



Artisanal and Small-Scale Mining in the Democratic Republic of Congo's Protected Areas and Critical Ecosystems

ABCG Extractives Workshop

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Outline of Presentation

1. Introduction; the ASM PACE project
2. ASM in protected areas and critical eco-systems in DRC
3. The Kahuzi-Biéga National Park
4. The Itombwe Nature Reserve
5. Mining methods and impacts in the studied areas
6. Conclusions and way forward



The ASM-PACE Programme

Aim: To address the environmental impacts of Artisanal and Small Scale Mining (ASM) whilst building on its economic, social, and empowerment potential in some of the world's most important ecosystems.

Collaboration between WWF and Estelle Levin Ltd.





Research: Artisanal Mining and Biodiversity in DRC

1. Most Mining in DRC is artisanal
2. Purpose:
 - Better understand the scale and nature of ASM in and around PACE in DRC,
 - identifying its characteristics and impacts;
 - identify the lessons learned from prior efforts to both tackle challenges and build on opportunities associated with ASM in critical ecosystems;
 - identify possible, desirable field-based case study and programme opportunities for attempting to tackle the issues on the ground.

Focus: the Kahuzi-Biéga National Park (KBNP) and the Itombwe Natural Reserve (RNI)

3. Methods: Desk based review & interviews with some key stakeholders on the ground



ASM in the DRC

- 10 million people i.e. 16% of DRC's population, either mine directly or are dependent on artisanal mining for their livelihood.
- The number of people seeking to work in this sector in DRC is expected to rise dramatically over the next ten years.
- Gold, diamonds, cassiterite, coltan, tin, tantalum, copper, cobalt...



Existing Initiatives to Regulate ASM

On-going efforts to prevent DRC's minerals from financing conflict

- the US Congress' Dodd Frank Act,
- OECD Due Diligence Guidance,
- ITRI Ltd and T.I.C.'s Tin Supply Chain Initiative (iTSCi), Regional Certification Mechanism of the International Conference for the Great Lakes Region;
- BGR's Certified Trading Scheme for natural resources (including gold)

Donor prioritisation of formalisation and regularisation of the ASM sector

- DFID & WB PROMINES Project
- International Task Force (ITF)
- Diamond development Initiative (DDI)

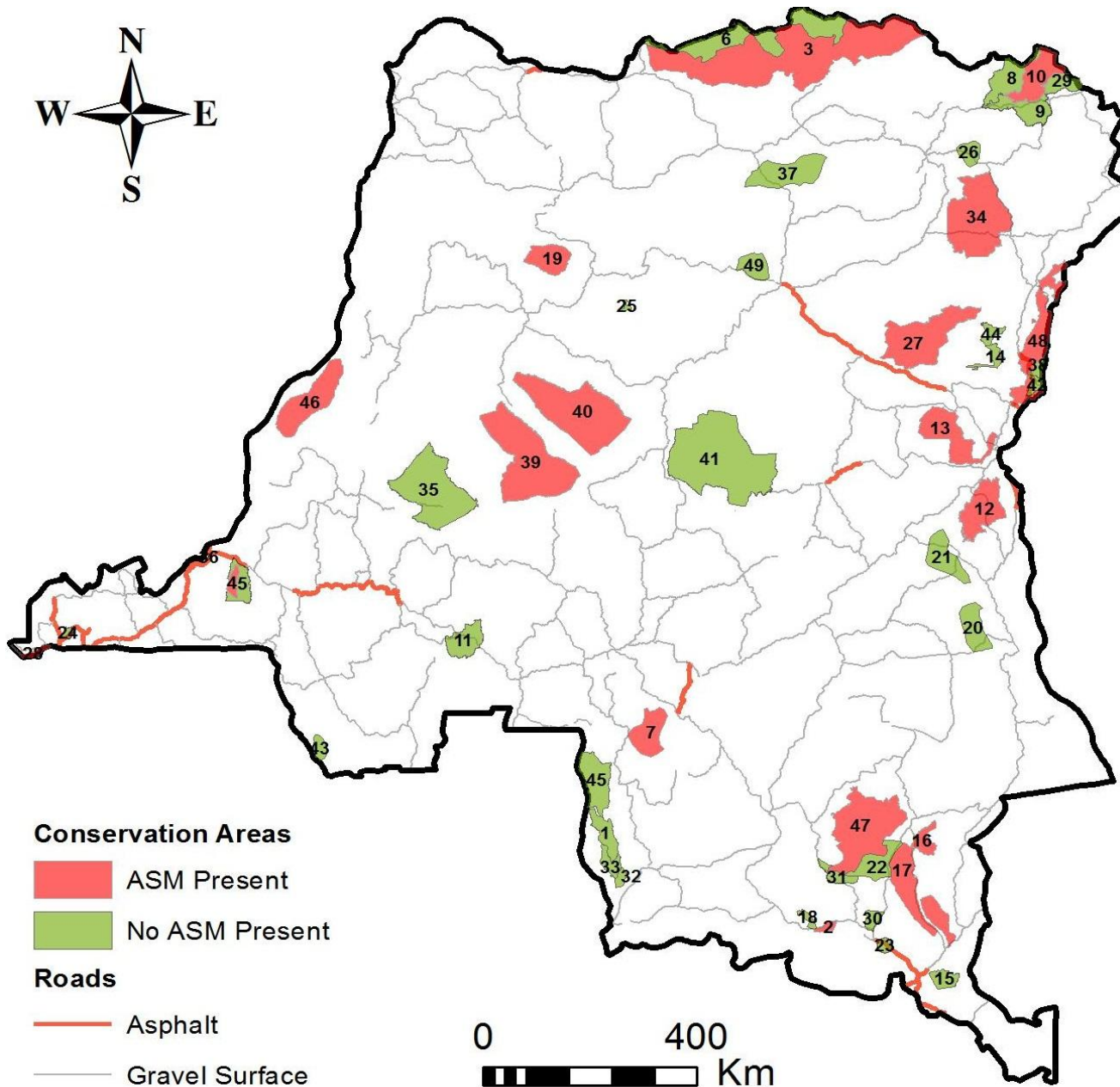
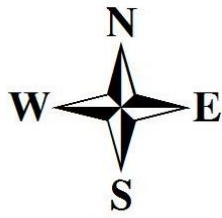
None of these have a strong conservation component integrated: opportunities



