying houses also state that

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[99] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[100] Ndongo, Benjamin et De Jong, Terah (2019). Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.

[101] Interview with anonymous source.

[102] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[103] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[104] Interview with Jules Yangaza, 10.04.2020

[105] See for example: DeJong, T. et al 2019: Rapport diagnostic sur la contrebande des diamants en République centrafricaine. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ

[106] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[107] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[108] DeJong, T. et al 2019: Rapport diagnostic sur la contrebande des diamants en République centrafricaine. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ

their customers reside in European countries, such as France or Italy, where they sell gold in ingot form. Others also have customers on national level, such as the local jewellery producers.[109] They also confirm that their main competitors are the informal buyers and pre-financers coming from Cameroon, Chad and Sudan, as well as some of the informal Bangui-based aggregators and buyers. [110]

As for informal flows, according to recent research, the majority of gold mined on the sites around Bocaranga are traded via Ngaoundere to Mbai Mboum in Cameroon, as well as via Garoua Boulai to Cameroon and to Gore in Chad. Bossangoa acts as a large trading hub for mine sites surrounding it, though sites to the northeast of the town also sell to Bangui, and those to the west sell to Mbai Mbou in Cameroon or Bozoum and then onwards. The mine sites south of Bossangoa largely sell via Garoua Boulai to Cameroon, but there are also flows to Bangui, Yaloke and Njo.[111] The main trading towns and destinations of gold *within* CAR have been found to be Bangui, Yaloké, Abba, Bozoum, Berberati, Carnot and Bossangoa. [112] This picture is confirmed by an interview with a Government official, mentioning the following informal gold trade routes:[113]

- Gamboula – Kentzou – Bertoua – Yaoundé – Douala ;
- Amadagaza – Gbiti – Cameroun ;
- Guiabona – Toctogo – Aba – Cameroun ;
- Gaga – Bouar – Garoua Boulai (Cameroun);
- Bocaranga – Bang – Ngaoundéré (Cameroun) ;
- Kouki – to Tchad
- Bangassou – to DRC

A snapshot of the flow of gold within and out of CAR is provided by the recent interactive IPIS mapping, showing the flow of gold from gold and mixed sites in Ouham and Ouham Pende prefectures to main trading towns and border crossings. This includes both formal and informal flows. Yellow lines are flows of gold from gold sites, blue lines are flows from mixed sites (gold and diamonds):

[109] Interviews with buying houses, 03.06.2020
[110] Interviews with buying houses, 03.06.2020
[111] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Online Map at: https://www.ipisresearch.be/mapping/webmapping/carmine/v1/#5.2342053130540 62/17.518732963248 34/8.6667427719859 36/4/1,6/11.0,12.3q,61.6
[112] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[113] Interview with Jules Yaganza, 10.04.2020

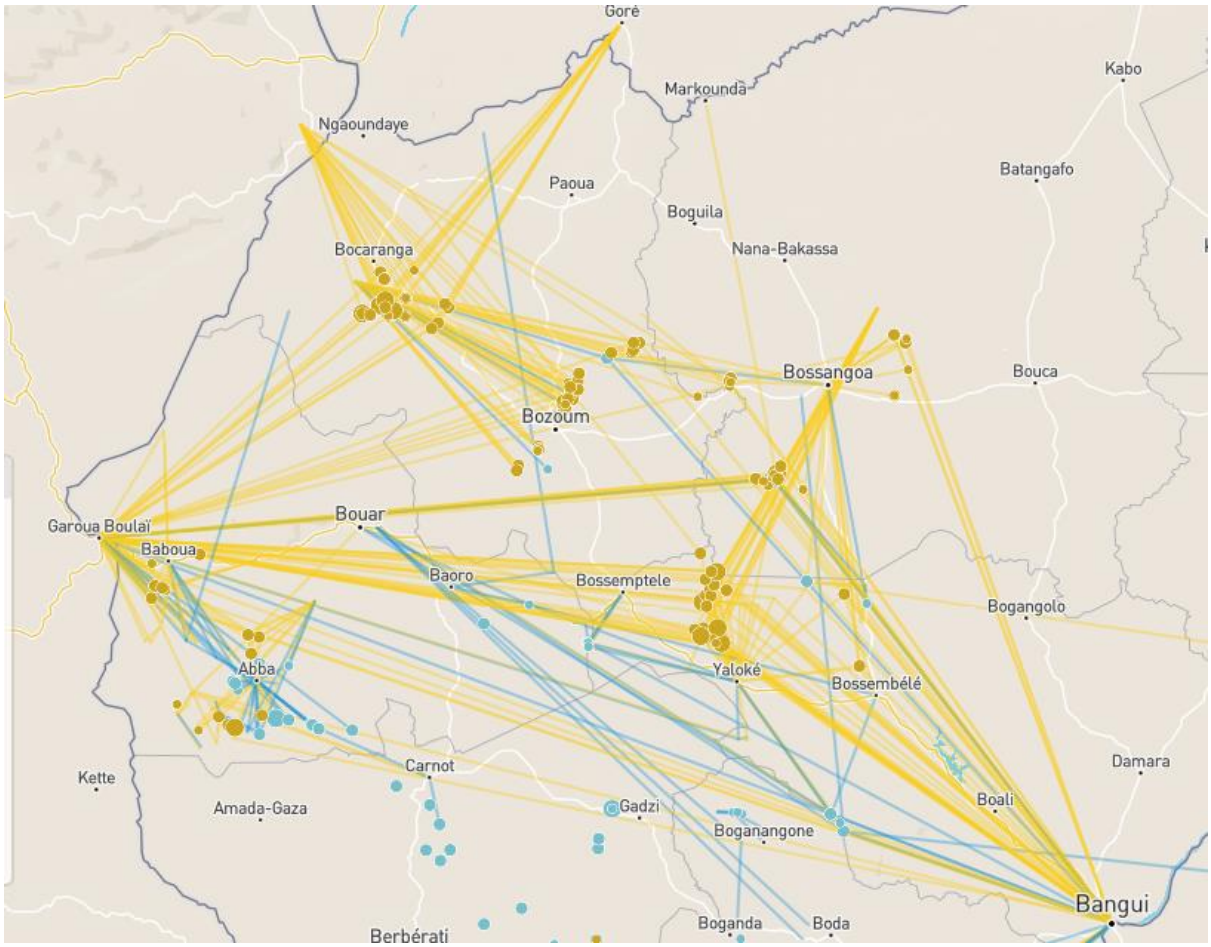


Figure 4: Web map by IPIS, showing gold flows from gold and mixed sites in Ouham and Ouham Pende prefectures. Source: https://www.ipisresearch.be/mapping/webmapping/carmine/v1/ (as of May 2020).

An earlier study also mentioned two key networks and hubs involved in the gold trade, which complement the above information: One network is organised in Kentzou and Bertoua in Cameroon, which attracts gold from Mambéré-Kadéï, Sangha- Mbaéré, Lobaye and Nana-Mambéré. Another network is organised in Djamena (Tchad) with branches in South Sudan, which attracts gold production from Vakaga, Bamingui-Bangoran, Haute-Kotto et Basse-Kotto, and Mbomou.[114]

The reasons for Cameroon being such an important destination for informal gold flows from CAR are several: First, Cameroonian traders seem to be able to offer slightly higher prices for the gold than local traders in CAR.[115] As mentioned previously, this may be due to their ability to buy higher volumes, thus making more profit to be re-invested, and the opportunity to make additional profits on re-import of consumer goods. Second, until recently, Cameroon had a much lower export tax for gold, set at 2.5% whereas in CAR it stood at 5.25%. This made the trade through Cameroon more profitable and thus again enhanced the trader's ability to buy larger volumes. However, the Government in CAR has reacted to this recently and a presidential decree

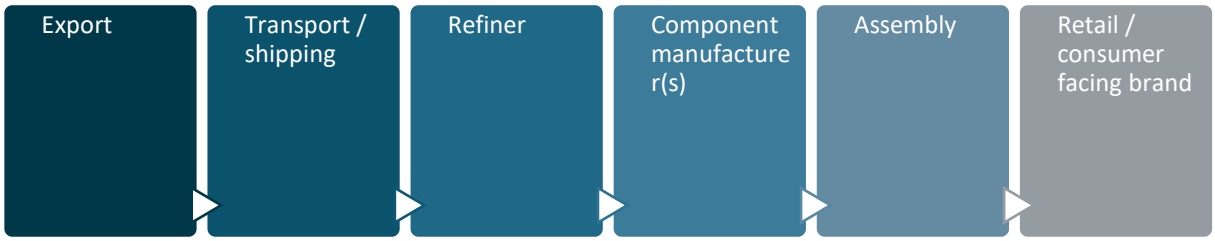
[114] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[115] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

from January 2019 has reduced the cumulative export tax rate for gold to 2.25% in order to enhance the formalisation of the gold sector.[116]

It is difficult to identify specific individuals or entities involved in these informal trading networks, since the large majority of these gold flows is informal and thus based on networks of individuals rather than formalised businesses or companies, and by nature very untransparent. An in-depth study to investigate such individuals and entities is planned by the EU-funded GODICA programme in the coming months. This will allow the PACE programme to gain additional insights into these networks.

6.4.7. MID- TO DOWNSTREAM

Once the gold is exported from CAR (formally or informally), a typical mid- to downstream supply chain would look as follows:



Once the gold is exported formally or smuggled to neighbouring countries, it ends up in international trading and refining hubs. Although there is very limited information on the trade and flow of ASM gold from CAR going into international markets, extensive research and analysis done on ASM gold from central and western African countries can provide an indication of the likely flows from CAR.

In particular Dubai and India represent the main gold trading hubs functioning as gateway for smuggled gold from African countries into European and American markets. According to a 2019 Reuters analysis, among the industrial mining companies they interviewed, none of them had sent gold through the Dubai Multi-Commodities Centre (DMCC), all the while UAE gold imports from African countries over the past years have recorded a significant increase and do represent an important proportion of UAE gold trade[117]. This points to the fact that a large proportion of the artisanally mined and traded gold (whether formal or informal) ends up in Dubai. Also, while statistics on UAE imports from African counties suggest that gold originating from CAR is limited, higher volumes are registered for Cameroon and Chad[118], which as highlighted in the previous sections represents destinations for smuggled gold from CAR.

While western refiners and downstream companies have a tendency of avoiding buying gold from other sources than large-scale mines in African countries, they still source from intermediary gold trade hubs such as Dubai, which could include gold that has been smuggled out of producing countries like CAR or is linked to conflict and/or human rights violations in these countries.[119] Official gold export data from the UAE shows that significant amounts of gold flow onwards to India, China, Hong Kong and Switzerland among others.[120] However, it is difficult to pinpoint individual refiners or companies 'buying' gold from CAR, especially where this is connected to informal or illegal gold flows. On one hand, this is due to the nature of gold value chain, where volumes of gold from different provenances are mixed and refined together and thus do not support physical

[116] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[117] Gold worth billions smuggled out of Africa, Thomson Reuters analysis, D.Lewis, R.McNell, Z. Shabalala, 2019
[118] UN Comrade Database, 2016-2018 (no later data available), imports data from UAE of gold unwrought or in semi-manufactured forms or in powder form from Cameroon, Chad and CAR.
[119] Gold worth billions smuggled out of Africa, Thomson Reuters analysis, D.Lewis, R.McNell, Z. Shabalala, 2019
[120] UN Comrade Database, 2016-2019, exports data from UAE to the World of gold unwrought or in semi-manufactured forms or in powder form

tracing of gold. On the other hand, this is due to refiners and downstream buyers who have not yet installed appropriate due diligence systems, thus often not even tracking *documentary* provenance beyond the first or second tier supplier (i.e. Dubai or Cameroon). Audit and certification systems such as those by the Responsible Minerals Initiative (RMI) are working to combat this, and publish a list of audited and certified gold refiners.

After refining in these key hubs, gold is then further sold into global downstream industries, such as the banking and finance sector, the jewellery sector, or the electronics industry. For each of these industries, different types of steps in the value chain apply, as gold is transformed into various forms and shapes in order to create bullions, jewellery, or hardware components. The following provides a brief overview of key steps in the mid- and downstream gold value chain destined for the jewellery or electronics market.

International transport and logistics: For ASM gold supply chains from African countries, air, sea and road transport routes are all common, depending on the trade corridors. Air transport is particularly common for smuggled gold, with smugglers transporting the material in their hand luggage[121]. An example of this is the Indian market, where air transport covers 65-75% of illicit gold smuggled into India, while a remaining 20-25% comes by sea.[122] These loopholes in the logistics sector for gold facilitate the illicit trade of gold across countries and through intermediaries. This is supported by the lack or limited questioning of buying organisations such as refiners, which is further explained in the next section.

Refiners: Refiners assemble large volumes of gold and melt and refine it to the highest possible purity grades before the gold moves onwards to banks or other sectors. Following the refining stage where the gold gets further processed and melted, tracing back to origin, provenance and specific challenges in the gold value chain is very difficult. For this reason, refiners are defined as the pinch point of the gold value chain, and are thus the main focus of responsible sourcing regulations, standards, guidelines and initiatives. A key actor in the gold refining space is the London Bullion Market Association (LBMA), as it sets the standards for purity, form, provenance and way of trading precious metals. Specifically, the LBMA Good Delivery documents and recognises those refineries which produced gold bars to the required LBMA standard, which includes guidance on responsible sourcing in alignment with the OECD Due Diligence Guidance and regulations such as the EU Regulation on conflict minerals as well as other standards and sector initiatives.[123] While LBMA refiners need to adhere to these standards, other refineries can be loopholes in the system and willingly or unwillingly source illicitly traded gold. Currently, no refiner based in UAE is included in the LBMA Good Delivery List. Lack of information and investigation can lead such refiners to source gold through illicit channels, and to refine gold which is potentially linked conflict financing, violations of human rights including the worst forms of child labour, and money laundering.

Manufacturers: Manufacturers often represent an intermediary step between refining companies and consumer facing brands. Both the jewellery and electronics industry have manufacturing stages in their gold supply chains. Here, the role of hubs such as India in the jewellery supply chain is key: The country exports in the form of manufactured jewellery almost 1/5 of its of gold imports annually.[124] Given the many tiers of such manufacturers, it is often very difficult for companies in the technology industry to trace and perform due diligence on specific materials.

Consumer facing companies: Jewellery and electronics brands often use small amounts of gold in different configurations and components of their end product. In principle, they have the responsibility to perform due diligence on their suppliers. Especially larger brands, as bigger buyers in terms of volumes and monetary value, are believed to have more leverage on their direct suppliers and the supply chain tiers beyond them. However,

[121] Gold worth billions smuggled out of Africa, Thomson Reuters analysis, D.Lewis, R.McNell, Z. Shabalala, 2019
[122] A Golden Wed: How India Became One of the World's Largest Gold Smuggling Hubs, A.Martin, 2019
[123] LBMA Responsible Sourcing Guidance Overview and LBMA Responsible Gold Guidance, 2018
[124] A Golden Wed: How India Became One of the World's Largest Gold Smuggling Hubs, A.Martin, 2019

full transparency and traceability is far from being mainstream and many companies might not have information beyond the refining stage.[125] Despite this, a recent market analysis for ASM gold has identified that jewellers who are knowingly sourcing gold from ASM, do so through certified provenances such as Fairtrade and Fairmined.[126]

6.5. Secondary activities and actors

In addition to the primary activities in the gold value chain, there are also secondary or auxiliary activities connected to each step, from the mine sites up to the point of export or where the gold leaves CAR. The following diagram provides an overview of such activities and the actors involved in them:

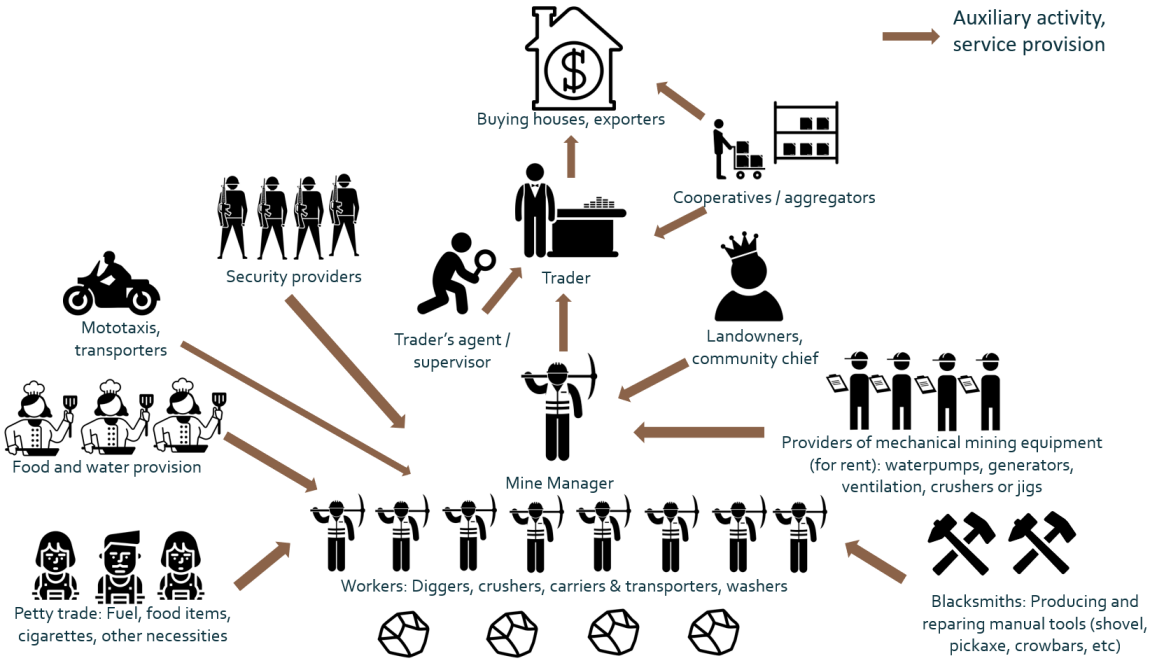


Figure 5: Generic overview of the production and trade environment in the ASGM sector, showing secondary and auxiliary activities and service provision.

6.5.1. PROVIDERS OF EQUIPMENT AND MINING SERVICES

In the majority of cases, the mine workers and mine managers conduct most of the activities that relate directly to the mining process by themselves, including the steps requiring tools and equipment. The artisanal mining sector in CAR is still very much based on manual labour, thus using only the simplest of tools. The most common **manual tools** used on a large majority of mine sites are shovels and pickaxes, crowbars, machetes and sieves/pans. [127] Some of these are manufactured and maintained by local metalsmiths. Motor pumps are also relatively common, as they are essential to pump ground- or rainwater out of the depth of the pits. They can be

[125] See also: The Hidden Cost of Jewellery, Human Rights Watch, 2018
[126] Market analysis: Artisanal and Small-Scale Mining (ASM) gold from eastern DRC, USAID-funded Commercially-Viable and Conflict-Free Gold, Levin Sources, 2019
[127] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

owned by the mine manager but are often hired from sub-contractors who are compensated like daily labourers.[128]

Much less common and only found on few sites are the more **mechanised tools,** such as metal detectors and generators. Metal detectors are used for example on the large Willy site near Bossangoa.[129] Mechanical crushers, sledgehammers and other mechanical equipment are still very uncommon on artisanal mine sites. [130] However, the few semi-mechanised or semi-industrial operations, such as the Chinese mining company operating along the Ouham river, do use large mechanised equipment such as caterpillars, causing considerable environmental impacts.[131]

The tools and equipment are often provided by the (pre-)financer (called 'assureur') or the mine manager.[132] On larger gold sites, tools and equipment as well as certain mining-related activities may also be supplied by independent teams of service providers that offer equipment rentals or specialised tasks, such as for example:[133]

- Land clearers (defricheurs), who strip the land of vegetation and may also help remove the overburden until the mineralised layer is reached.
- Operators of metal detectors and motor pumps who are hired based on temporary basis depending on the season and stage of the mine life cycle.
- Local smelters that provide an initial refinement of gold.

The mechanised equipment, such as the motor pumps, are dependent on fuel. Therefore, fuel providers also play a key role as a secondary actor. If the motor pump is hired, usually the hired team is responsible for also buying and providing the required fuel, whereas if the pump is owned by the mine site manager, he buys the fuel for it.[134]

Manual tools for mining (as well as for agriculture, including manioc and peanuts) are often manufactured locally by **blacksmiths**, rather than imported. This provides an important economic backward linkage of the ASM and agriculture sector which helps to support livelihoods, jobs and skills. There are associations of blacksmiths, whose members are also often involved in mining themselves. The blacksmithing skills and enterprises are said to be a very traditional activity, and have been passed from generation to generation. The blacksmiths are therefore very attached to and proud of their profession. [135]

It is difficult to obtain a generalised picture of the start-up and running costs as well as the income and profits of a blacksmithing enterprise. Blacksmiths stated that their income and profit depends on the demand, and were not able to provide a view of average sales, even though they said especially the small tools, knives, shovels and sickles, are in high demand. The following provides a view of expenses and prices obtained from a blacksmith association in Bossangoa[136]:

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[128] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD. A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[129] Interview with mine manager, Willy site, near Bossangoa, August 2020.

[130] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[131] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[132] Ndongo, Benjamin et De Jong, Terah (2019). Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.

[133] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[134] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[135] Interview with representative of a blackmithing association in Bossanguoa, July 2020.

[136] Interview with representative of a blackmithing association in Bossangoa, July 2020.

