

Contraband Gold in the Great Lakes Region

In-region Cross-border Gold Flows Versus Out-region Smuggling

May 2015

PARTNERSHIP AFRICA CANADA



CONTRABAND GOLD IN THE GREAT LAKES REGION

IN-REGION CROSS-BORDER GOLD FLOWS VERSUS OUT-REGION SMUGGLING

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About this Report

The present report analyzes the regional artisanal gold flows within and out of the Great Lakes Region on the background of promoting responsible engagement and supply chain management in the context of the ICGLR Regional Initiative on Natural Resources and the OECD Due Diligence Guidance.

About the BGR Module of the German Support Program to the ICGLR

BGR and GIZ were jointly commissioned by BMZ to implement a support program to the ICGLR, focusing on the ICGLR secretariat and associated regional bodies as well as national stakeholders in several ICGLR member states including Burundi. The BGR module runs from 2011-2016 and includes two components, namely introduction of the Analytical Fingerprint (AFP) method in the Great Lakes Region (Component I) and supporting artisanal mining sector formalization as well as the implementation of the Regional Certification Mechanism in Burundi and Rwanda (Component II) within the Regional Initiative against the Illegal Exploitation of Natural Resources. This report represents a contribution from Component II in the context of BGR capacity building efforts in partnership with the ICGLR and the Burundian Ministry of Energy and Mines. More information on the project can be found at www.bgr.bund.de/mineral-certification.

Disclaimer

This report does not necessarily represent the views of BGR or its project partners.

EXECUTIVE SUMMARY

Background

This study examines the ASM gold sector in the ICGLR Region, analysing both its size and the extent to which ASM gold produced in the region is smuggled either across local borders or out the region completely. The study notes the extent to which cross-border movement of gold within the ICGLR region now pales in comparison to the volume of ASM gold that is smuggled out of the region and exported illegally, principally to the United Arab Emirates.

This result should be of particular interest to governments of ICGLR nations, which have traditionally looked on the problem of contraband gold as a primarily DRC related issue. With its linkages to conflict financing, gold smuggling from the DRC remains perhaps the most acute problem. However, for the governments of all other producer nations in the IGCLR region the vast scale of ASM gold smuggling from the region represents a clear and pressing problem.

At its most basic level, the smuggling of ASM gold deprives governments of the region of tax revenue – up to \$22 million per year – desperately needed for development. Beyond the financial loss, the inability of IGCLR governments to control, tax and financially benefit from their ASM gold sectors has served to distort governance of the mineral sector in the ICGLR region. While the LSM sector provides relatively little employment in comparison to the ASM sector, governments in the ICGLR region give priority to LSM gold projects, in large measure because LSM projects provide actual tax revenue to state coffers.

Regaining control of ASM gold exports would not only serve to curtail conflict in the DRC, but could also serve to rebalance government priorities in the gold mining sector. Alongside the LSM sector, the ASM sector could take its proper role as a significant generator of employment, and a moderate generator of tax revenue for African governments.

At the other end of the chain, the study examined the role played of the United Arab Emirates (Dubai) in the commercialisation of illegally exported ASM gold from the ICGLR region. The study found that responsibility for the failure to effectively control ASM gold flows from the ICGLR region rested not only with the producing countries, but also with the actors in the major destination for ASM gold from the ICGLR Region, the United Arab Emirates. The study found few if any effective controls being implemented by the UAE at the purchasing level of the chain: customs and import controls are lax, buyers in the souk pay little attention to origin or legal provenance, refiners and banks do not have systems in place to assure the legal provenance of the gold they trade in.

This collective failure at the purchasing level is all the more extraordinary, given that due diligence as defined by the OECD (and accepted by the UAE), is the responsibility not only of producer-state governments but of actors all along the supply chain; producers, intermediaries, traders, refiners, financiers/bankers and end-users. If they truly want to remain compliant with due diligence as defined by the OECD, bankers, traders and governments at the purchasing level will have to begin being much more

stringent in their KYC and documentation requirements for ASM gold and gold-related transactions.

Finally, the study provides suggestions and potential solutions, both for producer states and for purchasing nations such as the UAE: technical measures that, if implemented, would significantly strengthen due diligence and reduce the volumes of ASM gold being smuggled out of the ICGLR region.

A Numerical Approach

The study took a largely numerical approach to analyzing ASM gold flows around and from the Great Lakes Region (ICGLR member states).

A data set of ASM gold exports and imports for the years 2003-2012 was assembled for this study consisting of the following data:

- official export figures (or reasonable estimates) for ASM gold from all the principal gold producing nations of the ICGLR;
- official figures for imports of ASM gold by Dubai from the principal gold producing nations of the ICGLR;
- royalty rates by year for these nations;
- the average price of gold by year.

Two Kinds of Contraband Gold Flows: Cross-border and Out-region Smuggling

The study identified two kinds of contraband gold trade: in-region cross-border traffic and out-region smuggling. In-region cross-border traffic involves the illegal transport of gold across national boundaries within the ICGLR region, where gold sourced in one country is transported to a second country and then “legally” exported as if it had been sourced in the second country. Out-region smuggling is the illegal export of gold (i.e. without obtaining export permits or paying export royalties¹) from one of the countries of the ICGLR region to an outside destination such as Dubai.

Out-region Smuggling is Massive: \$20 Million Lost per Year

The study established that out-region smuggling of ASM gold from the countries of the ICGLR region is a massive problem: over a three year period tonnages of smuggled ASM gold rose from some 10.5 tonnes in 2009 to nearly 20 tonnes in 2010 to just over 22 tonnes in 2011. Taking the average of the three years, the royalties lost to ICGLR governments amount to over \$15 million per year; for 2011 lost royalties topped \$22 million.

Mineral Royalty Differences and Cross-Border Traffic

The study found some numerical evidence that differences in royalty rates between neighbouring countries can lead to cross-border traffic in gold. Tanzania in 2009 raised its royalty on gold from 3% to 4%. Coincident with the rise, Tanzania’s ASM gold exports

¹ For the purpose of this study the term “royalty” is used to cover “export taxes”.

dropped by over half (4.2 tonnes to 2.1 tonnes), while exports in next-door Kenya (royalty rate 2.5%) rose by a proportional amount (1 tonne to 2.3 tonnes).

Solutions: Harmonize Mineral Royalties, Put Specialized Enforcement in Airports

To combat the problems of cross-border traffic and out-region smuggling, the study recommended two measures:

- harmonization of ICGLR region royalty rates for ASM gold at a relatively low level (2-2.5%) of export value;
- the placement of specialised mineral inspections units in the region's principal airports. These units should be modelled on the TMAA (Tanzania Mineral Audit Agency) Minerals Inspection Units currently in operation in Dar es Salaam and Mwanza airports in Tanzania.

United Arab Emirates: The Destination for Smuggled ICGLR Gold

The study determined that the United Arab Emirates (principally Dubai) was the primary destination for smuggled gold from the ICGLR region, receiving on average over 17 tonnes per year of illegally exported ASM gold from the region in recent years (over 22 tonnes in 2011). In keeping with the results of other reports, this study found there were few effective controls on gold smuggling into UAE/Dubai; import procedures for hand-carried gold appear to be lax and pro-forma. Gold dealers in the Dubai souks are eager to purchase ASM gold, with little documentation required.

UAE/Dubai: Technical Solutions and Political Will

The study recommended three technical solutions that should cost-effectively cut down on the smuggling of ASM gold from the ICGLR to Dubai and thus support implementation of supply chain due diligence in this important gold trading hub:

- Dubai customs should require those importing gold via the hand carry procedure to supply valid export permits from the country of origin. The export documents could include ICGLR certificates, or a national export license.
- Commercial banks operating in Dubai should consider tightening up on documentation requirements for gold traders making deposits in Dubai. Before accepting deposits originating from gold sales in Dubai, banks should insist on documentary proof – in the form of an ICGLR certificate or a national export license – that the gold giving rise to the deposit was legally exported from its purported country of origin.
- Dubai's gold refiners should test all purchases of gold marked as "jewellery melted bars" with an X-ray fluorescence scanner to determine their composition. Bars with compositions indicative of ASM origin should be rejected. Independent organizations or technical cooperation partners should consider establishing a database of typical signatures for ASM-sourced doré bars from the region. These signatures could be provided to interested stakeholders (DMCC, refineries) in Dubai. BGR would be one potential entity to establish such a database in the context of its cooperation with the ICGLR on analytical mineral forensics.

Contraband Gold in the Great Lakes Region

May 2015

The study further attempted to assess the degree to which Dubai authorities would be willing to discuss and or implement remedial measures of this nature. The study found little to no appetite on the part of Dubai authorities, even for discussion of such measures.

ABBREVIATIONS AND ACRONYMS

ASM	Artisanal and Small-scale Mining
BGR	Federal Institute for Geosciences and Natural Resources (<i>Bundesanstalt für Geowissenschaften und Rohstoffe</i>)
DMCC	Dubai Multi Commodities Centre
DRC	Democratic Republic of the Congo
GoE	(UN) Group of Experts on the DRC
ICGLR	International Conference on the Great Lakes Region
KYC	Know your customer
LBMA	London Bullion Market Association
LSM	Large-scale Mining
NGO	Non-governmental Organization
OECD	Organization for Economic Cooperation and Development
PAC	Partnership Africa Canada
ROC	Republic of Congo (Congo Brazzaville)
TAA	Tanzania Airport Authority
TMAA	Tanzania Mineral Audit Agency
UAE	United Arab Emirates
UN	United Nations
USGS	United States Geological Survey

Contraband Gold in the Great Lakes Region

May 2015

TABLE OF CONTENTS

1	Introduction	1
2	The Data Set: Exports and Imports of ASM Gold to the United Arab Emirates (Dubai) from the ICGLR Region	4
2.1	Export Data	4
2.2	Import Data.....	6
2.3	Appendix Items – Royalties, Sudan, Discussion	7
3	In-region Cross-border Traffic and Out-region Gold Smuggling – Tens vs. Hundreds of Millions of US\$ Value	8
4	How does it work: Drivers and Mechanisms of Gold Smuggling and Cross-Border Traffic.....	12
4.1	How In-region Cross-Border Traffic became Out-region Gold Smuggling: The Case of Uganda	12
4.2	Burundi tracks Uganda into Out-region Gold smuggling.....	14
4.3	Tanzania Gold crosses Borders into Kenya	15
4.4	Tax Differentials as a Driver of Cross-border Traffic	16
5	Solutions to Gold Smuggling and Cross-border Transit.....	21
5.1	Harmonize ASM Mineral Royalty Rates	21
5.2	Institute Mineral Agency Controls at International Airports	22
5.3	Mineral Certification/Export Licensing.....	25
6	ASM Gold in the United Arab Emirates (Dubai)	27
6.1	The Dubai Gold Chain	27
6.2	Possible Interventions – Technical Aspects.....	29
6.3	Possible Interventions – Political Aspects	30
7	Conclusions	32
	Appendix A: The Data Set.....	34
	Appendix B: Notes on the Data.....	38
	Appendix C: Former Sudan Data	45

1 INTRODUCTION

Artisanal gold – its origins, transport routes, and export points – has concentrated the attention of both national and international actors in the ICGLR region and beyond. For international actors, the implication of artisanal and small-scale mining (ASM) gold supply chains in the financing and support of armed groups in the DR Congo (and other conflict-affected or high-risk areas) has been the chief area of concern. For national governments in the region, the main pre-occupation has been illegal cross-border gold flows and undeclared gold exports (i.e. smuggling), and the concomitant loss of royalty revenues.

Beyond these immediate concerns, there is increasing competition for ASM-sourced gold from Africa, the result of steady gold demand from the Far and Middle East and somewhat restricted potential for growth in gold supply from industrial mines after 2015. National governments are also coming to appreciate the strong actual and potential contribution to employment and income generated by ASM gold activity. These trends will likely continue and be further economically accentuated in the years to come. They form critical elements to consider in the context of establishing and implementing due diligence in ASM gold supply chains.

As a contribution to developing adequate formalization and governance approaches to ASM gold supply chains from the region, this study attempts to address concerns of conflict risks and smuggling/revenue potential by examining ASM gold production and cross-border gold flows in the ICGLR region, along with the export flow – both legal and illegal – of this ICGLR gold to Dubai in the United Arab Emirates. The study takes both a ‘macro’ and ‘micro’ approach – the overall picture of regional gold production, intra-regional cross border gold flows and out of region smuggling and exports is analyzed via export and import statistics over the period from 2002-2013, allowing an estimate of total regional ASM gold production. Drivers of cross-border gold flows – including royalty rate differences and the growth of smuggling networks – are further analyzed using macro-level statistics.

In order to facilitate this macro analysis, the study has assembled a data set consisting of ASM gold export figures (or estimates thereof) for all the principal ICLGR gold producers for the period from 2002-2012. It should be noted that none of the nations of the ICLGR region have the capacity to effectively monitor ASM production at the mine site. In place of genuine production figures, ICGLR nations collect statistics on legal ASM gold exports. Throughout the study that follows, these legal export figures serve as the best available stand-in for ASM gold production. However, as will be shown in this study, legal ASM gold exports represent but a fraction of the total ASM gold production in the region.

The data set also includes the imports to the United Arab Emirates (assumed as mostly going to Dubai) from these nations over the same period. Finally, the data set includes the gold royalty rates for the ICGLR nations for each year in the ten year period.

As a complement to the macro approach, the study also analyses the current regulatory mechanics in place to control both cross-border gold trafficking and out-of-region smuggling, including licensing, export regimes, document requirements, and customs oversight. The study then suggests some measures that might be used to improve and

tighten these controls. Particular attention is paid to the region's international airports, which act as a chokepoint on gold flows. In a complementary fashion, the study further aims to analyze how import controls to Dubai and banking due diligence within Dubai could be tightened, and evaluate to what degree, if any, Dubai institutions would be open to tightening import and banking controls.

The study suggests that international concerns about conflict-related gold and more regional concerns about cross-border gold traffic should actually be seen as part of the same problem. From a comprehensive regional perspective, cross-border gold traffic – illegal shipments from one ICGLR country to another – is no longer the major problem. Instead, out-region smuggling – exporting gold from the region to the international marketplace without obtaining government documents or paying government royalties, which likely began as a way to circumvent international scrutiny on DRC 'conflict gold' – has now grown to dominate ICGLR region ASM gold exports: in 2011, nearly 80% of the AM gold exported from the ICGLR region – over 22 tonnes – was smuggled out of the region. With the likely increase in international demand for African-produced ASM gold in the coming years, the challenges posed by uncontrolled gold exports (i.e. smuggling) will only grow more acute.

Obviously, the problem of gold trafficking is no longer simply a Congolese problem, but a region-wide phenomenon, of concern to all ICGLR governments. The loss of royalties alone in 2011 amounts to a minimum of more than \$20 million. To address this haemorrhaging flow of gold, the study suggests a mix of incentives and enforcement, of sticks and carrots.

On the incentive side, the study suggests governments of the region should work to further harmonize export royalty rates on ASM gold. Much has been done already, with both Burundi and Uganda raising their abnormally low rates to 2% and 3% respectively. Much remains to be done. The study suggests governments of the region should coordinate their royalty rates at a relatively low rate – say 2% - while simultaneously working to address the challenge of out-of-region gold smuggling. Once this is brought under control, governments of the region could begin raising ASM gold royalties simultaneously, from 2% to 2.5% or 3%, and perhaps higher if smuggling remains under control and with due consideration for other established national mineral taxes.

On the regulation side, the study suggests governments of the region concentrate enforcement on the international airports of the ICGLR region, in particular Bujumbura, Entebbe, Dar es Salaam, Nairobi, Juba and to a lesser extent Mombasa and Zanzibar. These airports serve as chokepoints for gold exports from the region: concentrated enforcement at these chokepoints could well yield significant benefits with only moderate costs.

On the importation side, the study considers the case of the United Arab Emirates (Dubai). The study analyses the relative importance of the ICGLR market to Dubai (and vice versa). The study examines Dubai's internal gold chain, from import procedures to gold buyers in the souks to Dubai's gold refiners.

