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**ARTISANAL
GOLD COUNCIL**



Annual Report 2013

UNIDO Project no.GF/RAF/12/001

Reduce the Use and the Harmful Impact of Mercury on Human Health and the Environment in the Artisanal Gold Mining Communities in Burkina Faso, Mali and Senegal

Grantee Name: Artisanal Gold Council

Name of the project: Reduce the Use and the Harmful Impact of Mercury on Human Health and the Environment in the Artisanal Gold Mining Communities in Burkina Faso, Mali and Senegal

Contract Number: 16002639

Country/Region: Burkina Faso, Mali, Senegal

Project Duration: 3 years

Official Start Date: Oct 12, 2012

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Disclaimer:

The contents of this report are part of an ongoing investigation and process by the Artisanal Gold Council and should be considered preliminary. Further interpretation of data, observations, and analysis are to be carried out in 2014.

Introduction

This is the 2013 Annual Report submitted to UNIDO by the Artisanal Gold Council for the Project no. GF/RAF/12/001: *Reduce the Use and the Harmful Impact of Mercury on Human Health and the Environment in the Artisanal Gold Mining Communities in Burkina Faso, Mali and Senegal*. The contract was signed on October 12, 2012 and activities commenced officially that same month.

Throughout 2013 various trips have been carried out by AGC staff to both Senegal and Burkina Faso for the purposes of site selection and information gathering, government engagement and National Action Plan (NAP) development, and mercury-free processing plant and training centre installation. Activities from the first half of 2013 are detailed in the *2012-2013 Half-year Report* to UNIDO.

In the fall of 2013, 4 AGC staff from Canada travelled to Burkina Faso in 3 phases. Anthony Persaud traveled in early October for 3 weeks, followed by Kevin Telmer and Ricardo Rossin in early November, and Myrienne Richard in mid-November. Various meetings were held throughout this period with government and other important stakeholders in the ASGM sector. During this time, the AGC forged a strong relationship with the *Syndicat des Orpailleurs* (Miners Association), successfully selected a pilot training centre site, and installed a mercury-free processing system.

Earlier cost-sharing plans between the AGC's USDOS and UNIDO/GEF projects had planned for the selection of two pilot sites in conjunction with ARM. However, as a result of the project and project partner timelines becoming misaligned and delays in pilot site selection activities, the AGC made the decision to move ahead unilaterally with one site selection and intervention. This site fully supports AGC's obligations with UNIDO. The second site selection and better practices intervention will come at a later date pending the activities and decisions of ARM.

It is important to note that due to political unrest, activities in Mali were cancelled for 2013 and will be re-evaluated in 2014 with all project partners.

Project Context and Objectives

The overall objective of this project is to reduce the impacts of mercury on human health and the environment of artisanal gold mining communities in Burkina Faso, Mali and Senegal by promoting sound chemical management and by strengthening local and national capacity to effectively reduce

mercury use, emissions and exposure. The operational goals for this project are to complete a scoping of ASGM in the three countries; to create national plans to promote adequate management of mercury in ASGM in compliance with the Minamata Convention; and to carry out mercury reduction/elimination pilot projects (at least one per country).

Figure 1: General Time Schedule

Output	2012	2013					2014			2015
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1.1 Scope of ASGM in the 3 countries evaluated and better understood				**	**	**	**			
1.2 National strategy action plans to promote sound management of mercury in ASGM developed in all three countries										
2.2 Mercury reduction/elimination pilot projects are implemented in Burkina Faso and Senegal, and expanded in Mali with local and national stakeholders. Overall mercury use, emissions and exposure are reduced in pilot sites										