ASM in PAs in the DRC

National parks	Hunting domains and reserves	Other protected areas
<ul style="list-style-type: none">• Maïko• Garamba• Kundelungu• Salonga• Virunga• Upemba• Kahuzi - Biéga	<ul style="list-style-type: none">• Mangai Hunting Domain and Reserve• Bili Uéré• Bombo Lumene Hunting Reserve• Bushmaie Hunting Domain and Reserve• Basse Kano Hunting Domain and Reserve	<ul style="list-style-type: none">• Itombwe Natural Reserve• Lomako Wildlife Reserve• Mangroves Marine Park• Mount Hoyo Integral Reserve• Nsele Integral Natural Reserve• Okapi Wildlife Reserve• Tumba-Ledima Natural Reserve

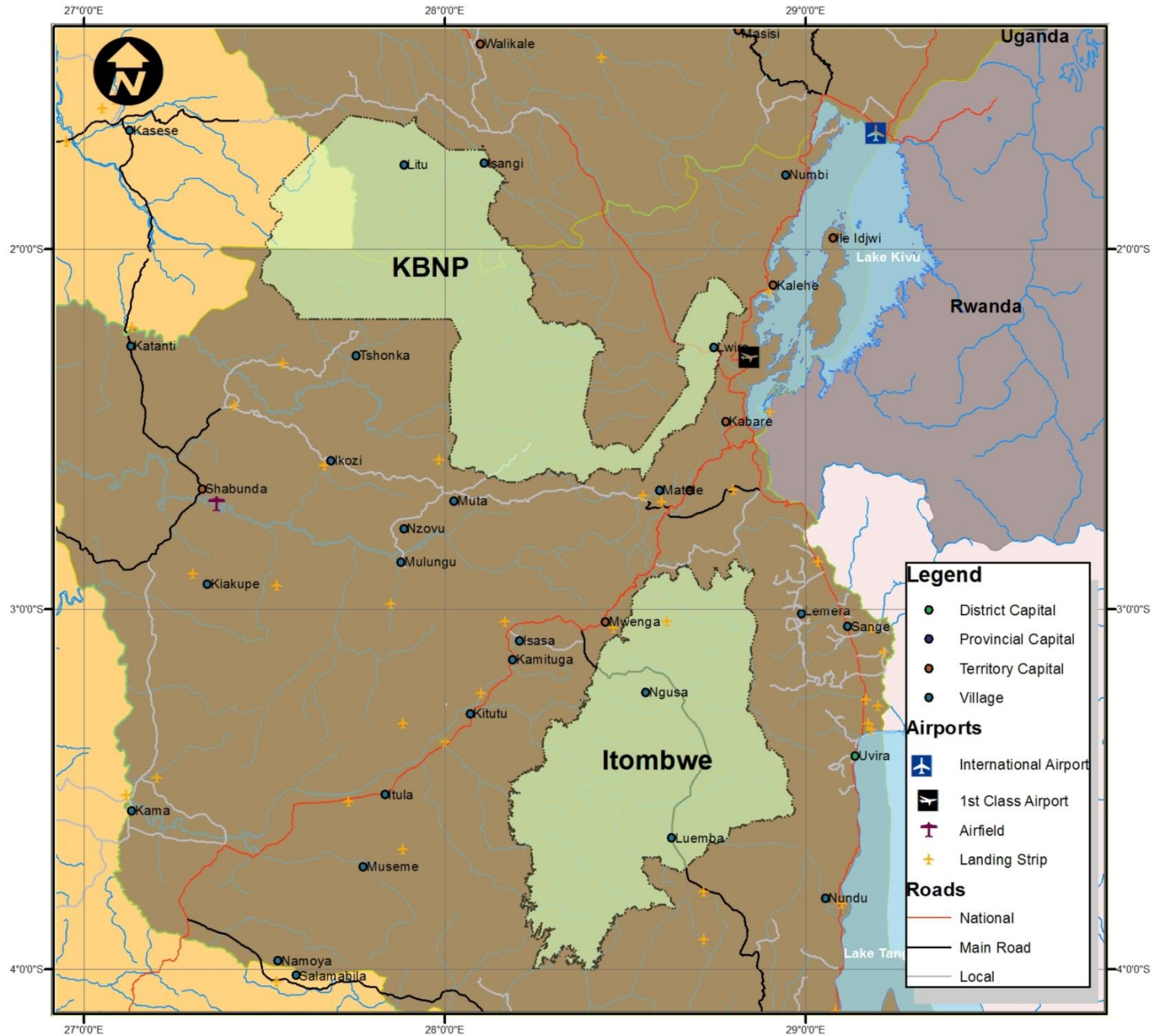
- Although illegal, artisanal mining takes place in about 40% of DRCs PAs



