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le savoir vivant

International Conference and Workshop

TRACEABILITY OF GOLD

May 2-3 2023, Palais de Rumine, Lausanne

Tuesday, May 2nd

09:00 session 1 : Traceability and anti-counterfeiting tools

With presentations and live demonstrations of anti-counterfeiting and traceability tools, based on blockchain, physical or optical marking, geochemistry and more.

12:30 Aperitif lunch

13:30 session 2 : challenges of gold traceability - the point of view of mining countries

With presentations by speakers from governments, mining representatives, NGOs, and universities from Brazil, Peru, Colombia, Ivory Coast and DRC as well as a controlling body in Germany.

18:30 Aperitif

Wednesday, May 3rd

09:00 session 3 : challenges of gold traceability - the swiss point of view

The participants will be subdivided into working groups (refining, administration, investment/jewellery, NGOs, traceability tools providers, academics) who will share the outputs explored in a plenary session.

12:30 Aperitif lunch

13:30 session 4 : The future of traceability tools

Panel discussions with representatives of institutions.

16:00 Close of Conferences and Workshops

Registration : gold.traceability@unil.ch

Information : gold-dna.ch/workshop/

Organisation : Barbara Beck, (main organizer) and Valérie Boisvert, University of Lausanne; Muriel Côte, University of Lund, Sweden; Matthieu Bolay, University of Berne and HES-SO

Further information

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Report: Workshop on gold traceability
Lausanne, Mai 2 and 3, 2023

Aline Gabella[1] and Barbara Beck[2]
[1] Faculty of Political and Social Sciences (SSP), University of Lausanne
[2] Faculty of Geosciences and Environment (FGSE), University of Lausanne,
barbara.beck@unil.ch

Frame

On two and three May 2023, the first workshop on the traceability of gold was held at the Palais de Rumine in Lausanne. The workshop was organised by the University of Lausanne. The event impressed as much by the presence of highly competent personalities and individuals as by a very rich and coherent programme, in a scientific setting conducive to thoughtful discussions.

Participants

The workshop brought together around a hundred people, around 80 a day, from Brazil, Peru, Colombia, Côte d'Ivoire, Congo, Germany, England, France, Sweden and Switzerland. The participants came from a variety of backgrounds:

- Traceability and anti-counterfeiting tool designers: Alpvision; Haelixa; aXedras; SICPA; Geoblock; Geoforensic Passport UNIL; University of Sao Paulo, Brazil; Breitling; Igarape Institute Brazil
- Refineries: Argor Heraus; PAMP MKS; Valcambi; Metalor; PX Précinox; Hafner
- Investment: BCV; ZKB; De Pury Pictet Turrettini; Nature Finance
- Jewellery: Breitling; Chopard
- Administrations: Federal Judge Brazil; Receita Federal Brazil; Federal Police Brazil; Ministry of the Environment and Climate Change, Brazil; Former Viceminister of Mines Peru, fedpol, Federal Office for Customs and Border,Switzerland; Federal Department of Foreign Affairs, SECO, Switzerland; DEKSOR (German Competent Authority - EU Due Diligence Obligations in Mineral Supply Chains)
- Mine representatives: World Gold Council; IBRAM (Brazilian Mining Association); Yanaquihua SAC Peru
- Traders : Gold by Gold Columbia; Performetals
- NGOs: Society for threatened peoples; Swissaid; Max Havelaar; Swiss Better Gold; Earthworm; Harpe AG; Helveticor; Projekt Consult; Pure Earth
- Academics: University of Abidjan, Ivory Coast; University of Sao Paulo, Brazil; Geneva Graduate Institute, Switzerland; University of Lund, Sweden; University of Lausanne, Switzerland; Wyss Academy for Nature, Berne, Switzerland; University of Zurich, Switzerand; London School of Economics, United Kingdom
- others: RAKIM SWISS; GEMS AFRICA INC; SG2Consult Sarl; Pierre Thurre Group

Support

This conference - workshop was funded by

- Fonds d'investissement de la Faculté des Géosciences et de l'Environnement de l'Université de Lausanne
- Fondation de l'Université de Lausanne
- Musée de géologie de Lausanne
- Fondation Jérémine, Lugeon et Rabot
- BCV
- Université de Berne
- Haute Ecole de Gestion de Genève
- Université de Lund en Suède
- Swiss Better Gold
- We would also like to point out that a large number of people travelled at the expenses of their institutions.