Running costs	Charcoal for fire (per sac)	5,000 XAF (9 USD)
	Scrap metal (abandoned container, per piece)	500,000 XAF (911 USD)
Sales prices	Plastering	5,000 XAF (9 USD)
	Axe	5,000 XAF (9 USD)
	Kitchen knife	1,000 XAF (1.80 USD)
	Shovel	3,000 XAF (5.45 USD)
	Crowbar	20,000 XAF (36.45 USD)
	Sickle	20,000 XAF (36.45 USD)
	Machete	5,000 XAF (9 USD)
	Small crowbar	1,500 XAF (2.70 USD)
	Repair of wheelbarrow	10,000 XAF (18 USD)

The main challenges for the local blacksmiths are the procurement of inputs, especially the scrap metal. They rely on scrap metal from abandoned containers or cars, which is expensive and difficult to transport from the site of abandonment to the workshop. Another challenge is the lack of demand and the competition of tools manufactured elsewhere, which are trade cheaply but are also of low quality and do not last long.[137] Their preference for support is for improved and modern equipment (hammers, anvils, gloves), learning of new techniques from elsewhere, and for long-term contracts with NGOs or local organizations. [138]

Child labour, including of children below 14 years, also seems to be common in the blacksmithing sector. The tasks are usually divided by age: Children aged 10 to 14 manufacture the wooden handles of knives, machetes and sickles. Their work consists of cutting wood to be used as handles of the tools , and then carving them with knives. They then use a hot tip to draw designs and shapes of figures on the handles before the older ones proceed with the assembly. This work is tedious because they have to produce more than ten handles in a working day, especially in case of high market demand. The older children, from 14-18 years old to more, work together in the forge to cut the pieces of scrap metal. They then use heavy hammers to give the final shape of the tool on the anvil. Children reported that this type of work has led to many cases of physical and bodily pain.[139]

6.5.2. PROVIDERS OF AUXILIARY SERVICES

In addition to the equipment providers, there is another tier of activities and actors in the secondary industry, which are related to mining but whose income is not directly related with or dependent on production. These are actors who make additional income as soon as there are mining activities, but do not depend on how much is produced nor in what phase the mining process is.

These actors include the providers of food and drinks, sellers of household goods for the mining camps, small traders selling cigarettes and alcohol, well as operators of bars and restaurants.[140] Equally, transportation is a crucial activity connected with the mining sector. Mine sites are often located remotely, even from rural villages and communities, and need to be accessed by the workers, the traders, the managers as well as by the equipment providers. In addition to people, tools and equipment need to be transported, as well as ore and gold consignments. Thus, moto taxi drivers are a key actor, and in turn increase the demand for fuel sellers.

Women play a key role in providing secondary, auxiliary services to the gold value chain, and on 77% of mine sites it was noted that the ASM activity also generates benefits for the women and community living nearby,

[137] Interview with representative of blacksmith association, Bossangoa, July 2020.
[138] Interview with representative of blacksmith association, Bossangoa, July 2020.
[139] Interview with representative of blacksmith association, Bossangoa, July 2020.
[140] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

even if they are not directly involved in the gold value chain. [141] On a large majority of mine sites, women provide food and drinking water for the workers, daily labourers and other service providers. [142] Women also take up roles in the construction and management of mining camps, in selling of fuel, or conducting other small trade at the mine site.[143] Sex work by women has also been reported on 20% of sites. [144]

6.6. Children and youth in the gold value chain

It is estimated that 52,600 children are involved in ASM in CAR overall (both diamond and gold sites), which represent approximately 18% of the total workforce in mining in the western parts of the country, and 23% in the east. [145] While these are estimates, it needs to be noted that this is lower than the percentage of children involved in child labour across the country (in all sectors), which stands at 29%.[146] Of the children involved in ASM, 13,800 are below 14 years old, representing 4% of the total mining workforce in the west of the country, and 8% in the East. The following table provides a general overview of demographics at mine sites in western CAR (both gold and diamond)[147]:

Demographic groups	Average proportion of the population of a mine site	Proportion of mine sites where this demographic group is present
Adult men	80%	100%
Adult women	2%	28%
Children (total, below 18)	18%	17%
Boys below 14 years	2%	15%
Girls below 14 years	2%	20%
Boys 18-14 years	11%	31%
Girls 18-14 years	3%	8%

ROLES AND RESPONSIBILITIES

At least one third of these children are not only present at the mine site accompanying their parents, but also actively working, and another third of them are employed in worst forms of child labour.[148] Children interviewed in Bocaranga confirm this by saying that most of the children from the surrounding villages are present on the

[141] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[142] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[143] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[144] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[145] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[146] Decadt, Leen, 2019: Child Labour Desk Review CAR. For Technical Service Organisation. Based on data from UNICEF.
[147] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[148] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

mine sites, and only the smallest ones, those between 2 and 4 years, do not work there.[149] But even in cases where children are mostly inactive and only present at the site because their parents are present, there might still be instances where they help adults transport food or water to the mine site.[150]

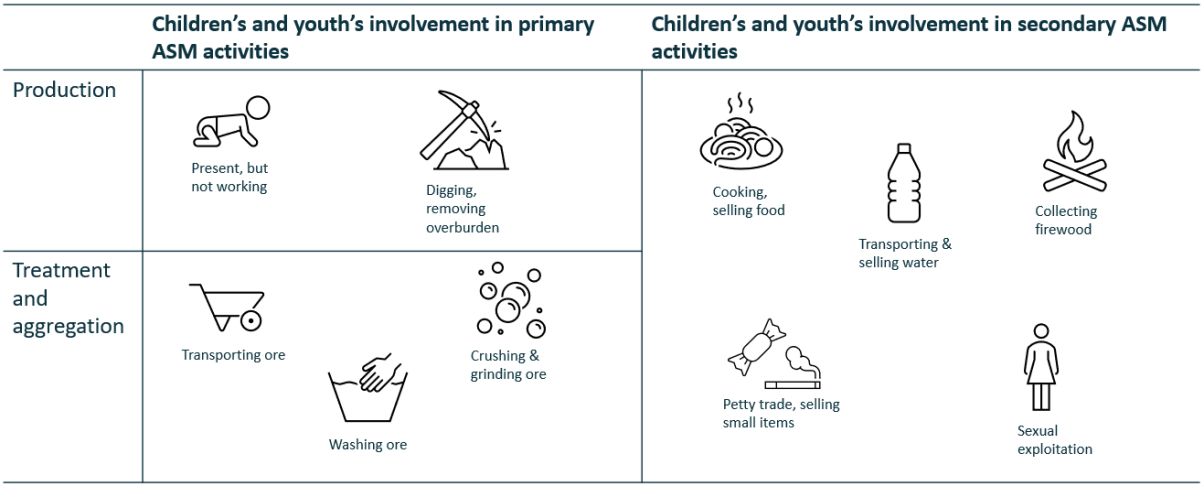

Figure 6: General overview of children's and youth's involvement in primary and secondary ASM activities.

In the cases where children work actively on mine sites, the large majority is involved in the same tasks as the women mine workers: Washing the ore (85% of sites where children are found to be present), transporting it (72% of sites), crushing and grinding minerals (61% of sites).[151] Children below 15 are also involved in digging (51% of sites), and in a very small number of cases also doing work underground (9 sites out of a sample of 249).[152] Even though this seems a small number, it is also often youth (between 15 and 18 years old) who work in the underground mines, in vertical and horizontal tunnels, which is one of the most dangerous tasks on a mine site. [153] Most of these tasks are considered hazardous and as worst forms of child labour by the OECD and ILO. Children are also involved in secondary activities, such as petty trade and selling small goods to miners.[154]

Children on sites near Bocaranga and Bossangoa, both boys and girls, confirm that their main tasks at the mine site are to crush, transport and wash ore, to supervise the running of motor pumps, as well as conducting secondary activities such as collecting firewood and water, and preparing food.[155] Some sources also indicate that girls are trapped in sexual exploitation, especially in cases where they do not find gold and are left to

[149] Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020

[150] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[151] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
The UNDP study of 2018 has looked at this data from a different angle and provides the percentage of children doing specific tasks out of the total number of children working at mines:

- 10% dig and drain water (East and West) ;
- 32% carry gravel bags and other heavy loads (37% east and 10% west);
- 29% wash and screen (16% east and 90% west);
- 31% crush (East)
- 69% accompany their parents working on the site (East and West), even during the school season;
- 27% sell goods (29% in the East and 20% in the West).

Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[152] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[153] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[154] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[155] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Focus group with Girls, Togbo (Bossangoa), 24.04.2020

destitution.[156] However, these statements are inconclusive, with other sources stating that they have never heard of this happening.[157] School authorities clarified that instead of sexual exploitation, one should rather talk about premature pregnancies, and that young girls usually start coming to the mine sites because their parents, siblings or relatives take them along, and that the girls may then be wooed and endowed by a 'lover' on site.[158]

In Yaloke specifically, children's involvement in the gold value chain seems to have increased with the arrival of the Chinese semi-mechanised mining company. This is due to the fact that the Chinese company dumps overburden and tailings that they have extracted with machinery. These dumps are easily accessible for the local population and do not need to be dug up in a mining operation anymore (thus not requiring prefinancing, time and effort); they can be rewashed and reprocessed in the hope of finding small amounts of left-over gold. Reworking the waste dumps is an easier and quicker way especially for women and children to make a bit of cash than agricultural activities.[159]

CHALLENGES AND IMPACTS

Children, both girls and boys state that they generally enjoy working at the mine site, especially because of the money they are able to earn, and that their favourite task is washing the ore since this then results in the sale of gold.[160] At the same time, they feel that working on the mine site is the worst type of work children could do, citing risk of impediments in their physical development, injuries and sickness as the main reasons. In line with the general large challenges around health and safety at mine sites (also for adults)[161], children state that working at the mine site is dangerous, and that they themselves have fallen ill or had injuries several times, and that there have been fatal accidents involving children in the past year.[162] According to them, the biggest difficulties for them stem from deep mining pits and shafts, the risk of collapsing pit walls burying the mine workers, the weight of the ore during transport, the potential of injuries during crushing, and the lack of drinking water on site.[163] At the same time, especially girls state that not only the work at the mines, but also the work in the agricultural fields is extremely hard, as well as the work as 'domestic aid' or in restaurants, where children are often mistreated according to them.[164]

Children stated that they came to the mine site the first time with their parents, older siblings or friends from the village.[165] They have learned the key tasks at the mine sites from their parents, as well as from their peers and friends[166] and are proud of supporting and helping their families.[167] They say that the skills acquired on the site could be useful for other vocations; the girls cite household chores whereas the boys state that working at mine sites is very hard and thus they have become brave, and feel equipped and able to do any kind of labour in the future. They state that there is no institution or structure locally where they could acquire other

[156] Interview with a teacher in Gbadock / Bolere (near Bocaranga), 24.-25.04.2020; Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020
[157] Interview with teacher in Ndowkété (Korompoko), 27.04.2020
[158] Interview with two school administrators in Bossangoa, August 2020.
[159] Interview with mine manager, Yaloke/Zawa, September 2020; interview with collectors in Yaloke, September 2020.
[160] Focus group with Girls, Togbo (Bossangoa), 24.04.2020; Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020
[161] See for example: A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.
[162] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020; Focus group with Girls, Togbo (Bossangoa), 24.04.2020
[163] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020
[164] Focus group with Girls, Togbo (Bossangoa), 24.04.2020
[165] Focus group with Girls, Togbo (Bossangoa), 24.04.2020; Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020
[166] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020; Interview with teacher in Ndowkété (Korompoko), 27.04.2020
[167] Focus group with Girls, Togbo (Bossangoa), 24.04.2020

vocational skills, except for tailoring for which they would have to go to Cameroon.[168] A teacher confirmed that there is no access to vocational training as there is no such training centre.[169]

INCOMES AND EXPENDITURES

Children are mainly paid as daily labourers, without a share in production. Both girls and boys stated that they can make between 3,000 and 5,000 XAF (approx. 5 – 8 USD) in a good week.[170] Other boys said they can make even 15,000 – 20,000 XAF (24 – 33 USD) in a good week,[171] though that is higher than the average income estimates for workers and day labourers on the mining sites, and thus to be taken with caution. Boys also stated that they are paid 1,000 XAF (1.80 USD) for digging $1m^3$ or a stipend of 1,000 XAF per day (1.80 USD)..[172]

Both boys and girls spend this income first and foremost on food, support to their parents, as well as on clothes and shoes,[173] in some cases in order to avoid being seen at school in torn clothes.[174] Boys also state that they use their money to support their family with food, pay their school fees, buy clothes and shoes, and buy small livestock such as chicken and goats.[175] Some of them stated to have been able to save between 10,000 – 30,000 XAF (18 – 55 USD) for such expenses.[176] This indicates that rather than children giving up school to go work at the mine sites, it may actually also help them stay at school. Children do not seem to be abandoning school because of gold mining, but rather complement school-going with mining wherever possible. Where the mine sites are remote, they may spend several weeks or months on the sites with their parents and away from the village or schools,[177] but children (both boys and girls), state that they do go to school and that they work on the mine site irregularly, mainly during holidays and before or after classes. [178]

This also shows that poverty seems to be a major driver of child labour at mine sites, including the need to find the means to cover basic necessities. [179] Two teachers state that children are often pushed by their parents to work and help earn income, and that the main attraction of the gold sector lies in the revenues that can be made on a daily basis.[180] Other school administrators make it clear that the main motivation for children to work on mine sites is to earn money to buy food (which is confirmed by the children's reports on expenditures). This provides and entry point to support school meals and school feeding programmes, which would allow children to stay in school instead of having to earn money.[181] A government official also estimates that the gold mining and trading sector will continue to attract children and youth due to the income it can generate (or is perceived to be generating) and thus help sustain them and their families.[182]

The role of poverty is further confirmed by what the children suggest would help them leave the work at mine sites: They state that their communities and parents should learn about the difficulties of children in working

[168] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020; Focus group with Girls, Togbo (Bossangoa), 24.04.2020
[169] Interview with a teacher in Gbadock / Bolere (near Bocaranga), 24.-25.04.2020
[170] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Focus group discussion with 14-18 year olds boys in Bossangoa, 02.05.2020.
[171] Focus group with Girls, Togbo (Bossangoa), 24.04.2020; Focus group discussion with 14-18 year olds boys in Bossangoa, 02.05.2020.
[172] Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020
[173] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020; Focus group with Girls, Togbo (Bossangoa), 24.04.2020
[174] Focus group with Girls, Togbo (Bossangoa), 24.04.2020
[175] Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020
[176] Focus group discussion with 14-18 year olds boys in Bossangoa, 02.05.2020.
[177] Interview with teacher in Ndowkété (Korompoko), 27.04.2020; Focus group with Girls, Togbo (Bossangoa), 24.04.2020
[178] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020; Focus group with Girls, Togbo (Bossangoa), 24.04.2020
[179] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020
[180] Interview with a teacher in Gbadock / Bolere (near Bocaranga), 24.-25.04.2020; Interview with teacher in Ndowkété (Korompoko), 27.04.2020
[181] Interview with two school administrators in Bossangoa, August 2020.
[182] Interview with Jules Yaganza, 10.04.2020

at mine sites or elsewhere,[183] and say that their parents, especially their mothers, should be supported with cash stipends, so that they can kick-start a small business, or expand agriculture, livestock, or fish farming, and through that ensure that the children do not have to work at the mine sites and can get a proper education.[184]

PUSH AND PULL FACTORS

Beyond poverty, there seem to be additional push and pull factors for child labour at mining sites. These involve lack of awareness of child labour and its impacts, the presence and functioning of schools and childcare facilities, personal ambitions and social or behavioural norms.

A lack of awareness about the impacts of child labour may play a role on the level of the community and those managing mine sites. Asked about the age from which children are allowed to work on the mine site, mine managers interviewed cited 16 years on average. More than half said an age below 18, and 26% even cited an age below 14 years old.[185] Children interviewed in Bocaranga stated that they had started working on mine sites at the age of 12, 8 and 5,[186] and a teacher stated that parents take their children to work on mine sites from the age of 10 or 12.[187] However, at the same time, miners interviewed for previous studies recognise child labour as morally wrong and harmful. [188] Thus the root causes may have less to do with a lack of awareness or willingness to tackle the issue, but with other economic and social factors.

The presence and functioning of schools and child care facilities may play a large role. The baseline study of 2018 found that in the western parts of CAR, schools are located a 28 minutes' walk away from mine sites on average, whereas in the East the average distance is 3 hours, which could potentially explain why more children are present at mine sites in the East.[189] Stakeholders also mentioned that the main reason for children working at mine sites is that there are no schools in many mining areas, or if there are school buildings, teachers are not paid and thus do not teach. [190] A teacher confirmed this by stating that while there may be primary schools in each village, there are very few qualified teachers, and few appropriately furnished school buildings.[191] The impacts of Covid-19 have further confirmed this: Stakeholders stated that the widespread closure of schools due to the pandemic has led an increased number of children to work on gold mining sites, though often independently rewashing tailings rather than being integrated in to the mine production.[192]

Children in Bossangoa and Bocaranga said that in principle they like going to school, because they are aware that education would help them and their families get out of poverty, and that school can provide them with the knowledge that is required to find good employment. At the same time they underlined that they do not like going to school in practice, because they are whipped, and because the teachers reportedly force them to work on their fields, transport bricks or bring poles for their houses, go fishing or hunting for them, or bringing them manioc.[193] It was confirmed that this issue is not an isolated incident and that this also happens in other

[183] Focus group with Girls, Togbo (Bossangoa), 24.04.2020
[184] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020
[185] Ndongo, Benjamin et De Jong, Terah (2019). Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.
[186] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020
[187] Interview with teacher in Ndowkété (Korompoko), 27.04.2020
[188] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[189] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[190] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[191] Interview with a teacher in Gbadock / Bolere (near Bocaranga), 24.-25.04.2020
[192] Interview with a mine manager, Yaloke/Zawa, September 2020; Interview with a mine manager at Willy site near Bossangoa, August 2020.
[193] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020

areas of CAR.[194] This issue in turn may be connected to a lack of funds for teachers and schools, and funds not being transmitted from the central Government in Bangui to the districts and local schools.[195] Thus a dysfunctional education system may be one of the indirect drivers of child labour, and if child labour at mines (or elsewhere) is to be tackled successfully, first and foremost the education system needs to be changed and supported to cater to children's needs.

Similarly, enabling child care services or community based child care might help to keep children away from mine sites – especially the youngest ones who are often just present because their parents are working at the mine.[196] This is confirmed by boys interviewed in Bocaranga, who stated that there are a few children that stay in the village and do not come to the mine sites, and that those all have someone who is able to look after them while their parents work on the site.[197]

Lastly, a pull factor that should not be missed especially for elder children and youth, is personal ambition. Some of the older children and youth find gold mining not only one of the quickest ways to make a living, but also an opportunity and chance for a way up and way out of their traditional, rural society and livelihoods. Some of the 14 - 18 year olds state that their parents were actually opposed to them working on the mine sites and would have wanted them to take on a field and cultivate, but that they had other plans for themselves than being a farmer.[198] Other stakeholder also confirm that youth often turns to gold mining to fulfil personal ambition, in order to be able to afford new phones, speakers, and other consumer goods.[199]

SOCIAL NORMS

Last but not least, social and behavioural norms play a role, both at the level of the mine sites and at the different trading stages.

Overall, many interlocutors state that parents and communities generally find it acceptable to send children to work in the face of poverty and food insecurity. To them, it would be key to sensibilise parents and communities more on the negative and long-term impacts of child labour, as well as teaching children more about their rights.[200] In addition to this, it is notable that the mine sites where no children are present are as informal as others, but seem to be governed by mine managers or landowners who pro-actively prohibit children near the mine sites. [201] It is also apparent that certain social norms relating to child labour are valid on mine sites: Children and youth state that there are norms around what kind of tasks can and should be done by children of different ages, for example saying that at school-going age (under 17), they were not allowed to enter the pits and tunnels, and only afterwards (from 17 onwards) were allowed to do digging work, whereas those under 12 are generally present without working (because their parents are present), and only from 12 years onwards they are allowed to take on some auxiliary tasks (water, food, etc).[202]

Thus the social norms and influence of customary authorities and mine managers should not be underestimated.[203] At present, this potential seems underused: Children stated that they do not have to ask

[194] Interview with child labour specialist at UNICEF CAR, 18.05.2020
[195] Interview with child labour specialist at UNICEF CAR, 18.05.2020
[196] Interview with teacher in Ndowkété (Korompoko), 27.04.2020
[197] Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020
[198] Focus group discussion with 14-18 year olds boys in Bossangoa, 02.05.2020.
[199] Interview with a mine manager, Yaloke/Zawa, September 2020; Interview with a mine manager at Willy site near Bossangoa, August 2020.
[200] Focus group with Girls, Togbo (Bossangoa), 24.04.2020; Focus group discussion with 14-18 year olds boys in Bossangoa, 02.05.2020.
[200] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020
[201] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[202] Focus group discussion with 14-18 year olds boys in Bossangoa, 02.05.2020.
[203] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

anyone for the permission to enter mine sites.[204] For them it is clear that the mine managers as well as the customary authorities (village chiefs) would be best placed to prevent children from working at mine sites.[205] Mine managers themselves state that the town mayors in collaboration with the local and customary authorities (chiefs on group, village, neighbourhoods) and their own oversight would have most influence over children's work at mine sites, especially if they collaborate closely with the children's parents.[206] Both boys and girls also see their parents as their main protectors, and it is the parents who look after them when they fall ill or have an injury from working at the site.[207]

This indicates that there may be levers to work with mine managers and community leaders to address issues of child labour. One key finding of earlier studies has been that mine sites where children are working are not as productive as other mine sites. While this may be influenced by many different factors, it could still be used as an awareness raising and advocacy tool with mining communities and mine site managers.[208] In addition, several stakeholder suggest to raise awareness about the benefits of literacy and the negative impact of child labour on their health and development, combined with supporting income and livelihoods of families of working children.

