



## Policy Brief

# Impacts of Artisanal Gold and Diamond Mining on Livelihoods and the Environment in the Sangha Tri-National Park (TNS) Landscape, Congo Basin

**Gold and diamond mining** constitute more than half of all mineral exploitation worldwide and an estimated 6 to 9 million artisanal miners are active in the gold and diamond sector. Africa hosts a third of the world's natural mineral wealth, among which 65 percent of global diamond deposits. While mineral exploitation contributes to the livelihoods of many, it also generally leaves a negative impact on the environment, which may ultimately be detrimental to livelihoods. The consequences of mining for both the environment and livelihoods are of particular concern in important landscapes, such as the **Sangha Tri-National Park (TNS)** covering Cameroon, the Central African Republic and the Republic of Congo. This brief offers recommendations based upon an extensive study<sup>1</sup> on the impact of artisanal gold and diamond mining in the Sangha Tri-National Park (TNS), which is a joint initiative of the **Centre for International Forestry Research (CIFOR)** and the **International Union for Conservation of Nature, Central and West African Office (IUCN-PACO)**.

**Key recommendations to regional governments, ministries, non-governmental organizations, private enterprises and development agencies:**

- 1) **Improve coherence of strategies across the mining and forestry sector** to enhance livelihoods and minimize environmental impacts. Special attention should be paid to mitigating **conflicting interests**: between small-scale and large-scale mining activities; and for mining activities in timber concessions and protected areas.
- 2) **Harmonize mining policies and resource governance strategies in the Congo Basin** in general and the three countries sharing the TNS area – Cameroon, the Republic of Congo and the Central African Republic. This harmonized approach to **mining in the TNS landscape** would assist in tackling conflicting interests between artisanal and small-scale mining (ASM) and large-scale mining (LSM) and trans-boundary trafficking. This strengthens the outcomes of existing Park related trans-boundary agreements on sustainable management following the 2000 signature of the “Yaoundé declaration” by Central African governments.
- 3) Promote development policies that **stimulate environmentally sound mining practices** in the TNS region, such as maintaining chemical free mining practices. **Environmental and social impacts** of large-scale mining operations should be studied thoroughly and disseminated transparently before exploitation licenses are granted. Mining companies can benefit from engaging with local communities and artisanal miners to minimize conflict in their operations and enhance corporate social responsibility.
- 4) Inform and **sensitize artisanal miners about their rights** under the national mining laws, how to access mining titles and operate in a legal way.
- 5) **Improve miners' livelihoods** by:
  - a. **Transferring knowledge** about sustainable mining techniques, tools, valuation and price.
  - b. **Facilitate miners to organise themselves** by creating forums for cross-boundary information exchange and sharing experiences on production, processing, financial management and market skills.
  - c. **Support miners to diversify** incomes with alternative activities such as more efficient farming, livestock rearing and NTFP cultivation.

<sup>1</sup> The research consisted of a literature review, interviews with 131 miners, discussion with stakeholders and field visits to 17 mining sites (13 in Cameroon and 4 in the Central African Republic) located within 50 km of the TNS. For a digital copy of the full report: “Study on impacts of artisanal gold and diamond mining on livelihoods and the environment in the Sangha Tri-National Park (TNS) landscape, Congo Basin” (2009) Tieguhong Julius Chupezi, Verina Ingram and Jolien Schure. CIFOR. Cameroon, Yaoundé, please contact CIFOR or IUCN.

## The Park: A rich landscape without borders?

The Sangha Tri-National Park (TNS) covers the Lobeke National Park in Cameroon, the Ndouable-Ndoki National Park in the Republic of Congo (RoC) and the Dzanga-Ndoki National Park and the Dzanga-Sangha Dense Special Reserve in the Central African Republic (CAR). The park is one of 11 “landscapes” identified as conservation priorities by the Congo Basin Forest Partnership. The area is home to around 25,000 people and has outstanding fauna, which includes forest elephants, western lowland gorillas, chimpanzees and bongos. Besides this rich biodiversity, the TNS landscape contains mineral wealth that attracts miners and whose activities could cause contradicting interests with the environmental services of the park. The question is: **whether and to what extent do artisanal mining activities affect the natural environment of the TNS area?**