Conservation Areas and ASM in D. R. Congo



KBNP and RNI, South Kivu



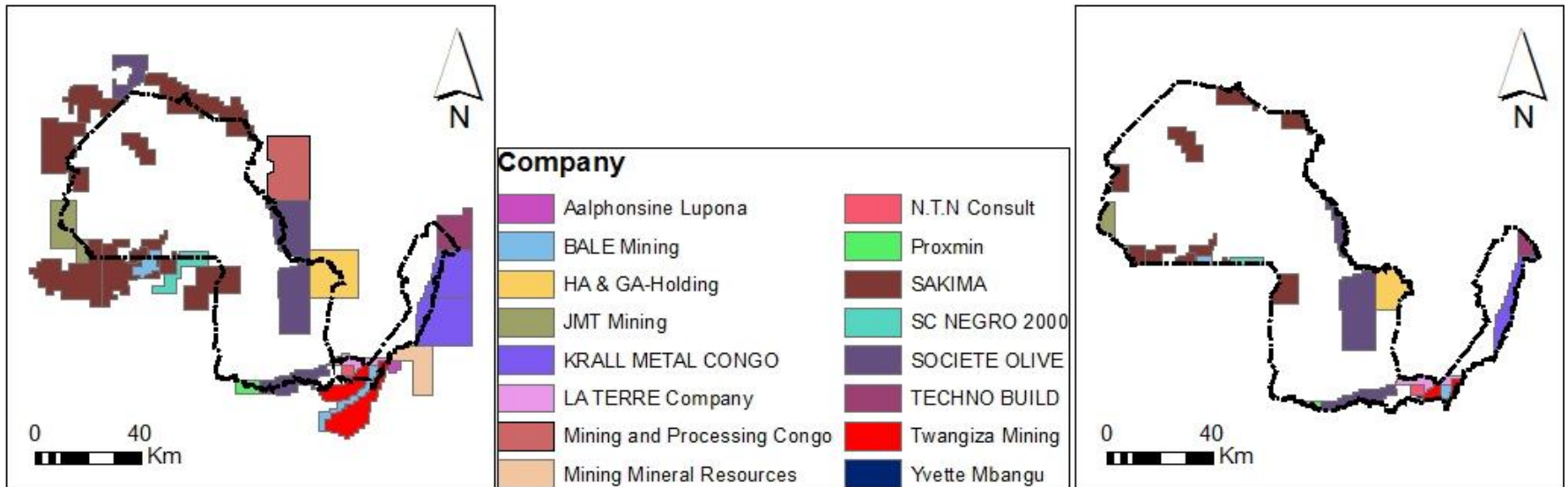


The Kahuzi-Biega National Park

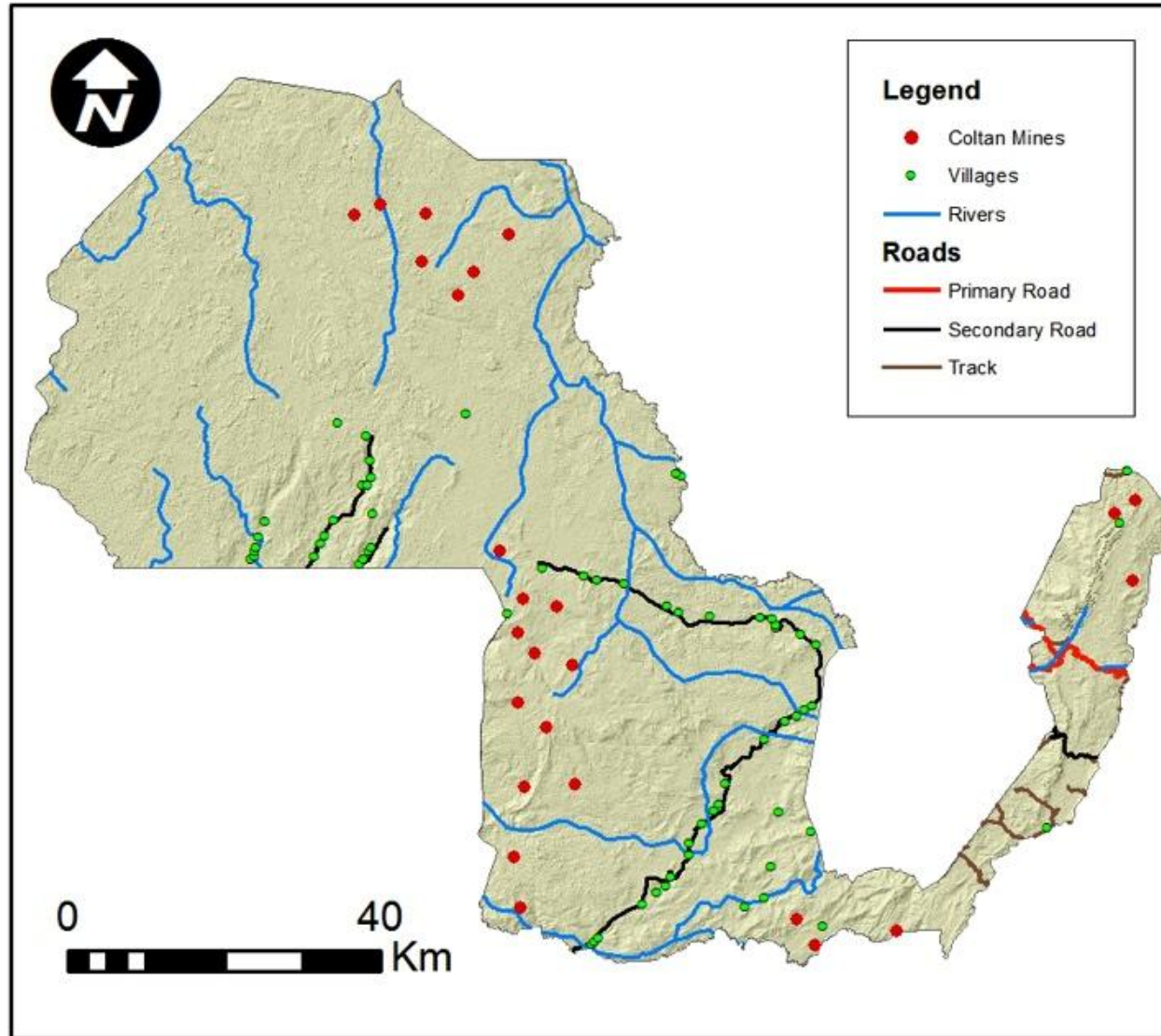
- Founded in 1970 and extended in 1975, before becoming a UNESCO World Heritage Site in 1981.
- In 1994 UNESCO designated it a World Heritage Site in Danger.
- With an area of 600,000 ha², it boasts a wide array of dense primary tropical forests, montane forests and bamboo galleries. The high mountains in the east, including the volcanoes Mount Kahuzi (3,308m) and Mount Biéga (2,790m), are connected by a corridor to the lower altitude tropical forests of the west.
- Great Apes, Forest elephants...