Further downstream in the value chain, at the level of traders and buying houses, there seems to be an awareness of the negative impacts and challenges related to child labour in mining on one hand, but a limited ability or willingness to take action on it. Buying houses generally believe that buying only through formal channels suffices to ensure that no child labour occurs in the value chain. They state that they only buy from official traders and producers, which are obliged by the law to not employ children.[209] One of the buying houses also states that they are conducting awareness raising when they visit their producers.[210] At the same time, mine managers and collectors state that traders and buying houses never ask about child labour when they buy gold, and that their only goal is to buy gold and make a profit.[211]

There seems to be a lack of practical tools or practices for buying houses to not only ask and check about child labour in their chain, but also to adequately support producers in eliminating it. It seems that neither their own downstream buyers and customers ask about this issue beyond the requested 'formality/legality' of the chain; thus little pressure or guidance currently comes from the market. This is confirmed by the union of ASM cooperatives, which states that assessing the risk of child labour and then putting in place mitigation measures is rarely done by traders, exporters or entities further downstream.[212] The union itself states that it is conducting awareness raising and sensibilization efforts on this topic, and is implementing a strategy that focusses primarily on women's economic empowerment (alternative livelihoods, business skills, etc) as an indirect way to combat poverty and thus child labour.[213]

Addressing child labour in ASM has received a lot of attention in recent years. There are good practice standards and guidelines supported by regulation and industry initiatives. These are presented briefly in the chapter on

[204] Focus group with Girls, Togbo (Bossangoa), 24.04.2020; Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020
[205] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020; Focus group with Girls, Togbo (Bossangoa), 24.04.2020
[206] Interview with mine manager, Yaloke/Zawa, September 2020; Interview with mine manager at Willy site near Bossangoa, August 2020.
[207] Interviews with girls in Bolere and Ndemou (near Bocaranga), 24.-25.04.2020; Interview with boys in Gbadock and Bolere (near Bocaranga), 24.-25.04.2020
[208] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[209] Interviews with gold buying houses in Bangui, 03.06.2020
[210] Interviews with gold buying houses in Bangui, 03.06.2020
[211] Interview with mine manager, Yaloke/Zawa, September 2020; Interview with mine manager at Willy site near Bossangoa, August 2020.
[212] Interview with representative of the union of ASM cooperatives, 03.06.2020
[213] Interview with representative of the union of ASM cooperatives, 03.06.2020

governance. In addition, recent studies have analysed the most effective approaches in tackling child labour in ASM, which are taken up in the chapter on recommendations.

6.7. Interrelations with other livelihoods

Many artisanal miners, especially those who are mine managers, combine mining activities with agriculture as two of their primary livelihoods.[214] However, it is crucial to note that artisanal mining seems to be the main economic activity for mine workers, in which they engage almost full time and throughout the year. This has been confirmed by two recent studies: Most miners work 6 days a week at the mine site,[215] and there is little difference in the amount of mining activities conducted in the dry and the rainy season.[216] Mining is often also the only source of cash for remote communities – cash which is needed to pay for basic goods and services such as health care and education.[217] This means that mining is a primary livelihood and economic activity for the workers, and parallel engagement in agriculture or other sectors is relatively small and sporadic.

The study from 2018 also found significant differences between the western and eastern parts of CAR related to this. Mine workers in the west seem to be much more dependent on and also specialised in mining as the main livelihood, and their income sources are not as diversified: 90% of workers in the West mentioned that mining is their principal activity (compared with only 55% in the East). 87% of workers in the western part also earn more than half of their household income in mining (compared with 3% in the east); 65% even more than three quarters.[218]

This is confirmed by looking at different income sources of miners' households: It was found that miner households in the western parts of CAR get as much as 74% of their income from mining on average, and only 12% from agriculture, 5% from livestock, and 4% from hunting and fishing.[219] The study also shows that those who combine mining with agriculture appear to earn two times less than those who only mine.[220] Given that there would be alternative options of income beyond mining, it needs to be concluded that mine workers *actively choose* to not diversify their income sources and prefer to stay mainly in mining. This might be explained by the fact that miners need to stay visible for their (pre-)financers and be active on the site to attract the necessary investment. This means however, that much of the miners' household's income is again spent on being able to continue mining activities, i.e. on transport to the mine site, or the costs of living in a mining camp.[221] This may in turn explain why mining is a crucial income source and provides better earning than alternative livelihoods, but still keeps many trapped in poverty. This underlines the need to establish better (pre-)financing systems and access to formal credit and loan schemes for artisanal miners, the pooling / sharing of mining equipment, and the need for diversifying livelihoods.[222]

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[214] Ndongo, Benjamin et De Jong, Terah 2019: Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.

[215] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique*. IPIS, Nov 2019. Preliminary, unpublished draft version.

[216] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[217] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[218] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[219] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[220] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[221] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

[222] Ndongo, Benjamin et De Jong, Terah (2019). Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.

Below is a detailed overview of the income sources and expenditures of mining households (both diamond and gold mining), found in the western parts of CAR as of 2018.[223]

Income source of mining households in Western CAR[224]	Percentage of household income
Mining	74.3%
Domestic chores	1.5%
Agriculture	12.1%
Livestock	4.7%
Hunting / fishing	3.7%
Sale of goods	2.0%
Provision of services	0.6%
Others	1.3%

Expenses of mining households in Western CAR[225]	Percentage of expenses
Subsistence	40.7%
Leisure	4.8%
House (construction, renovation)	2.8%
Household goods	5.8%
Mining	21.2%
Education of children	6.5%
Commercial enterprise	0.8%
Agriculture or livestock	7.6%
Savings	3.1%
Health	5.7%
Other	1.0%

It is key to note that when looking at the expenditures of gold and diamond mining households, and where the revenues from mining are re-invested, significant differences have been found between men and women. Men tend to re-invest quite a lot more into mining activities than women, while women invest double the amount of men in other small commercial enterprises. A much larger proportion of men's expenditures are also spent

[223] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[224] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[225] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

on food and drink, whereas women tend to spend more on living quarters and household goods. In addition, women also tend to spend a little bit more on health, education and savings.[226] This underlines the recommendation to support the secondary economic activities and small enterprises that surround the mining sites, which is dominated by women.

Expenses of mining households in CAR[227]	Men	Women
Subsistence	33.3%	17.5%
Leisure	5.4%	5.9%
House (construction, renovation)	8.7%	19.4%
Household goods	6.3%	10.0%
Mining	18.8%	14.4%
Education of children	7.0%	8.3%
Commercial enterprise	2.6%	5.3%
Agriculture or livestock	7.8%	7.3%
Savings	3.2%	4.4%
Health	6%	7.3%
Other	0.9%	0.2%

It needs to be noted that mine managers and collectors frequently underline the fruitful interrelations between gold mining and other economic sectors. Mine managers in the gold sector seem to be able to invest their own funds quite frequently (instead of depending on pre-financing from other actors), using funds that they earned in other economic activities. At the same time, they also re-invest earnings from the gold sector into other sectors. These other economic activities are however frequently not related to agriculture, but to the third sector, for example mine managers from Yaloke underlined that gold mining has enabled ex-combatants to leave armed groups and to invest in their housing and in other revenue generating activities (trade, hardware shops, moto taxis, etc).[228]

While interrelations between gold mining and agriculture exist but are limited, it is still key to note that there are links: Given that the mining population is engaged full time in the mines, they depend on others to provide food staples and agricultural products, which could potentially lead to a fruitful relationship that can also reinforce agricultural livelihoods. In that sense, Government officials recommend to focus investment into the agricultural sectors that are linked with the mining sector, focussing on food staples that can satisfy the demand of miners and help combat food insecurity.[229] At the same time it is crucial to keep in mind that mining also has negative impacts on other livelihoods, including agriculture and fishing, through its environmental effects. For

[226] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[227] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[228] Interview with collectors, Yaloke, September 2020.
[229] Interview with Jules Yaganza, 10.04.2020.

example, it was found that almost 400 million m3 of soil is disturbed each year on river banks or in dry beds, of which about 10% (by volume of gravel) is discharged directly into the water.[230]

6.8. Governance and regulatory framework

This section provides some key information about the governance and regulatory framework related to artisanal gold mining and trade as well as child labour. It is structured into a national and international part. A full analysis of the governance and regulatory frameworks would go beyond the scope of this report, therefore this chapter focuses on highlighting key aspects and instruments as well as barriers shaping the way gold supply chains from CAR work.

6.8.1. NATIONAL LEVEL

Overall, CAR has a relatively advanced legal framework related to mining, which accommodates ASM as one option of mining operations that are legally permitted. The Mining Code of 2009 provides for three types of mining permits[231]:

- **Artisanal mining**, defined as extraction of minerals using methods and tools that are manual, somewhat mechanised, but not industrial, to a maximum depth of 30 meters and taking place within an 'artisanal mining zone'. By 2018, the ministry had however not yet defined any such zone, thus making the existing permits somewhat incongruent with the Mining Code.[232] In addition, this hampers security of tenure for ASM, thus discouraging longer-term investments in the mining operation.
- **Semi-mechanised mining**, which is defined as using some mechanised methods and has a cap on the annual amount of production allowed.
- **Industrial mining**, with two sub-groups: large industrial mine and small industrial mine. This type includes fixed installations and industrial mining methods, and is operating on a proven ore body.

The Mining Code formally prohibits child labour in the mining sector. Beyond the activity of mining, the Mining Code also formally recognises and licenses particular actors in the mineral supply chain, as shown in the initial value chain overview. This includes namely:

- **Artisanal mine workers**, who are supposed to obtain a 'carte d'ouvrier minier'.
- **The 'artisan minier'**, i.e. the mine manager, who needs to obtain a 'patente' on an annual basis and is only allowed to hold an artisanal permit. This 'patente' can only be held by CAR nationals. The mine manager is allowed to sell gold to formal traders (collecteurs) or buying houses.
- The **mining cooperative** can hold an artisanal as well as a semi-mechanised permit. The cooperative can only be constituted by CAR nationals. The cooperative is allowed to sell gold to formal traders, buying houses, and jewellery makers, and is allowed to export minerals itself.
- **Mining companies**, which are allowed to be constituted by foreigners. Mining companies can trade and export their production themselves.
- **Formal traders**, called **'collecteurs'**, who need a license and are allowed to buy from the 'artisan minier' or cooperatives. They are allowed to sell the gold to buying houses, but not export it or sell it to other 'collecteurs'. They have to renew their permit annually. Collectors are also obliged to make four copies of a receipt ('bordereau') for every gold purchase – one copy for the seller, one for the collector and two for the buying house to which the collector sells onward to.

[230] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[231] Cf. Code Minier de la RCA, LOI N°09.005 du 29 Avril 2009
[232] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

- **Buying houses and their agents** who are allowed to buy from 'collecteurs', the mine manager (artisan minier), or cooperatives, and to export. Requirements for the permit of a buying house are high, especially in terms of financial capital[233]. Buying houses are obliged to hand one copy of the collectors' receipts to BECDOR upon export of a gold shipment. The buying houses are usually connected to international traders and refiners.[234]
- The Mining Code also recognises and provides the requirements for licenses of **domestic jewellers, refiners as well as gemstone cutters** (for diamond and other precious stones).

While the legal framework with regards to ASM generally may be advanced, Government representatives state that reform of the legal framework is needed in particular for the artisanal gold sector, as this sector is still relatively new and unknown in CAR. [235] However, the major obstacles to formalisation of the artisanal mining and trading of gold may stem less from the legal framework than from the Government's institutional and governance capacities. There are a relatively large number of institutions and state agencies involved in regulating and governing the sector, but coordination amongst them is often lacking, and their human and financial resources are extremely limited.[236]

Within the Ministry of Mines, it is the Directorate for Mines and Geology that is responsible for the mining sector. The Directorate is composed of three Sub-Directorates:

- The Sub-Directorate for mining research and the cadastre, tasked with geological research and data about the mineral sector;
- The Sub-Directorate for industrial mining, ASM and the protection of the environment, tasked with environmental protection and the promotion of ASM and industrial mining techniques;
- The Sub-Directorate for data, regulation and monitoring of minerals trade, tasked with providing statistics on the sector and supervising the minerals trade

Each of these Sub-Directorates includes several Services, of which the Service on ASM and the "Service du Bureau d'Evaluation et de Contrôle de Diamant et Or (BECDOR)" are most relevant for the ASGM sector and connected supply chains. The following provides an overview of the Direction Generale des Mines within the Ministry of Mines:

[233] Matthysen, K. and Clarkson, I. 2013: Gold and diamonds in the Central African Republic.
[234] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.
[235] Interview with Christian Ouloui, 10.04.2020; Interview with Jules Yaganza, 10.04.2020.
[236] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

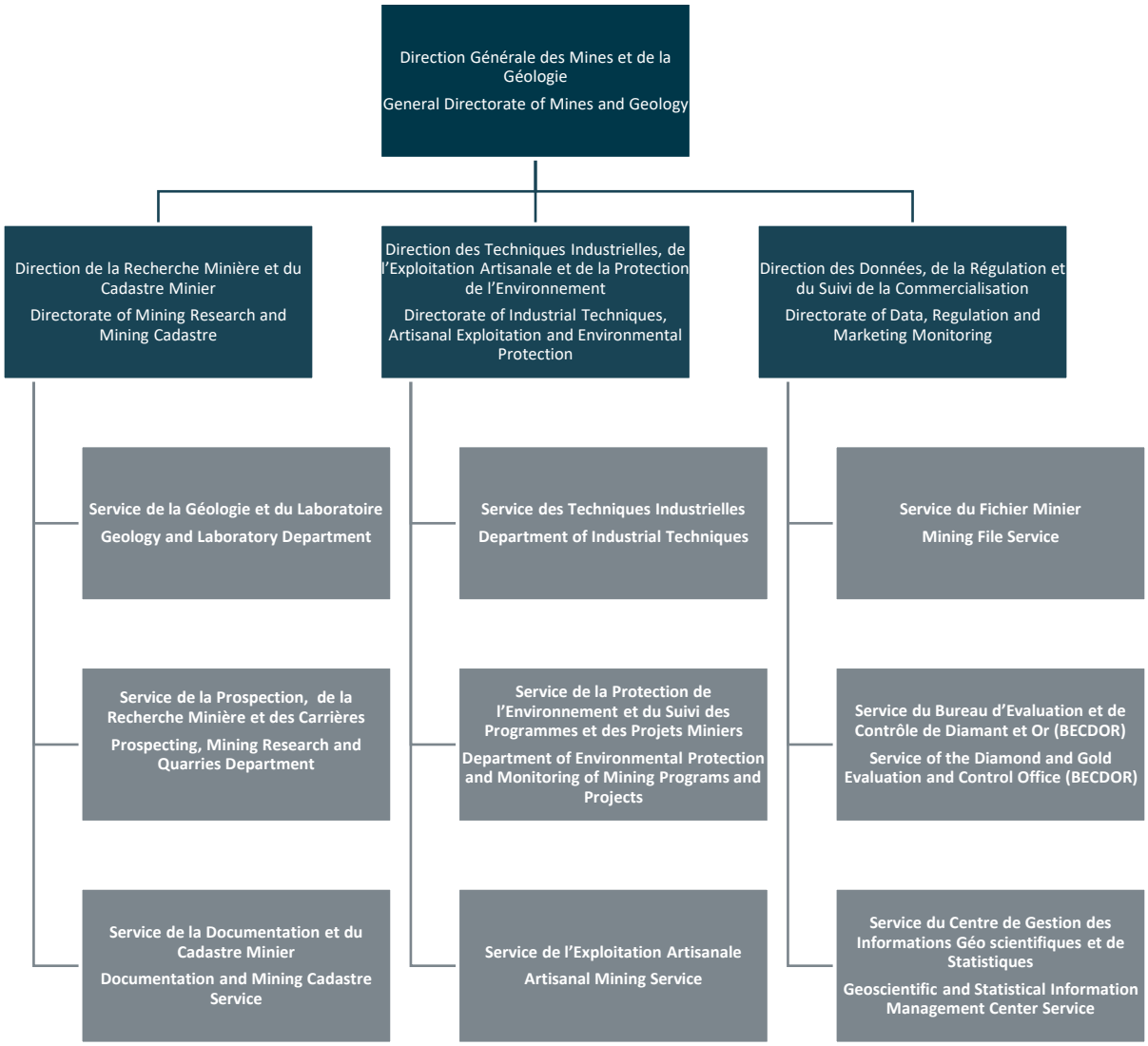

Figure 7: Structure of the Direction Générale des Mines. Source: https://www.mines.gouv.cf/article/29/organigramme.

There are also several law enforcement agencies intervening in the ASM sector, often without coordination and overlapping mandates, which creates inefficiencies in combatting illegal and illicit mining and trade of gold. These agencies include the Unite Anti-Fraude (USAF – under the Ministry of Mines, but composed of the national Police and the Gendarmerie), the Gendarmerie, and the Customs.[237]

In addition to coordination, the presence and resources of these institutions are a large barrier for appropriate governance of the sector. The Ministry of Mines and its agencies are mainly present in Bangui with few decentralised services.[238] The Ministry runs 6 Directions régionales des Mines and 18 Services Préfectoraux des Mines, which constitute its presence in the provinces and municipalities.[239] However, these local governance structures are often weak and lack the financial, human and logistical resources to effectively govern the sector across vast territories. The collaboration between the Regional Directorates and the Ministry's agencies in

[237] A. Jaillon, G. de Brier 2019: *Cartographie des sites miniers artisanaux dans l'ouest de la Centrafrique.* IPIS, Nov 2019. Preliminary, unpublished draft version.
[238] Interview with Christian Ouloui, 10.04.2020.
[239] Interview with Nathan Beangai, 15.04.2020. The list of Regional Directorates of the ministry of Mines can be found in the Annex.

Bangui is difficult, not least because the regional directorates are overloaded with requests from the agencies in Bangui, who rely on their information and activities. [240]

This has particular impact on the monitoring and control of gold production and trade, which BECDOR is mandated to oversee. BECDOR relies on information and statistics from the self-declaration of licensed traders and buying houses, as well as from mine service agents of the Regional Directorates. The latter often struggle to visit remote mine sites and trading points, which makes it difficult to collect reliable statistics. This facilitates corruption and fraud, including underreporting of gold volumes.[241] BECDOR currently only has 9 agents, based in Bangui, of which 2 posts are currently not filled, and 2 are exclusively focussing on procedures connected to diamond trade under the Kimberley Process.[242] This illustrates the general picture of institutional weakness and difficulty of the Government authorities to govern gold mining and trade across the vast territory, as well as the gaps of reliable information and data on the sector.

Besides this, informal trade and smuggling, fraud and corruption are major challenges for the formalisation of the ASM gold sector. The involvement of influential informal traders, as well as the political and other elites, including through 'cooperatives banco', makes it difficult to address such challenges.[243] Numerous informal taxation practices have been observed around the extraction and trade of gold, with 75% of mine site managers paying something to the village chief after the gold is sold, and 50% paying something to a Government authority – the municipality, USAF or the mining administration are cited as most frequent governmental recipients.[244] Corruption, extortion and racketeering of artisanal miners is again driving the gold trade further underground, as miners and other actors try to avoid interaction with authorities in what becomes a vicious circle.[245]

6.8.2. INTERNATIONAL DUE DILIGENCE REQUIREMENTS

In addition to the national governance framework, CAR's gold mining and trading sector is also governed by regional and international legislation, standards and guidances.

The key instrument to note is the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (OECD Due Diligence Guidance in the following).[246] It provides guidance for companies to avoid contributing to conflict and the worst human rights abuses through their mineral purchasing decisions and practices. This Guidance is for use by any company potentially sourcing minerals or metals from conflict-affected and high-risk areas. It is global in scope and applies to all mineral supply chains, including gold.[247] It has become a key instrument for driving responsible supply chains because it has become the basis of several legislations and is referred to in many industry standards, certification schemes and guidances, including those applying to CAR or international gold chains in general – some of which are listed further below.