The study suggests three technical measures that could be cost-effectively implemented to discourage the illegal out-region smuggling from the ICGLR region. Firstly, Dubai customs could modify its import procedures and begin requiring couriers hand-carrying gold to produce valid export documents from countries of origin. Secondly, as a part of

Contraband Gold in the Great Lakes Region

May 2015

their internal due diligence and KYC procedures, Dubai refiners should look into the technical feasibility of distinguishing true jewellery scrap from ASM gold doré by analytical means (through systematic differences in minor and major element composition that could be tested for all purchases of 'jewellery melted bars'. Thirdly, as part of their internal due diligence and KYC procedures, the study suggests that banks located in Dubai accepting cash deposits from ASM gold sales should strengthen the documentation requirements regarding the provenance of the gold. In particular, before accepting a deposit originating in an ASM gold sale, banks should demand documentary proof – in the form of an ICGLR certificate or other valid export license – that the gold exited its country of origin legally with all due taxes paid. Finally, the study evaluates the willingness – or lack thereof – of Dubai authorities to consider such measures.

2 THE DATA SET: EXPORTS AND IMPORTS OF ASM GOLD TO THE UNITED ARAB EMIRATES (DUBAI) FROM THE ICGLR REGION

Assembled together for the first time in this study is a relatively comprehensive set of statistics for ASM gold for the principal gold producing nations of the ICGLR. The data set contains statistics on legal exports of gold from ICGLR nations for the period from 2002-2013, as well as the corresponding figures² for the import by the UAE (Dubai) of ASM gold from ICGLR nations. The data set also gives the export royalty rate in each country over the ten year time frame. Finally, the data includes the average yearly price of gold, in US\$ per gram, as determined by the LBMA. All of this data is collected together in Appendix A.

2.1 Export Data

Table 1 in Appendix A gives figures for the legal export of artisanally produced gold for the principal gold producers of the ICGLR Region, for the period from 2002-2013. The data come either from government documents (both published and unpublished), the United States Geological Survey (USGS) Minerals Yearbook, or a mixture of the two. USGS Minerals Yearbooks are released annually for individual countries with the latest release available for the year of 2012³.

For several countries – the Democratic Republic of the Congo (DRC), Burundi, Uganda - the data come exclusively from national government records of gold exports – either the ministry of mines, customs or the central bank. Where government records distinguish between industrial and ASM exports, only ASM exports are included here. For all these countries, data are assumed to accurately represent officially registered gold exports.

For Kenya data were drawn from the USGS Minerals Yearbook which are in line with government figures; the author considers these data as accurate representation of non-industrial gold exports. For the Republic of Congo (Congo Brazzaville) USGS figures were used exclusively (government data were not available). The USGS considers the Republic of Congo to be an insignificant gold producer, with estimates of annual production of 100-150 kg per year, all of it artisanal. UAE import figures (see below), on the other hand, suggest Congo Brazzaville represents the origin for 1-2 tonnes of gold per year, at least since 2009. This might reflect potential challenges and limitations of UAE import data that are discussed below.

For Tanzania, the situation is more complex. Aside from Sudan, it is the region's most important gold producer and exporter and includes both significant industrial and ASM production. Therefore, the study aims to distinguish Tanzanian industrial and ASM gold exports by approximating individual production components from these sources. The gold export data used in this report were drawn from the Tanzanian Minerals Audit Agency (TMAA), supplemented by data included in the USGS Minerals Yearbook. Since 2011 the TMAA has published an annual report listing gold production by small scale miners over the preceding five or six years⁴. However, there are significant differences

² Import figures 2002-2011 only

³ See <http://minerals.usgs.gov/minerals/pubs/country/index.html#pubs>

⁴ <http://www.tmaa.go.tz/publications/category/reports>

between the TMAA figures given in the 2011 report and those in the 2012-2013 reports; the figures given in 2011 are an order of magnitude larger even for the same years (2009 production is listed as 5200 kg in the 2011 report and 484 kg in the 2010 report), likely indicating a TMAA-internal methodology change in data compilation. The author performed internal checks on data consistency and plausibility and in the end opted to use a mixed dataset as further explained in the Appendix.

To obtain an independent check on the TMAA figures, the report made use of the USGS Minerals Yearbook, which list both total gold production in Tanzania and the individual totals of each of the country's major industrial gold producers⁵. The calculated difference between total Tanzanian gold production and the sum total of industrial gold production is taken to represent legally exported ASM production. Using this methodology yields figures that are of the same order of magnitude as the 2011 TMAA report^{6 7}.

The author opted to make use of the figures from the TMAA 2011 report, supplemented in years not covered by this report (2002-2004; 2011-2013) with figures for ASM gold calculated from the USGS Minerals Yearbook. These figures seem to be consistent with each other at least to within an order of magnitude, and more consistent as well with the scale of artisanal production witnessed by the author in the Tanzanian gold producing region of Gaeta (if anything, the numbers used in here seem conservative in comparison to the scale of effort and production underway).

The use of the higher (TMAA 2011) figures for Tanzania ASM production will not affect the report's conclusions about the scale of the overall smuggling of gold from the ICGLR region to Dubai as discussed further below. Were the report to make use of the smaller production numbers (TMAA 2012), it would – when these numbers were compared with Dubai import figures – only show an even greater quantity of gold being smuggled from the region. However, the analysis of cross-border gold flows (Section 4.3) and the effects of royalty rates on trans-border gold flows (Section 4.4) would be drastically different if different figures were used for Tanzanian ASM production estimates. The provisional nature of the conclusions for these sections should thus be kept in mind.

For Rwanda, customs statistics from the Rwanda Revenue Authority were used for 2008-2010. The data from these years agree exactly with the corresponding figures in the USGS Minerals Yearbook. For years outside this date range (i.e. 2002-2007, 2011-2013), the USGS figures were used exclusively. The agreement of the Rwandan and US government sources is reassuring, but does beg the question of just where this Rwandan gold may have originated (some very minor gold mining does take place in Rwanda). However, as the Rwandan figures are too small (a maximum figure of 40kg in 2008 and typically below 10 kg) to affect the overall results, this question is left unaddressed in this study.

⁵ Note that TMAA and USGS figures for gold production by major gold mine match exactly and hence point to the internal consistency of the data as a base for comparative purposes

⁶ For five of the six years given in the TMAA 2011 report the difference between TMAA and USGS figures for a given year ranges from 7% to 22%, with an average difference of 11%. For the sixth year (2004), the USGS methodology yielded 4,950 kg while the TMAA 2011 report listed 1,020 kg, a difference by factor of five, indicating a significant data consistency problem for this year only.

⁷ The Tanzania Ministry of Energy and Mines keeps its own statistics of gold exports from both industrial and artisanal sources which could have resolved this question. Despite repeated requests, unfortunately, PAC was unable to obtain this data.

Several ICGLR nations with minimal gold production (less than 100 kg per year) have been left out of the table – these include the Central African Republic⁸, Angola and Zambia⁹. Former Sudan is a very significant regional gold producer and exporter, but the complexity of its national gold sector and associated considerations indicate that it should not be merged together with other ICGLR countries for the purpose of this report and its discussion focus. Therefore, Sudan and its successor countries (South Sudan, Sudan) are dealt with in a separate section (see Appendix C).

2.2 Import Data

Table 2 gives the tonnages of ASM gold¹⁰ imported by the UAE (Dubai) for ICGLR nations over the same period. The data come from UAE import statistics, as reported by the UAE to the International Trade Statistics Database, UN Comtrade (www.comtrade.un.org).

Comtrade, it should be noted, merely stores and reproduces import/export statistics as they are provided by participating nation states; Comtrade performs no checks for validity or internal consistency. The quality of this data is thus entirely dependent on the internal data collection procedures of the nation in question, in this case the United Arab Emirates (Dubai).

As noted below in Section 6 neither PAC nor any other research entity investigating ASM gold has been able to witness or verify Dubai's customs and import procedures for "hand carry" shipments of gold. Second hand accounts indicate that Dubai Customs may require few if any verifications as the true origin of gold shipments entering Dubai via hand carry. The validity and usefulness of any of the Comtrade country of origin statistics for gold imports to Dubai are thus open to question.

Certainly in those cases where the declared destination of outgoing gold is known, there is little correspondence between export figures and Dubai import numbers. For example, Burundi in 2008 and 2009 exported 2,170 kg and 980 kg of gold, most of it destined for the United Arab Emirates (Dubai) according to Burundi government documents. The Comtrade statistics for these years, on the other hand, report 46 kg in 2008 and nothing in 2009. Clearly, it's possible to disguise either the destination or the origin of gold shipments from the region. Gold traders told PAC that the DRC is almost never claimed as a point of origin. Potentially controversial border countries such as Burundi may also be avoided.

That said, there are likely limits to the extent of the "origin caching", as well as to its effects. Certainly, it seems unlikely that a trader or courier arriving in Dubai with gold from some other, less controversial region such as South America or Europe would give the gold a fictitious origin in the ICGLR Region. Knowledge of the Dodd-Frank law is not

⁸ Some media and NGO reports suggest that the CAR's gold production may be significantly more than reported, with the bulk of the gold being smuggled across the border into Sudan. This possibility is dealt with briefly in Appendix C.

⁹ Rwanda is likewise an insignificant gold exporter and could by this standard have been left out of the table. However, given Rwanda's geographical position and its key role in the export of "3T" minerals, it was felt it was worthwhile to include Rwanda's export figures, if only to emphasize its lack of a role in the region's gold trade.

¹⁰ Comtrade does not distinguish in its HS codes between artisanal and industrial gold. However, for those nations with industrial production – Tanzania, Kenya, DRC, Sudan – the destination of their industrially produced gold is made publicly available on producer websites and can also be found in the USGS Minerals Yearbook on each country. None of the industrial producers in the ICGLR ship to the UAE. Logically then, all of the gold entering Dubai from ICGLR countries is ASM gold.

universal, but traders do know enough to avoid controversy, and there would appear to be no advantage to such an act.

To judge by the example of Burundi and other countries¹¹, traders from the ICGLR region do disguise the origin of their gold upon arrival in Dubai. Some portion of these traders may give the name of a neighbouring, apparently safe country; to judge by the statistics, Tanzania appears to be a popular choice. Others may give the name of the country outside the region entirely.

Following this logic, the import statistics to Dubai represent a minimum value for gold originating in the region, and the major conclusion of this study as presented below – that more than 22 tonnes of gold exits the region illegally – would appear to be a conservative, base-case scenario.

One other possibility does exist, however, and that is simple incompetence. It is possible that those at Dubai customs in charge of recording origin and compiling import statistics give no importance to the task, and that the numbers they collect are purely without value. Until such time as some outside observer is allowed to view and verify their procedures, this possibility cannot be discounted.

2.3 Appendix Items – Royalties, Sudan, Discussion

Table 3 in Appendix A shows the royalty (or export tax) rate in each ICGLR country for each year of the period from 2003-2013. For more recent years (2011-2013 approximately) these data were obtained from published government documents (mining regulations and/or ministry of mines publications). For more distant years the author could not locate government documents (published or unpublished) detailing year by year tax rates on ASM gold exports. The author relied on institutional memory of individuals within the ministries of mines of the cited countries, supplemented by Internet searches of mining-related websites such as <http://www.mineweb.com>.

Appendix B contains notes on the sources of the dataset, and some discussion of the assumptions made in the interpretation of this data and resulting limitations.

Appendix C contains the export and import data for Sudan for the period from 2003-2012 along with a discussion on its interpretation.

¹¹ Uganda in 2007 similarly exported 3,140kg to Dubai, while Comtrade reported only 811 kg arriving.

3 IN-REGION CROSS-BORDER TRAFFIC AND OUT-REGION GOLD SMUGGLING – TENS VS. HUNDREDS OF MILLIONS OF US\$ VALUE

In-region cross-border gold traffic is the illegal transport of gold across borders within the ICGLR Region. Out-region smuggling is the illegal export of gold from the ICGLR region to overseas destinations such as Dubai. While both are of concern out-region smuggling is by far the more significant problem, responsible collectively for tax losses for ICGLR member states of at least \$20 million per year (at conservative royalty rates).

The data assembled in Tables 1-3 (Appendix A) provide a window on the ASM gold industry in the ICGLR region during a highly tumultuous decade. From 2003-2012, the price of gold rose over four fold, from just under US\$12/g to over \$50/g. Increasing attention to the issue of conflict gold in the DRC led, in 2006, to the UN Security Council levying sanctions against three Uganda-based gold export companies. The US Dodd-Frank bill became law in 2010, imposing labeling and reporting requirements on publicly traded companies making use of gold from the region. Finally, during this decade several ICGLR nations adjusted their royalty rates for gold: Tanzania from 3% to 4% in 2009; DRC from 3.5% to 2% in 2011; Burundi from 0.5% to 2% in 2013.

This section will attempt to tease out what effects, if any, these events have had on regional gold flows as reflected in the data. Based on these results, later sections will attempt to delineate what policy measures, if any, are appropriate to addressing these effects.

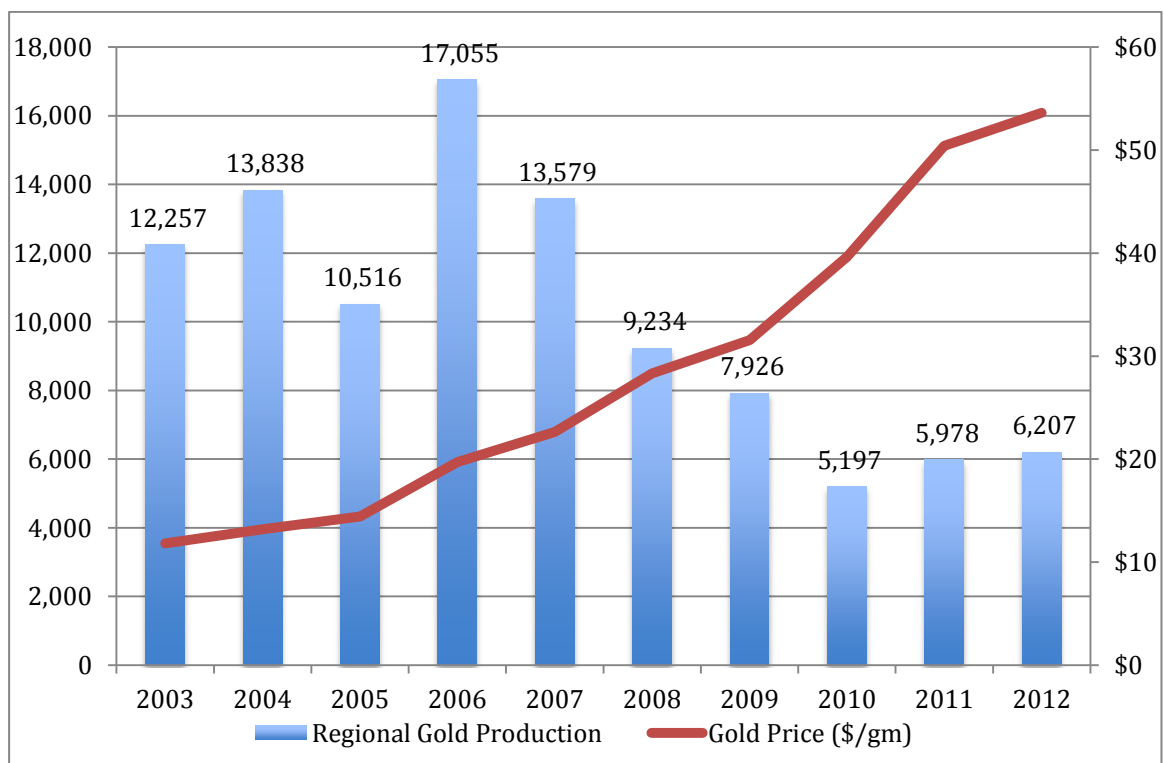


Figure 1: ICGLR region ASM gold exports (in kg) and world gold price (\$/g)

Contraband Gold in the Great Lakes Region

May 2015

The first thing to note is that the data given in Table 1 (Appendix A) and Figure 1 do not represent the total ASM gold production for the region, but merely that portion of the region's ASM production which has been legally declared and exported. These figures can thus be taken as a lower limit for regional ASM gold production for each year. How much gold above this lower limit actually gets produced and exported is a key question, one that will be further addressed below.