Our thanks also go to the Swiss Embassy in Brasilia and the Swiss Embassy in Lima.

Press release

- RTS : https://www.rts.ch/info/sciences-tech/environnement/13992031-la-tracabilite-de-lor-un-enjeu-crucial-pour-ameliorer-sa-durabilite.html
- swissinfo : in progress
- globo TV : in progress

Outlook

IBRAM and Nature Finance will host a similar seminar later this year in Brazil.

Highlights

1. Traceability and anti-counterfeiting tools (Tuesday, morning session)

We have succeeded, for the first time, in bringing together several providers of traceability and anti-counterfeiting tools: tools based on blockchain, physical or optical markings, chemical composition or GIS techniques.

Presentations from the Tuesday morning session can be downloaded here.

2. What does gold traceability bring to the various stakeholders in the producing and transition countries (Tuesday, afternoon session)

The approaches of the various countries present at this workshop are very different:

- In addition to the extremely interesting programme, Brazil impressed with its dynamism and willingness to listen to and collaborate with the various stakeholders, and its

willingness to take action in the face of the almost antagonistic problem of a Brazil split in two: the Amazon region and the rest of the country, requiring two completely different approaches;

- Peru's success thanks to Switzerland's strong presence in the value chain;
- Colombia, which stands out with solutions linked to the traceability of people, requiring direct contact and a strong presence in the field;
- A small African delegation, very determined to bring about change in Africa;
- The solidity of the German approach, as demonstrated by DEKSOR

Presentations from the Tuesday afternoon session can be downloaded here.

3. Challenges of gold traceability: approach by stakeholder groups (Wednesday afternoon session)

Part of this workshop was devoted to confronting the various challenges facing specific interest groups, in particular between refinery, investment/jewellery, NGOs, administration and academics. The output of these discussions can be seen in the spider diagram in the figure: each group had to assess the importance of one of these eight points on a scale of 1 to 5. The convergences/divergences of the different points were then discussed in mixed groups, with representatives from each stakeholder group.