[240] Interview with Christian Ouloui, 10.04.2020.
[241] Interview with Christian Ouloui, 10.04.2020; Interview with Jules Yaganza, 10.04.2020.
[242] Interview with Jules Yaganza, 10.04.2020.
[243] Interview with Jules Yaganza, 10.04.2020.
[244] Ndongo, Benjamin et De Jong, Terah (2019). Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.
[245] IPIS 2018: Central African Republic: A Conflict Mapping.
[246] OECD Due Diligence Guidance, 2011: https://www.oecd.org/daf/inv/mne/OECD-Due-Diligence-Guidance-Minerals-Edition3.pdf
[247] OECD website on the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas http://www.oecd.org/corporate/mne/mining.htm

The OECD Due Diligence Guidance provides companies with a five-steps framework for a due diligence process to identify and manage risks related to conflict and worst human rights abuses.[248] These steps need to be applied by all entities and companies in a supply chain. They are:

1. Establish strong management systems
2. Identify and assess risks in the supply chain
3. Design and implement a strategy to respond to identified risks – based on the principle of progressive improvement, companies need to work together with their suppliers to address and mitigate any identified risks and to improve due diligence practices; disengagement from the suppliers should only be the last resort.
4. Carry out independent third-party audit of supply chain due diligence at identified points in the supply chain
5. Report on supply chain due diligence

The specific 'risks' the Guidance speaks to are the following:

1. Serious *abuses associated with the extraction, transport or trade of minerals:*
   a. *Any forms of torture, cruel, inhuman and degrading treatment;*
   b. *Any forms of forced or compulsory labour;*
   c. *The worst forms of child labour – defined in line with the ILO convention No. 182 on the Worst Forms of Child Labour (1999)*
   d. *Other gross human rights violations and abuses such as widespread sexual violence;*
   e. *War crimes or other serious violations of international humanitarian law, crimes against humanity or genocide.*
2. Direct or indirect support to non-state armed groups
3. Direct or indirect support to public or private security forces
4. Bribery and fraudulent misrepresentation of the origin of minerals:
   a. *Money laundering*
   b. *Non-payment of taxes, fees and royalties to governments*

The OECD Due Diligence Guidance forms the basis of several regulatory and industry frameworks applicable to gold mining and trading from CAR. First and foremost, this includes the International Conference on the Great Lakes Region (ICGLR)'s Initiative against the Illegal Exploitation of Natural Resources (RINR)[249], of which CAR is a member, and it's **Regional Certification mechanism (RCM)**[250] that provides a framework for a verified chain-of-custody in gold and 3T supply chains up to the point of the exporter. Even though CAR is a member of RINR, it has not yet incorporated the requirements of the RCM in its domestic law and thus the RCM is not currently being implemented – unlike for example in DRC.

In addition, CAR is also covered by existing or planned regulation such as the **US Dodd Frank Act's Section 1502**[251] (applying to gold coming from countries bordering the DRC) and the **EU Regulation on Conflict Minerals**[252] (applying to gold from conflict affected and high-risk areas). The latter will come into force in 2021. These regulations in essence make it mandatory for certain types of companies in the US and EU to apply the OECD Due Diligence Guidance on their supply chains of gold (and other minerals).

Furthermore, international industry initiatives, certification and audit schemes in the gold sector have also made the application of the OECD Due Diligence Guidance a requirement. This includes the **London Bullion**

[248] Due diligence is an on-going, proactive and reactive process through which companies can ensure that they respect human rights and do not contribute to conflict. (OEC Due Diligence Guidance)
[249] http://www.icglr-rinr.org/index.php/en/
[250] http://www.icglr-rinr.org/index.php/en/certification
[251] SEC Factsheet: https://www.sec.gov/opa/Article/2012-2012-163htm---related-materials.html
[252] EU In Focus: https://ec.europa.eu/trade/policy/in-focus/conflict-minerals-regulation/index_en.htm

Market Association (LBMA) and its Responsible Gold Guidance[253], which all refiners on the LBMA Good Delivery List have to adhere to. In addition, the **Responsible Minerals Initiative**'s assurance programme[254] of gold refiners also includes the requirements of the OECD Due Diligence Guidance in their audits and certification, as does the **Responsible Jewellery Council's** Code of Practice[255] (along with additional requirements on social and environmental impacts). On the level of mining, the **World Gold Council's** Conflict-Free Gold Standard[256], which all members – usually large-scale mining companies - have to adhere to, is also aligned with the OECD's Guidance.

Considering the above requirements and expectations of downstream markets and consumer countries, it becomes clear that CAR's ASGM sector is far from ready for 'responsible' gold markets. CAR's regulatory and governance framework does require a chain of custody and due diligence, even if the RCM has not been translated into national law, since the same rules are applied to gold as to diamonds, which are covered by the Kimberly Process. But since almost all gold mining and trade remain informal at present, and gold from CAR finds markets that are not covered by or do not adhere to international requirements, this is not being implemented in most cases. A major effort to formalise the ASGM sector and the connected gold trade is required to improve this.

Knowledge and expertise around international due diligence requirements and good practices also remains very limited to non-existent within the gold sector in CAR. Traders and mine site managers in both field locations (Bossangoa and Yaloke) stated that they have never heard of due diligence and do not know what it means, although one cited the legal and documentary requirements of the mining law related to gold sales.[257] But even requirements of the national Mining Code and the traceability requirements of the Kimberley Process are not well known: A study shows that only 35% of miners (both gold and diamonds) have basic knowledge on this.[258] Raising awareness and knowledge around legal requirements and international expectations are therefore needed, both at the level of mining and trading. Initial trainings on due diligence have been provided under USAID's AMPR programme already, and there are plans to expand this further in the coming years.

The international framework on gold mining and supply chains also includes voluntary standards and frameworks which focus on ASM production specifically. The most important ones are Fairtrade[259], Fairmined[260] and the Code of Risk-mitigation for ASM engaging in Formal Trade (CRAFT)[261]. While these do not seem to be implemented in CAR at present[262], looking at their key requirements is useful as a guidance and vision towards a responsible artisanal and small-scale gold production and connected supply chain. The three frameworks include a broader scope of social and environmental issues than the risks mentioned under the OECD Due Diligence guidance. Fairtrade and Fairmined are certification mechanism while CRAFT has been designed as an open source 'escalator tool' for ASM to gradually transition from conformance with the OECD Due Diligence guidance to broader social and environmental aspects. The CRAFT Code promotes progressive improvement, which makes it more fit for purpose to engage ASM producers who might not be at the level of addressing all standard requirements but who are committed to improve.

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[253] LBMA Responsible Gold Guidance: http://www.lbma.org.uk/assets/downloads/responsible%20sourcing/Responsible_Gold_Guidance.pdf
[254] RMI RMAP: http://www.responsiblemineralsinitiative.org/responsible-minerals-assurance-process/
[255] RJC CoP: https://www.responsiblejewellery.com/rjc-certification/code-of-practices-certification13-2-2/
[256] WGC CFGS: https://www.gold.org/about-gold/gold-supply/responsible-gold/conflict-free-gold-standard
[257] Interview with collectors, Yaloke, September 2020; Interview with mine manager at Willy site near Bossangoa, August 2020.
[258] Ndongo, Benjamin et De Jong, Terah (2019). Baseline Knowledge-Attitudes-Practices (KAP) Survey of Artisanal Miners in Central African Republic. Washington, DC: USAID Artisanal Mining and Property Rights Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ.
[259] Fairtrade Gold Standard: https://www.goldstandard.org/tags/fairtrade
[260] Fairmined Standard: https://www.fairmined.org/the-fairmined-standard/
[261] The CRAFT Code: https://www.craftmines.org/en/what-is-craft/
[262] USAID's AMPR programme has provided training for key stakeholders in CAR's gold sector on the CRAFT Code and due diligence requirements.

These three frameworks also cover various aspects of child labour, which go beyond the requirement of the OECD Due Diligence Guidance on worst forms of child labour:

Requirements	Fairtrade Standard	Fairmined Standard	CRAFT Code
Minimum age for regular work (15) and for hazardous work (18)	x	x	x
Where children under accepted age have been employed, they should be protected from harmful risks including trafficking and slavery (protecting from and eradicating worst forms)	x	x	
When children under accepted age need to work to sustain their families, this should be done outside of school hours and no harmful work should be allowed.	x	x	
ASM organisations should make the best effort to respect the UN Convention on the Rights of the Child (UNCRC) and prevent child labour.	x	x	
Have a policy on child labour	x		
Where applicable decent youth employment opportunities should be enabled		x	
Baseline assessment of child labour is carried out			x
Best efforts to eradicate child labour for persons under 15	x	x	x

6.8.3. SUPPORT SERVICES AND INITIATIVES

This chapter provides a brief overview of services, infrastructure or initiatives that aim at supporting or improving mine workers' livelihoods, addressing child labour in the sector, or ensuring that revenues from the gold sector benefit the local population. Generally it is to be noted that few support services and initiatives are being implemented in ASM areas and communities, especially in relation to vocational training and skills development, the provision of formal financing services, or the formation of grass-root workers' cooperatives. There are however a few initiatives and services by the Government and international organisations.

The Mining Code of 2009 foresees a **Mining Development Fund**. Its purpose includes the support and development of the ASM sector, amongst other objectives such as financing geological studies, supporting the training of personnel, conducting information campaigns and sensibilisation activities on managing mineral resources and environmental impacts, and rehabilitating the buildings of the decentralised authorities in the provinces.[263] The fund is financed by contributions from the Government as well as mining companies and investors in the mining sector. It is located in Bangui and currently does not have decentralised structure in the provinces.[264] However, the structure and organisation of the funds was only properly established in 2019[265], and not many activities for the development of the mining sector have been implemented to date. In the decade since the Mining Code was established, the Fund has often been used for political purposes by Ministers or the Presidency, rather than for the development of the mining sector. [266] According to an informant, the fund is

[263] Interview with Brice Wingue, 16.04.2020.
[264] Interview with Brice Wingue, 16.04.2020.
[265] Interview with Brice Wingue, 16.04.2020.
[266] Interviews with two sources wishing to remain anonymous.

currently mainly used to finance the Ministry of Mines and its agencies, and has not yet conducted activities for the support of the sector or ASM.[267]

Beyond the Ministry's technical support and the Mining Development Fund, the Mining Code also foresees that private sector actors support the development of the sector and better Governance. Buying houses, cutting enterprises, jeweller and domestic refiners are obliged to contribute to the vocational and professional training for the Mining Administration. To what degree this is currently happening in the gold sector is unclear, though buying houses do state their commitment to awareness raising and capacity building in particular for their gold suppliers.

One of the key initiatives recently taken by the Government itself to support the formalisation of the gold sector has been to **reduce the tax due on gold exports from 5.25% to 2.25% in January 2019**. The objective was to increase gold production and to curb smuggling and incentivise gold trade and export through formal channels.[268] However, a government representative states that this has not yet had the desired effect as neither traders (collecteurs) nor buying houses report higher gold volumes, and traders and miners are complaining that the taxes paid are not re-invested in the sector or in improving production. [269]

The main programme implemented by international donors to support and improve the ASM sector in CAR is **USAID's Artisanal Mining and Property Rights (AMPR) Programme (2018 – 2021)**, which builds on earlier interventions through the Property Rights and Artisanal Diamond Development programme that started in 2015. Amongst other objectives, the programme aims to "increase awareness and understanding of the opportunities and challenges of establishing responsible gold supply chains" and to foster "increased understanding of linkages between artisanal and small-scale mining and key development issues".[270] The programme has focused mainly on diamonds to date and has only recently started to look into the gold sector. There are no concrete activities yet in the gold sector, though AMPR had commissioned the study by IPIS to understand the sector better and see where AMR could add value. With regards to enhancing local development, AMPR has fostered several revenue-generating activities in connection with the ASM sector, such as agriculture, pisciculture, petty trade and animal husbandry. The most successful of these were activities that supported the transformation of mined-out areas into fishing ponds or market gardening. A key lesson learnt was that these need to be activities that provide income very quickly, since miners can earn cash every day from mining, and do not need to wait for harvesting cycles. This was the reason why the support to agroforestry livelihoods had failed, as miners had to wait too long for revenues and abandoned the activity.[271]

The **EU funded GODICA programme** implemented by Enabel also aims at strengthening the Governance of CAR's artisanal diamond and gold sectors, with a view to improve the transparency and sustainability of mining operations and supporting the Government in its efforts to implement the Kimberley Process.

These two programmes, their activities and lessons learnt could be a useful source of information as well as offering opportunities for collaboration around improving livelihoods in gold value chains and addressing child labour.

[267] Conversation with Sebastien Pennes, 03.03.2020
[268] Interview with Jules Yaganza, 10.04.2020
[269] Interview with Christian Ouloui, 10.04.2020.
[270] See https://www.land-links.org/project/artisanal-mining-and-property-rights-ampr-technical-assistance-to-missions/ (07.05.2020).
[271] Interview with Herve Pounou, AMPR Programme, 17.05.2020.

6.9. Impacts of the Covid-19 crisis

Note: Covid-19 impacts are rapidly evolving and therefore this chapter only reflects the situation and impacts as of the time of research.

The spread of Covid-19 and Governments' responses to it has had profound impacts on mining and mineral supply chain the world over, including in the gold sector. As of April 2020, it has resulted in high gold prices on international markets, while at the same time caused the prices to collapse in gold producing areas and especially ASM communities. This was a result of the interruption of global value chains: Due to the travel restrictions, border closures and stopping of flights, the gold was not able to move anymore from source to market, especially when mined in remote, inaccessible location – thus creating a situation in gold mining communities where few were able to come buy the gold (hence creating oversupply), and a situation at international markets where few were able to get access to gold sources (hence creating overdemand). Major gold trading hubs, such as the souks in Dubai and India, as well as for a short period of time the refineries in Switzerland, had stopped operations.[272]

This left local miners and traders unable to sell their gold, or only at very discounted prices, greatly impacting their livelihoods. At the same time with reductions in income, miners also faced rising prices for food and other basic goods which are observed in many mining areas – in this sense, miners were doubly impacted by the crisis. Traders generally would try to stockpile gold and wait for better prices, but few had the necessary finances to do this over a longer period, i.e. keep buying gold while not yet selling. In addition, stockpiling gold can be a large security risk, especially in contexts as fragile as CAR. Experts fear that this situation created an opportunity for criminal networks, armed groups, or wealthy and well-connected businessmen and politicians to jump into the gold supply chain, as they are the few actors that still have the necessary finances to buy gold (acquired in other sectors) and will be attracted by the large margins that currently can be made by buying gold locally at low prices and selling it high internationally.[273] While these effects have been balanced out slightly in the recent months, with the high international gold prices slowly trickling down to ASM producers again, these disruptions and potential changes in the gold value chain need to remain on the radar.

In CAR specifically, similar effects of the Covid-19 crisis on ASM and gold chains have been noted. Structures have been set up to monitor these effects, including by USAID's AMPR programme, which organises bi-weekly calls for stakeholders and practitioners working on the ASM sector in CAR. Based on information received through this call, the following effects have been observed (as of April 2020)[274]:

- The Government has responded by creating a Covid-19 Task Force under the Ministry of Mines and Geology, composed of five senior technical ministry officials and three technical and financial partners, including the AMPR programme, World Bank and EU GODICA. This is to ensure that the (global) emergency funding and response around Covid-19 is also directed to mining communities. Under this task force, a brochure on guidelines for mitigating spread of COVID-19 in the mining sector has been distributed to a variety of actors in the mining sector, and SMS messaging has been prepared and approved by Ministry of Health for sending out to contact lists in the mining communities. USAID's AMPR programme has also started to provide training in ASM communities

[272] A comprehensive overview is provided by the Artisanal Gold Council at https://www.artisanalgold.org/agc-covid-19-portal/, including a dashboard on World Gold Trading Hubs: https://www.artisanalgold.org/2020/04/agc-gold-trading-hubs-dashboard/

[273] Cf. the following key resources: Comprehensive collection of data and resources b the Delve database: https://delvedatabase.org/about/news-and-events/impacts-of-covid-19-on-artisanal-and-small-scale-mining-insights-from-the-ground; Levin Sources: Initial Analysis: https://www.levinsources.com/knowledge-centre/insights/asm-responsible-sourcing-covid-19; Impact Transform: Illicit Traders Cashing In on Vulnerable Miners in Conflict-Prone Areas https://impacttransform.org/en/covid19-illicit-traders-artisanal-miners/

[274] Call summaries of 30.04.2020, 16.04.2020, 02.04.2020: Artisanal and Small-Scale Mining and the COVID-19 in the Central African Republic: Considerations and Implications for Action?

on sand water filters to increase access to clean water, and investigating the capacity of local soap makers in mining communities to act as trainers in other parts of the country.

- Official mineral exports have fallen to zero in February, March and potentially also April. This is connected to the restrictions implemented, although other factors (possibly related to international restrictions rather than domestic ones) are also at play since the Government only implemented the restrictions on March 18th.

- There are rumours and worries that the lack of exports is a sign for increased illegal trading between CAR and Cameroon, fraud and smuggling. In 'normal' times, gold exports (whether legal or illegal) are often hand-carried on commercial flights to Dubai and Europe via Douala and Yaounde. However, this path to markets is now closed. It may be that informal actors increasingly resort to using private charters to transport gold to Cameroon, as they have done in the past. Therefore, while formal trading and buying chains (through collectors and buying houses) may be les present in during the crisis, this does not mean that the informal value chain continues to work, and thus gold production and trade will continue.

- Informal trade and smuggling are potentially facilitated by the lack of presence of mining officers in the provinces and near mining operations, as they have returned to Bangui due to Covid-19 related travel restrictions. With this reduced presence, it will be even more difficult to monitor and enforce national and international regulations around mining and gold trading.

- The security situation seems to be getting more difficult in mining areas. Armed groups (3R, FPRC, UPC as well as smaller splinter groups that are reportedly newly forming) have reportedly become increasingly present both in southwestern as well as eastern CAR. This may also be linked to the return of Government officials to Bangui due to Covid-19 restrictions, leaving a vacuum. As of yet, it is unclear if and how the increased presence of armed groups will affect gold production and trade, though it is likely to lead to increased human rights abuses in the sector.

- Given the high mobility of ASM actors and communities, especially the different levels of traders, there is a high risk that Covid-19 can spread rapidly in these communities, and also be carried across borders. Most recent cases (as of end of April 2020) have come across the border from Cameroon, which confirms the link with trading activities. In addition, ASM communities may be at high risk of severe impacts by the virus. Even though the mining population is generally relatively young, miners often have previous health conditions due to their exposure to dust, mercury, etc.[275] At present however, a lot of the humanitarian response to Covid-19 is targeting internally displaced populations, and less attention is paid to mining communities.

- Prices for food and basic goods have increased, caused by transport restrictions. Especially prices for the staple food manioc have seen a steep rise, as in addition to Covid-19 related impacts, less was produced in the last harvesting season.

- Impacts on ASM communities, livelihoods and gold production still remain uncertain. Experts suggest that on the one hand, the travel restrictions may impact (pre-)financing and the provision of supplies to mining areas and reduce the options for trading gold to regional and international markets; but on the other hand, that the general economic crisis caused by Covid-19 is likely to push miners to work more to maintain livelihoods, especially in a context of high indebtedness. Considering similar shocks in the past (e.g. 2008), the production of gold might decrease, as well as the prices paid at mine sites, but the number of miners may remain the same. This would indicate that the economic impact of Covid-19 may be mostly felt in terms of earnings of ASM, pushing them further into poverty, and that miners have few other livelihood choices than mining and accepting lower prices for their production.

[275] Levin Sources 2020: Six reasons why COVID-19 response planning should prioritise ASM communities, at: https://www.levinsources.com/knowledge-centre/insights/covid19-response-planning-prioritise-asm-communities

In a longer-term outlook however, gold value chains may prove to be more resilient than diamond value chains globally. In times of economic crisis and recession, consumer countries tend to cut back spending on luxury goods (i.e. diamonds) while investment by financial markets and Governments in gold increases. Thus in the longer term, this may provide an opportunity for the gold sector in CAR and its artisanal mining communities. However for this to happen, it is key to ensure that formal and responsible actors in the chain do not leave the field to informal or even criminal actors crowding into the sector, and that gold can continue to move to international markets through value chains that are transparent and responsible.

Connected to this, it needs to be noted however that the recent rise of the gold sector in CAR occurred during years when gold prices actually fell.[276] Thus gold prices, while being an important factor, may not be the only aspect influencing the dynamics of the ASM sector in CAR. Other factors, such as conflict dynamics, displacement movements, the decline of the diamond sector, and the particular characteristics of the gold supply chain also played a role in this rise, and may continue to play a role throughout and beyond the Covid-19 crisis.

6.10. Key insights

This chapter provides key insights connected to the gold value chain, focussing on three main topics: Improving incomes and livelihoods within and around the gold mining sector (primary and secondary activities), combatting child labour in the sector, and improving governance and support services underpinning the sector.

6.10.1. IMPROVING INCOMES AND LIVELIHOODS

Within and around the gold value chain, there are opportunities for the consortium to support and improve particular income generating activities.

Primary activities

On the mine sites, **improving livelihoods and incomes in primary activities** can be done by supporting capacity building of mine managers and workers around **improved, more efficient, and safer prospecting, extraction and processing techniques**. Even without increasing production, revenues (and thus incomes) at mine sites can be improved by establishing more efficient artisanal methods and processes, which saves time and pre-financing costs – thus allowing the mine site to produce as much mineral in less time and with less financial inputs, leaving a larger margin. Such support programmes have been conducted by USAID's AMPR programme and lessons from this could be applied to the intervention areas in Bossangoa and Bocaranga. This would require a three-pronged approach, possibly working with demonstration or pilot sites: Broad awareness raising campaigns, community liaison officers providing initial insights, and then technical training from experts targeted to those mine managers and workers who are interested in improving their techniques.

Such training and capacity building could be supported by enabling the **creation of interest groups, cooperatives, associations or other collaborative models on the mine site level**. This needs to take into account existing forms of organisation and hierarchy within mine sites, rather than supplanting these models. Such collaborative forms could support the spreading of risk and pool resources, for example to hire equipment or to provide social security or health stipends for workers in case of injuries and accidents – activities which are often provided and then deducted from the price by the trader and prefinancer in the current model. This may potentially enable better revenues and incomes. In addition, a special focus could be given to supporting the creation of such interest groups amongst daily labourers and independent service providers (who are paid with a fee rather than a share in production), in order to enable them in having a voice in the mine site's hierarchy

[276] Pennes, S. et al 2018: Diagnostic de l'exploitation minière et perspectives de développement socio-économique en RCA à la lumière de la vision du régime minier en Afrique. Levin Sources pour UNICEF et PNUD.

structure and potentially better bargaining power with regards to their payment. This could be particularly important for women, who are hired as daily labourers in the majority of cases.