Averaging the four year period from 2003-2006 gives an average annual production for the region of just under 13,500 kg. This is at least consistent with the standard estimate of DRC artisanal gold production, which puts DRC production at some 10,000 kg.

As shown in Table 2 (Appendix A) and Figure 2 below, over this same period the UAE (Dubai) reported imports from the ICLGR Region of between 4,000 kg and 10,000 kg. Imports to Dubai in these years thus represented anywhere from 47% to 95% of the ICGLR's legal exports. Logically, this would seem to make sense. Dubai in this period was the dominant, but not the sole destination for ICGLR gold. While hardly definitive proof, the fact that imports track exports during this period is at least a reasonable indication that ICGLR exports as reported (i.e. legal exports) are relatively close to total ICGLR exports, both legal and illegal.

From 2006 onwards, regional gold exports begin a steady, steep decline, from over 17,000 kg in 2006 to some 6,000 kg in 2011. This extraordinary crash in exports is especially curious given that over the same period the price of gold more than doubled, from \$23/g to \$54/g. Such a significant increase should serve as a spur to production, bringing more miners into the industry, making previously marginal gold deposits economically viable. The divergence between gold production and price is shown graphically in Figure 1.

Gold is of course a limited resource; one could envisage a situation in which declining gold deposits leads to a gradual or rapid exodus of miners from the artisanal sector and a concomitant decline in production. However, no such exodus was noted either by government mining officials or the many NGOs observing the sector; anecdotal evidence suggests just the opposite.

During repeated visits to the DRC's Orientale province from 2007-2010, PAC witnessed a significant boom in the ASM gold sector. With the onset of the world economic crisis in 2008 diamond prices crashed, even as gold prices once again doubled. Artisanal diamond miners switched over en masse to gold. Cenadep, a Congolese NGO with a bureau in Kisangani, had to abandon an outreach project focused on artisanal diamond miners because the diamond cooperatives with which Cenadep was working saw their membership drop from the low hundreds to mere tens of members. International mapping efforts of the eastern DRC's ASM sector have documented similar patterns in all eastern DRC provinces.

In Tanzania, in 2010, the government devolved licensing authority and procedures for the ASM sector from Dar es Salaam to 26 Zonal mines offices distributed around the country. This was done partly to encourage formalisation of the ASM sector, but also in reaction to what mines officials believed was a significant growth in the country's population of ASM gold miners.

Contraband Gold in the Great Lakes Region

May 2015

Though anecdotal, these observations suggest that, whatever the export figures might say, ASM gold production did not actually decline from 2006 onwards. The UAE import figures given in Table 2 (and Figure 2 below) give further credence to this supposition.

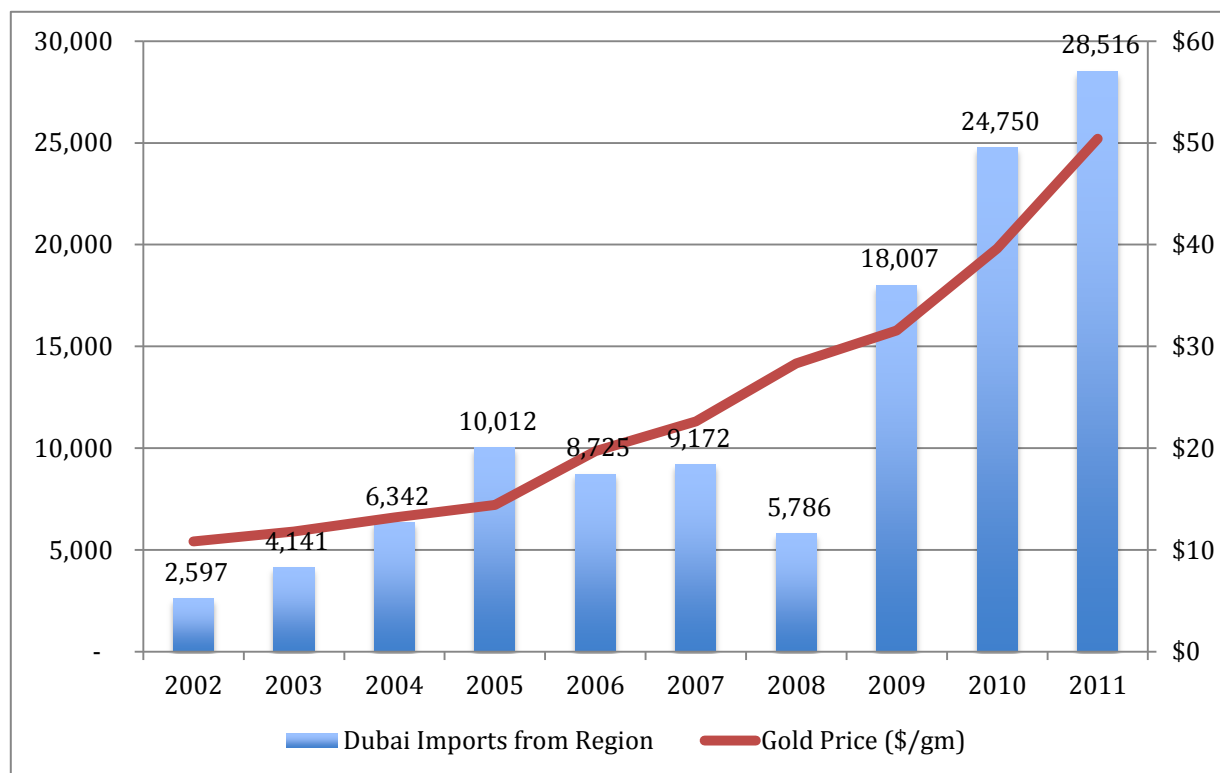


Figure 2: UAE (Dubai) gold imports (kg) from ICGLR nations and world gold price (\$/g)

Graphed in Figure 2, the numbers show gold imports from the region increasing in lock step with the rising price of gold, more nearly what one would expect in this situation. Imports over this period grow from 8,700 kg in 2006 (51% of legal exports) to 28,500 kg (477% of legal exports) in 2011.

Figure 3 (below) illustrates the discrepancy between legal exports and UAE imports. From 2003-2008 UAE imports represent a large plurality to a majority (from 34%-95%) of regional gold production. From 2008 onwards export figures decline while import figures grow; by 2009 imports dwarf registered exports by some 10,000 kg. By 2010 the discrepancy is over 19,000 kg. By 2011, over 22,500kg of gold that was not legally exported from the region is getting imported into Dubai.

What this numbers suggest is that the problem of contraband gold is not confined to regional cross-border traffic, nor is the problem confined to the DRC. Contraband gold is rather a massive regional problem affecting many if not most of the gold producing nations in the ICGLR region. The figures show that the majority of ASM gold from the ICGLR region gets smuggled out of the region, paying no royalties in any ICLGR

Contraband Gold in the Great Lakes Region

May 2015

jurisdiction. Nearly 80% of the ASM gold from the ICGLR region that arrived in Dubai in 2011 arrived there illegally.

Collectively, the ICGLR nations are missing out on some 22,000 kg per year of gold exports. Taking even the lowest tax rate of 2%, this represents some US\$ 20 million in missing tax revenue at current gold market prices.

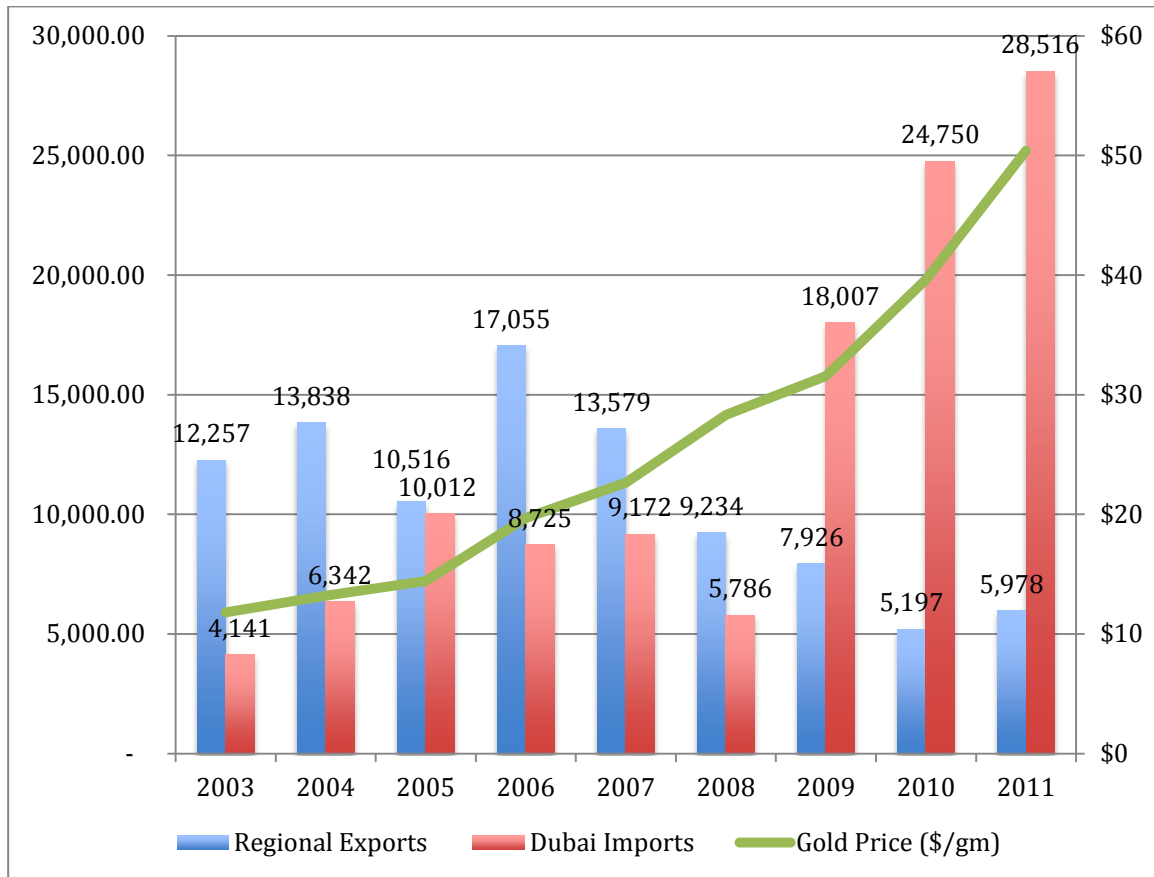


Figure 3: ICGLR nations' gold exports compared to UAE (Dubai) gold imports (kg)

4 HOW DOES IT WORK: DRIVERS AND MECHANISMS OF GOLD SMUGGLING AND CROSS-BORDER TRAFFIC

The legal ASM gold export figures for ICGLR countries given in Table 1 (Appendix) are graphed below in Figure 4. Patterns are not immediately evident from this figure. However, a more detailed look at the export figures for individual countries – both on their own in comparison with selected neighbours – does provide some plausible explanations for both the extraordinary growth in out of region smuggling rates, and for patterns of in-region cross-border traffic. The sections below focus on Uganda, Burundi and Tanzania.

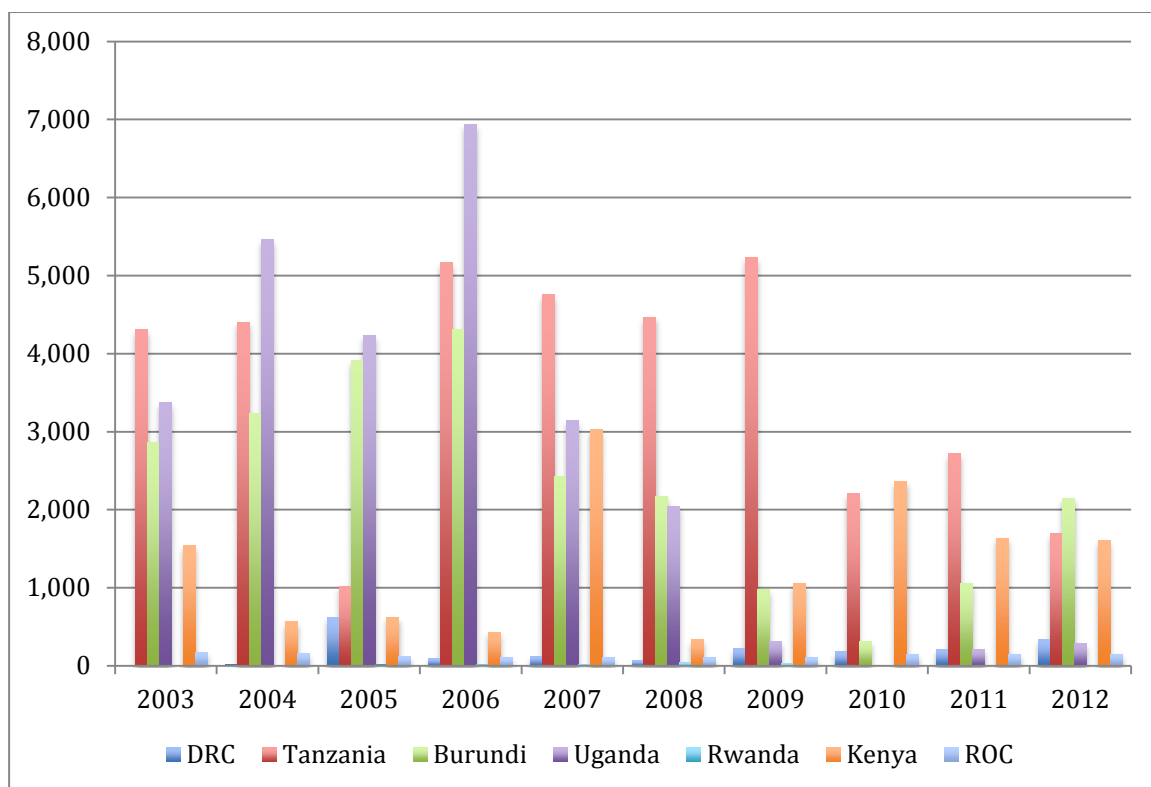


Figure 4: ASM gold exports (kg) by individual ICGLR nations

4.1 How In-region Cross-Border Traffic became Out-region Gold Smuggling: The Case of Uganda

Uganda from 2003-2006 was a major and growing gold exporter, accounting for nearly 7,000 kg in 2006 alone. The DRC government and investigations by the UN Group of Experts had long suggested that the bulk of this gold was cross-border traffic from the Congo, and that some of this gold was linked to the financing of armed groups in the DRC. By 2006, successive GoE reports had established sufficiently strong proofs of this for the UN Security Council to levy sanction against three Uganda-based gold exporting companies.