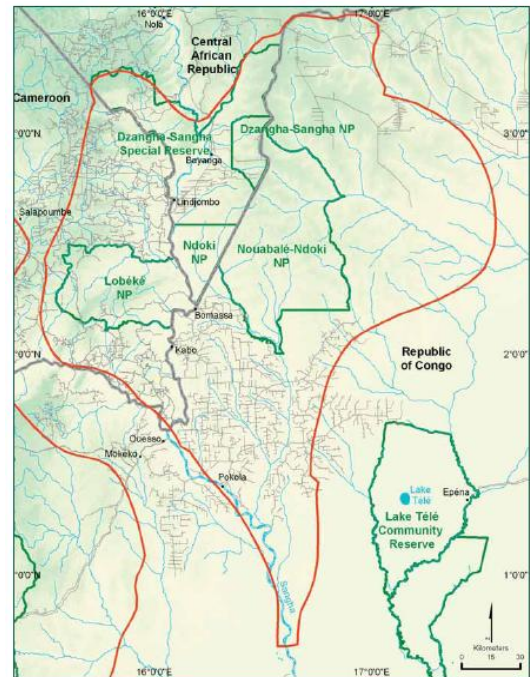
The CIFOR-IUCN research shows that miners are operating within the **interior of the park**, especially in the northern area of Dzanga-Ndoki National Park in the CAR and the southern part of Lobeke National Park in Cameroon. In Cameroon, 20% of the miners who were interviewed also mine inside the reserve. In the CAR, only 1 of 32 miners operates in the park. The majority of mining takes place along streams, with direct but temporal and moderate impacts such as diversions, siltation and sedimentation of streams. There is no reported or observed use of mercury or cyanide for gold extraction. Only limited felling of trees or land clearance was observed for the period of mining, often temporal or seasonal, which were then abandoned with no or little farming activities taking place in the mining areas. The indirect effects of working in the forest, leading to exploitation of timber and non timber forest products -particularly bush meat and medicinal plants- also seem to be limited.

Although the present scale and conduct of **artisanal mining** in the TNS region do not significantly threaten environmental values, this is no guarantee for the future. To the contrary, is likely that the scale of impacts will grow proportionally with an increase of population of miners, growing markets and improved extraction methods. It is important to note that the majority of the miners think that mining has no negative environmental impacts and believe that gold and diamonds are infinite resources.

There is an influx of **large-scale mining operators** into the TNS landscape, a trend which increases the risk of negative environmental impacts. A couple of large mining operators have received exploration licenses in the buffer zone of the Lobeke National Park. The fact that these mining concessions overlap with the TNS landscape carries a risk that their operations, once started, will put pressure on the park, directly through large scale mining activities and indirectly by increasing demand for land for agriculture, bush meat by workers and timber for construction and energy. **These potential future pressures on the park give cause for concern that current regional agreements governing the TNS landscape do not consider the impact of mining operations.**

## The People: Who are the artisanal miners and who benefits from mining?

Artisanal and small-scale mining (ASM) is both poverty driven and poverty alleviating and its continuing attraction is the opportunity it provides to many to gain cash income. In the TNS area, at least **3,510 people** (517 miners and their dependents), almost a quarter of the area’s population, depend upon mining incomes from the TNS landscape. The miners are mostly middle-aged male workers who are largely based around four main villages. The **‘diggers’**: excavate shallow pits and; **‘divers’** scoop sand and soil from the Sangha River. Most miners are married and assisted by (family) labor, involving many women and children. Education among the miners is generally low. Over 70 % of the miners only attained primary school level or no formal education at all.



Map of Sangha Tri-National Landscape (Sources: Atlas of Cameroon GFW/WRI, CARPE, JRC, SRIM, WCS-Congo, WCS-Gabon, WWF-Jeune).

### The Landscape in brief

Coordinates: 3°32'12"N – 0°40'29"N; 15°28'26"E – 17°34'8"E  
Area: 36,236 km<sup>2</sup>  
Elevation: 330-700 m  
Land ecoregions: Northwest Congolese forests ecoregion  
Aquatic ecoregion: Sangha ecoregion  
Protected areas: Nouabalé-Ndoki National Park, 419,000 ha, 1993, Republic of Congo  
Lobéké National Park, 43,000 ha, 2001, Cameroon  
Dzanga-Ndoki National Park, 125,100 ha, 1990, Central African Republic  
Dzanga-Sangha Special Reserve, 310,100 ha, 1990, Central African Republic