In addition, there may be opportunities to also enhance and **improve local value addition in the gold value chain**, and thus be a driver for local employment and income. Other countries, such as Guinea[277], have a lively local gold processing, aggregation and refinery sector, which, like mining, also depends on a variety of tools, equipment, inputs and services. In CAR, much of this value addition seems to be done in neighbouring countries at present. Though some larger traders and buying houses seem to have the capacity to aggregate and refine gold into ingots in Bangui, this value addition is not done locally in the mining areas and thus results in lower prices paid locally. Supporting the **establishment of processing and aggregation points and/or artisanal refineries in mining locations** and building the capacity of actors in the chain to conduct such activities (i.e. removing impurities, melting, making ingots or doré, conducting assays to determine purity) could be a way to improve incomes and value addition, and also support the formalisation of gold flows. However, this has to be based on a more thorough understanding of current capacities and the barriers for necessary inputs to reach CAR's remote mining and trading locations. Despite such challenges, this recommendation is supported by a Government representative, who recommends to train cooperatives and other miners' organisations in better techniques for the aggregation, processing and refining of gold.[278]

Lastly, incomes and livelihoods in and around the gold value chain could be improved by **enabling access to more formalised finance**. This is applicable to both primary and secondary activities in the value chain. For primary activities, pre-financing networks and structures provide the necessary investment and loans, but - though a crucial part of the value chain - these are often informal flows of money and can cause dependence or impact on the prices and revenues. Enabling alternative sources of finance, e.g. by pooling resources from collaborative groups formed at mine site level, may be a viable option, given that in the gold sector, the pre-financer does not necessarily have to be the buyer. There could also be an opportunity to collaborate with existing cooperatives or the cooperative association in Bangui, who are buying gold from mine sites and exporting it, or with the state-run gold and diamond buying agency, to see whether and how they could provide credit or loans to miners. This would also encourage gold trade into formal channels of export.

The following provides a summary table for support interventions in primary activities in the gold value chain:

Target group	Economic activity to support	What kind of support ?
Daily labourers	Improved income and participation/voice of daily labourers, especially women (washers, transporters, etc)	Formation of interest groups & associations & their inclusive & participatory management
Mine managers, workers	More efficient, safer and environmentally friendly prospecting, extraction and progressing techniques	Awareness raising, technical training & capacity building, demonstration sites Formation of interest groups & associations & their inclusive & participatory management

[277] PAGASEM 2017: Diagnostic de l'exploitation artisanale de l'or en Guinée. By Geomin, Levin Sources, CECIDE. Unpublished.
[278] Interview with Jules Yaganza, 10.04.2020

		Access to formal finance or mutual credit/loan schemes
Mine managers, traders	Improved aggregation and refining at local level	Formation of interest groups & associations & their inclusive & participatory management Access to formal finance or mutual credit/loan schemes

Secondary, auxiliary activities

In particular, **secondary or auxiliary activities have the potential to improve livelihoods of women and youth**, which is key to address child labour, and to help diversify income sources in mining households. Such activities could be the following:

Secondary activities in the gold value chain		
Women and girls above 16	Restaurants; provision of food and drink at mine sites, which is closely interlinked with agricultural chains and small commerce – particularly of peanut paste and manioc flour (see agricultural chains).	Formation of interest groups & associations Establish of mutual credit and loan scheme, or access to formal finance. Numeracy and literacy; business management skills
	Activities that are needed as part of the response to the impacts of Covid-19, such as supporting local soap production or sewing of masks, which is often done by women and will be necessary for preventing the spread of the virus on mine sites, allowing income generation from the gold value chain to continue.	As above. USAID's AMPR programme has already supported local soap making in mining communities. This could be scaled and expanded.
Men and boys above 16	Moto taxi and transport services from and to mine sites	As above.
	Blacksmithing and the production, selling, renting, repair and maintenance of the equipment used in mining or gold processing, i.e. shovels, pickaxes, transport bags, etc.	As above. Enabling access to scrap metal. Training and capacity building of work place health and safety.
Landowners, mine site managers, boys and girls above 16	Activities that can generate income beyond mining and help diversify livelihoods, such as for example the	USAID's AMPR programme has already supported fish farming as a rehabilitation method for

	establishment of fish farming in mined out ponds (which has been done in diamond areas by USAID's AMPR programme already)	mined out sites. This could be scaled and expanded.

Such activities should be supported in line with processes around **small enterprise development**. This could include the formation of interest groups or associations with those involved in the particular activity, providing training and capacity building on basic business skills including basic literacy and numeracy (especially for women), vocational training or placements with existing enterprises (blacksmiths), or providing start-up capital or inputs. For secondary and auxiliary activities, enabling access to finance is equally as important. Banking services, including mobile or digital banking are extremely limited in rural areas of CAR, and thus supporting more traditional credit, loan or saving schemes could be envisaged for interest groups or associations, including women's saving groups.

6.10.2. ADDRESSING CHILD LABOUR

Addressing child labour in ASM and mineral supply chains has been a key focus of many industry- and Government-led initiatives in the past years. A recent (unpublished) study for the ILO has compiled lessons learned and good practices from these initiatives.[279] A key insight is that addressing child labour in mining should be done **in collaboration and participation with all stakeholders**, including children and youth themselves, and through **a phased approach**, first tackling the worst forms, then other forms, gradually reducing the presence of children at mine sites and improving scholarisation rates. Immediately removing or banning children from mine sites might do more harm than good, by removing their source of livelihood and inadvertently displacing the work of children into other economic sectors. Thus, **a landscape approach**, addressing child labour in all sectors and economic activities in a given community, may me more sustainable in the long term.

In terms of addressing child labour specifically in the gold value chain**, changing social norms and behaviours** is important. There are actors who can influence whether or not and how children are working on mine sites and collaborating with these could provide key entry points. This could involve establishing a broad **community dialogue** (including village leaders, parents and children, as well as existing parents associations) around the value of childhood and the future of coming generations, and involving the community, including children and youth, in sensitisation and awareness raising about the risks and impacts of child labour – especially at mines.

In addition, specific collaboration could be envisaged with **mine managers and customary authorities or landowners** in order to change social norms about children working on mine sites, and establish rules for their presence and work. As a first step, this could involve awareness raising campaigns or trainings for such actors, to enhance their understanding of the risks and impacts on children, and to discuss how children could be kept safer on a mine site – both when working and when just being present. This could in time be transformed into a more formal 'protocol' for the mine site, including minimum ages, etc.

Supporting women and mothers in organising child care for their smallest children could also be a first step in preventing children's presence at mine sites (or reduce their exposure to danger if staying at a site), e.g. through a rotational system where the person providing care is compensated by the others for the loss of daily income, such as through the mechanism of a savings group or a women's association.

[279] International Labour Organisation, 2020: Mapping interventions addressing child labour and working conditions in artisanal mineral supply chains – including a compendium of emerging good practices of the CARING Gold project. By Levin Sources, currently under review by ILO and not yet published.

This needs to be accompanied by concrete support services, aiming to **improve the access to income and livelihoods for families, as well as access to better education for children and vocational skills for youth**. Child labour at mine sites seems to be driven largely by poverty (rather than opportunity) as well as a dysfunctional and even harmful education system. Interventions should thus target families whose children are working at mine sites to supplement the families' income or to earn money for their school fees, focusing on those engaged in the worst forms of child labour first. Such families should be included in the **small enterprise support** to enhance the parents' incomes from primary or secondary activities in the gold value chain (or alternative economic activities). Potentially this could be combined with capacity building around managing household revenues and savings for school fees. In addition, **programmes that help pay for or provide meals at schools** could be an important intervention to enable children to attend school rather than having to earn money to feed themselves. Advocating for and supporting **the improvement of the education system** should be another priority, given the dysfunction and exploitative set up that keeps children trapped in having to provide labour for teachers even if they 'go to school' and are not on a mine site.

Finally, the **employability and skills development of youth (above 14) should be supported**. This should take into account the extreme remoteness of CAR's rural areas and thus the limited size and diversity of the local economy. Skills and vocational training should be connected with specific, locally existing industries and activities, and it should be practical and hands on, rather than remaining at a theoretical level or focussing on professions that are less in demand in such locations. While children and youth aspirations should be taken into account, it is also essential to not raise expectations too high and provide practical support for activities that can bring immediate income.

Supporting skills development could be done through **providing training on basic business skills** (including basic literacy and numeracy, financial skills), as well as hands-on, practical vocational training including through placements and apprenticeships at existing local businesses or professional artisans. This will require close collaboration with the private sector and existing small businesses. Skills development and vocational training could be supported in both primary and secondary activities around the gold value chain, as well as other economic sectors and activities (see chapter below).

Given the economic attractiveness of gold mining, supporting skills development in primary activities could provide an opportunity not only to enhance youth's employment and income prospects, but also to improve and professionalise the artisanal gold mining sector overall. For example, it could be worth **exploring collaboration with the University of Bangui and its Department of Mining and Geology** under the 'Institut superieur de technologie', to see if and how local youth could be included or 'matched' with undergrad students in field-based assignments and courses – with the aim of providing a practical curriculum for how to become a professional and responsible miner (thus also providing a prospect for better revenues from mining in the future, if education and training is prioritised now). In addition, youth could be trained not only in responsible gold mining (social and environmental issues), but also in the basics of gold trading and gold processing, aggregation and refining, thus enabling employment in activities further down the value chain. This could be done in collaboration with the University, existing cooperatives or buying houses, or also USAID's AMPR programme.

6.10.3. IMPROVING GOVERNANCE AND SUPPORT SERVICES

An overall recommendation is to support the formalisation of the gold mining and trading sector on a larger level by **collaborating with the relevant Government authorities and helping to enhance governance and support services** in the sector. Ensuring livelihoods and economic security for mine workers and managers in the long term will also be determined by the capacity of the Government authorities to bring them into the formal economy and support their development into small- and medium sized enterprises. This is not a task

that is limited to the areas of Bossangoa or Bocaranga, and thus may require broader collaboration with actors already involved in the mining and ASM sector, such as USAID's AMPR programme. A current entry point could be the participation in or collaboration with the coalition of organisations that is engaged with the Ministry of Mines' emergency task force to tackle the Covid-19 crisis in the ASM sector.

In line with broader efforts to formalise ASGM and connected value chains (trading and exports), considerations around downstream due diligence requirements and readiness for responsible markets should be considered. Targeted ASGM communities and connected value chains should be capacitated to access responsible downstream markets, including for example through training and capacity building on due diligence requirements in the spirit of progressive improvement (e.g. using the CRAFT Code). This is an activity that the USAID AMPR programme is planning to implement in the coming months, and could be supported or replicated in Bossangoa or Bocaranga.

7. Agricultural and other value chains

As a landlocked country, CAR has significant agricultural potential. According to FAO, the country has 15 million hectares of arable land, of which only 10% is exploited. [280] In terms of natural potential, CAR has major assets such as land, pastures and water resources. [281] The climate is tropical wet. It is divided into five types of climate,[282] corresponding to the main agroecological zones of the country:

- The forest area in the south-west and east, with rainfall of 1500-1800 mm/year, is that of perennial crops (coffee, cocoa, palm oil);
- The savannah area in the centre-west is characterized by food farming and transhumant cattle farming. Rainfall averages range from 1,100-1,500 mm/year.
- The "cotton-food-breeding" zone corresponds to the savannahs of the Central East and Northwest. Rainfalls is on average between 800 and 1,100 mm per year. The area thus registers six months of rain, three months of off-season and three months of dry season.[283].

In agriculture, less than 5% of arable land or about 700,000 hectares are being cultivated annually. [284] The many decades of political-military instability seem to have annihilated prospects of agricultural development. In 1994, there were approximately 450,000 family farms, of which 76,000 grew cotton, 67,000 grew coffee, and 296,000 produced cassava, the staple crop.[285] The main export crops (coffee, cotton, tobacco), once a source of foreign exchange for the state, have been in free fall since the 1980s and 1990s. This is illustrated by coffee and cotton production[286]:

[280] Special Report on Crop Assessment and Food Security in the Central African Republic, September 14, 2017, p. 48
[281] Grenewald F et al. 2018, Agricultural Development in central Africa. Proceedings of the symposium, Bangui, June 2018.
[282] From south to north the Guinean forest, Sudan-Guinean, Sudan-Oubanguian, Sudanese-Sahelian and Sahelian climate.
[283] Crop and food security assessment report in the Central African Republic, Fao/Pam, March 2019.
[284] Dufumier Mr. Lallau B., 2016. « To What Development Agricultural In Republic Central african ? Reflections and Proposals," Working Paper, Agency University Francophonie, Paris, 24p.
[285] African Development Fund, 1994 Completion Report, Rural Development Project in the Coffee Regions of Mbaiki and Berberati, Central African Republic, 48p. https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/ADF-BD-IF-96-16-FR-SCANNEDIMAGE.151.PDF.
[286] Central African Republic, Rural World Sector Note, SCAC, French Embassy, 2004, 18 pp. http://hubrural.org/IMG/pdf/centrafrique_note_monde_rural_2004.pdf.

	Years	1980ies	1990ies	2003
Production (tonnes)	Cotton		45,000	2,000
	Coffee (robusta)	15,000 – 20,000	5,000 – 12,000	2,200

The Central African agriculture and livestock sector is therefore characterized by a very low level of production and control by the state. Only half of the rangeland is exploited. Pasture availability could feed an average of 5 million head of livestock. Conflicts have affected livestock production, whose production has declined significantly. The number of cattle herds in the Central African Republic is reported to have halved. It was estimated at more than 1,500,000 heads of cattle in 2014,[287] while the small livestock has been totally decimated by armed groups.

The Sudan-Guinean area corresponds to the extreme north-west of the country. This complex is considered the main breadbasket of the country. Its proximity to the Chadian borders to the north and Cameroon to the west has facilitated close trade links for decades. Like many parts of the country, the area is predominantly rural. subsistence agriculture is the main household activity. Important crops include cotton, tubers (mainly cassava), oilseeds (peanuts, squash, sesame, cowpea), and cereals (maize, millet, sorghum). Large livestock farming, favourable in the area due to vegetation cover and hydrography, has been in decline since 2013. Agricultural activities are also associated with small-breed farming (chickens, goats, sheep, pigs).

The average acreage area cultivated per agricultural asset is estimated at 0.53 ha (FAO, 2019). Agriculture is exclusively subsistence through the use of rudimentary tools. However, the northwest remains a peculiarity by the use of animal traction allowing an increase in the area cultivated between 1 and 3 ha mainly for the cultivation of cotton.[288] Mainly cultivated in the Bossangoa region, this cash crop is the subject of a relaunch mainly driven by the state.[289] In rural areas, several agricultural crops are usually mixed and grown together. Regardless of the agroecological area, cassava remains the most commonly practiced crop and often associated with other crops. This crop occupies on average 40% of the areas cultivated.[290].

7.1. Profile of key agricultural chains and livelihoods

In Bossangoa and Bocaranga, peoples' livelihoods are mainly based on agriculture, small-scale farming, gold mining and trade. Agriculture is mainly food-intensive, and most of the production is for self-consumption and subsistence. Small livestock farming involves mainly poultry, goats and pigs. This alternative activity has been experiencing great difficulties since 2013. Indeed, the livestock farmers are facing the resurgence of the 'small livestock plague' and the Newcastel disease. The latter is highly contagious and mainly affects poultry. The persistence of armed clashes has also led to the impoverishment of small-scale herders, who see their wealth taken away or destroyed by armed groups. The breakdown of basic state structures and the profound alteration of people's livelihoods have only exacerbated a chronic state of vulnerability in rural areas.[291].

The agricultural activity system is based on combining crops. Cassava remains the staple crop for households, alongside which a range of plants (maize, peanut, cowpea, squash) are grown in combination. Sesame is

[287] Socio-anthropological study of the situation of the transhumance and pastoralist populations after the 2013-2014 crisis in the Central African Republic. Joint Report, DRC, FAO and CRS, Bangui, March 2015, p. 32.
[288] Zoning activity "plus" livelihoods of the Central African Republic. Special report of the Famine Early Warning Systems Network, October 2012, p. 10
[289] Special Report on Crop Assessment and Food Security in the Central African Republic, September 14, 2017, p. 48
[290] Central African Republic Analysis of how markets work in relation to household food security in the Central African Republic. July 2011, p. 80
[291] Report on the Rapid Assessment of Food Security and Livelihoods Boguila - Acf February 2018.

practiced in pure cultivation however.[292] Vegetable cultivation is also practiced and includes amaranth, jute, small onion, tomato, lettuce, cabbage, okra, green bean, parsley, carrot. Onion cultivation provides some households with substantial incomes in Bocaranga. However, its production remains limited by the need to master technical specifics. Due to its low production, this agricultural product is still mainly imported from Cameroon and Chad. Whereas the cultivation of sesame, squash and cowpea in the locality is destined for the border market, especially Cameroon. All cultivated plants are part of people's eating habits. Although agricultural activities remain the key source of food for communities, crop profitability plays a role in the choice of crops to produce. The produce is then intended for both the local and external agricultural markets, the backbone of the economy. [293]

In the savannah area, the agricultural calendar runs from March to January: the months of March and April are devoted to soil preparation, the sowing covers 4 months of the year from May to August. Squash and sesame seedlings are added later in the agricultural cycle. Both plants are sown in the middle of the rainy season. Sesame has a growth cycle of about 5 to 6 months, planted between July and August.[294] Harvests run from July to January, with the sesame and squash harvested later (between December and January). However, cassava remains a specificity sown and harvested throughout the year.

Seasonal calendar of major crops in Bossangoa and Bocaranga:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Season												
Rain												
Dry												
Cassava												
Peanuts			Clearing		Semis		Harvest					
Maize			Clearing		Semis		Harvest					
Squash	Harvest						Semis					Harvest
Sesame	Harvest						Semis					Harvest
Cowpea					Clearing		Semis				Harvest	
Cotton	Harvest		Clearing			Semis						Harvest

The practice of agriculture is dependent on the availability of land and the ownership and management systems surrounding its use. For a long time, land was collective, sacred, and inalienable. It was passed on by inheritance, short-term loan or unrequited donation.[295] This dynamic can also be observed in rural areas of Central Africa. Access to the land is free and is acquired by the 'right of first axe'. The agricultural land belongs first to the natives of the area, who can give it away, or lend it to foreigners without consideration. The parcel of land is therefore tended for a well-defined period according to the agreement between the owner and the tenant. At the end of the harvest, the land is taken over again by the owner and fallowed. This trend is most noticeable in the Bocaranga region.

[292] Betabelet JR, 2018: Resources, Territories and Conflicts: Cattle Breeding and Farming in Western Central African Republic, Ph.D. thesis of geography, University of Paris1 Pantheon Sorbonne, p. 412
[293] Report on the Rapid Assessment of Food Security and Livelihoods Boguila - Acf February 2018.
[294] Paulette Roulon-Doko. Sesame in Gbaya country; C. Raimond, E. Garine and O. Langlois. Food resources and food choices in the Lake Chad Basin, IRD, pp.153-168, 2005. https://hal.archives-ouvertes.fr/hal-00511970/document.
[295] Sougnabé P, Gonne B and Ngana F: Evolution of land practices in savannah areas in Central Africa, in "Developing African Savannahs: Innovating to Last, Conference Acts, April 2009, Maroua Cameroon.

In Bossangoa, the principle of open access applies to indigenous peoples, i.e. to those born in the area. Some restrictions are observed mainly for non-natives. For example, for displaced persons or newcomers, the principle of renting prevails. The owner rents his plot to the newcomer. In return, the owner receives part of the production at the end of the harvest. It is only in Bossangoa centre where there is a certain commodification of the land. The land can be either rented or sold. For a one hectare parcel, the sale price ranges from 30,000 to 50,000 XAF (50 - 83 USD). When rented, the amount paid to the owner ranges from 10,000 to 15,000 XAF (16 – 24 USD) for an annual lease to cultivate the land.

Prices for agricultural products vary from period to period depending on the availability of the products, and depending on the harvest and lean seasons. The table below sheds light on the different prices charged in the local markets for key agricultural products in Bocaranga and Bossangoa. Analysis of the data shows that there is a price differential between the two communities. Selling prices for agricultural products are relatively higher in Bossangoa than in Bocaranga. Accessibility and the security situation appear to be determining factors that affect both trade flows and the arrival of merchants.