Contraband Gold in the Great Lakes Region

May 2015

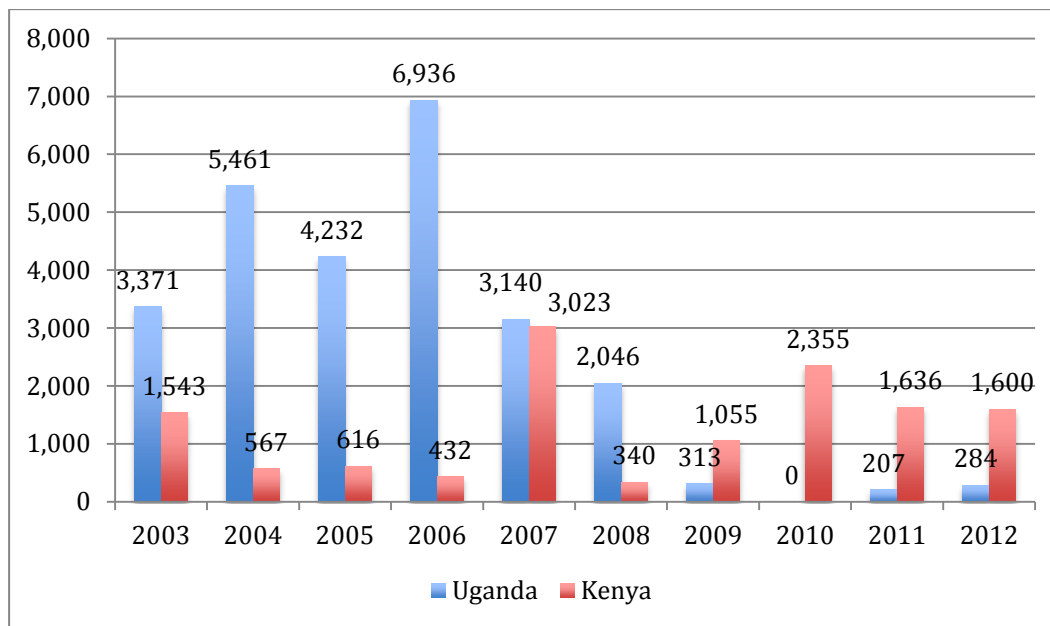


Figure 5: Gold exports (kg) from Uganda and Kenya

In 2007, Uganda exports dropped by over half, from 6,900 kg down to 3,100 kg. Intriguingly, exports from next-door Kenya rose that year to some 3,000 kg, nearly exactly matching the drop-off in Uganda. Kenya had to that point been a consistent but marginal exporter, managing some 500 kg per year. One explanation of these numbers is that the Ugandan-based exporters, wishing to avoid further UN scrutiny, were now routing their gold through Kenya. This relationship is graphed in Figure 5 ¹².

As a long-term solution, however, Kenya was hardly ideal. Its royalty rate of 2.5% was five times the 0.5% that the Uganda exporters had been accustomed to paying back home. In 2008, Kenya exports crashed back down to 304 kg. Ugandan exports, meanwhile, dropped again by a third, from 3,100 kg down to 2,000 kg. And, as Table 2 also shows, no other ICGLR nation showed a corresponding up-tick in gold exports that year.

In conversations with two of Ugandan-based exporters mentioned prominently in UN GoE reports, PAC was given the clear understanding that various Ugandan exporters had found ways to continue their gold export business, making use of Entebbe airport and various informal arrangements with airport security officials in order to facilitate the smooth (and illegal) export of gold. This is also the conclusion of the last two reports from the UN Group of Experts on the DRC.

Going back to the data then, it would seem plausible that by 2008 the Ugandan exporters had these systems in place, and had no further need of neighbouring countries to disguise their gold. After 2008 official Ugandan gold exports crashed down to 300 kg in 2009, then drifted slowly downwards from there to reach 207 kg in 2011 (and barely

¹² Particular attention should be paid to the declining in Ugandan exports beginning in 2006, and the sudden jump in Kenyan exports in 2007. The increases in Kenyan exports from 2007 onwards are explained in the section on Tanzania below.

Contraband Gold in the Great Lakes Region

May 2015

17kg in 2014). By 2009 then, the Ugandan-exported gold that had once only illegally crossed in-region borders had moved fully into the clandestine market.

4.2 Burundi tracks Uganda into Out-region Gold smuggling

The case of Burundi provides an interesting counterpoint to that of Uganda. Much like Uganda, from 2003-2006 Burundi was a major and growing gold exporter, with exports rising from 2,800 kg in 2003 to some 4,300 kg by 2006. As with Uganda, much of this gold was believed to be illegal cross-border traffic from the DRC. The USGS puts Burundi's domestic capacity for gold production at between 350-500 kg per year and estimates by national researchers straddle the 500-1,000 kg range.

Again, as with Uganda, successive UN Group of Experts reports focused on Burundi's role as an illegal gold entrepôt, and on specific individuals and companies involved in the trade. Unlike in Uganda, however, the GoE never amassed enough evidence regarding Burundi for the UN Security Council to impose sanctions. Despite this, after 2006 (the year sanctions were levied on Ugandan companies), Burundi's gold exports also began a dramatic slide, from 4,300 kg in 2006 down to less than 300 kg in 2010.

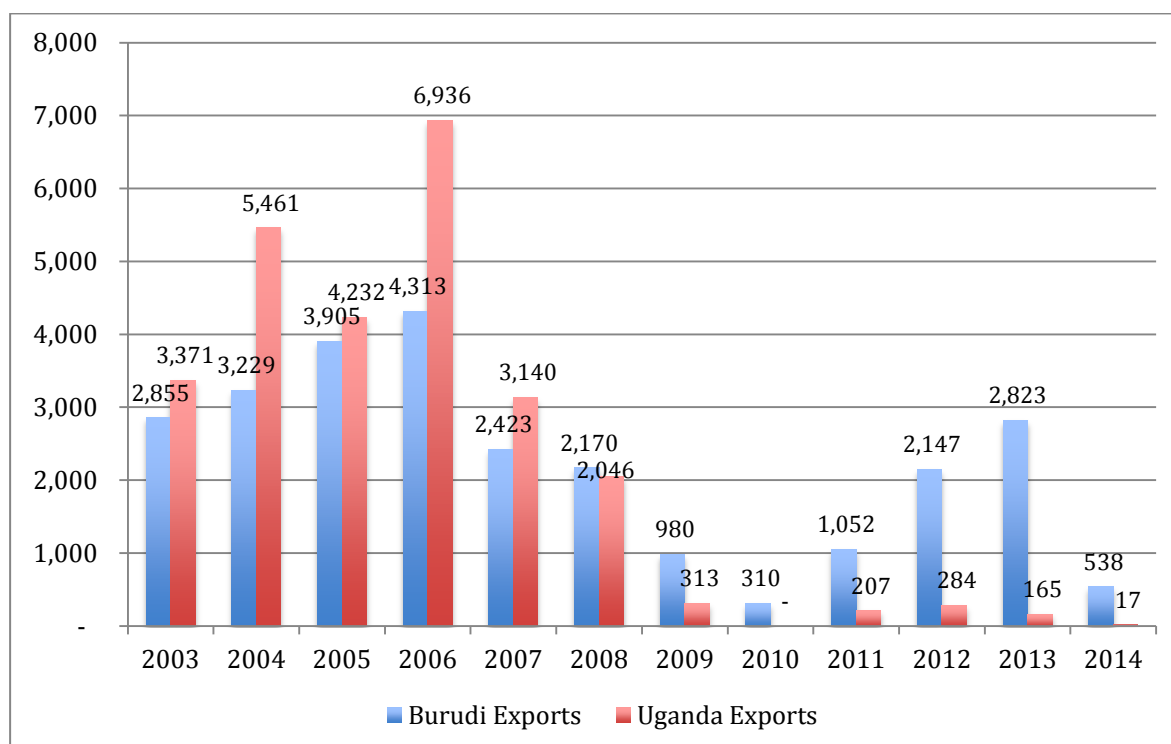


Figure 5: Gold exports (kg) from Burundi and Uganda

Burundi officials have speculated that cross-border traffic to Tanzania is the culprit for this decline. This, however, seems unlikely. For one, Tanzania's royalty rate of 3% (rising to 4% in 2010), as compared to the then current total export tax rate in Burundi of 0.5% would have imposed an immediate 2.5% penalty on any would-be smugglers. In the gold market, 2.5% is huge. Secondly, the numbers in Table 1 show no corresponding up-tick in Tanzanian ASM gold exports. On the contrary, Tanzanian exports remain fairly steady near 5,000 kg from 2006-2010, even as Burundi exports are crashing.

A more plausible – though by no means certain – explanation involves a combination of open market competition and/or “technology transfer”. From 2007-2009, Ugandan exporters would appear to have been mastering the techniques for exporting gold illegally, thus reducing an already minimal 0.5% royalty down to zero (while also avoiding further public statistical scrutiny). Burundian exporters, conceivably, observed this development and decided to adopt this particularly bit of know-how and gain an extra 0.5%.

Or, more plausibly, Burundian exporters began to feel competitive pressure from the Ugandans, who now enjoyed a 0.5% tax advantage. Large parts of Burundi’s traditional gold-producing hinterlands of South Kivu do lie within the competitive watershed of Kampala.

Whether competitive pressure or friendly transfer of smuggler’s know-how (or potentially some third explanation), what is incontrovertible is that from 2006 onwards Burundi and Ugandan legal gold exports display a lock step progression towards zero (See Figure 5). While this is occurring, it should be recalled, imports of ICGLR gold to Dubai are soaring.

One challenge to this explanation is the sudden rebound of Burundi exports, beginning with 1,052 kg in 2011, growing to over 2,800 kg in 2013. This is comparable to Burundi’s export levels in 2007. It should be recalled, however, that from 2006 to 2011¹³ gold imports to Dubai from the region more than tripled, from 8,400 kg to 26,500 kg; as of 2011 more than 80% of gold from the region was being exported illegally. It should also be noted that, in contrast to Uganda, the gold sector in Burundi forms a significant part of the economy, one that is carefully monitored by various organs of government, including the security services. Conceivably, government officials may have insisted on some level of legal exports as a condition of doing business in Burundi. Seen this way, the 2,800 kg of gold legally exported in 2013 becomes a kind of licensing cost, which can then be amortized over three times that amount of gold directed via clandestine channels. Further research in the field would of course be required to support this theory.

Even with restricted government scrutiny, the rebound lessened considerably in 2014; by October of 2014, Burundi had logged only 538 kg of gold exports¹⁴. One likely contributing factor is the fact that in December of 2013, Burundi raised its ASM gold export royalty from 0.5% to 2%. The additional 1.5% in taxes might well be responsible for the radical drop in legal gold exports that followed.

4.3 Tanzania Gold crosses Borders into Kenya

Tanzanian officials believe a good percentage of their domestic ASM gold production transits illegally to Kenya. They could well be right.

Figure 6 shows legal export figures for the two countries for 2003-2012. As noted above, Kenya was a marginal exporter for 2003-2009, with the sole exception of 2007, when Kenya got a one year windfall of exports diverted over from Uganda. Not counting 2007,

¹³ Import data for Dubai is not yet available for years after 2011.

¹⁴ Data for the remaining 3 months of 2014 are not yet available to the author.

Contraband Gold in the Great Lakes Region

May 2015

Kenya's average yearly exports for period only barely reach 700 kg. Tanzania's exports during the 2003-2009 period (with the sole aberration of 2005) hover between 4,000kg – 5,000kg, with an average of just under 4,200 kg.

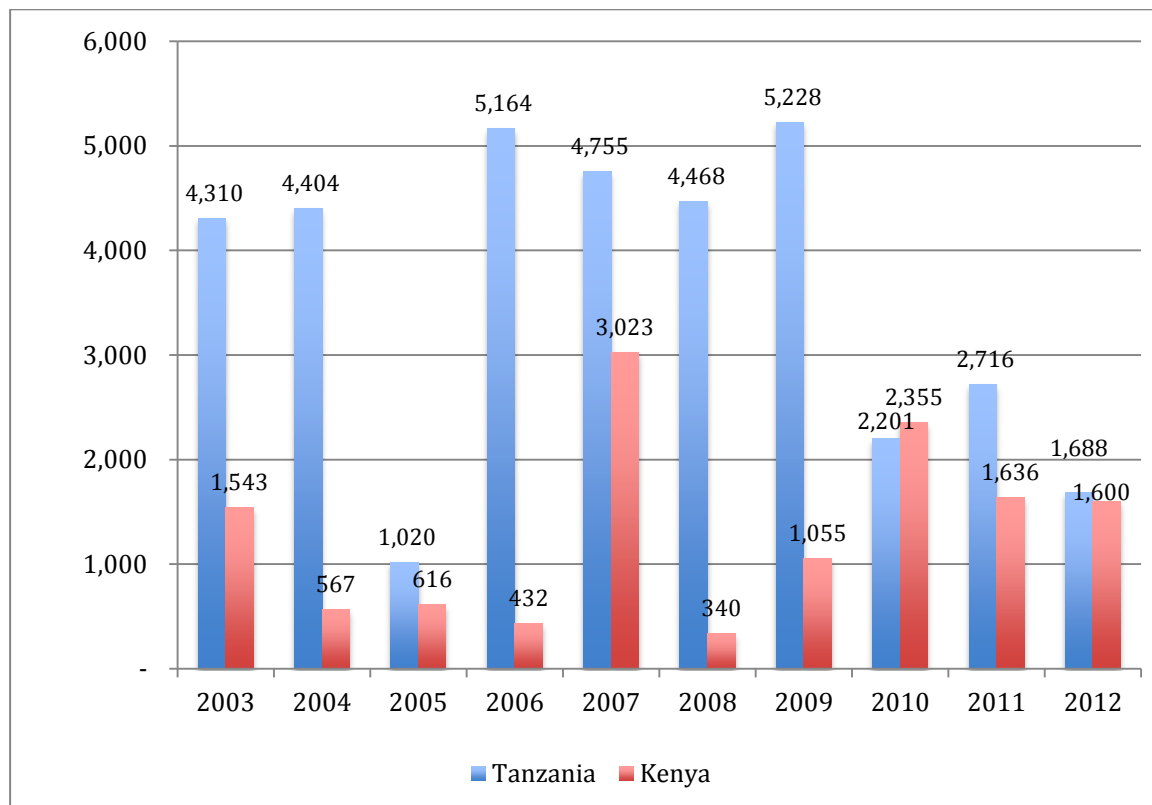


Figure 6: ASM gold exports (kg) from Tanzania and Kenya

In 2010, however, Tanzanian officials opted to raise the royalty on gold from 3% to 4%. Legal gold exports dropped by over half, from 5,228 kg down to 2,201 kg, a drop of over 3,000 kg. Kenya, in 2010, saw its legal gold exports more than double, from 1,055 kg to 2,355 kg, a difference of 1,300 kg. The pattern remains steady for 2011-2012, with Tanzanian exports at about half their 2009 level, and Kenyan exports about double.

Making the plausible assumption that all of Kenya's 1,300 kg increase represents cross border Tanzanian gold, that would mean that Kenya had picked up some 43% of the Tanzanian loss. Tanzanians officials believe the remainder exits their country either via Zanzibar or clandestinely through Dar es Salaam airport. (For more on this see Section 5.2).

4.4 Tax Differentials as a Driver of Cross-border Traffic

Differences in export royalty rates between neighbouring countries are often cited by officials in the region as a major driver of cross-border gold traffic. The 3% difference between the DRC and Uganda/Burundi (historically 3.5% versus 0.5%) is believed to have been one of the primary reasons for the development of the cross-border networks exiting the DRC. However, while interviews with gold dealers have yielded ample

testimony as to the importance of small differences in price, the theory hasn't yet been tested empirically.

The data set assembled here offers three natural experiments for testing the effects of royalty differentials on cross border gold flows: Tanzania, which raised its royalties from 3% to 4% in 2010; the DRC, which lowered its royalty from 3.5% to 2% in 2012¹⁵; and Burundi, which raised its royalty from 0.5% to 2% in 2014¹⁶. If tax rate differentials are indeed significant drivers of illicit ASM gold flows, one should expect to see changes in export volumes (positive or negative) resulting from the change in tax rates.

Tanzania

Tanzania is the best of the test cases. The royalty change came at the end of 2009. There are 7 years of data preceding the change and another four years after. The export data and tax rate are shown in Figure 7.