** Amended to reflect current work schedule (see corresponding sections below)

Overview of results achieved for this reporting period

1. First pilot sites selected in both Burkina Faso and Senegal
2. Letter of Agreement signed between Bantaco GIE and AGC/ARM staff
3. Mercury-free processing system and training centre designed, imported and installed in Burkina Faso
4. Mercury-free processing system and training centre design completed and equipment ordered and shipped for Senegal
5. Improved baseline information in Burkina Faso and Senegal
6. Hiring of local staff in Senegal
7. First regional Steering Committee (COPIL) meeting attended in May 2013, Dakar, Senegal.
8. Two National Steering Committee meetings held in Senegal
9. First National Steering Committee meetings held in Burkina Faso
10. Distribution and where feasible demonstrations using "A Practical Guide: Reducing Mercury use in Artisanal and Small-Scale Gold Mining" to various communities in Burkina Faso and Senegal.
11. Collaboration with the *Syndicat des Orpailleurs*

12. Elaboration and creation of a retort guide to improve understanding of the use of retorts and to assist mercury reduction in this project and other projects in the region
13. Health system evaluation and capacity building for ASGM in Burkina and Senegal
14. Development of a health education program components and delivery mechanism in Burkina
15. Attendance and representation of project at ICMGP, Scotland.
16. Attendance and representation of project at UNEP Global Forum in Lima
17. Contribution to materials on inventory development at the UNEP Andean Forum.

Activity 1- Identify/Map active ASGM sites, conduct risks assessments, and present data to government agencies in each country

Milestone 1.1 Collect information for mapping and baseline estimation

Senegal and Burkina Faso

Detailed mapping and baseline information was provided in the *2012-2013 Half-year Report* for UNIDO and in the *Annex A- ASGM activities in Burkina Faso and Senegal: Preliminary Inventory Report*. This information is being refined and updated, and will be formally reported in detail in 2014. Recruitment of local personnel in Kedougou, Senegal to assist in the development of updated work was finalized in December 2013. Training and further field work towards this Milestone will be carried out in early 2014 in Senegal. In Burkina Faso more than 45 sites have been visited and detailed baseline information has previously been reported, however increased local capacity and updated information is still needed. Detailed demographic questionnaires are currently being carried out in the pilot site region of Burkina Faso, and plans in 2014 include training an increased number of local staff to carry out wider national inventory work.

- The current estimate for Senegal ASGM gold production is **8.7 tonnes per year** using a conservative minimum for number of miners. The estimate for Senegal mercury use is **11.3 tonnes per year** using a mercury to gold ratio of 1.36: 1.
- The current estimate for Burkina Faso ASGM gold production is **27 tonnes per year** using a conservative minimum. The estimate for Burkina Faso mercury use is **35 tonnes per year** using a mercury to gold ratio of 1.3: 1.

Milestone 1.2 Compile and assess national data/ Milestone 1.3 Prepare and Present country reports

These results will be presented to the corresponding country national steering committees (composed of ministry representatives and civil society) over the course of the next year, with the understanding

that these results are not definitive and are meant to help the understanding of the sector and in turn guide future plans and actions.

Activity 2- Develop National Strategy Action Plans, including priority site for intervention, for each country

Milestone 2.1 Present Mercury reduction policy recommendations and form national and local stakeholder groups in Burkina Faso and Senegal; assign roles and responsibilities

Many Ministry officials have been met over the course of the reporting period, and have been individually informed of the project goals, expected impacts and importance. The AGC has had the opportunity to spend time with the Ministry of Environment representatives on several occasions to discuss the steps allowing the elaboration of a National Action Plan (NAP) for ASGM in Senegal and Burkina Faso.

In Senegal, two national steering committee (COFIL) meetings have been carried out. This committee is lead by the Ministry of Environment and composed of several other ministry representatives, including the Ministry of Mines, as well as civil society representatives.

In Burkina Faso, the first National Steering Committee was delayed due to misunderstandings by the Ministry of Environment regarding the FFEM/ARM aspect of the project. It is understood that this has now been resolved and the first National Steering Committee meeting was held in late December 2013.

Additionally, a Regional Meeting was held in May 2013 in Dakar with participants of all 3 countries, as well as representants from UNIDO, ARM and AGC.