A contested Conservation Space: The KBNP is not a wilderness empty of humans. It is inhabited by groups of people comprising farmers, indigenous groups, displaced groups, armed groups, hunters, rebels, stockbreeders and miners.

Large Scale Mining in The Kahuzi-Biega National Park



Coltan Mining & Village Settlements KBNP in 2001



From D' Souza, 2003



KBNP ASM PROFILE

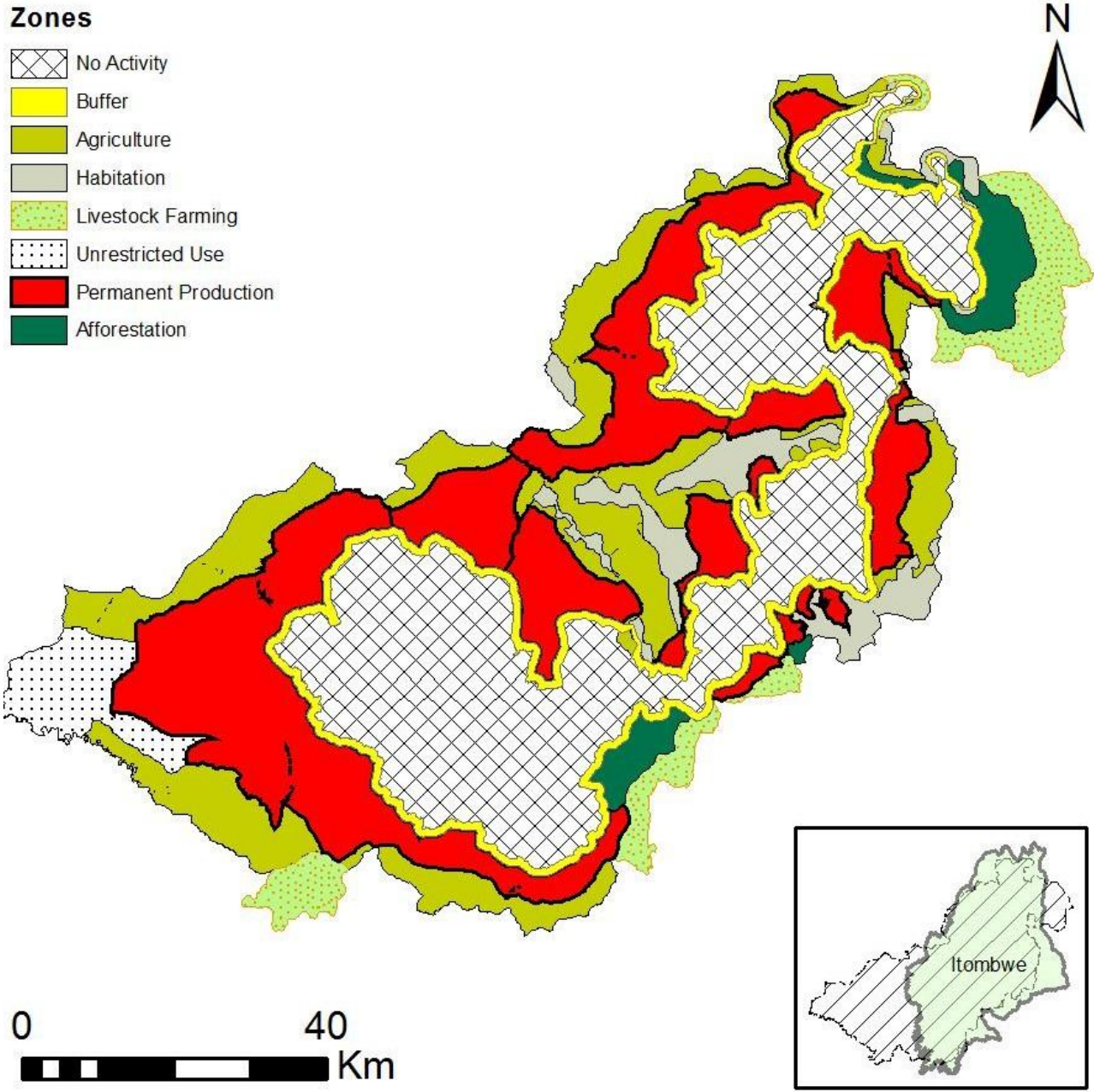
- Rebel groups heavily engaged with mining in the park
- Large problems with security
- Around 80% of the world's reserves of columbite-tantalite lie in Congo's eastern region
- As of March 2011, people were mining gold, coltan, and cassiterite on the outskirts of KBNP and within the park as well.
- Most mining within the KBNP takes place in the western region. Gold mining takes place at low altitudes
- Most miners are displaced people from elsewhere