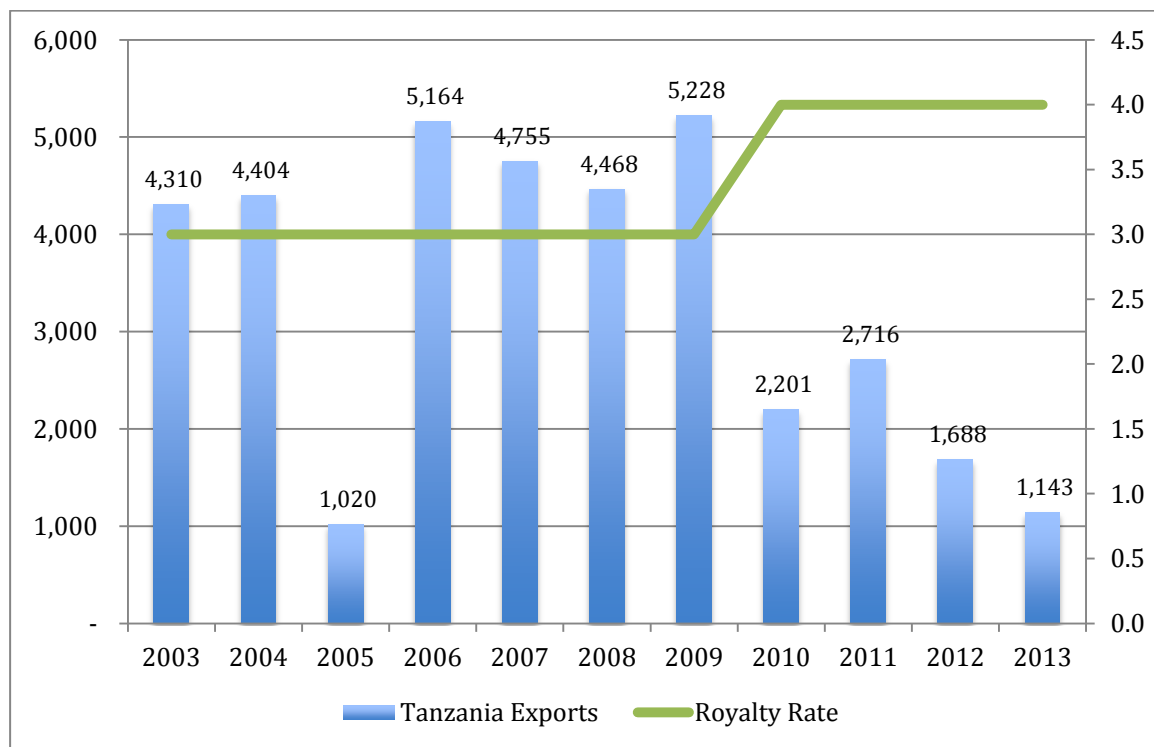


Figure 7: Tanzanian inferred ASM gold exports (kg) and royalty rates (%)

As shown, the data provide fairly graphic evidence of the negative effects of a royalty rate jump on ASM gold. From 2009 to 2010 exports dropped by over half, exactly coincident with the jump in royalty rates.

¹⁵ This was done in late 2011.

¹⁶ This was done in December, 2013.

Contraband Gold in the Great Lakes Region

May 2015

No other factor would seem to explain such a drop. Gold prices increased over this period, from \$32/g in 2009 to \$40/g in 2010. Tanzanian officials noted no diminution in the number of miners or intensity of ASM activity. The sole variable factor here appears to be the royalty hike.

The case illustrates the potential negative effects on revenue from hiking royalties (without regional coordination among neighboring countries). Had gold prices not risen so spectacularly in these years, Tanzania would have ended up collecting less in taxes with a 4% royalty than it had with 3% as far as the ASM sector is concerned¹⁷. Averaging the four years before the rate change and the four years after, Tanzania would have collected 40% less income at 4% than it had at 3% royalty rate. Even with the near doubling of the price of gold the royalty hike turned out to be effectively revenue neutral; the increased tax rate and gold price are more than balanced by the drop in declared production¹⁸.

DRC

The DRC provides the second test case. The DRC dropped its export taxes in late 2011 from 3.5% down to 2%. The DRC took this move in order to discourage cross-border traffic to Uganda and Burundi, and encourage legal exports from the DRC itself.

Unfortunately for the purposes of this experiment, DRC exports for 2014 have not yet been obtained. There is thus only data for only two years after the change in tax rates. These do show an increase, from some 200 kg per year before the reduction to around 300 kg (see Figure 8), an increase of some 50%, but still a marginal fraction compared to its ASM gold productive capacity of 10 tons or more. Given these volumes, a difference of only 100 kg could just as easily represent luck, weather, the quirk of a single mine owner or any one of a dozen other factors as much as it could the success of a new tax policy. It is thus impossible to draw any firm conclusions.

¹⁷ However, it did benefit in terms of its dominant industrial gold sector as shown in the TMAA reports. ASM and LSM sectors may hence require a differentiated tax approach.

¹⁸ Calculation based on SUM production per year X average price per year X royalty rate for that year; Net of 2006-2009 = \$15.03 Million; Net of 2010-2013 = \$14.6 million.

Contraband Gold in the Great Lakes Region

May 2015

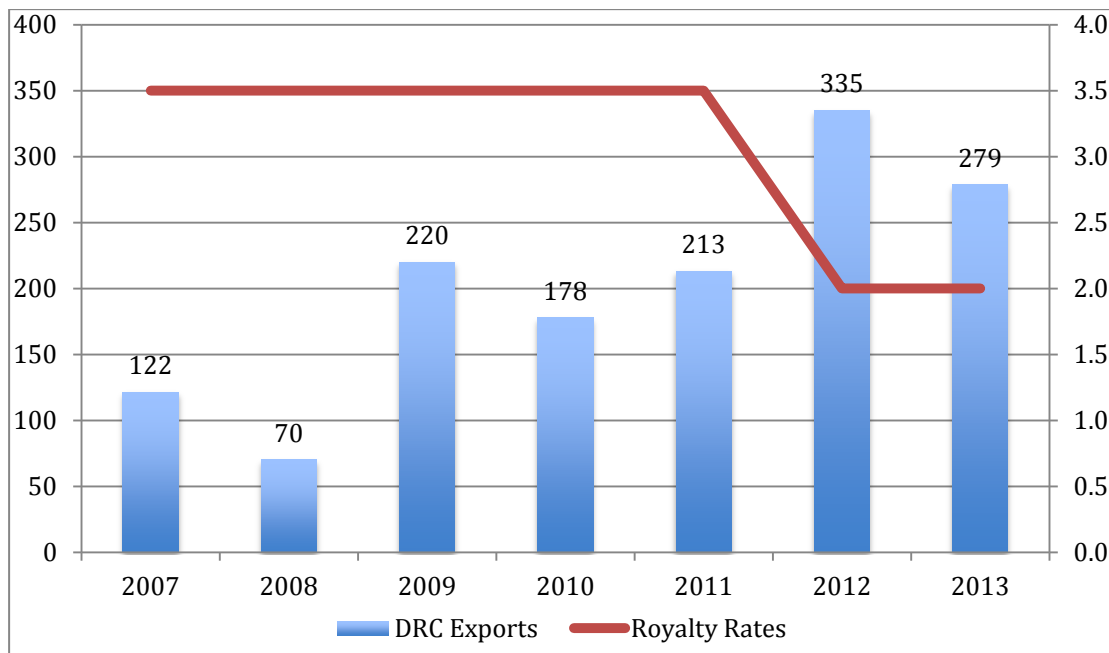


Figure 8: DRC ASM gold exports (kg) and royalty rates (%)

Burundi

The third test case – Burundi – is similarly hampered by the lack of a long series of data. Burundi raised its ASM gold royalty from 0.5% to 2% at the very end of 2013, along with a range of additional fiscal measures (e.g., registration fees for gold export comptoirs). At the time of writing, gold export figures after the change are available only for Jan-Oct 2014. As shown below in Figure 9, the single data point after the change does indeed show a dramatic drop in exports, from 2,800 kg down to 538 kg¹⁹. This drop could be read as the result of the royalty increase. However, the fact that Burundi experienced a drop of a similar magnitude over the two year period from 2008-2010 – when the royalty rate remained a constant 0.5% - argues for some caution. Before any firm conclusions can be reached on Burundi another year's worth of data would be required, along with a directed inquiry into the causes of the previous export drop. For now, the results are merely suggestive. Additional impact factors for the low legal gold export levels registered for 2014 may be related to the restricted number of comptoirs that were able to obtain a gold export license under the new mining code, with the total number of comptoirs coming down from over 20 to only 3. Gold mining in the country has continued throughout this period, albeit often illegally, as miners did not register as cooperatives as required under the new mining code.

¹⁹ Pro-rated to 12 months this would still amount to only 646 kg.

Contraband Gold in the Great Lakes Region

May 2015

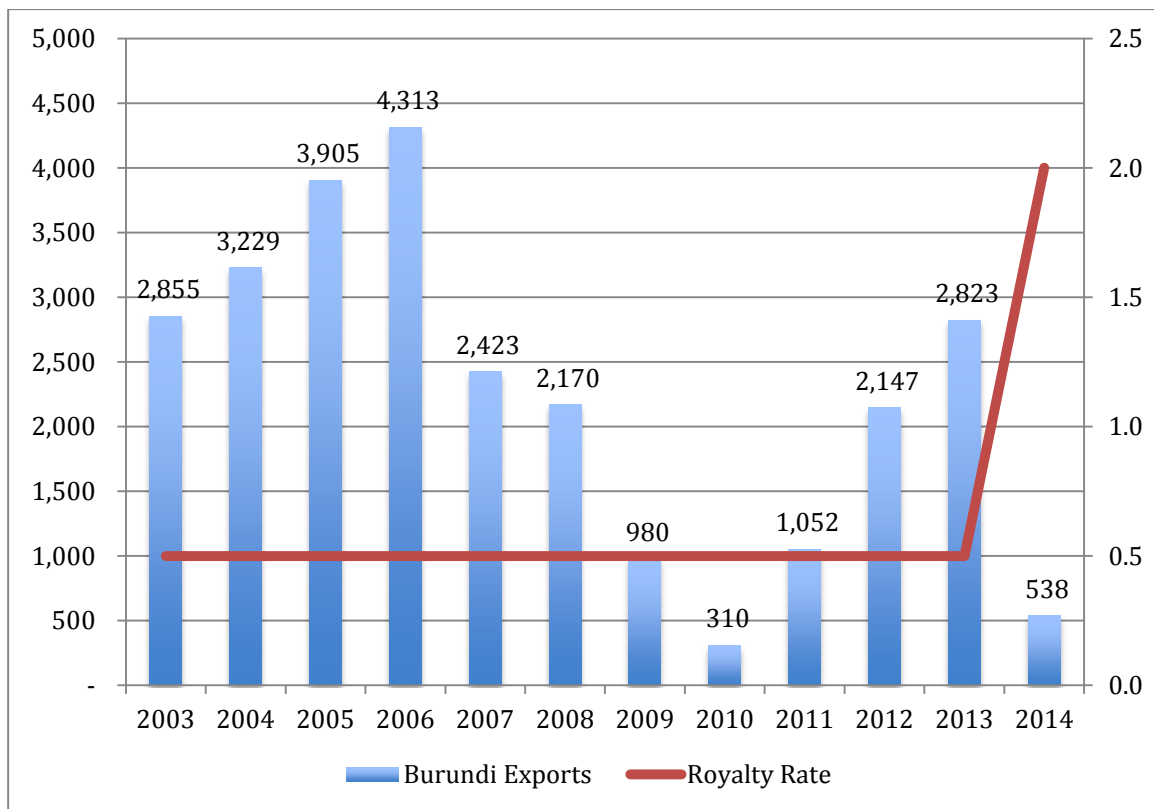


Figure 9: Burundi gold exports (kg) and royalty rates (%)

5 SOLUTIONS TO GOLD SMUGGLING AND CROSS-BORDER TRANSIT

In addressing the problems on in-region cross border traffic and out- region smuggling, it's important to keep in mind the relative scale of the two issues: out-region smuggling is an order of magnitude more important. And yet, it is the cross-border traffic that seems to have captured the attention of government officials.

In Burundi, officials complain that their gold travels east to Tanzania (or in some cases even to Rwanda). Tanzanian officials believe their gold gets smuggled into Kenya. Ugandan officials likewise tag Kenya as the destination for their gold. Congolese officials and international observers believe Congolese gold travels pretty much throughout the region: Tanzania, Burundi, Uganda, Kenya and South Sudan at a minimum.

There is truth in these allegations, as was shown in Section 4. But as shown in Section 3, the cross-border traffic is dwarfed by the out-region smuggling. To take the example of Tanzania: cross-border traffic to Kenya, as shown in Section 4.4, likely cost Tanzania some 1,300 kg of gold in 2010, worth some \$2.6 million in lost government royalties. Out-of-region smuggling to Dubai that same year cost Tanzania nearly 14 tonnes, or nearly \$22 million dollars²⁰.

Across the region the scale of the challenges are similar. Cross-border leakage may lead to gains or losses for one or the other country of some millions of dollars. But the consistent mass smuggling of gold from the region collectively costs the governments of the region some 21 tonnes of gold per year (worth more than US\$1 billion p.a.), or US\$20 million at the modest royalty rate of 2%.

To some extent, the measures needed to address the one challenge should also be effective against the other. The priority, however, should clearly be given to out-region smuggling. In order to bring fully smuggled gold back into legal channels, a balance of incentives and regulation – sticks and carrots – will likely be required. The most cost-effective measures would include a harmonisation and reduction of export royalties, and enhanced scrutiny of out-going passengers at the region's key international airports. These options are briefly described below.

Certification and/or licensing of gold exports could also prove an effective technique, but only if destinations such as Dubai can be brought to accept the legitimacy of these documents, and demand their provision as part of their import controls. This option is also explored below (See Section 6 for more on Dubai).

5.1 Harmonize ASM Mineral Royalty Rates

In-region differences in royalty rates have been shown in this study to be a driver of in-region cross border traffic, at least in the limited case of Tanzania and Kenya. Anecdotally, royalty rate differences are believed to have been strong drivers – at least initially – of the cross-border traffic from the DRC to Uganda and Burundi. The role of royalties in out-region smuggling is not known. However, if a 2.5% tax difference can motivate exporters to traffic gold from Tanzania to Kenya, a 3% or 4% export royalty

²⁰ 13,853 kg X \$50.41/g X 1000g/kg X 4%. As explained above, it is possible that smugglers upon entering Dubai declare another origin for DRC gold, e.g., Tanzania. As such, the above sum may in the end not exclusively pertain to Tanzania but to the DRC and other countries as well.

should provide equal motivation to out-region smuggle, provided always the risks of getting caught are small. It should be noted that regional smuggling of 3T minerals (coltan, cassiterite, wolframite) is often driven by local price differences as well, which ultimately corresponds to the same effect resulting from gold royalties imposed on ASM supply chains.

As a provisional measure, this study recommends that the nations of the ICGLR harmonize their ASM gold royalty at a relatively low rate, say 2% or 2.5%. Harmonization should hopefully serve to take attention away from cross-border traffic and direct it towards out-region smuggling, the greater of the two problems. The relatively low rate will hopefully set a low barrier for out-region smugglers considering a return to legality.

If the cost of complete legality (and the security that comes with it) is relatively modest exporters who currently smuggle may consider a return to legality a worthwhile expenditure. This will only work, of course, when and if those currently smuggling come to believe there is at least some possibility of getting caught and having their shipment seized as a result (See 5.2 for more on developing this capability).

Once an enforcement capability is in place, and a significant portion of the smuggled gold flows have been returned to legal channels, ICGLR governments should consider increasing ASM gold royalty rates in small increments, always ensuring that regional harmonization is maintained.

5.2 Institute Mineral Agency Controls at International Airports

ASM gold from the ICGLR region travelling on its way to Dubai moves almost exclusively by air. In conversations carried on by the author in 2014 with both legal and illegal exporters, these traders indicated the favoured method was the 'hand carry', where 5-20kg of gold is transported with the courier as part of their hand luggage. The principal airports of the region thus become an obvious choke-point for enforcement efforts. Entebbe, Bujumbura, Dar es Salaam, Nairobi, Juba – all these airports have daily and often direct flights to Dubai and the UAE.

Given the scale of the monetary loss from out-region smuggling – more than \$20 million per year – a targeted enforcement effort at five to seven airports hardly seems excessive. In addition to serving as checkpoints, airports have the added advantage that most of the equipment required to detect and apprehend gold smugglers is already in place and used on a day to day basis to screen every outgoing passenger; the X-ray machines in use at these airports are highly effective at detecting gold.