NAP development continues and ultimately relies on the initiative of the national governments. The AGC, through its experiences helping develop NAPs in other countries (including under the SAICM project in Côte D'Ivoire) and with its in depth knowledge and participation in the development of the Minamata Convention is bringing knowledge and experience and draft materials to the discussions. The general time schedule (Figure 1) has been amended to accommodate delays, and the activities under this output will continue into 2014. It is expected that the mercury free training centre will help galvanize the development of NAPs by bringing field knowledge and an understanding of possibilities and costs into the discussions.

Milestone 2.2 Develop and finalize National Strategic Action plans

Political Context and National Action Plan

The development and finalization of National Strategic Action Plans (NAPs) can only be completed by national governments and requires coordination and communication between the various Ministries and other stakeholders. This project and the COPIL meetings have provided important forums for this dialogue, and AGC meetings with various Ministry of Environment and Ministry of Mines representatives have provided strategic advice towards accomplishing this Milestone. Activities in 2014 will be aimed towards formalizing NAP recommendations for both Senegal and Burkina Faso and towards assisting the government in moving forward with this initiative. The AGC, through its experiences helping develop NAPs in other countries (including under the SAICM project in Côte D'Ivoire) and with its in depth knowledge and participation in the development of the Minamata Convention is bringing knowledge and experience and draft materials to the discussions. As mentioned above it is expected that the mercury free training centre will help galvanize the development of NAPs by bringing field knowledge and an understanding of possibilities and costs into the discussions.

Specifically, in Burkina Faso, it is important to detail meetings that were carried out in the fall of 2013:

Ministry of Mines

Meetings were held on two occasions with Patrice Dabiré of the Ministry of Mines in order to update him on the status of the project and to obtain clarification on the legal situation with regards to various potential pilot sites. During these meetings Mr. Dabiré made clear his support for this project and his desire to see mercury-free processing proliferate in Burkina Faso. He mentioned that if the pilot site is successful, the Min. of Mines will work with some of the major ASGM permit holders to ensure increased uptake of such technologies.

Ministry of Environment

Meetings were held on two occasions with Madame Ouatta of the Ministry of Environment in order to update her on the status of the project and to provide clarification on various questions and concerns that were raised by her superiors. There was much confusion regarding the overall budget of the GEF/UNIDO/FFEM budget and timeframe. During these meetings Madame Ouatta made it clear that the Ministry of Environment was in favour of the AGC moving ahead with a site selection and technical intervention as quickly as possible and to accommodate aspects of the project involving ARM and site selection as best as possible when that component of the project is underway. This is largely because they perceive the approach of the AGC to be more directly and quickly addressing the requirements of the Minamata Convention and development of National Action Plans.

Activity 3- Implement mercury reduction/elimination projects (at least one per country)

Milestone 3.1 Design site appropriate interventions at each pilot site, including equipment need description

Pilot sites have now been selected in both Senegal and Burkina Faso, and intervention plans including equipment needs have been developed.

In Senegal the site of Bantaco has been agreed as the main pilot site intervention and a letter of agreement has been signed between a GIE in Bantaco and AGC/ARM staff. Additionally, the AGC has designed a technical intervention plan and chemical-free processing system that has been ordered and is currently being shipped to Senegal. Local staff recruitment in December of 2013 will now allow for the AGC to more consistently engage with Bantaco and prepare the community for the installation of the system in early 2014.

In Burkina Faso, the first technical intervention took place in November 2013, with the installation of a chemical-free processing system and training centre. The details of this intervention are provided below.

Pilot Site: Zopal, Village of Memer, Burkina Faso

Coordinates UTM: 0510557, 1235239

GPS: 11.17417,-2.90331

The pilot site selected by the AGC for the installation of a mercury-free processing system and training centre is called Zopal, located 300 kilometres away from Ouagadougou in the Province of Ioba. Zopal lies within the Rural Commune of Koper which is composed of more than 21 rural villages and is an active ASGM area. The site is under the responsibility of Ouédraogo Issa, and lies within the concession area of the Exploration Company ACC Resources. Mr. Issa has written authorization to mine a 1km² area within the ACC resources concession for a period of three years, which began in July 2013.