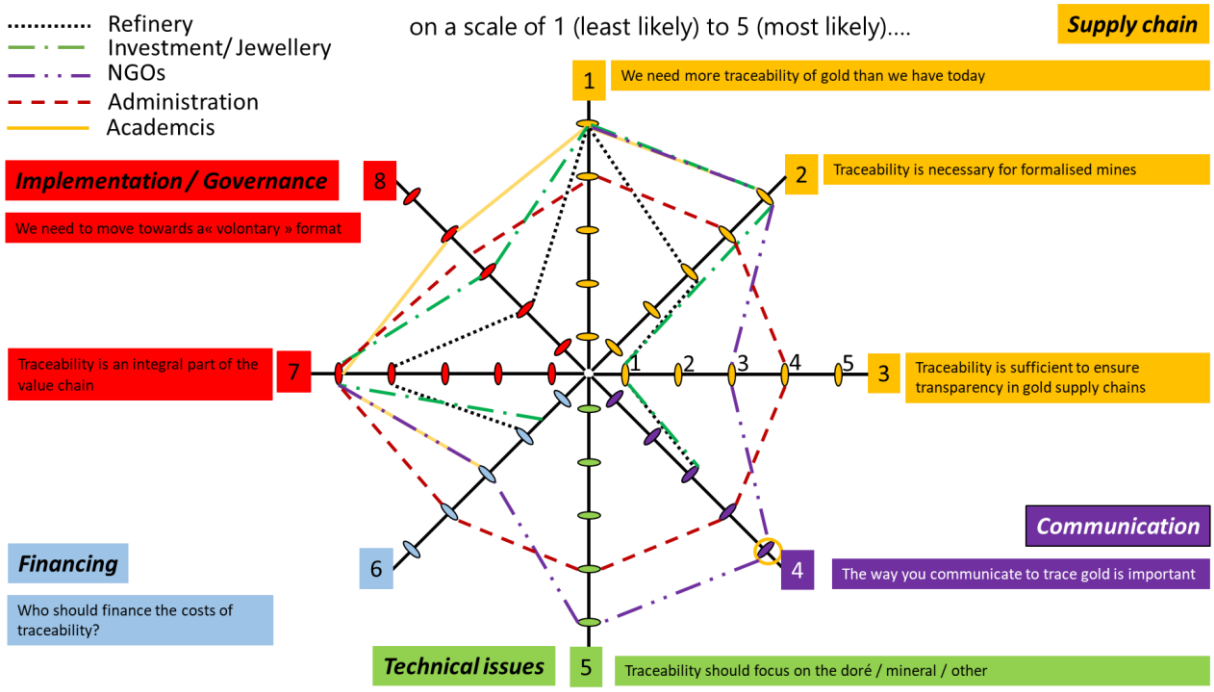

Figure: output of the stakeholder discussion. The differences were then discussed by representatives of the various stakeholders.

The points to be discussed related to the following themes:

- the supply chain (do we need traceability, for example, traceability vs transparency)
- communication (should the way in which the origin of the gold is traced be made public)
- technical issues
- financing (who pays for the implementation of traceability tools)

- and, finally, questions of governance (should we stay with a voluntary format?)

The discussions at the workshop highlighted several points. Firstly, it emerged that traceability must be ensured throughout the supply chain, from the first source of extraction to downstream players, regardless of the status of the mine and the form of the precious metal (mined or recycled gold). However, particular attention was paid to the issue of ASM. Several groups stressed the importance of avoiding passing on the costs of traceability to this sector and of having suitable tools that can be easily implemented in the case of limited resources. Secondly, the discussions reveal a plurality in the way traceability is framed, depending on the interest group. By extension, this results in responses and priorities that can sometimes be contradictory. Nevertheless, and thirdly, most of the groups agreed on the need to harmonise the tools, standards and regulatory frameworks relating to this issue.

Need and objectives of traceability (points 1 and 2)

In general, there is a consensus among the different interest groups on the need to increase the traceability of gold over the whole supply chain. However, the objective of traceability differs according to the interest groups.

NGO's stress that traceability is fundamental to ensuring the integrity of the product and is necessary for reputational purposes. Some of these elements are shared by investors, for whom traceability is a priori linked to issues of accountability, transparency, and risk management. In their view, given their place in the gold value chain, refiners should have a key role in terms of traceability. According to the latter, the issue of traceability cannot be handled by the refiners alone and requires collaboration with all stakeholders, be they administrations, people on the ground, NGOs, and actors down the value chain. In their view, more traceability is needed, especially for ASMs, however they add that the traceability imperative should not prejudice the business.

From the administration's perspective, for importing countries, traceability is one of the tools to prove that companies are fulfilling their due diligence, regardless of the scale of production. They stress that due diligence is an obligation of companies, not of states. For producer countries, traceability is a means of combating the illegal gold market. The administrations of both importing and producing countries agree that tracing the origin is necessary, but not an end. It should be seen as one of the tools to verify that operations are legal and that production conditions comply with international environmental and social standards.

This view is shared by academics, who believe that effective traceability can help to improve working conditions for small-scale miners, combat illegal mining/trafficking and increase control and state revenues from gold mining. However, the need for traceability comes at a cost and may discriminate against smaller operations. Therefore, it is important to have traceability tools that are affordable for the entire sector, regardless of the scale of operation. The subject of traceability tools was also raised by the refiners, for whom technological tools are a means of verifying and supplementing the written data provided by the mining operations. Academics pointed out that the traceability process needs to be reviewed by audits, which, to avoid any conflicts of interest, should be conducted by an entity independent of the refiners.