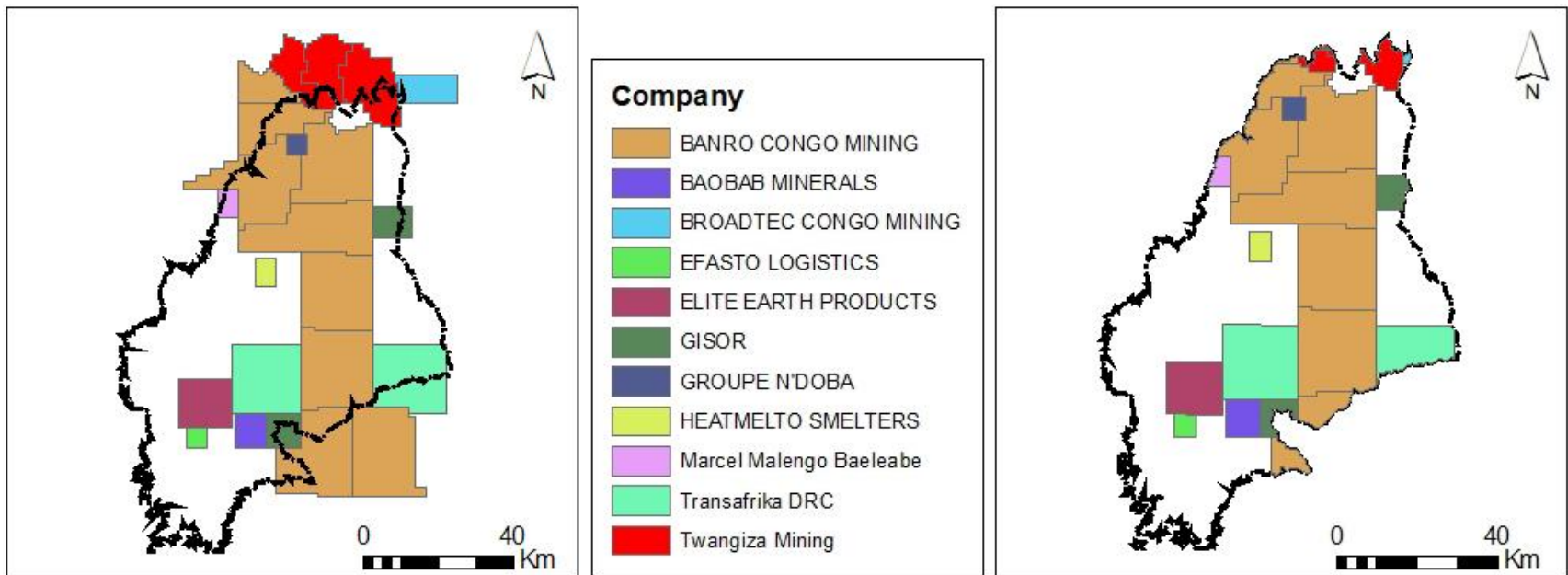
The Itombwe Natural Reserve

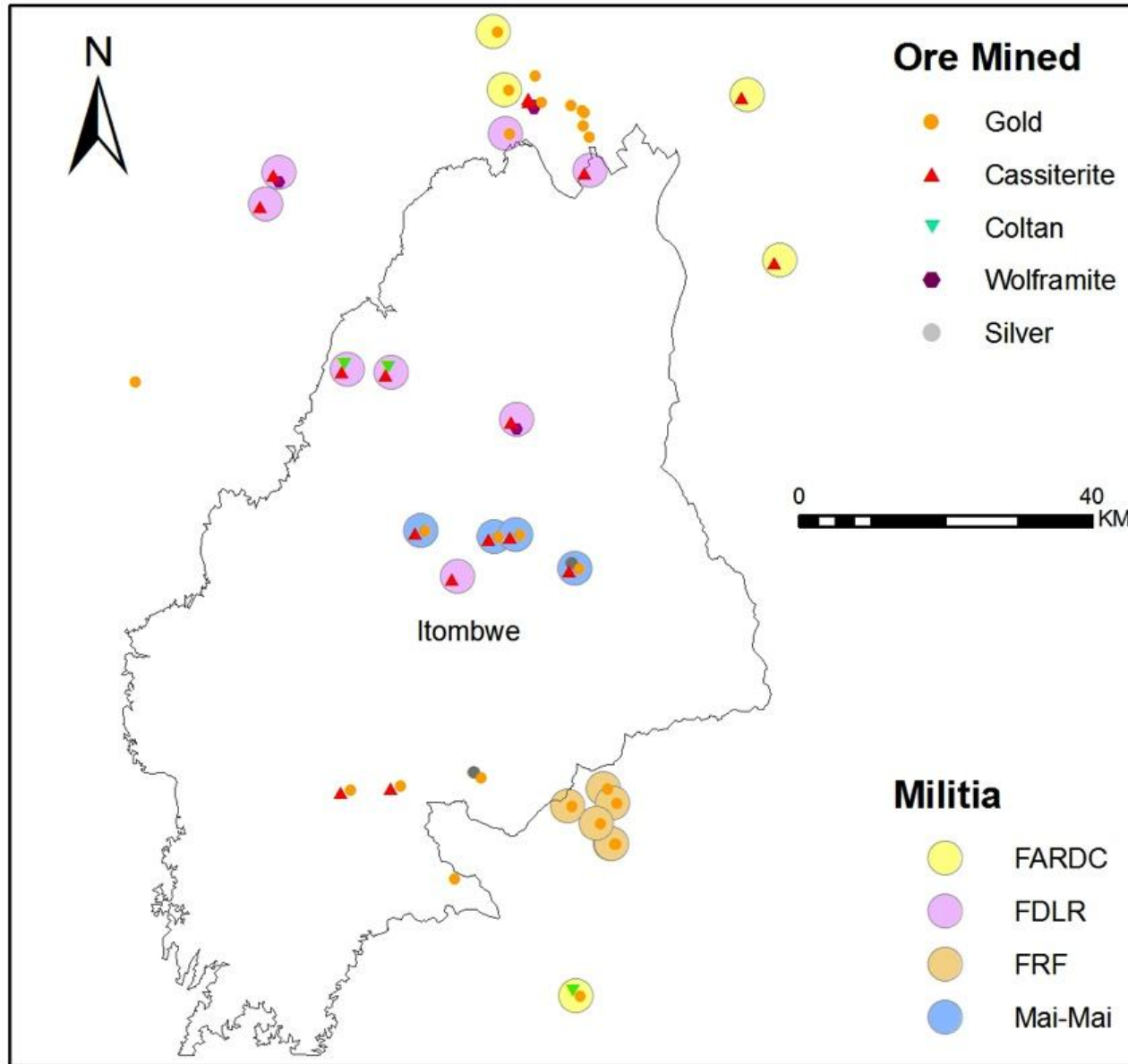
- Also known as the Itombwe Massif, or RNI
- Not as researched or documented as the KBNP.
- Comprises the largest area of uninterrupted forest in the Great Lakes, and in Africa as a whole.
- Critical habitat for Eastern lowland gorilla
- The forest and mountains that make up the Reserve are the vital habitat for endemic and endangered species.
- Considered the most important habitat on the continent for a diverse range of bird species.
- *Contested Conservation Space*: Est. 375.000 people living inside the reserve
- *Gazettelement Process not yet finalised*

RNI Proposed Zones of Use / Gazettetement



Large Scale Mining in Itombwe





ASM and Militia involvement in RNI (IPIS, 2009)



The Itombwe Natural Reserve ASM Profile

- ASM has been on-going since 1920s
- Cassiterite and, to a lesser extent, gold, can be found all over the Reserve.
- Mining in the southern part of the reserve mainly concentrated on gold exploitation, using mercury
- Cassiterite and some gold is exploited on the western sides of the Reserve in conjunction.
- Miners are local people are employed by armed groups that have discovered and secured the deposit.
- Amount of goldminers grown since Dodd Frand and other initiatives
- Security problems
- Overlap of Banro's Large Scale gold mining concession with the park and the ASM area



ASM Methods

River mining, open cast mining of old river beds and soft rock deposits, and underground (shaft) mining of old river beds and soft rock deposits.