Source; CBFP (2006), The Forests of the Congo Basin, State of the Forest 2006



**Mining** is the **main activity** for 79% and 88% of the miners of the study in Cameroon and the CAR respectively, often combined with between one to six other activities. Agriculture is the second important source of income after mining, followed by non-timber forest product gathering in Cameroon and fishing in the CAR. All minerals mined in the region are sold unprocessed and generally the artisanal miners are **not organized** and sell directly to individual buyers. This leaves the artisanal miners with little bargaining power and they largely remain 'price takers' with their sponsors or traders. The prices of diamonds tend to fluctuate greatly and are being calculated as unit prices as the miners possess no methods or tools to analyze weight or quality to determine the 'real value'. The mean **annual net income from gold and diamonds** – after reduction of costs for production materials, labor and transport –

were: 575,338 CFA and 812,644 CFA (1,130 and 1,596 US\$) respectively in Cameroon. On the CAR side of the TNS, diamond miners obtained an average annual net income of 368,084 CFA (723 US\$). Whilst these average incomes are above the standard poverty line measure of 2 US\$ a day (Cameroon gold miners at 3.1 US\$, diamonds miners 4.4 US\$ and 1.8 US\$ for CAR diamond miners), they are still low incomes. Nevertheless, mining activities continue to expand as the average miner can make up to three times a higher income than others in the region who usually practise a combination of farming, hunting and gathering forest products. Mining incomes **pay for important basic needs** such as: food (although alcoholic drinks represent 20% of the food costs), education, clothes, medicines, construction of houses and consumer goods. At the same time, a part of the miners is left with close to nothing, or even debts, because the variation in incomes between miners is enormous, ranging from considerable profit to massive losses; up to 2,028 US\$ in the CAR. Even for those who make money, **the economic value of the revenues rarely becomes capitalized into savings or reinvestments**.

The small scale miners in the TNS region indicate that their main concerns and **problems** are: a lack of food and medicines, harassment by conservation agents, dishonesty of sponsors, low production, harsh government laws and actions, lack of mineral detecting and exploitation materials, price changes and lack of start up capitals. In Cameroon, the most crucial problems identified are the lack of detecting and exploitation tools, a lack of food and medicines at the sites and a low production. In the CAR, the two most crucial problems are the low production and a lack of detecting and exploitation equipment.

**Governments** play a crucial role in re-distributing mineral revenues (from royalties, taxes, license fees) to essential government services and putting in place policies, regulations and fiscal regimes. This shapes the institutional framework that guarantees the rights of miners and communities and sets the standards for environmental impact assessment and mitigation measures, and outlines the financial and social obligations for new mining operations. In both countries of this study, Cameroon and the CAR, mining falls under a legal framework structured by a mining code, tax code and environmental code. Currently, **Cameroon** faces a dynamic sector with new diamond deposits being discovered and industrial exploration permits being granted. In 2003, the Government run *Support and Promotion Framework of Mining Activities organization* (CAPAM) was created to facilitate, assist and promote small-scale mining. One challenge recognized by provisions of Cameroon's 2001 mining code is to mitigate problems related to small-scale mining (ASM) and large-scale mining (LSM) operations on the same site. Translating this recognition of possible contradicting interests of ASM and LSM into policies and appropriate measures is one of the key issues for the TNS landscape. In Cameroon, small-scale miners do not pay tax even though the mining code has the provision of an annual tax payment. The government's involvement in the artisanal mining sector is more visible in the **CAR** than in Cameroon. The CAR, with no industrial mining due to a history of political instability and a land-locked geography with minimal infrastructure, developed a national mining code in 2004 to attract more mining operators and investors. This mining code also regulates the issuing and renewal of artisanal mining permits for the country's significant artisanal diamond sector. A special administrative unit *Bureau d'évaluation et de Control de Diamond et d'Or* (BECOR) monitors the market, produces statistics and issues licenses to diamond diggers and 160 collecting agents who sell to the two purchasing offices in Bangui. In the CAR, labor taxes are being collected from over 56% of the miners. Small-scale miners pay an annual tax of 2,000 CFA (3.9 US\$) while the head of sites pays an annual tax of 30,050 CFA (59 US\$). Collectors or buyers pay an annual tax of up to 1,100,000 CFA (2,161 US\$). The CAR is member of the Kimberley Process, an international diamond certification scheme aiming to stop the trade of 'conflict diamonds'.