Transparency (point 3)

The issue of transparency is one of the elements on which interest groups differ the most. The common point is that traceability and transparency are two different concepts. Traceability of gold allows the origin of the gold and the legality of the mining operation to be identified. But it does not necessarily lead to transparency and does not guarantee that the gold is produced under conditions that respect social and environmental minimums. Several interest groups stress that audits are an essential element in ensuring minimum social and environmental production conditions. Academics and refiners agree that these audits should be conducted by a third party and stressed the importance of developing a common standard, recognised by all stakeholders. The point of contention, however, is the confidentiality of these reports. For refiners, transparency can be a barrier to business and therefore auditors should be bound by business secrecy. From an NGO perspective, however, increased transparency would make the entire value chain more accountable. From an administrative perspective, transparency and information sharing are key elements in the fight against environmental crime, money laundering and illegal logging.

Communication (point 4)

Linked to the issue of transparency, the topic of communication is also subject to significant differences between the different groups. A central question relates to who should have access to information. Several groups share the idea that information should be accessible to the different stakeholders in the value chain, as well as to administrations and NGOs, but that detailed communication to the public is not essential. However, a tension was highlighted by some stakeholders since communication to civil society is necessary to raise awareness of the negative externalities of gold mining and thus both put the issue on the political agenda and further involve the end consumer.

Refiners agree that it is important to communicate about the tools and technologies used. However, for competition reasons, giving access to all data, including the names of their sources of supply, is considered to be an impediment to business. In their view, there is a consensus that the extent of disclosure should remain at the discretion of companies. NGO representatives recognised that some information could be kept confidential but pointed out that this leads to a wide gap in practice between different stakeholders, with some companies already prepared to disclose their sources of supply.

Scope of traceability in the value chain (point 5)

Consensus is that traceability must extend to the entire value chain, whether it is mined gold or recycled gold. NGOs stressed that the process must also be downstream of the value chain. For mined gold, several groups emphasised the importance of not just looking at the processing plants, but going all the way down the supply chain, regardless of the status of the mining operation. Producing countries report that there is currently a large gap in the pre-production phase (mine survey, licensing, technical and chemical input suppliers).

Financing (point 6)

First of all, majority of groups agree on the need for a differentiated regime for ASM. Given their limited resources, the costs of traceability should not be related to this type of operation. The administrations of the producing countries mention the possibility of state support for ASM, which would not only cover the costs of traceability, but would also serve to prevent illegal activities by offering economic alternatives to the population in rural areas. Apart from the issues related to ASM, the proposals diverge according to the groups. For academics, governments should contribute to financing. The representatives of the administrations of importing countries mentioned the possibility of state financial support as an incentive for companies. Finally, from the point of view of investors and refiners, traceability is an added value, and its cost should therefore be borne by the brands and the final consumers.

Governance: mandatory versus voluntary measures (points 7 and 8)

Groups agree that regulation needs to be improved and that standards, tools and legal bases need to be harmonised between different countries or regions and regulatory bodies. The divergences lie in the form and binding nature of these measures. For academics, NGOs and representatives of EU and Brazil administration, mandatory regulation is needed. The investors point of view is that the process towards a binding regulation should be carried out step by step. In their opinion, due the central position of refiners in the value chain, stronger regulation should be first implemented on the refinery side. According to refiners, the requirement for tracing could be compulsory. However, the extent of transparency should remain a choice and should depend on the stakeholder. In their sense, a certification scheme by a consensual and legitimate third party along the value chain would be a possibility.

4. Whither traceability tools: should they be institutionalized? (Wednesday afternoon session)

The last session was organised in the form of a round table. Here are the main points discussed:

- Production at industrial mines is generally not very problematic, since there is considerable know-how on the production site and the gold goes into a relatively direct supply chain to a refiner. On the other hand, artisanal production is very often part of an informal economy that meets an existential need. Know-how is often limited, the use of chemicals is poorly controlled and the gold produced is sold through a very complex supply chain. The fight against poverty and inequality takes precedence over traceability. The legality of the supply chain is of little importance to these artisanal miners.
- The participants were fairly unanimous on the importance of giving artisanal mines access to a legal supply chain. However, traceability tools alone are not enough, and must be considered as part of due diligence.