Like most other ASGM sites in Burkina Faso, all of the miners sell the gold that they produce to the site buyer – in this case Mr. Issa. This gold then moves to Bobo or Ouagadougou where it is sold to an export company (SOMIKA, SAVOIR, or BURKINA OR MÉTAL), however there is no obligation for Mr. Issa to sell the gold to one of these export companies.

There are challenges with the site, including long-term cooperation with ACC Resources, water access, and local village participation. However, the site has been chosen as a suitable pilot because of the following important factors:

- Formal recognition and authorization to mine by various stakeholders including the exploration company (ACC Resources), local authorities (Villagers, Mayor) and national authorities (Ministry of Mines).
- Known mercury use on the site and so a good target for mercury reduction (100% of the gold currently produced is done so with mercury).
- Proven gold recovery on the site over the last 10 years and a likely future life expectancy of an additional 10 years.

- Relative to the ASGM sector, a well structured organization and governance on the site. Mr. Issa maintains ownership of all of the mine shafts on site, meaning that 50% of all ore that is mined flows through a centralized system. This is favourable for a pilot site in that it ensures high uptake of the mercury-free technology, creating an example for other miners that are currently processing their ore independently using mercury. This also means that the overall population and organization of the site will remain more constant into the future.
- Cooperation from the *Syndicat des Orpailleurs* (Miners Association), to which Mr. Issa belongs
- Several thousand people on site
- Preliminary estimates of 1 kilogram/week production levels
- Similarity to many other sites in Burkina Faso making replication straightforward
- No use of Cyanide on the site – this is important as it is illegal in Burkina Faso and does not fit the vision for the ASGM sector that the AGC promotes nor that of the Burkinabe Government

Mercury-Free System and Training Centre

The key outputs of this reporting period has been the installation of a mercury-free processing system and training centre and the development of health training materials and an elaboration of the health network and strategy to engage with it. After choosing appropriate equipment and importing it into Burkina The process for the installation of the mercury free system and training centre can be considered a three phase approach, the first of which was carried out in the month of November, 2013 on the mining site of Zopal.

The Installation Phase

- Three days in Ouagadougou for preparation including purchasing of tools and supplies needed for the local context; logistics planning; meetings and negotiations with gas and chemical suppliers for a viable and affordable supply of materials for gold beneficiation processes on site; final negotiations with site owner and the Miners Association
- Loading and transportation of the equipment from Ouagadougou to the site (2 round trips/48 hours) involving the work of AGC staff and 1 truck/crane operator and 3 helpers
- Arrival at site and site inspection including introductions with local police and authorities
- Based on the local context and the results of the site inspection a strategic plan of action was developed to carry out the installation over a three week period
- Local staff were hired (7 general labourers; 2 welders; 1 mason; 1 truck driver/crane operator

Local Staff List	Pay
Samuel - labour	60,000 CFA (\$120 USD) – 12 days
Compore - labour	60,000 CFA (\$120 USD) – 12 days
Amidou - labour	60,000 CFA (\$120 USD) – 12 days
Ousman - labour	60,000 CFA (\$120 USD) – 12 days
Nahabo - labour	60,000 CFA (\$120 USD) – 12 days
Aziz - labour	60,000 CFA (\$120 USD) – 12 days
Issa - labour	60,000 CFA (\$120 USD) – 12 days
Mason (1)	60,000 CFA (\$120 USD) – contract flat rate

	(including building of foundations for crusher, mill and shaking table over 1 week)
Welder 1	30,000 CFA (\$60 USD) – 3 days
Welder 2	30,000 CFA (\$60 USD) – 3 days
Truck/Crane Service	400,000 CFA (\$800 USD) – contract flat rate which includes fuel (2 round trips from Ouagadougou to site, loading and unloading, repositioning of equipment over 2 weeks)