Table: Price changes (in XAF) of major produce in study areas:[296]

Locations	Products	**Retail** (per 'ngawi' / bowl)		**Wholesale** (per 'sac' / bag)	
		Harvest periods	**Lean periods**	**Harvest periods**	**Lean periods**
Bocaranga	Cassava	2 000	3 500	-	-
	Peanut seeds	3 500	7 000	-	-
	Maize	1 500	2 500	-	-
	Cowpea	1 750	4 000	-	-
Bossangoa	Cassava	2 500	2 500	15 000	15 000
	Peanut seeds	7 000	12 000	42 000	72 000
	Maize	2 000	3 000	12 000	18 000
	Cowpea	5 000	8 000	30 000	48 000

Indeed, the links between armed conflicts and food markets are marked by a spatial retribution of commercial mobility, production basins and markets. In the context of the armed conflict of 2013 in particular, agriculture was significantly affected by a decline in food production. This decline in production has been a factor in reducing the intensity of food trade, resulting in populations retreating to subsistence food production.[297] Agriculture therefore remains a subsistence rather than a business activity due to the lack of opportunities since 2013.[298] In the Bocaranga region, studies have shown that the departure of Fulani herders, the main buyers of agricultural products, has resulted in a drastic fall in food prices.[299]. Moreover, the area remains very little frequented by transport vehicles, given its isolation and the prevailing security situation due to the continued presence of armed groups (the 3R of Sidiki Abbass). Roads have become dangerous and robberies on regular transport vehicles are common. This phenomenon of persistent insecurity limits the arrival of traders on agricultural markets.

[296] Information provided by livelihood officers of World Vision (Bocaranga) and War Child UK (Bossangoa), in April 2020.
[297] Calas B., 1995. The impact of Ugandan political crisis upon the supplying of Kampala. *Newsletter Association de Geographers Francais* 72, flight 3:222-233. https://doi.org/10.3406/bagf.1995.1829.
[298] Chauvin E., 2014. "Armed Conflicts, Mobility Under Constraints And Recompositioning Food Markets in the Northwest Central African Republic. 15th Conference Of Network MegatchadNaples, 263-287.
[299] Ankogui Mpoko G-F., Betabelet J R., 2015. "The situation of transhumance in the Central African Republic following the crises of 2013 and 2014." Report study on the Conflicts, Danish Refugee Council, Bangui, p. 93

The local economy in Bocaranga is structured around four weekly markets: Ntasted (40 km), Sangami (25 km), Kélé-Claire (17 km) and Boléré (15 km) which are hubs of exchange between villages and between these food production basins including Bouar, the main region-wide consumption basin, and some border villages in Cameroon. Close commercial links have also been reported between these weekly markets and gold mining sites. Faced with a deficit in the influx of traders, agricultural products mainly feed mining sites. Each weekly market is linked to one or two gold mining sites: Boleré market is connected to the mining sites of Ndemou and Moundji, the Sagami market is linked to the Sadou site, the market of Ngouteré to ed to a mining site of the same name, and finally the Kelle-Claire market maintains commercial links with the Bordoul site.

It is key to note that the prices on the mining sites are twice as high as those in the villages. The table below provides information on food prices in villages and on mining sites (in XAF):

Locations	Speculations	Prices in the village (per 'ngawi' / bowl)		Prices on mining sites (per 'ngawi' / bowl)	
		Harvest periods	Lean periods	Harvest periods	Lean periods
Bocaranga	Cassava	2 000	3 500	3 500	5 000
	Peanut seeds	3 500	7 000	5 000	8 000
	Maize (flour)	1 500	2 500	2 500	3 500
	Cowpea	1 750	4 000	2 500	4 500
	Squash	2 000	-	2 500	2 500

Bossangoa, on the other hand, seems more open. Security has been relatively stable in recent years. Although it does not have commercial links with the border regions, the town is connected directly to the capital Bangui, which absorbs most of the food markets. Around the central market of Bossangoa, there are also weekly markets in the outlying villages. The arrival of traders in Bossangoa and in the peripheral markets is more regular.

Child labour

Child labour remains a reality in agricultural value chains in CAR. Although an exact figure is not available, the proportion of children working in the agricultural sector remains high. A significant labour force, the contribution of children is remarkable during the work of sowing, weeding, and harvesting on family farms. The youngest (under 14 years old) combine agricultural work with gathering and selling agricultural or commercial products of parents and individuals, or selling food in the restaurants.

The motivation for child labour in agriculture is similar to the one in mining: the additional income in households in the face of increased poverty. Because such activities occupy children almost full-time, the majority are out of school. Many parents have difficulty to send children to school. In addition, because most rural schools are not operational, parents may bring the child to the field or entrust the child with paid activities as a way to occupy it. The many years of conflict and persistent insecurity in rural areas seem to also play a role in these dynamics.

Governance and support services

The Central African Republic is characterized by the weakness or absence of state frameworks, sometimes replaced by humanitarian support. This does not place agriculture in a sustainable production logic. At the local level, the ACDA is the Government structure in charge of supporting and mentoring farmers. However, ACDA's number of staff on the ground is very small. As a result, the agency is unable to meet the needs of farmers in terms of training and support. In Bossangoa, ACDA works mainly with cotton producers and some agricultural groups that are supported by humanitarian organizations. ACDA's support is therefore limited to cash crop

producers or more or more structured community organizations. In areas covered by humanitarian organizations, the organisation of training sessions strengthens the capacity of farmers in mastering the technicalities of improved production via the popular field school approach in rural areas. However, no training centre is present in both Bossangoa and Bocaranga.

7.1.1. COTTON: A PROMISING CASH CROP

In addition to food crops, one main cash crop is grown: cotton. In Bossangoa, cotton remains a promising crop structured in the local economy. In recent years, this crop has been the subject of a recovery plan financed by the World Bank and led by the Central African government.[300] For several years, cotton production suffered both from the volatility of cotton prices and the military political crises of 2003 and 2013.[301]. Since then, about 5,000 tonnes of cotton have been harvested and the state has cleaned up the debts of cotton farmers. This boost seems to give new hope to the producers of Bossangoa.

Cotton production is practiced by almost all households in the area around Bossangoa who own a minimum area of two hectares. The number of cotton producers is reported to be on the rise. The profitability of the crop and above all the assurance that the state offers to farmers by purchasing their production, is no longer in doubt. With state supervision, producers benefit from donations of seeds, plant protection technical support. Cotton farmers are supported and overseen by the 'Cellule Cotton', a state structure under the Ministry of Agriculture.

For the current year, the purchase price of cotton will be 225 XAF per kilogram (0.36 USD), a price significantly higher than in 2019 (160 XAF/kg – 0.29 USD) and an increase of more than 70%. At this price, a producer can expect to have 900,000 XAF (1,486 USD) per hectare planted. Producers generally use harnessed cultivation and daily labour to maintain their plots. In Bossangoa, the income of a daily labourer in cotton fields is 1,500 XAF (2.4 USD), or 9,000 XAF (15 USD) per week. In addition, these workers may also benefit from food stipends. Cotton, which creates jobs and wealth, is thus also seen as a "driving force" for food crops. It is intercropped with annual crops including maize and peanuts, and useful to meet the social needs of households (schooling, health, construction).[302].

Despite cotton being a promising cash crop in Bossangoa, it offers an opportunity mainly for larger landowners or landowning families, whereas for daily labourers and workers it may not be different from other livelihoods.

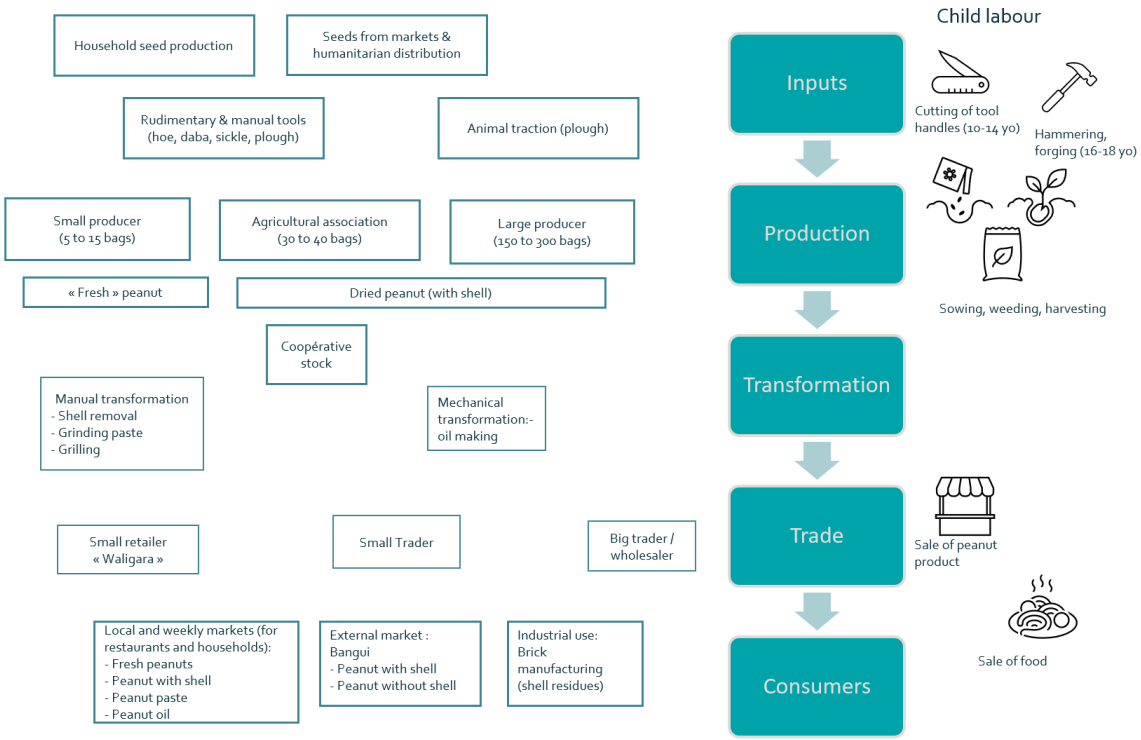
Therefore, the three value chains portrayed in detail below are for different crops and activities: **Peanut, cassava and sand and gravel mining for the construction industry.** These three value chains were chosen because they are practiced in both locations (Bocaranga and Bossangoa) and by a wide segment of the local population including on a very small-scale subsistence level – thus carrying a specific social importance also for the relatively poorer families. Peanut was specifically chosen for its various options for value addition within the chain. Cassava was chosen for being the main staple food of the population and being supplied to all mining sites, thus having a lot of localised demand. Sand and gravel mining and the associated brick making for the construction industry was chosen because a lot of value addition in this chain is retained locally and the construction industry is one of the few sectors growing even in rural areas – as reconstruction after the conflict continues and gold trade is bringing money especially to traders and mine managers, who are constructing improved housing with their increased income.[303]

[300] Grenewald F et al. 2018, Agricultural Development in central Africa. Proceedings of the symposium, Bangui, June 2018.
[301] https://www.lemonde.fr/afrique/article/2019/07/16/en-centrafrique-quand-refleurira-le-coton_5490069_3212.html.
[302] Grenewald F et al. 2018, Agricultural Development in central Africa. Proceedings of the symposium, Bangui, June 2018.
[303] Interview with sand producer, Yaloke, September 2020.

7.2. Peanut value chain[304]

In CAR, economies have often followed a duality between traditional crops (cereals, tubers, oilseeds) for consumption and cash crops (coffee, cotton, tobacco) mainly destined for export. The crisis of the 1980s and the fall in world cotton prices paved the way for the search for other avenues for additional cash revenue. Peanuts have emerged as one of the ways to make a living for many rural people.[305]. Once practiced by women and children, peanuts are now also of interest to male farmers. Population growth in urban cities and especially competitive prices offer savannah farmers alternative incomes to cotton.[306] In CAR, peanut production basins are mainly located in the north-west of the country. The Ouham-Pendé prefecture and the northern part of the Ouham are areas of high production. The cities of Bossangoa and Bocaranga are an integral part of this, as well as Yaloke.

The choice made by the communities for this crop is justified by its profitability. Peanut is the most cultivated cash crop. In 2015, for example, nearly 32% of households used their land for growing peanuts, while 42% grew it for consumption.[307]. For communities, this culture also has added value. It brings in more income if sold podded. It is also part of the eating habits of the populations, consumed in various forms: paste for the preparation of meals, oil, or other local specialties, such as "*Ronron*" and "*Zabalai*". In local markets, the demand for peanuts is still high and current production does not seem to cover the needs - hence there is a constant increase in prices for sale. In areas such as Yaloke, the demand is particularly high, since this area supplies both to Bangui and to many mine sites in the vicinity, and women traders state that they see this as a key economic opportunity.[308] Overview of the peanut value chains (in Bossangoa):



[304] If not otherwise indicated, information has been provided by livelihood officers of World Vision (Bocaranga) and War Child UK (Bossangoa), in April 2020.
[305] TimothéE EssangGéraud MagrinDavid Kadekoy Tigague. From food to merchant food and To The intésub-réregion: the case of FilièRe Peanut. Jean-Yves Jamin, L. Seiny Boukar, Christian Floret. 2003, Cirad - Prasac, 7 pp., 2003. <hal-00128918>.
[306] Ibid.
[307] Food security assessment in the context of insecurity, Central African Republic, WFP, September 2015, 47p.
[308] Interviews with women traders of agricultural goods, Yaloke/Zawa, September 2020.

Peanut production

Access to peanut seeds is local. At least 50% of households produce their own seeds. Production is generally divided into three piles: consumption, sale and seed reserves for the coming seasons. This was confirmed by women traders in Yaloke, who stated that producers cultivate their own seeds and complement this by sometimes buying seeds from the smaller weekly markets. More generally, many households also have to buy seeds from markets because of low production that is exclusively destined for their own consumption. The many years of conflict, the multiple displacements of people, the destruction of villages and seed storage has significantly reduced the capacity of households in seed production. They may benefit from support from FAO or humanitarian organizations, but seed distribution appears to have declined in intensity overall.

Like for access to seeds, other actors play a decisive role at the 'inputs' stage of the supply chain for peanut production, such as for example **blacksmiths**. It is from them that farmers obtain the agricultural tools: hoes, 'daba', sickles, plough, which are essential for cultivation. As a result, agriculture provides substantial income for blacksmiths. Given that blacksmiths also sell their tools to those working in the mining sector, this is a key auxiliary sector that can provide local livelihoods. During growing periods, a blacksmith's income ranges from 15,000 to 32,500 XAF (25 – 54 USD) per week. Demand for tools drops during the lean period to a weekly income of about 12,000 XAF (20 USD). A more detailed view of their business and livelihoods can be found above, in the chapter on 'Secondary activities and actors' in the gold value chain.

Three types of peanut producers stand out: small individual producers comprising 80% of farmers overall; farmers working within a 'groupement' or collective (about 15%), and finally large producers who use a paid labour. The difference between producers can be seen in terms of acreage and the tools used. 80% of households use a family workforce and work using rudimentary tools over small areas (less than or equal to 1 ha). Family labour is essential throughout the growing phase. However, there is a certain division of work within the household. The contribution of men is remarkable at the beginning of activities (clearing, burning and sowing). The maintenance of the plots, the most difficult activity, is done by the women and children.

Farmers working in collectives rely on the pooling of members' efforts. Both small producers and collectives work with rudimentary tools (hoe, machete, 'daba', sickle). Large producers require a paid labour force. There, daily labourers conduct the clearing, ploughing, sowing, weeding and harvesting. However, during the harvest, less workers are needed and thus the opportunities for daily labourers decrease. The daily income of such a worker is 1,500 XAF (2.4 USD) or 9,000 XAF (15 USD) per week for manual cultivation. This cost is relatively more expensive for cultivation using animal traction: 15,000 XAF (25 USD) per week or a daily cost of 2,500 XAF (4 USD). The area used may be more than or equal to five hectares.

Processing and sale

The second phase of the peanut value chain include sales and processing activities. The strategies adopted by farmers have been put in place through the marketing of peanuts, sometimes in an informal setting, but driven by the dynamism of traders whose role is important in the development of food trade. The strategies of these players are essentially aimed at assuming a link between the consumer and the producer while benefiting from their activity. [309] There are three types of merchants: retailers, semi-wholesalers and wholesalers working on three levels of the chain: **Bush markets or collection markets (1)** in production areas are the initial stage. These spaces are most often visited by **retailers or semi-wholesalers** (2) who collect the products and sell them in rural markets in larger centres (intermediate level in the marketing chain). It is at this level that **wholesalers** (3), which amass stocks, are involved in order to sell gradually locally or to external markets. In local markets at the

[309] TimothéE EssangGéraud MagrinDavid Kadekoy Tigague. From food to merchant food and To The intésub-réregion: the case of FilièRe Peanut. Jean-Yves Jamin, L. Seiny Boukar, Christian Floret. 2003, Cirad - Prasac, 7 pp., 2003. <hal-00128918>.

retail level, which are mostly women traders, peanuts are sold in a variety of forms: fresh, hull, paste, or oil. Wholesalers, on the other hand, sell peanuts in shells or pods.

The processing activities involve the manufacture of paste and oil. Peanut paste is used for local products such as 'ronron' and 'zabalai', as well as to produce traditional cookies (called 'kouroukourou' locally). These products are sold to households as well as to restaurants and barbecue stalls. According to women traders in Yaloke, **peanut paste** has high demand both in Bangui as well as on mine sites. Women traders of peanuts (and other agricultural goods) are already organised into associations and collectives, and many of them have been involved in the trade of these goods for decades, thus having become specialists in finding the best suppliers and having large networks in the producing regions. The associations and organisations the women have formed have both commercial and financial purposes: There are collectives with the specific purpose of organising sale at mine sites, and there are the mutual credit and loan groups ('tontine'), in which the women pool money and pay it out to members in turn. This serves as both 'insurance' in case some of their economic activities fail, as well as a source of finance for expanding their economic activities in the absence of access to formal banking. [310]

The women traders of peanut paste in Yaloke estimate their costs and revenues as follows[311]:

Input	Input cost	Milling costs (service provision)	Sale revenue from peanut paste
Peanut - bowl of 5 litres	2,500 XAF (4.5 USD)	2,000 XAF (3.6 USD)	5,000 XAF (9 USD)
Peanut – bowl of 20 litres	10,000 XAF (18 USD)	2,750 XAF (5 USD)	20,000 XAF (36 USD)
Peanut – sac of 120 litres	60,000 XAF (108 USD)	15,000 XAF (27 USD)	120,000 XAF (215 USD) – this is sold over 3 weeks, so around 70 USD per week.

The women pay for the service of milling to the owner of the milling equipment. In Yaloke, the cost of a mechanical mill is estimated at 120,000 XAF (202 USD). Additional investment costs of these service providers for the motor and other tools for peanut paste making amount to an estimated 475,000 XAF (800 USD).[312]

Peanut-based oil is made manually using artisanal techniques. Local oil is sold for 1,500 XAF (2.4 USD) per litre in Bossangoa, whereas in Bocaranga the price varies between 1,100 and 1,200 XAF (1.8 – 2 USD) per litre depending on whether sourced directly from households or the local market. The average production capacity of a household is estimated at 96 litres per month in Bossangoa and 42 litres in Bocaranga – thus potentially amounting to an income of 85 – 192 USD per month.

The biggest challenges for women at this stage of the value chain stems from the difficulty in processing peanuts, especially their roasting on basic ovens that emit a lot of heat and make for a difficult working environment. In addition, the market prices of peanuts fluctuate between the rainy and dry seasons, with peanuts being less available during the lean season and thus becoming expensive to acquire for the women

[310] Interview with women traders of agricultural goods in Yaloke/Zawa, September 2020.
[311] Interview with women traders of agricultural goods in Yaloke/Zawa, September 2020.
[312] Interview with resource person in Yaloke, September 2020.

involved in producing paste and trading them. This is also connected to the difficulty of conserving and storing peanuts during the rainy season, as there is an increased risk of the stock becoming spoilt. [313]

In terms of **child labour,** mainly girls are involved in the peanut value chain. At the level of production, as in other agricultural value chains, they are involved in sowing, weeding and harvesting together with their parents. On the level of processing and commercialisation, girls aged between 12 and 15 years old are often involved in roasting the peanuts, as well as packaging the paste into small bags for sale. In addition they accompany their mothers at the market stalls and support the sales. Women traders state that this is also in view of teaching the girls how to become successful traders themselves once they turn 18 years old.[314]

In summary, peanut cultivation has a potential to support livelihoods and economic income generation in the target locations. The agroecological conditions are conducive to the development of the crop, and market demand is high both at mine sites and larger towns, including Bangui, especially for value added products such as peanut paste. At the level of the producers, support to increased and better seed production and storage, better tools, improvements in agricultural techniques through the extension of animal traction could impact the potential of livelihoods. At the level of processing and trade, peanut paste production and commercialisation seems to offer the most opportunities. Support to existing women traders associations and credit schemes is a key entry point. Technical and financial assistance in improving roasting ovens, storage locations and packaging are mentioned by women traders as key areas of support. Enabling better access to peeling and skinning equipment and mills for the production of paste is another opportunity, combined with skills and capacity development in business and financial management for existing associations.