- ASMs need support to formalise. A good way is for artisanal mines to be grouped together in a collector supported by local authorities and NGOs.
- Traceability in itself does little for artisanal mines. There is little incentive to join a legal supply chain, and the incentives are not tempting enough. However, the situation is very different for other players in this supply chain: for the tax authorities, for example, the end consumer, NGOs, control authorities such as customs and, last but not least, legal cases that need very precise information about the origin of the gold.
- What incentives can be given to mining companies to use traceability tools? The current practice is to sell gold produced in an artisanal mine for a premium, with the money then going back to the collective. These incentives are therefore passed on to the end consumer. The Covid crisis has given rise to another reason for formalisation: legal mines have been able to count on financial support from the state, unlike non-legal operations.

Conclusion

Gold traceability is a highly topical issue, as demonstrated by the keen interest shown in this workshop. For the first time, we succeeded in bringing together several major players in this field, including providers of traceability and anti-counterfeiting tools. These tools are based on a wide variety of techniques: blockchain, optical marks, intrinsic features of the gold, GIS etc. ; and can be used in a wide variety of contexts: as part of due diligence measures in an LSM context, but also as an additional measure in an ASM context to reinforce a formalisation process.

However, the benefits of these traceability tools are somewhat questionable. On the one hand, aren't the current tools too consumer-centred rather than producer-centred? We have seen that producers themselves are not too interested in formalisation and even less in traceability. Existing incentives are mainly based on a “premium”, passed normally on to the end consumer, who doesn't really rush out to buy ethical gold neither. What are the other stakeholders for whom traceability tools could be of interest? We have seen the strong role of NGOs in supporting small-scale mining in Peru, the Amazon, Congo and Côte d'Ivoire; but also Brazil’s strong involvement of state institutions. Shouldn't these incentives come more from these institutions? For example, through tax breaks, as is the case in the Philippines, or by decriminalising production, as has been the case in Peru the last few decades, or by supporting improvements in mining techniques with the aim of properly remunerating work in the mine, which is the most difficult and dangerous part of the entire supply chain, thus making it more attractive for miners to sell their ore to a cooperative.

On the other hand, we may also wonder about the primary objectives of these traceability tools: should they really serve as an appendix to formalization measures; or is it possible to view these traceability tools independently, with a perspective to detecting illicit production, outside of any formalization accomplished or in progress: in preventing illegal gold from entering legal supply chains. It's a question of assessing the risk of not detecting illegal gold, a risk-based approach as already established by John Ruggie in his report submitted to the United Nations Human Rights Council (cf. "United Nations Guiding Principles on Business and Human

Rights") in which he concludes, that the sector of raw materials is responsible for the most serious and massive human rights violations in the world.

When it comes to the traceability of gold, we have to deal with the risks associated with production sites: the risk of environmental pollution, of child labour, of human rights violations, of money laundering along the supply chain and much more. In this context, it is perhaps a little too hasty to declare LSM production as unproblematic, thus giving LSM production a virtually free pass, unlike ASM, which is all too frequently penalised. Shouldn't we rather judge the importance of traceability in relation to a context, and evaluate the risk of gold produced by a small-scale artisanal miner in the Peruvian altiplano trying to escape daily poverty; and the one produced in Venezuela to fund conflicts, or the risk of uncontrolled and uncontrollable production of gold in the Amazon? Independent of LSM / ASM ? We need to put these traceability tools into a global context that allows us to better understand the situation and to improve the conditions of communities, not just validate the doré by digitising the physical production.

Obviously, with a risk-based approach, mines with major faults are not accessible. Therefore, we need instruments, traceability tools that don't need to go to the production sites, but which allow remote control. The Geoforensic Passport is certainly a tool that fulfils this condition. What about tools based on blockchain or physical or optical marking?