- In the local city of Dano remaining supplies were gathered such as cement; bricks; rebar; lumber; wire; electrical breakers (fuses); fuel and engine oil for generator.
- Commissioning of electrical power generator including assembly of components and testing was carried out.
- Blueprints were designed for shaking table steel frame; concrete foundations for crusher, mill and shaking table; and, electrical wiring of all equipment including installation of circuit breakers and switches
- Digging of tailings pond that will be lined for the collection of the mercury-free plant tailings (2 days)
- Workers were trained to sieve and produce high quality clean sand and aggregate to be used in the building of the concrete foundations – clean sand and aggregate is essential to make strong concrete
- All machinery was assembled, repositioned, adjusted to required specifications and tested (2 weeks)
- Primary and scavenger sluices were designed



Positioning the shaking table

Installing the crusher



Positioning the mill



Mill assembly

The above activities took place over a period of three full weeks and can be considered the installation phase of the project. Prior to AGC staff departing from the site detailed inventories of all equipment and supplies were carried out and everything was secured in a central depot. All machinery units were properly decommissioned (belts removed; electrical motors covered etc.). Negotiations with site owner were carried out to ensure that the necessary staff would be available during the next phase and to construct shelters for machinery and training facilities – tin roofs over all equipment and a teaching space.

The next two phases of the project will include the training and operational phases, scheduled beginning January 2014.

Additional activities during this period

Coordination with the Burkina Faso Miners Association

The *Syndicat des Orpailleurs* or Miners Association of Burkina Faso has been in existence for the last six years and is now composed of more than 8000 members from the 13 districts, representing more than 340 formal and informal sites. The last General Assembly in 2012 was attended by more than 10,000 miners, forcing the government to start paying attention to the Miners Association and to start recognizing artisanal gold mining as a profession. Additionally, the Association has registered a legal body in the Province of Bám that is the first of its kind, able to act as an organization able to obtain mining permits in the interests of informal miners. The entry fee for a miner into the Association is 5000 CFA, with an annual fee of 2000 CFA.

The Association has taken many steps to improve the reputation of artisanal gold mining by contributing to environmental and social development initiatives. Between the periods of 2008-2011 they planted more than 5000 trees in the Kongoussi area. They have also organized blood drives, and helped with the construction of schools and roads in the Sobara area. The overall vision of the Association is to work with sites to show that artisanal mining can contribute to community development.

The Miners Association can be considered an important organization for the progressive development of ASGM Burkina Faso, and the AGC has made arrangements to work more closely with them in the future. We expect the Association will play a significant role in replication and sustainability of this project.

Activities scheduled for the next period

- Additional site visits in Senegal to strengthen the inventory.
- Potential to select one more site in Senegal and Burkina Faso, in collaboration with ARM, for technical field intervention.
- Formal training sessions on the revision of the NAP with selected members of the national COPIL in Burkina and Senegal.
- Recruitment and training of local expert staff in Burkina Faso.
- Continuation of health activities as detailed in the Health Report, such as health professional training and the development of a continuing education curriculum.
- Equipment imported and installed in Bantaco.
- Training and Operational Phases in Bantaco (as per the point below).
- **Training Phase in Burkina Faso pilot site including:**
 - Creation of operational procedures and maintenance schedules in the form of training manuals
 - The training of local staff to operate and maintain all equipment including technical, health and safety and administrative training
 - Site visits and workshops by the Miners Association members, government and other stakeholders
 - Creation of governance and sustainability plan
 - Detailed baseline studies and mercury inventory work

Operational Phase in Burkina Faso pilot site including:

- Process optimization for best gold concentration and recovery
- Formalization plans including transparent and legal supply chain development
- Continued inventory work to measure income and mercury use differences