Mercury is used for gold mining

The 'standard' procedure for ASM:

- Clear forest
- Remove overburden to expose mineralised ore
- Extract ore (using ropes, wooden pulleys, sacks)
- Crush ore using hammers
- Bag crushed ore and transported to washing site
- Wash crushed ore to concentrate mineral using wooden sluices



ASM Impacts (1)

Deforestation and forest degradation owing to:

- Forest clearance and use of timber and poles to build camps to accommodate workers;
- Firewood collection for warmth and cooking in camps
- Forest clearance to expose substrate for mining, reinforce mine shafts or make mining tools and carrying baskets;
- Removal of topsoil via high power hoses to remove first the top layer of sand and clay.
- Removal of topsoil using medium and large-size backhoes and dredges
- Erosion of unprotected earth during rains leading to land-slips;
- De-barking trees to make panning trays for washing coltan;
- Cutting of lianas to make carrying baskets for coltan;



ASM Impacts (2)

Water pollution owing to:

- Pollution of streams by silt from washing process;
 - Silting up of streams likely to kill invertebrates and reduce photosynthesis in aquatic plants;
- River diversions and damage
- Direct dumping of waste, tailings and effluents in waterways
- Reduced productivity of fish stocks in lakes and rivers affected by silt pollution
- Erosion of unprotected earth during rains leading to land-slips and sediment-heavy water
- Use of mercury to release gold in mineral washing.



ASM Impacts (3)

Impact on animals :

- Heavy hunting to feed miners and camp followers;
- Increased poaching and commercial bushmeat and wildlife trade through greater accessibility
- Disturbance of animals due to large number of people resident in and moving through forest;
- Reduced productivity of fish stocks in lakes and rivers affected by silt pollution;
- Exposure of gorillas and chimpanzees to disease owing to sewage from mining sites
- People killing animals in 'self-defence' (great population density in the park means higher rate of human encounters with animals)



Socio-economic Impacts

- Improved living standards of involved actors
- Absorption of unemployed population means a reduction in crime in rural and urban areas
- Generates local wealth, though the proportion of the value of the mineral to stay locally and even in-country may be low.
- Generates taxes for central and local governments, as well as traditional authorities .
- Increases commerce and trade in local economies, especially demand for food products, housing, transport, and consumables.
- Exacerbation of illegal exploitation of resources and financing of war lords.
- Attracts people, especially youth, away from their traditional activities
- Encourages high rate of school drop outs, and consequentially low levels of education

People in ASM

A reduction in income from more traditional types of employment has led ASM to become a poverty driven activity





Conclusion: Critical issues ASM in PAs in DRC

1. ASM is a serious threat to biodiversity
2. ASM provides also a survival mechanism and a livelihood for 10 million Congolese
3. It's all about Conflict Minerals!
4. Conflicting Land use: ASM, LSM and PAs
5. Growth of LSM and Displacement of ASM;
6. Inadequate environmental, health, safety and security safeguards for artisanal miners at the mine site;
7. Confusion over the legality and formality of activities;
8. Lack of governance: Barriers to institutional support or management of the ASM sector; no intergovernmental coordination
9. Security situation: Still a strong link between ASM and rebel groups
10. Lack of information, lack of transparency in the sector



Way forward: Opportunities

1. Further, field, based , research
2. Improve availability and access to information
3. ASM to be part of land use planning processes
4. Work on conservation aspects of Conflict Minerals traceability initiatives
5. Improve coordination between different institutions (ICCN, CAMI)
6. Work with development NGOs on economic alternatives
7. Work with LSM on the ASM-LSM-PA interface
8. Build a strategy around the people concerned. Need for extensive stakeholder consultation and participation:
 - Indigenous people
 - Displaced people
 - Ex-combatants
 - Women

Female artisanal gold miners in Sierra Leone



THANK YOU!