All that is required are the personnel with the training and legal authority to make use of this equipment, as well as the proper incentives for apprehending smugglers. Even better, there is already in the ICGLR region a partly successful working example of a unit of this type: the Tanzania Mineral Audit Agency's (TMAA) Minerals Auditing Desks.



Figure 10: TMAA notification at Tanzanian airports

As noted in Section 4.4, Tanzania in 2010 experienced a crash in legal ASM gold exports, the result officials believed of cross-border gold traffic to Kenya. The TMAA had been created in 2009, tasked with ensuring that all actors (large scale and small) in the Tanzanian mineral sector were paying appropriate royalties and taxes. The Minerals Auditing Desks were created in 2012 specifically to interdict the illegal export of Tanzanian minerals, especially gold, Tanzanite and diamonds.

Three Auditing Desks were established – one at Mwanza airport in the Mwanza gold region, one at Kilimanjaro Airport, and one in Dar es Salaam airport. TMAA agents at these posts are empowered to interview and inspect outgoing passengers and seize any minerals not accompanied by a valid export license.

The Dar es Salaam Desk has four agents. As this is not enough to cover all flights on all days the unit profiles to some extent, focusing on particular flights for particular minerals. Tanzanite smuggling is more common on China and East Asia-bound flights, while gold is more commonly smuggled on flights heading to the Middle East (notably Dubai) and India.

Agents observe passengers as they line up outside the airport doors to screen their bags, and then again at the second X-ray station – where only carry-on bags are screened –

Contraband Gold in the Great Lakes Region

May 2015

located in front of the departure gates. Agents may request a search based on an indication from the Tanzanian Airport Authority agent manning the X-ray machine, based on passenger comportment or a passenger's response to questions.

The Auditing Desks have had some success with this approach. From their creation in July 2012 to the end of 2014 the Minerals Auditing Desks have registered 64 incidents, seizing minerals worth nearly US\$900,000. Among these was a seizure in December 2013 of 1 kg of gold being carried by a Congolese national (see Figure 11).

JAMHURI YA MUUNGANO WA TANZANIA
WIZARA YA NISHATI NA MADINI
HATI YA KUKAMATA MADINI
MINERALS SEIZURE RECORD FORM

TAARIFA ZA ALIYEKAMATWA NA MADINI PERSONAL DETAILS

Jina la Ukoo Surname: **KALOMBO** Jina la Kwanza First Name: **EDINHO** Jina la Kati Middle Name: No: **000023**

Utaifa Nationality: **CONGO** Kitambulisho ID No.: **08 0193537** Mtaaji Issuer: **RDC** Tarehe Date of Issue: **25/12/2013**

Anwani Address: **MPEZI BEIGN MAFONBE** Namba ya Simu Telephone No.: **0775365826**

Barua Pepe Email: **edinal@proton.fr** Sinau Signature: **[Signature]**

MAELEZO YA TUKIO INCIDENT DETAILS

Tarehe Date: **05/12/2013** Muda Time: **14:30** Mahali Location: **TNIA**

S/N	Aina ya Madini Yaliyokamatwa Type of Minerals Seized	Uzito Weight	Unit	Thamani Assessed Value	Maoni Remarks
1.	Gold pills 221 pieces	1	kg		
2.					
3.					
4.					

Madini yaliyotajwa hapo juu yameshikiliwa kwa muda na Mtaaji wa TMAA kwa niaba ya Kamishna wa Madini kufuatia mtajwa hapo juu kushindwa kuoneshwa leseni ama vibali vilivyotavyo vya kumuhusu kumiliki/kusafirisha madini hayo nje ya nchi: EP/ DL/ ML/ SML.

Mtaaji hapo juu amepewa siku zilizozidi mbili (2) kuwasilisha vibali vilivyotajwa hapo juu kama ushahidi wa kuhafidha umiliki wa madini hayo. Iwapo husika kama ushahidi wa kuhafidha umiliki wa madini hayo nje ya nchi, hawo hawatawazi kumiliki/kusafirisha madini hayo nje ya nchi.

The above mentioned minerals have been temporarily seized by the TMAA Auditor following the aforementioned person's failure to provide the following document(s): EP/ DL/ ML/ SML.

The aforementioned person has been given utmost two days (2) to submit the missing document(s) as authorization for possession and permission to export the same. Failure to meet the above requirement would permit the Government, through the

Figure 11: Record notice for impounded gold lot

The TMAA's Mineral Auditing Desks would likely have experienced even greater success were it not for a couple of factors. First, TMAA agents are prohibited from monitoring the baggage screening X-ray machines. That is a prerogative of agents of the Tanzanian Airport Authority (TAA) which to date the TAA has been unwilling to share. Senior TMAA managers believe that some TAA agents may be letting gold pass through in return for financial compensation.

Secondly, the TMAA does not cover all international airports in Tanzania. By a quirk of Tanzania's federal structure, the island of Zanzibar is not covered by the Tanzania Mines Act, and so lies outside the legal domain of the TMAA. Direct observation of procedures at Zanzibar airport by this author show there is little or no scrutiny of outgoing passengers for minerals. And while Zanzibar has no direct flights to Dubai, there is a daily Ethiopian Airlines flight via Addis, with only a single connection. TMAA managers believe Zanzibar has become a significant outgoing hub for smuggled minerals.

As a model for a wider ICGLR region effort, the Tanzanian experience contains both positive and negative lessons. On the positive side, the TMAA experience has shown that airport monitoring can be a cost effective intervention against mineral smuggling. The TMAA seizures at Dar es Salaam have more than paid for the cost of the service, even

hampered as they are by lack of access to the X-ray machines. Were the agents truly set loose, their seizures might be extraordinary.

The Tanzanians experience shows the importance of a specialized customs inspection unit devoted to minerals. At Entebbe airport in Uganda, the Uganda Customs Service is ostensibly in charge of screening outgoing passengers. However, as the director of airport customs explained, customs has traditionally focused on inspecting incoming goods. That is what customs sees as its role, and it is for that task that customs is paid (and financially rewarded in the case of seizures). Customs officers have no training in minerals or mineral export permits, and see little point in expending staff hours pursuing mineral contraband. Not surprisingly, customs officers do not observe or inspect outgoing passengers at Entebbe. Customs could report no seizures or incidents involving minerals at Entebbe airport in all of 2014.

On the cautionary side, the Tanzanian experience shows the critical importance of covering all the airports. In Tanzania, covering Dar es Salaam and Mwanza seems to have shifted some illicit gold flows to Zanzibar. To avoid a similar result in the ICGLR, governments in the region would have to develop a coordinated program of TMAA style monitoring covering all the major international airports of the region. This would certainly include Dar es Salaam, Zanzibar, Nairobi (and possibly also Mombasa), Bujumbura (and possibly also Kigali), Entebbe and Juba.

The costs of establishing mineral inspection units in each of the principal airports of the region would be significant. However the target – over \$20 million per year in contraband gold alone – is almost certainly worth the cost.

5.3 Mineral Certification/Export Licensing

All legal gold exports from the ICGLR region currently require an export license. Normally issued or at least processed through the ministry of mines, an export license demonstrates that a gold export has paid all the appropriate royalties and export fees.

Certification takes this one step further and documents that due diligence has been performed on the associated supply chain. Gold exports with an ICGLR Certificate should bear proof that the gold export has paid all appropriate royalties and that the gold originated in a known, inspected mine site, and was traced from that site to the point of export²¹.

Both export licensing and certification could prove an effective tool against out-region smuggling, provided governments of the region could convince importing jurisdictions such as Dubai to require exporters to provide these documents before allowing them to pass customs²². Reputation-sensitive companies operating out of Dubai may benefit from establishing such a process as they could integrate such documents into existing or to be established Know-Your-Customer (KYC) standard procedures.

Export licensing provides little check on cross-border smuggling within the region. The Tanzanian system is fairly typical in this regard. A Tanzanian export permit for a

²¹ However, only an effective and credible third-party audit scheme and risk monitoring will give credibility to this process.

²² The ICGLR Certificate has perhaps an advantage in this regard, as it is a region-wide uniform document, and thus easily recognized by the customs services of importer nations.

Contraband Gold in the Great Lakes Region

May 2015

shipment of gold can be obtained by either a licensed exporter or the holder of a primary mining license (reserved to artisanal/small scale producers). The export permit can be obtained at any one of 26 Zonal Mines Offices spread around the country. The applicant is required to show only a copy of his license and proof of payment of the 4% royalty. On paper, the mining act requires exporters to keep and present a register containing the date, amount and origin of their purchases, while miners are required to keep a register of their site's production. In practice this is never done. Pay the royalties and show a license and in Tanzania you can legally export.

The situation is for all intents and purposes identical in the DRC, Burundi, Kenya and Uganda. The export licensing process thus provides no check on illegal cross border gold traffic.

Certification would provide a check on cross-border traffic, in that gold would have to be traceable from its origin to point of export. However, gold traceability has not yet been shown to work in the field.

As an interim step, producer nations and the ICGLR should work to encourage importer nations such as Dubai to require either export licenses or certificates before accepting incoming shipments of gold.

6 ASM GOLD IN THE UNITED ARAB EMIRATES (DUBAI)

The United Arab Emirates (UAE) has long been identified – in government export documents, by the UN Group of Experts and various NGOs, and by its own customs statistics – as the major destination for ASM gold produced in the ICGLR Region. Of the seven Emirates, Dubai has by far the largest gold market. According to its own customs figures, the UAE imported 28,516 kg of gold from the ICGLR region²³ in 2011. Only 5,978 kg of this total had been legally taxed and exported from the region. Whether by oversight or design, the UAE is thus complicit in the evasion of at least \$20 million per year in African export royalties.

This much is well known, documented in repeated reports by the UN Group of Experts and elaborated more recently in investigative reports by Partnership Africa Canada and Global Witness. The purpose of this study was not so much to re-confirm the UAE's role as the primary destination for illegally exported African ASM gold as it was to identify chokepoints in the UAE/Dubai gold chain where remedial action could be cost-effectively targeted. Secondly, the study aimed to evaluate the extent which UAE/Dubai authorities might be open to implement such targeted interventions.

Results of the study were mixed: on the positive side the study determined that there are indeed several chokepoints in the UAE/Dubai chain where targeted interventions could have a significant impact on smuggled gold coming in from the ICGLR region. On the down side, the author found Dubai authorities only marginally willing to discuss the issue of illegally imported ICGLR region gold. Specific discussions of gold chain mechanics and possible interventions were not possible. Implementation of such interventions, at least by UAE/Dubai government authorities, would seem to remain a relatively distant prospect. Larger private sector actors with strong reputational concerns, such as banks, might of course move more quickly.

The sections below outline the nature of the Dubai gold chain, and the possible interventions, before turning briefly to the question of the possibility of implementing these interventions.

6.1 The Dubai Gold Chain

Customs

ASM Gold from the ICGLR Region arrives by plane, most of it as 'hand carry'. On arrival, couriers declare their gold at Dubai customs. The exact procedure followed at this point remains a bit of a mystery. Researchers from the UN Group of Experts, the OECD, and PAC have all made repeated requests to view this procedure and interview customs officers involved in the process. All such requests have to date been denied.

For this study the author interviewed two couriers who claimed to be familiar with the process. Both indicated that importers were required to show and declare the value and volume of incoming gold, and fill in a customs declaration form. On the critical issue of how Dubai customs verified the origin of the shipment accounts differed somewhat. One indicated he was required to show his airline boarding pass to prove his claimed

²³ Not including Sudan.

country of origin. The other indicated no proof was required. Both indicated that Dubai customs did not demand any kind of certificate of origin, export permit or other government document from the country of origin. Processing of the import document is quick, and there are no taxes involved.

Earlier research by PAC and the UN GoE made essentially the same findings. An OECD researcher who visited Dubai shortly after PAC was told that customs was or would soon be or was considering demanding some kind of export permit. This information remains unconfirmed.

Once the courier has passed customs, there are two types of potential customers: the various gold souks, or Dubai's five gold refineries.

Given that all gold couriers must pass through the single customs office, and declare their gold as they pass, the Customs step seems an excellent location for an intervention, as discussed below in Section 6.2.

The Souks

There are actually three gold souks in Dubai: the main souk (also known as the souk or the old souk), the new souk and the Dubai Gold & Diamond Park, an upscale mall-style souk owned by the government development company EMAAR. In addition there is the Blue Souk in the Sharjah emirate, some 45 minutes north of Dubai.

A previous PAC research effort identified eight gold purchasers in the souk from invoices on gold exports from Uganda and Kenya, contacted each one and established that all would buy hand carried gold with no questions about provenance. While the point seemed adequately demonstrated, for this study PAC contacted a further two buyers in the souk to determine whether they would purchase doré bars of artisanally mined gold in quantities of 5-10 kg with only an import declaration for documentation. Both had no problems with such a purchase. Indeed, the souk is remarkably well equipped for such transactions. Buyers can provide an initial assay of the gold, based upon which a price can be agreed. The gold can then be smelted forthwith and re-assayed for a final purity value, after which payment can be delivered forthwith.

From here, the gold may be turned into jewellery, or it may be sold on to one of Dubai's gold refineries. Buyers in the souk wishing to sell their gold on to a Dubai refiner are required to keep a record of the nature and origin of their gold purchases, in order to satisfy the due diligence requirements of the refiners. Questioned on this point, the buyers indicated that they would classify the gold as scrap, where a 10 kg purchase would not be noticed.

Given the large number of potential buyers in the souk, and the existence of other competing souks, an intervention at this step in the chain would seem impractical.

The Gold Refineries

As noted above, there are some five gold refineries in Dubai. These refineries purchase gold directly from customers overseas, and also buy gold from the traders in Dubai's gold souks. Dubai's refineries have engaged to be compliant with the OECD standard for

gold. Refineries are subject to auditing under the Dubai Multi-Commodities Centre (DMCC) audit standard. Both standards require refineries purchasing gold or doré from dealers to revise the dealer's purchasing records (or a sample of these records) to verify that the purported scrap gold does in fact originate from jewellery. As noted above, dealers claim they churn enough volume of jewellery to easily disguise a significant quantity of ASM produced gold. In other words, paper trails alone may not be enough to attack this problem.

One of the refineries PAC interviewed in Dubai believes it has found a technical solution to this challenge. This refinery subjects all purchases of so-called 'jewellery melted bars' to examination under an X-ray fluorescence scanner, which determines the elemental composition of the bar. According to the refiner, true jewellery melted bars, particularly those originating in the Indian market, should be a mixture of gold with minor copper. Bars melted from ASM gold, on the other hand, will contain a mixture of silver, copper, lead and other minor and trace elements, depending on the specific origin of the gold (which typically forms 80-90% of the total composition). The difference is apparently quite stark, according to the refiner, who also suggests that were such scanners for screening of jewellery melted bars made mandatory, it would significantly cut down on or eliminate the flow of ASM gold into Dubai's refineries.

Other refiners in Dubai with whom PAC spoke were not willing to discuss their purchase verification procedures. However, given the relatively low number of refineries and their key role in the gold chain, this would seem an excellent place location to implement this intervention.

Banks

Dubai-based banks come into the gold chain once traders have disposed of their gold and require a location to deposit the proceeds from these ASM gold sales. This segment has been among the least researched of all the links of the international ASM gold chain. It is thus not known whether gold traders keep their proceeds in cash, or convert the cash into trade goods for export back to the ICGLR region, or deposit the proceeds in local banks, to be either converted into trade goods or transferred back to the region or elsewhere. Likely, some combination of the three occurs.

For those Dubai based banks who accept deposits from ASM gold traders, it is also unclear what kind of KYC procedures have been put in place, and what kind of documentation is demanded before banks will accept such deposits.

Given the sensitivity of banks and financial institutions to reputational risks and charges of money laundering, this aspect of the international ASM gold chain is perhaps one of the most promising areas for further research and for targeted interventions.

6.2 Possible Interventions – Technical Aspects

Demand Export Documents at Customs

The simplest and most effective intervention would be for Dubai customs officials to demand government export permits for all incoming gold parcels, and particularly for hand carried parcels. As part of this effort, the ICGLR governments (possibly through the

ICGLR Secretariat) could provide Dubai customs with sample copies of the required, legitimate export document.