Finally, there's the question of setting up traceability tools. Where should they be implemented? Who controls what? With which tool? Given that Switzerland plays an important role in the gold trade, with around half the world's gold production, wouldn't it be Switzerland's role to create an easy-to-access platform for traceability tools? Where should these traceability tools be placed? Should there be regulation between the public state and private companies, or hybrids? What role should civil society and business play?

This workshop on gold traceability showed that thanks to Swiss expertise, it is possible to collectively succeed in an international business in a scrutinized international environment. All the publications and actions that denigrate the refining business in Switzerland are no coincidence. So, any solutions that come from within Switzerland to safeguard the competitiveness of this sector are essential.


ARTS

Programme Tuesday, May 2nd

09:00-09:10	**Introduction** Niklas Linde, Dean, FGSE, University of Lausanne
09:10-12:30	**Anti-Counterfeit and Traceability Tools**
	Moderator: Nikita Taranko, SBG, Switzerland
	Authenticity, anti-counterfeiting
Alpvision	Fred Jordan
	Software solution
aXedras	Urs Röösli, Patrick Röösli
	Optical or physical marking
Bullion Protect (Sicpa)	Vincent Mathier, Andreas Mueller
Haelixa	Rebecca Albers, Holly Berger
10:30-11:00	**Coffee break**
	Geochemical approaches
Geoblock	Bruno Regli, Dario Biedermann
Geoforensic Passport	Barbara Beck, Patrice Kiener
University São Paulo and FPB	Fábio Salvador
	Others
Breitling	Aurelia Figueroa
RGPP	Deborah Goldemberg
12:30-13:30	**Aperitif Lunch**
13:30-18:30	**What does gold traceability bring to the various stakeholders in the producing and transition countries?**
	Moderator: Muriel Côte, University of Lund, Sweden
	Governmental organisations
FPB (Federal Police Brazil)	Erich Adam Moreira Lima
Federal Judge, Manaus, Brazil	Mara Elisa Andrade
DEKSOR, Germany	Kira Herrenknecht
Receita Federal, Brazil	Andrea Costa Chaves
FPB (Federal Police Brazil)	Dhiego Melo Job de Almeida
	Private sector
International Mining Consultant, Former Viceminister of Mines Peru	Augusto Cauti
15:45-16:15	**Coffee break**
	Industry representatives
Mine owner, MYSAC, Peru	Mariam Samaniego
IBRAM (Instituto Brasileiro de Mineração)	Raul Jungmann
	Academics
Uni Abidjan, Ivory Coast	Jean Kouamé
RDC / Uni ZH	Gabriel Kamundala
	NGOs
Pure Earth, Madre de Dios, Peru	France Cabanillas
	Trading and Refinery
Gold by Gold, Colombia	Patrick Schein
18:30	**Close of Day One and Aperitif**

Programme Wednesday, May 3rd

9:00-12:30	**Workshops**
	Moderator: Matthieu Bolay, University of Berne
	Part I: Discussion by stakeholders
	Group 1: Refiners
	Group 2: Investment, Jewellery
	Group 3: NGOs
	Group 4: Administration
	Group 5: Academics and Traceability tools providers
	Part II: Discussion in mixed groups
10:15-11:00	**Coffee break**
	Part III: Plenary session: workshop output
IHEID (Graduate Institute Geneva)	Filipe Calvão
12:30-13:30	**Aperitif Lunch**
13:30-16:00	**Whither traceability tools ? Should they be institutionalized?**
	Moderator: Valérie Boisvert, University of Lausanne
University of Lausanne	Jean-Christophe Graz
University of Lausanne	Aline Gabella
	Panel Discussion
	Moderated by: Nicolas Andres Eslava, Afai Consulting
Swiss Custom	Thomas Brodmann
IBRAM (Instituto Brasileiro de Mineração)	Raul Jungmann
International Mining Consultant, Former Viceminister of Mines Peru	Augusto Cauti
Attorney General, Geneva	Sylvie Bertrand-Curreli
WGC (World Gold Council)	Andrew Hayes
ASFCMP (Swiss Ass. Manufacturers and Traders in Precious Metals)	Antoine de Montmollin
16:00	**Close of Conference and Workshop**