In both Cameroon and the CAR the artisanal mining sector is a significant sector and hundreds of thousands of people depend directly or indirectly on mining revenues. Despite the presence of the legal framework in both countries and tax payments in the CAR, the sector is characterized by an overall **lack of governance and informality** of the small-scale

mining business predominates. Moreover, there is little information and awareness on rights and regulations, such as the mining code, among the miners. In cases where miners know their rights, these are considered to be limited and not protecting the interests of artisanal miners.

## Conclusions

The impacts of artisanal mining on both the environment and livelihoods are of particular concern in important landscapes, such as the **Sangha Tri-National Park (TNS)** covering Cameroon, the Central African Republic and the Republic of Congo. This common study of CIFOR and IUCN bases its recommendations upon literature review in combination with an extensive field research in Cameroon and the CAR. The main **conclusions are:**

The current **environmental impacts from artisanal mining in the TNS landscape** appear to be temporal, of limited size, short term and of low significance. However, two types of current developments are likely to increase this impact and should not be neglected when discussing the future of this important landscape. These are: the growth of the number of artisanal miners and up-scaling of their technology and, especially also: the influx of large-scale mining operators.

Mining in the TNS landscape offers a significant **contribution to livelihoods**. It provides income to over 3,000 miners and their dependents (almost a quarter of the area's population). On an average, miners derive much higher income than non-miners in this area and this pays for important basic needs such as food and education. Meeting these needs fall within the expectations of realising some of the most important United Nation Millennium Development Goals (MDGs). However, the real average income of miners is still low and the distribution of income from mining is extremely unequal. The fact that a considerable part of the miners actually loses income implies that mining remains a risky business and could as well obstruct poverty alleviation under the current socio-economic and institutional arrangements.

Well-targeted **support of small-scale mining** groups can provide labor income for the local population and assumingly will have less of a negative impact on the environment than large-scale operations would have. This support should involve tackling informality in production and trade, increasing access to mining titles by the poor, improving information flows on mining codes at the grassroots and assisting in the provision of basic tools to boost start-up capital. Deliberate government or external support programmes would serve to organize the sector and inform stakeholders on the benefits of formal businesses. In this light, the current contributions of mining incomes to meeting the basic needs of the people would expectedly increase.

**Good governance** of the mining sector co-determines the eventual outcomes of mining in terms of national economic impacts, employment creation, and infrastructure development, improvements in health and educational systems and environmental impacts. Governments play a crucial role in re-distributing mineral revenues to essential government services and setting laws and regulations for social and environmental standards. Cameroon's and the CAR's mineral sectors are characterized by artisanal and small-scale mining activities. Although both Cameroon and the CAR have legal frameworks in place, at present, the artisanal mining sector is largely informal and miners are often not aware of their rights and obligations. There is a lack of adequate mechanisms that deal with possible conflicting interests and that assist miners in their daily operations. Moreover, there is a general lack of coherence of forestry and mining policies reflecting in overlap of concessions which implies contradicting interests of services of the TNS landscape (minerals, vs. timber, vs. fauna conservation). On a regional level, there are cross-boundary agreements about the natural services of the park. However, this collaboration does at no point refer to mining activities, for which a regional approach towards current issues would be highly recommendable and reinforce the outcomes of the TNS Park agreements. ----

---

CIFOR, the Center for International Forestry Research, is an international research and global knowledge institution committed to conserving forests and improving the livelihoods of people in the tropics. CIFOR's high impact research helps local communities and small farmers gain their rightful share of forest resources, while increasing the production and value of forest products. For more information: <http://www.cifor.cgiar.org/> or contact: CIFOR Regional Office for Central Africa C/o IITA, B.P. 2008, Messa, Yaoundé. Cameroon, Tel: +237 22237449 or +237 22237451, [cifor.cameroon@cgiar.org](mailto:cifor.cameroon@cgiar.org)

IUCN, the International Union for Conservation of Nature, helps the world find pragmatic solutions to our most pressing environment and development challenges. It supports scientific research, manages field projects all over the world and brings governments, non-government organizations, United Nations agencies, companies and local communities together to develop and implement policy, laws and best practice. For more information: [www.iucn.org](http://www.iucn.org) or contact: Forest Conservation programme: Central and West African Office (IUCN-PACO): [cleto.ndikumagenge@iucn.org](mailto:cleto.ndikumagenge@iucn.org)

---