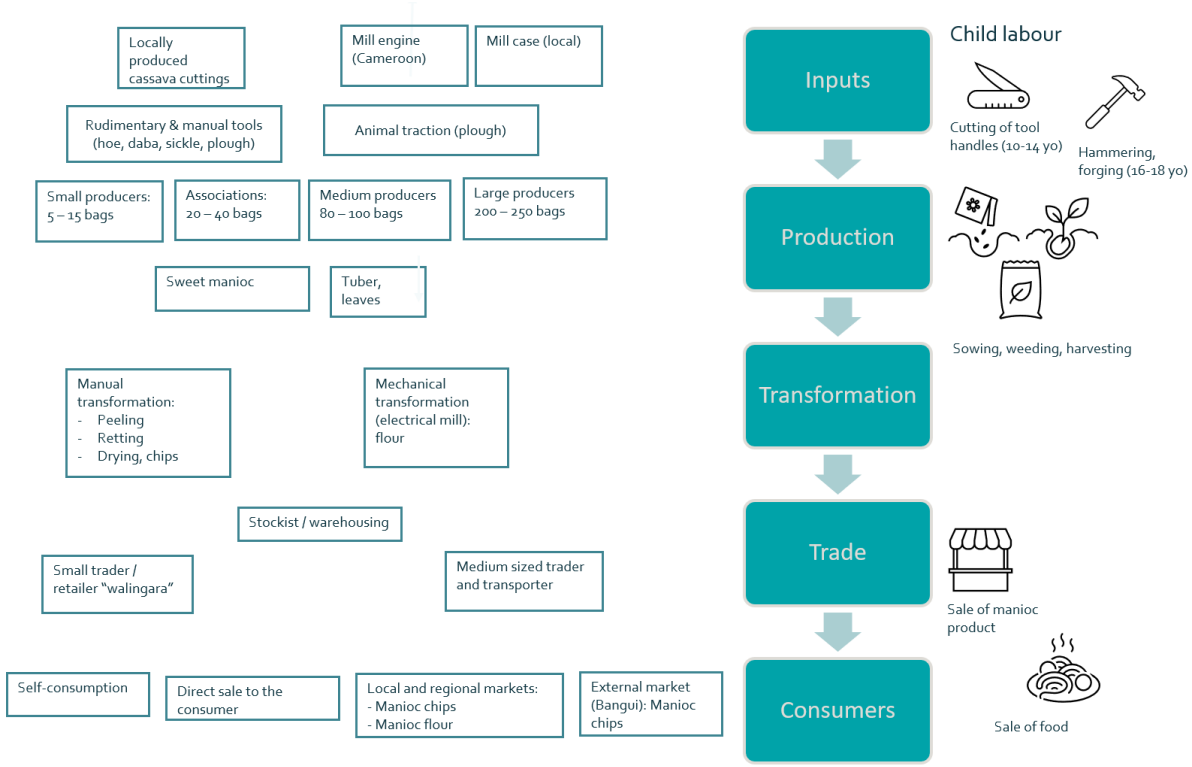
7.3. Cassava value chain[315]

Cassava forms the basis of the diet in the Central African Republic. Of American origin, it is a perennial shrub plant producing edible tubers. Nationally, cassava is the main food crop planted by households. According to FAO, about 68% of households grew cassava in 2015 and its production is estimated at 705,594 tonnes in 2016. This edible plant has many benefits for households. Grown and harvested in all seasons, cassava is constantly available. The tubers can remain in the ground for several years, which is a practical and advantageous characteristic in the context of insecurity.

The primary activities in the value chain of cassava are mainly done on the household level. Cassava is therefore both a subsistence and a cash crop and plays a dual role: economic profitability and food availability. Its commercial cultivation has increased with the development of cities and the inherent population growth. In particular poor households grow their own cassava for consumption and during lean periods, cassava can provide substantial income. In addition, demand for cassava is reported to be high on mine sites, and women state that they see a significant economic opportunity to sell cassava on mine sites throughout the year.[316]

The following provides an initial overview of the cassava value chain (in Bossangoa):

[313] Interview with women traders of agricultural goods in Yaloke/Zawa, September 2020.
[314] Interview with women traders of agricultural goods in Yaloke/Zawa, September 2020.
[315] If not otherwise indicated, information has been provided by livelihood officers of World Vision (Bocaranga) and War Child UK (Bossangoa), in April 2020.
[316] Interview with women traders of agricultural goods, Yaloke / Zawa, September 2020.



Like for other crops, access to cassava cuttings remains local. Three varieties are grown, i.e. cassava that takes 9, 12 and 24 months to grow. The combination of all three varieties allows households to yield cassava at all times. Cassava is cultivated in combination with maize and peanuts, but can also be planted in pure cultivation. Cassava lends itself to both manual cultivation and animal traction. There are different types of cassava producers, with differing sizes of areas under cultivation and using different tools as shown in the table below.

While small producers and collaborative groups ('groupements') practice manual cultivation, the average producer combines the two methods (manual and animal traction) by renting the equipment and animal power to plough the land. This of course requires some capital. Large producers rely mainly on such cultivation using animal traction and ploughs. As in the peanut value chain, larger producers also use daily labourers, whereas small producers rely on their household members to do the work.

Table: Typology of cassava-producing actors in relation to the equipment used in Bossangoa:

Types of producers	Area (in ha)	Labour	Types of equipment used	Product, per production cycle (Cassava chips)	Sale price (9,000 XAF / 15 USD per bag)
Small Producer	0.5 to 1	Not paying	Manual culture	6 to 15 bags	54,000 to 135,000 XAF (90 – 223 USD)
Groupement	1 to 3	Not paying	Manual culture	20 to 40 bags	180,000 – 360,000 XAF (325 – 647 USD)

Medium Producer	1 to 3	Pay	Animal traction Manual culture	80 to 100 bags	720,000 – 900,000 XAF (1,294 – 1,617 USD)
Big Producer	3 to 6	Pay	Animal traction	200 to 250 bags	1,800,000 – 2,250,000 XAF (3,234 - 4,043 USD)

After production, the second phase of the value chain involves processing and marketing. More than 90% of the cassava grown serves as a food, making it an indispensable plant for the food security of rural populations. It is consumed in various forms (tubers, leaves), but the **most common form is cassava chips.** The **transformation of cassava into chips** goes through several stages: unearthing, peeling, retting[317] and drying. These preparation phases are most often done by women, which suggests that cassava processing is a predominantly female activity.

After being converted into chips, cassava is packaged for sale. Several players are involved in the cassava marketing chain. The cassava trade flows in Bossangoa mainly feed the Bossangoa market and the capital Bangui. Some of the trade also serves to resupply mining sites where agricultural activities are often declining in the face of the boom in gold mining. The principles of the trade flow and aggregation of produce is the same as for peanuts. Women are the most involved in retail, whereas wholesale and cassava transportation and packaging services are involving more men.

Retailers are most often small producers and agricultural groups that sell directly to local markets. The majority of semi-wholesalers are women traders, who provide the trade connections between peripheral and final consumer markets. At the top of the marketing chain are wholesalers. They buy, store and sell gradually on the market. Increasingly a certain organizational dynamic among wholesalers can be observed. They come together to pool their efforts and they build storage depots that serve as a warehouse for cassava packaging.

According to women involved in trading cassava in Yaloke, cassava chips are less profitable than cassava flour (described below). This is because the chips spoil more easily especially in the rainy season, and then have to be sold at half the buying price to women who prepare local liquor from them. In addition, there are large fees involved for the storage of bags of chips in the market places. [318]

The **transformation of cassava into flour** is another value-adding link in the value chain. Traditionally, women use mortars to pound cassava and turn it into flour after sieving. However, a mechanical mill powered by fuel is increasingly used to crush cassava. The engine for the mills is often imported from Cameroon, while the case is manufactured locally. In some places, this type of equipment has made it possible to alleviate the hard work of pounding for women and girls in particular. Mills are owned on a household level, but households with mills are generally the wealthiest looking to diversify their sources of income. Income for a household which owns a mill can range from 18,000 to 31,500 XAF (30 – 52 USD) per month.

In Yaloke, women state that the production and sale of cassava flour is more profitable than cassava chips, because there is a very high demand for it on gold mining sites, and because the flour can be conserved more

[317] The retting of cassava is widespread in Central Africa and is a process of detoxification of tubers after soaking.
[318] Interview with women traders of agricultural goods, Yaloke / Zawa, September 2020.

easily than chips and does not spoil as quickly in humid environments.[319] Women involved in small trade of agricultural goods in Yaloke estimated the profitability of this activity as follows[320]:

	Input costs	Production cost	Sale revenue
Items:	Manioc - bowl of 20 litres	Milling costs (service provision)	50 small bags of flour per week
Amount:	2,500 XAF (4.5 USD)	200 XAF (0.36 USD) for bowl of 20 litres	In town: 250 XAF (0.5 USD) per small bag = 12,000 XAF (21.5 USD) per week On the mine site: 1000 XAF (1.8 USD) per small bag = 50,000 XAF (90 USD) per week
Income			In town: 9,300 XAF per week (167 USD) or 1,328 XAF (2.38 USD) per day. On the mine site: 47,300 XAF (85 USD) per week or 6,757 XAF (12 USD) per day, though minus transport costs from and to the mine site.

The trade in cassava also provides work for service providers or handlers. This part of the value chain is especially important to unemployed young people seeking to earn a living. Their task is to package cassava, load and unload the bags and store them in the depots, as well as transport cassava bags from the warehouses to the merchants' place of sale. These labourers are usually paid for by the number of bags transported or packaged.

In terms of **child labour in cassava value chains,** the picture is similar to the one in peanut value chains described above and the agricultural sector in general. Children, both girls and boys, below and above 18 years support their parents in ploughing cassava fields, harvesting and retting of cassava including drying.[321] They also help carry and transport the bags of manioc chips to the market and support the mother at the market stall, including by filling in smaller bags. In addition, children work in petty trade of manioc goods, by going house to house or selling on the mine sites. [322]

In summary, cassava remains an indispensable crop to improve both food security and incomes of rural populations, despite barriers in market access caused by the environment of insecurity. Agroecological conditions allow cassava to be grown throughout the year and there are opportunities for increasing the potential for livelihood improvement, particularly since demand is high on mine sites and manioc can be sold at higher prices there. Because processing is a specifically female activity, improving techniques would increase productivity, increase income and reduce the hardship of women's and girls' work (e.g. through improved retting and drying techniques).[323] Both on the level of the producers as on the level of the traders, women would benefit from enhancement of their business management skills to enable increased economic autonomy.

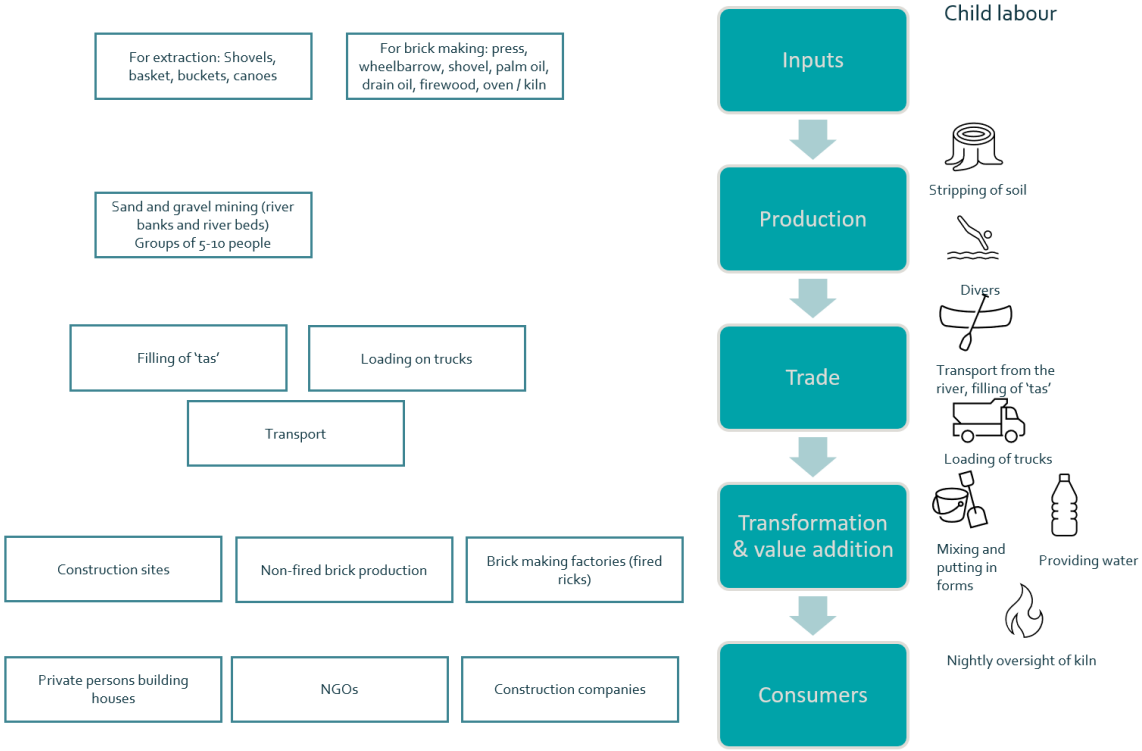
[319] Interview with women traders of agricultural goods, Yaloke / Zawa, September 2020.
[320] Interview with women traders of agricultural goods, Yaloke / Zawa, September 2020.
[321] Interview with women traders of agricultural goods, Yaloke / Zawa, September 2020.
[322] Interview with women traders of agricultural goods, Yaloke / Zawa, September 2020.
[323] GrAnewald F et al. 2018, Agricultural Development in central Africa. Proceedings of the symposium, Bangui, June 2018.

Cassava producers in general sell individually, and a major obstacle in the cassava value chain is the ability of households to work in groups. Thus, accompanying them to work in groups could increase their negotiating capacity vis-à-vis traders and wholesalers. On the level of the traders, there are already groups or associations of women who organise themselves to sell cassava to mine sites (e.g. in Yaloke). Most women also invest in local informal credit and insurance schemes ('tontines') which they set up amongst themselves for the purpose of supporting each other. Supporting existing associations or helping to form new ones could be an entry point, combined with providing support for the professional management and development of such organisations.

Given that a major challenge is the conservation of cassava from becoming spoilt especially during the rainy season, and given that fees for stocking cassava are high, improved stocking and packaging opportunities would benefit the income of women traders. Similarly, transport of bags is costly and therefore often done by women and children themselves, contributing to difficult working conditions. Setting up transport cost sharing mechanisms or supporting the women in acquiring a means of transport would be entry points of support.

7.4. Sand and brick making value chain

In both Bossangoa and Bocaranga, extraction of sand gravel through artisanal and small-scale mining is a prevalent livelihood activity, feeding into local brick making and suppling the local construction industry. The following diagrams outlines the sand and gravel value chain, which is based on information collected in Bossangoa and Yaloke, and remotely through livelihoods officers Bocaranga.[324]



SAND AND GRAVEL EXTRACTION

Typically, sand and gravel are extracted in rivers in the vicinity of towns and urban centres. The rivers bring large quantities of these minerals especially during the rainy season. Sand and gravel mining is done in small groups

[324] Information provided by livelihoods officers of War Child UK (Bossangoa) and World Vision (Bocaranga), based on a questionnaire supplied electronically.

of people (between 5 and 25 persons). Unlike in gold mining, where miners live almost exclusively from mining, sand and gravel miners are often farmers who supplement their subsistence farming. Nevertheless, they state that sand and gravel mining is their main source of cash. Most adults reinvest these earnings into agriculture, whereas youth and children state that they give part of their earnings to their parents, and invest another part in small trade and commerce. [325] It is to be noted that few to no girls or women work in sand and gravel extraction (digging). They are only involved sporadically, especially during the time period before Christmas, when extra cash and income is required.[326] As in gold mining, they are mostly present in auxiliary services, such as transport and petty trade or food provision.

The extraction of sand and gravel from river beds and shores seems to be mainly conducted by men and youth, whereas the filling of 'tas' (unit of measurement) and the transport from the river to the truck is often done by women and children carrying bags on their heads. Children and youth are also involved in loading the trucks for transport, and in evacuating water from the mining pits by the river side.[327] Furthermore, children and youth may also act as 'divers' to extract sand and gravel from the river especially in the dry season.[328] In the majority of cases, the children below 18 years accompany their parents to support them on the sand mining site.[329] The work involving heavy loads and working under water are considered worst forms of child labour.

The tools and equipment used is artisanal and consists mainly of shovels, buckets and baskets. Sometimes sand and gravel are also extracted using canoes rather than from the river side only. The following table gives a view of input costs for sand and gravel production based on information from interviewees in Bossangoa and Yaloke:

Input / start-up costs	Bossangoa	Yaloke (team of 30 people)
Canoe	80,000 – 100,000 XAF	
Wheelbarrow	35,000 XAF	
Shovel	3,500 XAF	7,500 XAF for 4 shovels
Baté		4,000 XAF (for 4 items)
Crowbar		12,000 XAF (for 2 crowbars)
Worker stipend / ration		10,000 XAF per week for the entire team = 333 XAF (0.6 USD) per week per person

The following table provides an overview of approximate earnings per task (in Bossangoa):

	Amount produced	Time needed	Earnings

[325] Interviews and discussions with sand and gravel miners in Bossangoa, July 2020.
[326] Interviews and discussions with sand and gravel miners in Bossangoa, July 2020.
[327] Interview with sand producer, Yaloke, September 2020.
[328] Interviews and discussions with sand and gravel miners in Bossangoa, July 2020.
[329] Interview with sand producer, Yaloke, September 2020.

Sand extraction, share from sales – cost of inputs need to be deducted	3m3	4 days	15,000 XAF (25 USD) = 6.25 USD per day, divided by number of workers
Gravel extraction, share from sales – cost of inputs need to be deducted	3m3	6 days	25,000 XAF (41 USD) = 6.8 USD per day, divided by number of workers
Transport and filling of 'tas' – worker salary	3 x 'tas'	1 day	3,000 – 4,000 XAF (5.4 – 7.25 USD), divided by number of workers (3-4) = 1.35 – 1.81 USD per worker per day
Loading of truck – worker salary	2 trucks (16m3)	1 day	6,000 – 8,000 XAF (11 -14 USD), divided by number of workers (6-8) = 1.4 – 1.75 USD per worker per day
Washing and manual transport of sand and gravel – worker salary (often done by children)	Bag of 25kg	unclear	300 XAF (0.55 USD)
Transport by truck – costs of vehicle and fuel need to be deducted	3m3	unclear	15,000 – 20,000 XAF (24 – 33 USD)

In Yaloke, workers can reportedly produce up to 10 'tas' (around 3m3) of gravel per week; and 1 'tas' can be sold at 25,000 XAF. This means a profit of 100,000 XAF per week, of which 50,000 is deducted for the mine manager (5,000 XAF per 'tas'.[330]

Sand and gravel is sold at the following prices per m3 (usually measured in truck loads) in Bossangoa:

	Amount	Price
Gravel	6m3	40,000 – 50,000 XAF
	8m3	60,000 – 65,000 XAF
Sand	6m3	25.000 XAF - 30.000 XAF
	8m3	35.000 XAF

The main challenge associated with sand and gravel mining, according to miners, is the elevated risk of drowning. Providing protection equipment (such as diving suits and equipment), extraction materials (shovels, wheelbarrows), as well as support and training on stock management are key areas of support mentioned by sand and gravel miners.[331] An additional challenge is that transport costs are high and thus women and children

[330] Interview with sand producer, Yaloke, September 2020.
[331] Interviews and discussions with sand and gravel miners in Bossangoa, July 2020.

take on the task of carrying sand, causing difficult working conditions and health impacts.[332] Support in this area needs to be well thought through, as the provision of transport equipment (wheelbarrows, etc.) could on one hand alleviate this burden and support profitability of the sand extraction operation, but at the same time cut women and children out of their jobs and income generating activity.

BRICK MAKING

The sand and gravel is then transported and sold to construction sites in town. Demand has been increasing recently, as different actors seek to construct buildings: Construction enterprises, NGOs, the Muslim community whose houses have been destroyed by the conflict, and private citizens including gold traders who are able to invest in large houses. Sand and gravel are also sold to small brick making factories and locations in town. There are 5 such factories in Bocaranga, producing fired bricks, whereas there is also a large production of non-fired bricks employing a workforce that consists of 80% youth. In Bossangoa, the work force are mainly local men and youth who have left school. However, children also seem to be involved in making bricks, and they themselves consider this as extremely difficult work.[333] For many in this activity, brick making is their main income source. They reinvest their incomes into subsistence agriculture, dowry payments, school fees, motor bikes or back into sand and gravel extraction or construction.[334]

There are two main roles at the brick making factories: Those pressing bricks into pre-fabricated shapes, and those operating the kilns and ovens. Children below 14 years do not seem to be working at brick making factories, and no girls were observed either.[335] Boys between 14 and 18 usually fulfil a variety of tasks: Mixing and forming the bricks, transporting and providing the water, and supervising the kiln during night time. [336] Some of these could consist of WFCL, as they involve heavy loads and include night-time work.

The main equipment and inputs used in the fabrication of bricks are brick presses, wheelbarrows, shovels, palm oil or waste oil, and firewood / tree trunks. The start-up costs to produce 10,000 fired bricks amounts to approximately 300,000 XAF (544 USD), while a fired brick can be sold for 55 XAF (0.10 USD).[337] Thus a turnover of 550,000 XAF (998 USD) can be made. Of the latter, the running costs and salary and stipends of the workers (5,000 XAF per week per worker) need to be deducted. An example from a fired-brick making factory in Bossangoa is given below

Start-up costs	Land area (start-up costs)	15,000 – 50,000 XAF
	Building of oven / kiln (start-up costs)	60,000 XAF
	Shovels	3,5000 XAF
	Pickaxes	6,000 XAF
	Pressing forms 14/28	100,000 XAF
	Pressing forms 15/30	120,000 XAF
	TOTAL (approx.)	**310,000 XAF (563 USD)**

[332] Interview with sand producer in Yaloke, September 2020.
[333] Focus group with Girls, Togbo (Bossangoa), 24.04.2020
[334] Interviews & focus group discussion at brick making factory in Bossangoa, July 2020.
[335] Interviews & focus group discussion at brick making factory in Bossangoa, July 2020.
[336] Interviews & focus group discussiona t brick making factory in Bossangoa, July 2020.
[337] A non-fired brick sells for 25 XAF (0.04 USD).