Check the Composition of Jewelry-Melted Gold Bars

The DMCC should require refiners to implement compositional screening of all incoming jewellery melted bars, prior to purchase. Those with a trace element composition more typical of ASM gold production should be rejected for purchase. As part of this effort, an independent party could develop a database showing the composition of typical ASM gold doré bars from various regions within the ICGLR, and provide this to refiners and other interested parties for reference. Due to their role as a technical cooperation partner of the ICGLR with regards to developing and applying the Analytical Fingerprint (AFP) forensic technique to track the origin of 3T minerals from the region, the German Federal Institute for Geosciences and Natural Resources (BGR) might be one possible entity capable of performing this function.

Engage with Dubai-based Banks

Dubai-based banks should be made aware of the reputational risks of accepting deposits from ASM gold traders bringing in shipments from the ICGLR Region. The findings of this study – in particular the vast divergence between legal ICGLR exports and UAE imports – are strong prima facie evidence of widespread smuggling from the ICGLR region. Dubai-based banks should be made aware of these findings.

In light of the strong possibility that ASM gold from the ICGLR region arriving in Dubai may have been smuggled out of its country of origin, Dubai-based banks should be advised of the wisdom of increased due diligence procedures when considering deposits from ASM gold traders coming from the ICGLR region. To avoid any suggestion that they are facilitating gold smuggling, Dubai-based banks should demand ICGLR Certificates or valid government export licenses before accepting deposits the originate from ASM gold sales.

6.3 Possible Interventions – Political Aspects

In assessing the political will in Dubai for some kind of intervention aimed at combatting the smuggling of gold in from the ICGLR region, it was felt important to assess the contribution of this gold to the overall gold market in Dubai. Figure 12 below shows the percentage contribution of various countries or geographical groupings to Dubai's total gold imports for the three year period from 2009-2011²⁴. Table 4 (Appendix) shows the actual volumes of gold involved. Contributions from India (27.5%) and Europe (9%, primarily Switzerland) are in line with expectations. The outside contribution of Syria (11%) to Dubai's gold imports comes as something of a surprise²⁵. As shown in the chart

²⁴ The outside role of Syria in Dubai's gold imports comes as something of a shock, particularly given that Syria is not known to have any significant gold deposits. These imports – 211 tonnes, 202 of them in 2011 – are almost certainly related to Syria's ongoing civil war, possibly a sell-off by Syrian authorities of government gold reserves in a bid to beat Western and Arab country sanctions. The Assad family is said to have well established residences in Dubai. The OECD may want to examine whether such trade falls under the definition of 'conflict gold' under the Due Diligence Guidance.

²⁵ The data are drawn from Comtrade.

Contraband Gold in the Great Lakes Region

May 2015

and table, the ICGLR region (including Sudan) contributes about 8.3% of Dubai's imports, about the same as the rest of Sub-Saharan Africa, and slightly more than North Africa.

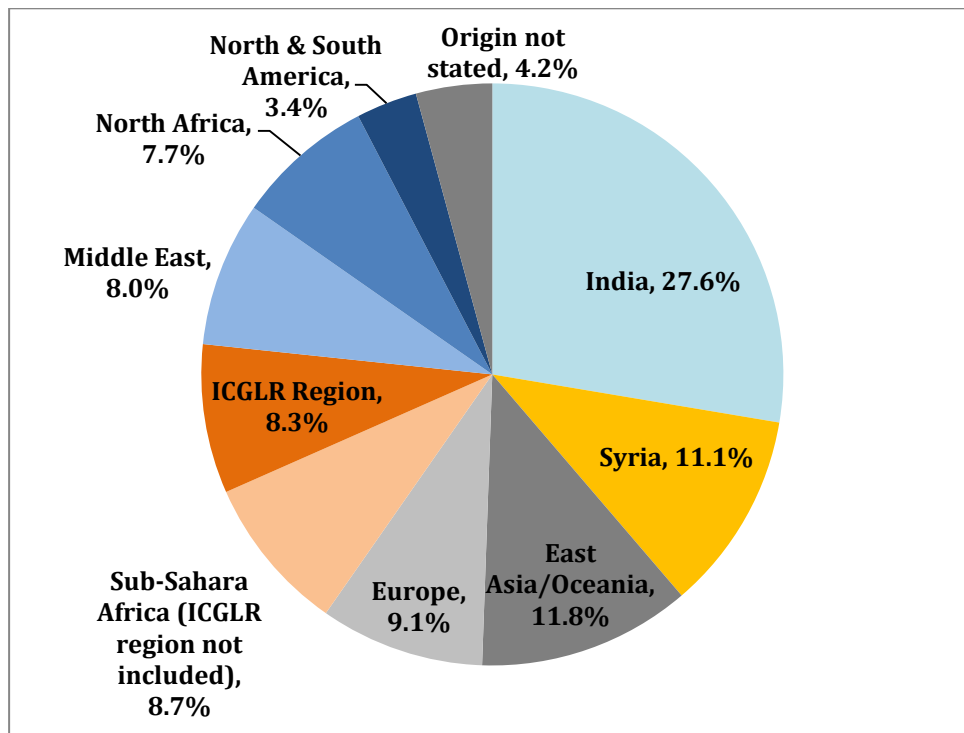


Figure 12: United Arab Emirates (Dubai) gold imports by region (averaged over 2009-2011); average gold tonnage was 635 tonnes p.a.

In some ways, this could be seen as a kind of 'goldilocks' position. The ICGLR region's contribution is large enough to make structural interventions significant and worthwhile. On the other hand the ICGLR region's share is not so large that its loss would destroy the Dubai gold buying industry, should more stringent import procedures cause the ICGLR market to shift elsewhere²⁶.

That said, the author found very little willingness on the part of Dubai officials to even discuss the issue of smuggled gold from the ICGLR region, much less arrive at the technical details of possible interventions. An OECD researcher who arrived shortly after this author reportedly found greater willingness on the part of Dubai officialdom to at least initiate discussions. However, while Dubai officials were reportedly willing to discuss training workshops and sensitisation sessions for government officials, the OECD researcher was still not permitted to interview actual customs officers or view import procedures. Until attitudes change and Dubai becomes more open to genuine engagement, effective action seems unlikely.

²⁶ It should be noted, though, that gold imports into UAE/Dubai refer not only to mine gold (ASM or industrial) but also to scrap and other sources (in the case of Syria). As far as the contribution of primary mine gold is concerned, the ICGLR region is probably a more significant supplier for the UAE/Dubai.

7 CONCLUSIONS

This study examined legal and illegal gold flows within the ICGLR Region and from the ICGLR Region to the United Arab Emirates, the principal import destination for ASM gold from the ICGLR Region. Government export data (or USGS data where government data was unavailable) was used to estimate ASM gold production, and to make observations regarding the likely size of illegal cross-border flows between countries within the ICGLR Region. Import data from Comtrade (the UN's online database of international trade statistics) was analyzed to track the size of gold flows from countries of the ICGLR region to the United Arab Emirates (mostly Dubai). By comparing government export data with UAE import data, the study arrived at an estimate of the size of the illegal flows from the region to Dubai.

The study found that illegal ASM gold flows from the region dwarfed cross-border flows within the region: in the three years from 2009-2011, conservative estimates of illegal gold exports from the ICGLR region averaged some 17.5 tonnes per year. This represents a collective royalty loss to ICGLR governments of at least \$15 million per year on average (and more than \$20 million in 2011). By comparison, the largest of the cross-border flows analyzed, from Tanzania to Kenya, amounted in 2010 to only some 1.3 tonnes per year, while smuggling from Tanzania to Dubai that year topped 13.5 tonnes. As this example shows, out-region smuggling is typically 10 times larger than cross-border gold flows within the region.

Implementation of the OECD Due Diligence Guidance has become policy for most of the countries of the ICLGR Region. In terms of better controlling the ASM gold sector, the relative size of the out-region smuggling versus cross-border traffic should focus the attention and guide the thinking of governments in the ICGLR region. Gold smuggling is clearly no longer just a DRC problem, but an issue for all the governments of the region. As by far the larger problem, out-region smuggling should receive greater priority, attention and resources. That said, measures to address the one should also prove effective for the other.

The study proposed two concrete in-region measures to combat illegal gold traffic:

- the harmonization of ASM gold royalty rates across the ICGLR;
- an enforcement effort in the principal (international) airports of the region to interdict the air transport of illegal gold shipments.

Bringing these contraband gold flows back under government control (and thus implementing OECD Due Diligence) would provide numerous benefits. Traceable mineral flows would help eliminate the role of ASM gold in conflict financing, bring much needed revenue to government coffers, and help establish the ASM sector in what should be its proper role as a significant contributor to economic activity, employment and government revenue.

Outside the ICGLR Region, the study analyzed Due Diligence implementation and controls on the gold chain as implemented in Dubai in the United Arab Emirates (UAE), the destination for the lion's share of artisanal gold from the ICGLR. The study found few effective controls for reliably determining the provenance of gold shipments hand-carried into the UAE.

Contraband Gold in the Great Lakes Region

May 2015

The study suggested three technical proposals to increase the implementation of due diligence on ASM gold in the UAE and Dubai. These include a modification to Dubai's customs procedures, such that those bringing hand-carried gold into Dubai would have to provide a valid ICGLR Certificate, certificate of origin or export license from the country of origin as proof that the gold was legally exported from its country of origin. The second technical measure suggested is for gold refineries located in the UAE to test all purchases of 'jewellery melted bars' to verify that these bars truly were sourced from melted jewellery, and not ASM production. Finally, the study suggested that Dubai-based banks accepting deposits from gold traders that originate in sales of ASM gold from the ICGLR region should demand an ICGLR Certificate, certificate of origin or other valid export license as proof that the gold was legally exported from its country of origin.

The author found relatively little interest on the part of Dubai authorities for deeper engagement on questions on due diligence for ASM gold imports from the ICGLR region. The study therefor suggests that in the short term engagement with private sector entities in Dubai including banks and refineries may prove to be the more fruitful approach.

APPENDIX A: THE DATA SET

Table 1: (ASM) Gold Exports of selected ICGLR Countries [kg]

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
DRC *	n/a	0	12	613	95	122	70	220	178	213	335	279
Tanzania *	1,268	4,310	4,404	1,020	5,164	4,755	4,468	5,228	2,201	2,716	1,688	1,143
Burundi	483	2,855	3,229	3,905	4,313	2,423	2,005	898	293	1,052	2,147	2,823
Uganda	5,000	3,371	5,461	4,232	6,936	3,140	2,046	313	n/a	207	284	165
Rwanda	10	3	5	10	15	17	40	30	3	3	3	n/a
Kenya	1,477	1,543	567	616	432	3,023	340	1,055	2,355	1,636	1,600	n/a
Congo Brazzaville *	100	175	160	120	100	100	100	100	150	150	150	n/a
Total	7,070	12,257	13,838	10,516	17,055	13,579	9,234	7,926	5,197	5,978	6,207	4,410
Price (\$/g)	10.1	11.82	13.2	14.43	19.71	22.64	28.31	31.55	39.63	50.41	53.6	44.81

* Tanzania = estimated ASM gold exports (without industrial gold) as explained in the text. DRC = official ASM gold exports (without industrial gold); Congo Brazzaville = estimated production by USGS (mineral yearbook data). All other countries correspond to official (government) gold export figures or exports quoted in the respective USGS mineral yearbook. See Annex B for further details.

Table 2: UN Comtrade Gold Imports into the United Arab Emirates (Dubai) [kg]

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
DRC	n/a	20	n/a	n/a	n/a	n/a	n/a	n/a	158	334
Tanzania	1,172	2,663	3,620	5,335	6,385	4,586	2,158	13,521	15,900	20,740
Burundi	10	n/a	n/a	85	998	609	463	n/a	405	392
Uganda	182	482	1,621	2,078	257	811	293	1,633	3,366	2,652
Rwanda	n/a	17	n/a	9	n/a	n/a	n/a	n/a	n/a	n/a
Kenya	1,184	857	938	1,953	798	2,867	1,619	1,776	3,388	2,389
Congo Brazzaville	49	102	163	552	287	299	1,253	1,077	1,533	2,009
Total	2,597	4,141	6,342	10,012	8,725	9,172	5,786	18,007	24,750	28,516
Price (\$/g)	10.1	11.82	13.2	14.43	19.71	22.64	28.31	31.55	39.63	50.41

Table 3: Royalty Rates/Export Taxes for ASM Gold from selected ICGLR Nations [%]

Tax Rate	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
DRC	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2	2
Tanzania	3	3	3	3	3	3	3	4	4	4	4
Burundi	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2 *
Uganda	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	3	3	3
Rwanda	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	6
Kenya	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5

* Only from late December onwards, applied since 2014

**Table 4: Three-year (2009-2011) Average Gold Imports to UAE by Region
(recalculated from individual countries as per UN Comtrade data)**

Region	Kg	%
India	175,599	27.6%
Syria	70,364	11.1%
East Asia/Oceania	75183	11.8%
Europe	58,020	9.1%
Sub Sahara Africa (ICGLR not included)	55,202	8.7%
ICGLR Region	52,622	8.3%
Middle East	51,088	8.0%
North Africa	48,727	7.7%
South America	21,545	3.4%
Origin not stated	26,864	4.2%
Total	635,215	100.0%

APPENDIX B: NOTES ON THE DATA

Import Data

The import data comes from the UN Comtrade database (www.comtrade.un.org), for HS code 7108 (Gold, unwrought, semi-manufactured, powder form) for United Arab Emirates (UAE) as reporter and listed countries as partners. Database accessed in February-March, 2015.

Export Data

DRC:

2004-2012: Data from published DRC government documents (*Statistiques Minières 2003 a 2012, RDC Ministere des Mines*)

2013: Data from unpublished DRC government documents (CEEC)

Data only tracks official ASM gold exports. It does not track ASM production estimates (smuggled through neighboring countries) or official industrial gold exports.

Tanzania:

2005-2010: Data from Tanzania Minerals Audit Agency (TMAA) Annual Report 2011, registered ASM production.

2013: Data from TMAA Annual Report 2013, registered ASM production

2002-2004, 2011-2012: Data from Tanzanian government unavailable for 2002-2004; 2011-2012 data is given the TMAA Annual reports of 2012 and 2013, but is considered as non-representative.

Estimates for these years were therefore calculated using USGS mineral yearbook reports for Tanzania, which lists total Tanzania gold exports, as well as the gold exports of Tanzania's major mines. The difference between total exports and exports from major mines is taken as the production from artisanal and small scale mines.

As a check, the results of this technique were compared with the TMAA numbers for the years in which the two overlap (2005-2010). The TMAA numbers and the calculated figures inferred from USGS data show reasonable levels of agreement (from -7% to 22%) for 2006-2010, four of the five years for which the figures overlap²⁷. The results are sufficiently close for the calculated USGS figures to serve as stand-ins for official government numbers for 2002-2004 and 2011-2012 (with the uncertainty arising for 2011 and 2012 possibly due to a change in TMAA's methodology to calculate/estimate ASM production).

²⁷ The exception is 2004, when the TMAA figures show 1,020 kg and the USGS methodology shows 4,950kg, a difference of some 386%.

Tanzania's role as a transit country for ASM gold from the DRC has been documented. However, as the above data estimates Tanzanian ASM gold exports based on production levels, presented figures are less likely to include gold of DRC origin. This does not affect the major conclusions of the report.

Burundi:

Official export data from internal Burundian government statistics used throughout. The data in the USGS Minerals Yearbook tracks Government of Burundi data from 2003-2007, after which the USGS substituted its estimate of the actual productive capacity of Burundi, in place of government export figures due to Burundi's documented role as a transit country for ASM gold from the DRC. The official export data presented here hence contain a significant fraction of ASM gold of DRC origin.

Uganda:

2002-2009, 2011-2013: Data from unpublished Uganda Ministry of Mines and Energy export registers. No data available for 2010.

Uganda's role as a transit country for ASM gold from the DRC has been documented. The official data presented here hence do contain a significant fraction of ASM gold of DRC origin.