Running costs for production of 10,000 bricks	Firing material and its manual transport	80,000 XAF (145 USD)
	20 L of waste oil	15,000 XAF (27 USD)
	Defourrement	10,000 XAF (18 USD)
	TOTAL	**110,000 XAF (200 USD)**
Sale of 10,000 bricks	**55 XAF per brick**	**550,000 XAF (998 USD)**

The following table provides an overview of the range of incomes or salaries of workers. It needs to be considered that brick production is particularly high during the dry season, when demand is high in the construction sector, while in the rainy season, production might be limited and thus incomes very low:

	Income
Bocaranga: Worker at brick factory (salary)	5000 XAF per week (8.25 USD) = 1.17 USD per day.
Bocaranga: Transporter of bricks (income – costs of vehicle and fuel need to be deducted from this)	140,000 XAF per week (231 USD) = 33 USD per day
Bossangoa: Worker making fired bricks (salary)	Between 5,000, 20,00 or 60,000 XAF per week (8.25, 33 or 99 USD) = 1.17, 4.7 or 14 USD per day
Bossangoa: Worker making non-fired bricks (salary)	8,000 and 15,000 XAF per week (13 – 25 USD) = 1.85 – 3.57 USD per day)

Key challenges in brick making are the lack of key material (motorbike for transporting the firewood, storage facility during rainy season, protective equipment), the lack of credit and loan opportunities, low in investment and difficult access to banks, the slump in demand during the rainy season, as well as the numerous health and safety risks that cause accidents and injuries. These are key entry points for the consortium to improve the economic viability of brick making and the protection of workers and their livelihoods.

Overall, sand and gravel extraction, transport and brick making could be a viable local livelihood especially for youth and men, and for farmers needing to supplement their household income. As in other locations, the extraction and use of sand and gravel (as well as other industrial minerals) has a large potential for localised value addition and job creation. Most of the value is added locally and the value created also remains within the community and towns – which is in stark contrast with gold value chains, where the main processing, refining and value addition occurs outside the country on global markets, and little value is created locally and margins remain small especially for those who are unable to trade large volumes.

7.5. Key insights

In principle, the agricultural sector in CAR has the potential to provide improved livelihoods and incomes for large parts of the population. However, it remains constrained by the impacts of the conflict and general instability, the limited reach, capacity and resources of the state, the mainly artisanal methods and tools used in agricultural production. Nevertheless, there are lively local agricultural markets in main towns, also reaching out to mining areas, and trading networks to Bangui as well as neighbouring countries. This shows that agricultural products can provide the opportunity for earning increased incomes beyond providing for subsistence of rural households.

Promising agricultural value chains are **cotton, peanut and cassava**. Cotton is re-emerging as a cash crop around Bossangoa that is sold internationally with the support of the state. Peanut and cassava are staple crops that are produced and consumed by large parts of the population in CAR, with high demand in Bangui and also high in mining areas. There are also opportunities for improved value addition in these two crops, such as production of paste and oil (peanut), chips and flour (cassava).

Activities that could support households, and in particular women, in improving production of these crops could include: enabling better access to seeds, building the capacity for improved cultivation and processing practices, and supporting collaborative forms of organisations in order to enhance pooling of resources, sharing of risks, better negotiation power vis-à-vis the larger traders and wholesalers, and improved access to finance or renting of equipment. Through private sector and value chain development approaches, producer groups could also be enabled to supply to wholesalers who have already established their own collaborative organisations and have started building storage spaces.

In addition to specific agricultural value chains, other economic activities practiced locally should be in focus, such as **sand and gravel mining and connected brick making** for the construction sector. This is because a lot of value is created and retained locally in this supply chain, and many youth and poorer households are involved in this activity. In addition, it needs to be noted that a key 'input' across all these activities, agricultural as well as brick making and mining, are the still simple, artisanal tools, many of which are produced locally by **blacksmiths and craftspeople.** Therefore, small enterprise development projects could be targeted to such artisans, as well as the brick factories and the sand and gravel extraction sites.

Unfortunately, children are as involved in agricultural value chains as in gold value chains, as well as in other activities such as sand and gravel mining and brick making. Because of this, a landscape approach to address child labour needs to be adapted – in order to prevent the simple 'displacement' of children from one sector to another. The recommendations for tackling child labour in the gold value chain thus remain relevant also for the agricultural chains as well as other economic activities.

Based on these general insights, the following economic activities should be supported:

Target group	Economic activity to support	What kind of support ?
Households and small producers - men and women, children above 15	Agricultural production of peanuts and cassava	Forming producer groups and associations Improved access to finance – through credit/loan schemes or access to banking Support seed production and storage

		Training or demonstration of good sowing & harvesting practices through field schools / extension services
Women and girls above 16	Value addition (peanut paste, cassava flour) and small / local trade from producer to semi-wholesale	Support existing collectives or form traders' groups and associations Support existing forms of credit/loan schemes or access to formal finance Improve access to equipment for these groups: roasting stoves, mills, skinning machines Improve storage and packaging to reduce risks of spoiling during rainy season and reduce storage fees & seasonal price fluctuations Enhance market links to mine sites and Bangui, support sharing of transport costs or access to means of transport for collectives Training and capacity building on business skills, financial literacy, etc
Men and boys above 16	Sand extraction and brick making	Support existing collectives or form groups and associations Support improved sand stock management and improved storage solutions for bricks to balance out reduced demand during the rainy season Support sharing of transport costs or access to means of transport for collectives, though considering the impact on women and children's livelihoods (who often act as transporters) Improved ovens for brick making – safer and requiring less inputs Support existing forms of credit/loan schemes or access to formal finance

8. Conclusions and recommendations

Based on the key insights of the previous chapters on the gold and agricultural value chain, the following table summarises the key challenges and opportunities for improving livelihoods in each value chain, and synthesises the ways in which children are involved in each:

Economic activity	Obstacles to improving livelihoods	Opportunities for improving livelihoods	Presence of child labour / WCL
Gold value chain: Artisanal gold mining and gold trade	Informality of mining and trading Health & safety risks increasing household expenditures Uncertainty and unpredictability of income / revenue Low incomes for daily labourers (often women) Dependency on informal (pre-)financing, including smuggling networks Inefficient and often unsafe prospecting, extraction, and processing techniques Limited value addition and refining in producing areas	The ASGM sector is booming and high international prices are increasingly translated upstream Integration with other economic sectors and livelihoods through cross-financing; provides a viable market for agricultural value chains Government has a high interest informalisation & other partners are already working on it Areas of intervention: supporting workers' organisation and voice, access to formal or local financing mechanisms, improved mining & processing techniques, enhance local value addition, support secondary/auxiliary services	U-12: Often present but not working, some auxiliary tasks such as carrying water, selling food, etc 12 – 14: as 14 -18, though less involved in digging 14- 18: digging and removing overburden (boys), transporting/carrying ore, crushing, washing ore (both), moto taxis, fuel provision (mainly boys), petty trade, restaurants & food provision (mainly girls)[338]; carving handles for tools (both); blacksmithing (boys)
Cassava (especially flour) Peanut (especially paste)	Small subsistence producers which are not members of associations Seed production and storage difficult Price & demand fluctuations between seasons Risk of spoiling stock during the rainy season, insufficient	Both a subsistence and a cash crop, cultivated for economic profitability and food availability. High demand on mine sites and larger towns, including Bangui. Women involved in value addition and trading, with existing associations and credit/loan schemes	U-12: Supporting on family farm (sowing, weeding, harvesting) – both girls and boys 12-18: Supporting family farms and production (both), carving handles for tools (both); blacksmithing (boys); processing and value addition (roasting, milling et), packaging,

[338] Evidence on sex work or sexual exploitation is inconclusive and viewed differently by different stakeholders, including on what constitutes 'sex work' and sexual exploitation.

	storage and packaging Costly and difficult transport and storage, value addition facilities	Areas of intervention: Support or form farmers / traders collectives; support existing forms of credit/loan schemes or access to formal finance; access to equipment (roasting stoves, mills, skinning machines); improve storage and packaging; enhance market links & transport; training and capacity building on business skills, financial literacy, etc	carrying / transport and trading (market stalls, door to door) (girls)
Extraction of sand and gravel; brick making	Uncertainty and unpredictability of income / revenue, including due to seasonal variation sin demand Low incomes for daily labourers (often women) Storage and stock management during the rainy season Costly inputs (firing oven) and transport Health and safety risks increasing household expenditures	High local demand in construction industry fuelled by reconstruction after conflict and increased incomes from the gold sector Value is added locally using local equipment and tools, and value chains are short and transparent Areas of intervention: Support existing or form collectives, support existing forms of credit/loan schemes or access to formal finance improved stock management and storage; improved and safer ovens; transport cost sharing	U-12: Often present but not working, some auxiliary tasks such as carrying / transporting, bringing food and water 12-14: as 14 -18, though less involved in digging 14-18: Digging and diving, bagging sand, carrying/transporting and loading trucks, mixing mass and filling in brick forms, supervising the oven

Considering these opportunities and challenges, the following table presents livelihood options for different target groups, and summarises the kind of support the consortium could envisage in its programming.

In terms of target groups, it is to be noted that there are gendered roles and tasks in all supply chains examined in this study, and while the following recommendations tend to follow these gender norms that exist on the ground, it would be key to also enhance women's empowerment and participation in other economic roles, tasks and activities over time, i.e. working towards an increasing number of women mine managers, women being part of mining teams instead of daily labourers / service providers, girls also gaining access to vocational training with blacksmiths, etc. Since income differences between gender are also often due to the different tasks and roles taken on within a value chain, changing these norms and roles over time will contribute to increased income opportunities for women and girls.

Target group	Economic / livelihood activity to support	What kind of intervention would help vulnerable households or individuals?
Under 12 year old (boys and girls	Only very light support tasks that help parents in their farming / economic activities outside of school times	School meals programme Enhancing educational system: Access to schools in remote areas, safe reopening of schools during Covid-19, improving teachers' salaries, etc Improved income or livelihoods for parents / access to finance or savings schemes, or conditional cash transfers to enable payment of school fees Awareness raising and sensibilisation, strengthening social norms with community leaders, mine site managers and traders Organising daily care and supervision while parents are working
12 – 14 year old (boys and girls)	Light support tasks in agricultural production at household level (cassava, peanuts) Light support tasks in petty trade and food/water provision at mine sites, together with parents / care takers	Improved income or livelihoods for parents Access to finance or savings schemes, or conditional cash transfers to enable payment of school fees Awareness raising and sensibilisation, strengthening social norms with community leaders, mine site managers and traders Soft skills development through informal / vocational education: financial & business management
Girls 14 – 17 years old	Agricultural production Peanut paste manufacturing and trade Cassava flour manufacturing and trade Restaurants, food and water provision Transporting (light weights) and washing of gold ore	Vocational training and placements with existing businesses/operators / demonstration sites Soft skills development: financial and business management Forming of associations and organisational support Credit/loan and savings schemes / access to finance Awareness raising and sensibilisation on children's rights
Boys 14 – 17 years old	Agricultural production Blacksmithing Moto taxi / transport Land clearing	

	Transporting (light weights) and washing of gold ore, sand and gravel Brick manufacturing	and worst forms of child labour, labour laws
Adult men	Agricultural production Gold mining and trade Sand and gravel mining and trade Transport Brick manufacturing	Forming of associations and organisational support, including for workers and daily labourers Credit/loan and savings schemes / access to formal finance, especially in gold value chains Soft skills development: financial and business management, understanding of value chain, price determination and negotiation, etc Technical, practical skills development: Improved, more efficient and safer working techniques; field schools and demonstration sites Access to improved value addition equipment (mills, ovens in agriculture, refining in gold); technical training on value addition
Adult women	Agricultural production Peanut paste manufacturing and trade Cassava flour manufacturing and trade Restaurants, food and water provision Gold mining and trade (though at present mostly involved in alluvial, individual panning, washing, carrying/transport) Sand and gravel mining and trade (though at present mostly involved in carrying/transport and loading)	

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10. Annexes

10.1. List of interviews and data sources

Interviews and focus group discussions conducted tin the first phase of the project:

Date and place	Stakeholder
10.04.2020, Bangui	Jules Yaganza, Expert évaluateur au Bureau d'Evaluation et de Contrôle de Diamant et Or, Ministere des Mines et de la Geologie
10.04.2020, Bangui	Christian Ouloui, Directeur de la Direction des données, de la Régulation et du Suivi de la Commercialisation, Ministere des Mines et de la Geologie
15.04.2020, Bangui	Nathan Beangai, Directeur de la Direction de la Recherche et du Cadastre minier, Ministere des Mines et de la Geologie
16.04.2020, Bangui	Brice Wingue, Directeur des Resources, Ministere des Mines et de la Geologie
20. – 30.04.2020, Bossangoa	Livelihoods Officer of War Child in Bossangoa, 2 questionnaires on agricultural chains and other economic activities
20. – 30.04.2020, Bocaranga	Livelihoods Officer of World Vision in Bocaranga, 2 questionnaires on agricultural chains and other economic activities
24.04.2020, Togbo (near Bossangoa)	FGD with 5 girls working on mine sites
02.05.2020, Togbo (near Bossangoa)	FGD with 4 boys working on mine sites.
24. – 15.04.2020, Bolere and Ndemou (near Bocaranga)	FGD with 3 girls working on mine sites and 4 parents.
24. – 15.04.2020, Bolere and Gbadock (near Bocaranga)	FGD with 7 boys working on mine sites, 5 parents, 1 traditional leader and 1 teacher.
24. – 15.04.2020, Bolere and Gbadock (near Bocaranga)	Interview with a teacher
27.04.2020, Ndowkété (Korompoko, Bossangoa)	Interview with a teacher
14.05.2020, phone	Herve Pounou, Directeur TetraTech CAR, USAID AMPR Programme
18.05.2020, phone	Pauline Delacroix, Specialiste Protection de l'Enfant en Situation d'Urgence, UNICEF CAR
03.05.2020, Bangui	Gonofino Grégoire, Bijoutier and founder at Bijouterie Nationale de Centrafrique (BINACA)
03.05.2020, Bangui	ADAMA SWISS, gold buying house, refiner and exporter
03.06.2020, Bangui	José Rodriquez Makpayen, Secrétaire Général Adjoint, Union Nationale des Coopératives Minières en Centrafrique
03.06.2020, Bangui	Malo, Commandant de l'USAF

03.05.2020, Bangui	FGD with sand extractors: Paul Aboma (President), Gaston Bimale (Vice-President), Paul Padec (Advisor)

Interviews and focus group discussions conducted in the second phase of the project, through field work in Bossangoa and Yaloke:

Name	Role / function	Organisation / structure
Bossangoa (13. – 16. August 2020)		
WILLY Magloire	President	Sand extraction operation
GAMBORE Celine	President	Group/association BALAWA
WASSABA Pierre	President	Blacksmiths association
BESSEME Jean Paul	Village chief Boulakaba	Mine manager on the site PEI ; 54 km from Bossangoa
FEIDANGAMOKOI Salomon	Chef, education sector Ouham	National education
NDOUBA David François	Chef, education sector Bossangoa	
MBAINDO Noel	President	Association of sand producers and brick manufacturers
FEIMONA Adolphe (16 years)	Mine worker	Mine site Péyi
Yaloke (31. August – 6. September 2020)		
TAKOSSO Victor	Director at Bakala school in ZAWA	National Education
KETEA Victor	Chef de groupe at the village ZAWA	Mayor's office in YALOKE
BEINA Florence	Trader at ZAWA market	Women traders association
YAKOE Pierrette	Trader at ZAWA market	
BEGUE Rosalie	President of women traders association at ZAWA market	
OUANGO Lazare	Collectors / gold traders	Ministry of Mines
GARAMO Emanuel		
DOWEN Jean Maker	Sand and gravel extraction, brick manufacturing	Association of sand extractors
WANIZOLO Abel	President of the youth association in ZAWA	Association de la jeunesse
YAFONGO Maurice	Mine manager GAGA site	Focus group on GAGA mine site
NGAKOLA Emanuel	Member of the cooperative at GAGA	
GOLOMO Elysée	Mine worker	
Yvon Saint Cyr	Mine manager	

10.2. List of Regional Directorates of the Ministry of Mines

- Direction Régionale N°1 avec Résidence à BIMBO comprend les Préfectures de l'Ombella –M'Poko et de la Lobaye;
- Direction Régionale N°2avec Résidence à Berberati comprend les Préfectures de la Mambéré Kadéi et de la Sangha-Mbaéré;
- Direction Régionale N°3 avec Résidence à Bouar comprend les Préfectures de la Nana-Mambéré, de l'Ouham et de l'Ouham- Péndé;
- Direction Régionale N°4 avec Résidence à Bambari comprend les Préfectures de la Ouaka, de la Kemo, et de la Nana-Gribizi;
- Direction N°5 avec Résidence à Bria comprend les Préfectures de la Haute Kotto, de la Bamingui-Bangoran et de la Vakaga;
- Direction N°6 avec Résidence à Bangassou comprend les Préfectures du Mbomou, de la Basse-Kotto et du Haut-Mbomou.

10.3. List of ASM gold permits

ASM gold permits in 2019:

N°	Nom des détenteurs	Type de permis	Localités	Observations
1	COMAT	1 PEASM	Nola	En activité
2	CAMSONA	Transfert 2 PEASM	Sosso Nakombo	En activité
3	CAMSONA	Renouvellement 2 PEASM	Sosso Nakombo	En activité
4	CEMBOS	1PEASM	Carnot	En activité
5	Yobé	1 PEASM	Bania	En activité
6	Gbinmon Gonou	1 PEASM	Bozoum	En activité
7	Un pour Tous	1 PEASM	Salo	En activité
8	Mère et Fils	1 PEASM	Yaloké	En activité
9	Béloko Mining	1 PEASM	Béloko	En activité
10	DSTM	3 PEASM	Nola	En activité
11	MING XING SARL	5 PEASM	Bogoin	En activité
12	SODIAOR Centrafrique	5 PEASM	Carnot	En activité
13	TSA	1 PEASM	Sosso nakombo	En activité
TOTAL		25 PEASM		

ASM gold permits in 2018:

N°	Nom des détenteurs	Type de permis	Localités	Observations
1	Abigail NGARAMON	1 AEA	Yaloké	En activité
2	CADORC	1 PEASM	Sosso Nakombo	En activité
3	COMIDENO	2 PEASM	Nola	En activité
4	COMIDIOR	2 PEASM	Baboua	En activité
5	COMIGAP	2 AEA	Carnot	En activité

6	CEMCA	2 PEASM	Sosso Nakombo	En activité
7	CORADIOR	2PEASM	Abba	En activité
8	COMIDIOR	2 PEASM	Abba	En activité
9	COMICA	5 PEASM	Bania et Carnot	En activité
10	COMIVBO	2 AEA	Boganda	En activité
11	EBEN EZER	5 PEASM	Ngotto	En activité
12	COMGAP	2 AEA	Carnot	En activité
13	MINERVA AFRICA	5 PEASM	Bambari	En activité
14	MOSSORO TI E	5 PEASM	Carnot, Bania et Mbaiki	En activité
15	CMOK	1 PEASM	Gamboula	En activité
16	WONDERFUL	3 PEASM	Bania	En activité
17	ORGEM	5 PEASM	Bania, Bria, Gadzi et Boda	En activité
18	DIMA MINING	3 PEASM	Amada-Gaza	En activité
19	KARO 5 PEASM	1PEASM	Yawa	En activité
20	TIAN XIANG	5 PEASM	Baboua	En activité
21	YONG KANG BUSINESS	5 PEASM	Baboua	En activité
22	ZHIGOU MINING	5 PEASM	Bozoum	En activité
23	ZHONG YU KUANG YE	5 PEASM	Baboua	En activité
TOTAL		70 PEASM		

PEASM = Permis d'Exploitation Artisanale Semi-Mécanisée ;

AEA= Autorisation d'Exploitation Artisanale.

10.4. List of active buying houses and smelters

N°	Sociétés	*Raison sociale*	*Responsable (Directeur Gl ou Gérant)*	*Localisation*
1	**ADAMAS SWISS**	Fonderie / Bureau d'Achat	CLAUDIO DE Giorgi	Bord du fleuve / Côté ALLIANZ
2	**KOTTO MINES**	Fonderie	POCKOSSI Antoine	Salon Artisanal
3	**GONGA**	Fonderie		Quartier SAÏDOU, face SINOBEL
4	**SAWA SAWA**	Fonderie		Quartier Sissongo, à côté de 20000 place
5	**Bangui Butter Built (BBB)**	Bureau d'Achat Or et D	EREZ AVRAHAMOV / LOMBILO Igo	
6	**DUNTA SURL**	Bureau d'Achat Or et D	MOHAMEB DJEDO Abdel Karim	Flanc coline Gbazoubangui, Rue NDEKE LUKA
7	**MAZEN & MOUSSA DIAMANT**	Bureau d'Achat Or et D	FAYAZ Mazen	Rue Universiité, secteur Centre Santé Universitaire

8	**SUD AZUR**	Bureau d'Achat Or et D	Mahamat OUMAROU	Centre Villle, Côté Direction TELECEL
9	**TRECK MINING**	Bureau d'Achat Or et D	TENOKO Hervé	200 VILLAS, Face ex HYDRO FINANCE
10	**MEX**	Bureau d'Achat Or et D	Moussa YAKOUBO	Avenue Indépendance, Face Gendarmerie