Rwanda:

2008-2010: Data from Rwanda customs (Rwanda Revenue Authority)

2002-2007; 2011-2013: Data from USGS Minerals Yearbook

Kenya:

Figures represent gold exports as given in USGS Minerals Yearbook

Republic of Congo (Congo Brazzaville):

Data corresponds to estimated production as cited in the USGS Minerals Yearbooks as export figures were not available.

Notes on the export figures: Are Exports as reported from the Region Actually Produced in the Region?

As a first step, the study attempted to determine the overall ASM gold production for the ICGLR region excluding former Sudan. Two values were generated: the first and primary value is based on government export figures. The second value is based on UAE (Dubai) import figures, as this corresponds to the destination of the great majority of the region's ASM gold. Reconciling the two values, as done

in this report, allows an evaluation of the region’s declared vs. non-declared ASM gold production.

Both values are based on the assumption that gold exported from the region is likely produced in the region: that is, while ASM gold can and does cross national borders within the region, it does not divert into other gold producing regions on its way to its final destination. Likewise, gold from other producing regions is unlikely to pass through ICGLR countries on its way to market.

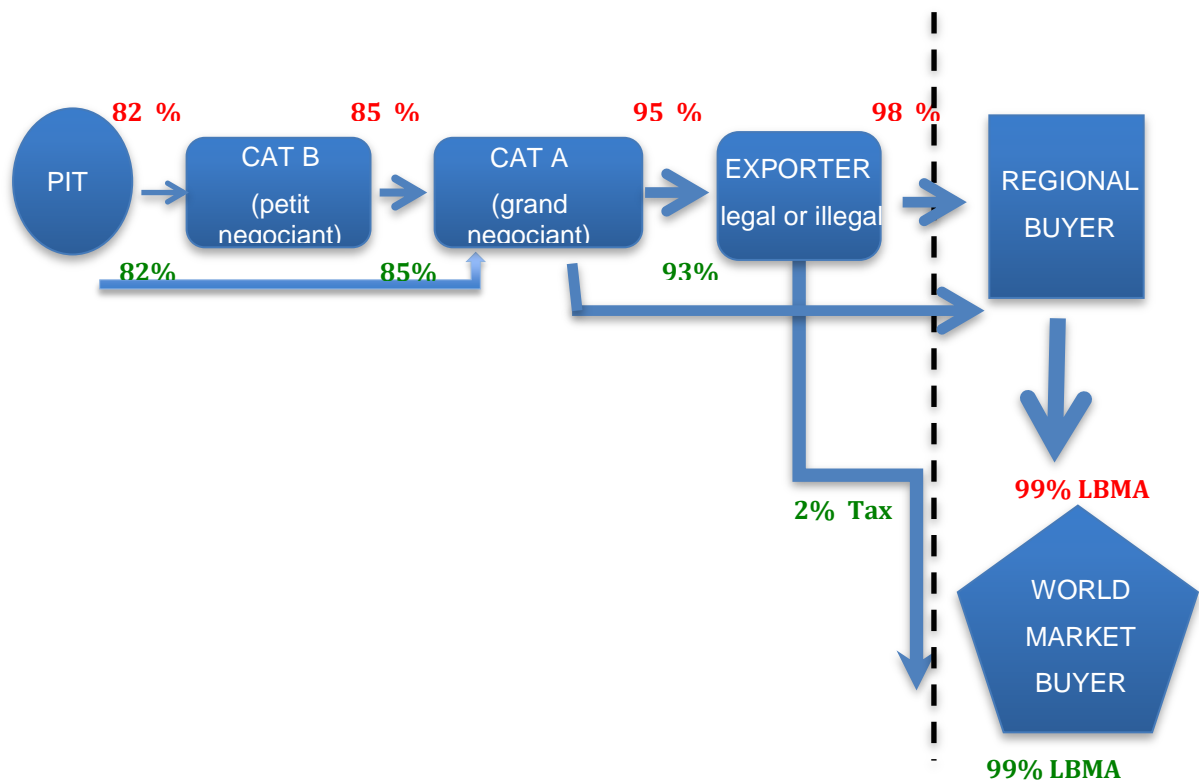


Figure 13: Typical value distribution along Great Lakes Region ASM gold chain. The percentage figures (red or green) represent the prices paid for ASM gold at each step in the chain, expressed as a percentage of the LBMA world gold price. Figures in red represent the illegal ASM chain (smuggling), figures in green represent prices in the legal ASM chain.

This assumption requires some justification. Gold is by its very nature one of the most easily transportable, readily smuggled commodities on earth. Dense (19.3 g/cm³) and malleable – a 1 kg bar of 80% pure gold doré would, if given the length and width of a standard credit card, have a thickness of only 1.3 cm. Such a bar would be only slightly larger than a Samsung smart phone battery, and yet be worth upwards of \$40,000 – the equivalent of a year and half’s median salary in Canada, or close to a century worth’s of per capita GDP for the DRC.

That said, there are limits to the illegal transportation of gold, limits imposed both by the mode of transport and by the economics of the artisanal gold chain.

In particular, there are limits to the number of steps and thus the number of middle men that can economically subsist in the chain between miner and end user.

Table 5: Margins and Volumes on a Typical ASM Gold Chain

Increasing Volumes per Transaction → → →						
Actor	Miner/ PDG	Category B Petit Negociant	Category A Grand Negociant	Country Exporter	Regional Buyer	World Market Buyer
Location	Mine Site	Supply Village	Local Service Centre	Country Hub	Regional Hub	Inter- national Entrepot
Example Locations	Akwe	Ega Barriere	Bunia	Butembo	Entebbe	Dubai
Volume (g)	0.167	0.1-5	50-500	1,000-5,000	1,000- 10,000	5,000- 25,000
Frequency	(per day)	(per purchase)	(per purchase)	(per purchase)	(per purchase)	(per purchase)
Purchase Price (as % of LBMA gold value)						
Range	n/a	75-88%	84-90%	89-94%	97-98%	99-100%
Typical	n/a	82%	85%	93%	98%	100%
← ← ← Increasing Margins per Transaction						

In a typical artisanal chain (shown above in Figure 13), the miner sells his gold to a pit side petit negociant (called Category B negociant in the DRC) who aggregates small quantities and sells them on to a mid-level travelling trader or grand negociant (called Category A in the DRC) who aggregates enough gold to finance the journey between digging centre and regional export centre. The travelling trader then sells his gold to a country level exporter.

In a legal artisanal chain, the country exporter then directs the gold on to an overseas buyer (jeweller, refiner, etc.), paying the requisite royalties and export license costs. Total steps in a legal chain are thus four.

The illegal chain contains an extra middle man. By-passing his country's royalties and export fees, the country level exporter smuggles the gold out to a regional level exporter. This regional exporter, in turn, sells to gold on to an overseas buyer. From miner to end-user, an illegal chain has 5 steps.

There are of course regional variations on this basic pattern, but none that increase the number of steps in the chain: in South Kivu field buyers skip the country exporter and take their gold straight to regional exporters in Bujumbura (miner to end-user, 4 steps); further south in Fizi, travelling traders take their

gold across the lake to Kigoma, Tanzania, where another group of travelling traders purchase the gold and transport it up to Dar es Salaam (miner to end user, 5 steps).

For reasons of economics, it would seem the maximum number of steps in a legal chain is four (miner-field trader-grand negociant-exporter), while the number in an illegal chain is five (miner-field trader-grand negociant-country trader-regional exporter). In no case is there ever an increase in the number of middle men; the margins simply don't allow it.

It is for this reason that gold shipped by a country level or regional level exporter travels straight to its final destination; the margins don't allow another stop over. That is, gold departing Tanzania or Burundi is not acquired, aggregated and re-exported by a dealer in Ghana or South Africa and then re-exported to Dubai. Likewise, gold from West Africa does not swing by Entebbe on its way to Sharjah or Beirut.

As a result of this constraint, we can assume that gold exported from an ICGLR producer country is on a one-step journey to its final destination; the export and corresponding import statistics that record this journey can thus be taken as reliable. The sole exception would be a case where an intermediary was able to offer an above world market price for gold, thus creating room in the margin for an extra step. The possibility that this may be happening in former Sudan is addressed in Appendix C.

What then, of traders higher up in the chain? Could they be responsible for outflows or inflows of gold from or to the region? Here we come to the question of transport modes, and aggregate quantities of gold. From miner to pit level trader the most of transport is foot and the quantities involved range from 0.1 to 5 g. Pit level traders (petit negociants) aggregate from 5 to 50 g, and sell it to grand negociants (Category A), normally located in a small service centre not far from the mine site. Again the mode of transport is surface – either foot or motorcycle. Neither miners nor pit side traders have the time, capital or transport options to take gold from the producing country, much less the region.

Travelling traders aggregate up to half a kilo of gold. They are highly mobile, and aggressively seek out the best price. However, their transportation options are limited. Travelling by road, such traders can remain anonymous and are largely immune to customs controls and border inspections. However, security is an issue with surface travel. Carrying 500 g of gold you need to stay vigilant at all times. What's more, the time you spend travelling in search of a better price is time you aren't out buying and selling. Balancing price versus time and safety, travelling traders seem to have arrived at a rule of thumb of three days travel as a maximum.

Travelling by surface, three days from South Kivu is enough to reach Kigoma or even Dar es Salaam, Bujumbura or Mwanza. From North Kivu three days will take you to Entebbe or Nairobi. From Orientale three days could get you to Bangui or Entebbe or Juba. That is, grand negociants travelling by surface can (and do) engage in illegal cross border traffic within the region, but don't take gold out of the region.

A travelling trader could extend his range travelling by air, were it not for the challenge of economics. On the economic side, a half kilo of gold is worth some \$20,000, but the trader's margin on that gold may be only 5%, plus or minus 2. Each additional percent a can earn is worth \$200. Realistically, the most a Grand Negotiant might gain from a voyage – by air or land – is thus \$400; the costs of the voyage are thus rather tightly limited, and there are few flights within or out of the region that cost less than \$400.

Country level exporters (or illegal exporters) typically aggregate 5 kg or more and so can afford a much larger range of travel options. Every 1% gain on 5 kg yields some \$2000, more than enough to defray the costs of air travel. Certainly, within the ICGLR region illegal exporters make extensive use of airplanes. Much of the illegally exported gold from Bunia and Butembo is believed to travel to Entebbe by air, for example.

The challenge for such traders taking gold out of the region is with customs and airport security. The larger airports with flights out of the region come equipped with metal detectors and X-ray machines. As these are very good at picking out gold, those who wish to circumvent these controls have to know the appropriate procedures for bribing security officials. Rarely if ever is this done on the spot. Indeed, gold seizures at airports in the region typically occur when a country level trader tries to bypass the regional exporter and DIY his way through an airport without the appropriate contacts.

Successfully navigating airport security involves establishing contact with the appropriate officials beforehand and negotiating an appropriate fee for overlooking the shipment. Along with access to finance, this is one of the two primary services regional level exporters provide.

Perhaps the one exception to this general pattern again involves former Sudan (i.e., Sudan and South Sudan). Country level illegal exporters already make use of smaller airplanes to move gold from their centre to a regional hub. It would not be inconceivable for exporter of this type (particularly those located in northern DRC) to make use of small airplanes to reach Sudan. An evaluation of whether and to what extent this may have affected the export data is given in Appendix C.

UAE Import Figures – Do they come where they say they come from?

The second major data set in use for this study comes from UAE import statistics, as reported by the UAE to the UN trade statistics agency Comtrade (www.comtrade.un.org). Comtrade takes the data from the reporting nation (in this case the UAE) as it is supplied. No verifications are performed.

For imports to the UAE there are two pertinent issues. First, though the UAE is ostensibly a single country, and is recorded as such in the Comtrade database, in point of fact each of the seven emirates that make up the UAE operates a completely separate customs service. Dubai is the largest gold importer of the seven, but both Abu Dhabi and Sharjah have smaller but still significant gold sectors. The data presented by Comtrade represents an amalgam of the seven.

Unfortunately, there is no guarantee that there are common standards among the emirates regarding such issues as valuation, HS codes, or proofs of provenance.

The second question regarding this data is in fact the proofs of provenances – or lack thereof – that may be required for gold imported to the UAE (Dubai). This is a particular concern for gold hand carries, shipments in which the gold is brought as carry-on luggage, and presented to Dubai customs at the airport.

The exact procedures followed by Dubai customs at this point remain somewhat murky. Several official bodies, among them the UN Group of Experts on the DRC and the OECD secretariat (or its consultants), as well as international civil society (e.g., Partnership Africa Canada) have requested to observe and or verify this process in recent years. All such requests have been denied. Interviews with gold dealers suggest that the gold courier fills in a form declaring the volume, value and origin of the gold. Accounts vary as to whether Dubai customs require additional documentary evidence of origin. All of the gold dealers interviewed stated that Dubai did not require export permits, Certificates of Origin, ICGLR certificates, or other proof of royalty payment in the country of origin. One dealer said that customs did ask to see an airline boarding pass, as proof that the courier had at least flown in from the country he was claiming as the origin for his gold.

Dubai customs did not respond to requests for information on this topic.

The indications are that origin is not tightly scrutinized as the gold arrives in Dubai. In terms of evaluating the quality of the data, this can be interpreted two different ways. On the one hand, there is nothing that would prevent a gold courier from misstating the origin of the gold he carries. On the other hand, as there is neither penalty nor preference assigned to any particular origin, a courier has nothing to gain by such a misstatement. That said, there are some countries that traders appear to avoid naming as country of origin, including the DRC, Burundi and Uganda, which are thus under-represented in the import statistics of the UAE.

These exceptions aside, however, and in the absence of any indication to the contrary, the UAE's import data will be assumed to be accurate. However, this assumption may well have to be revisited, if and when more information on Dubai import procedures comes to light.

APPENDIX C: FORMER SUDAN DATA

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Export Data	2,500	2,500	3,789	3,061	3,262	5,232	12,992	24,188	21,508	44,133
Imports to UAE	2,773	3,650	3,599	5,298	6,029	4,704	22,124	42,122	45,855	
Tax Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%

Data Sources

Export Data: Sudan Central Bank

Import Data: UN Comtrade as per other import data shown in this study. Country is listed as Former Sudan/Sudan

Discussion

The data set for Sudan is shown in the above table. Sudan is clearly a significant artisanal gold producer. However, the inclusion of this data with the remainder of the data set was felt to be problematical.

Firstly, there are questions about the veracity of the data. The numbers do come from official reports published by Sudan's Central Bank. However, the author did not have the opportunity to visit Sudan and has no way to evaluate whether the government numbers correspond to any reality on the ground. The sheer size of the reported exports is enough to engender at least some pause; whether one looks at export data or UAE import data, the Sudan figures are greater than all other ICGLR nations combined as far as ASM production is concerned. An analysis that included Sudan would end up being about Sudan, simply as a result of the size of the numbers.

Secondly, the pattern of Sudan exports is exactly the opposite that of the rest of the ICGLR. Where the official export figures for ASM gold of ICLGR nations decline, Sudan grows, despite a hefty 4% royalty.

This pattern might indicate that Sudan has found the magic formula: high taxes and ever growing export figures. However, according to media stories and IMF reports, Sudan's secret is somewhat less than magical mix of currency debasement and inflation.

The central bank in Sudan is in charge of both printing the national currency and purchasing gold. Exchange controls are in place and there is reportedly both an official and a parallel black market exchange rate. The central bank's practice has been to purchase gold at the higher parallel rate, using money it prints itself. (The gold can then be used to purchase hard currency or stored.)

For the sellers, as long as the parallel rate is equal to the export royalty, they are exporting essentially tax free. If the spread is even higher, sellers gain a bonus. The trade-off here is inflation. The central bank is essentially debasing its own currency, which will lead to the currency devaluing (and likely an ever greater difference between official and parallel exchange rates). The IMF has warned the Central Bank about the procedure, and recommended it cease.

Whatever the outcome of that discussion, it seems clear that the (ASM) gold industry in Sudan is large enough and complicated enough to merit its own, separate study. The figures are included here merely as a reference, and to complete the ICGLR data set.