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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

Health Component- Progress Report on Senegal

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

Contractor Name: Myrianne P.Richard
Title: Health Education Expert
Project Number: 100337
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Country/Region: Burkina Faso, Mali, Senegal

Contact Information: Mrs. Myrianne Richard, mrichard@artisanalgold.org; Dr. Kevin Telmer, ktelmer@artisanalgold.org
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Submitted by: Mrs. Myrianne Richard
Submitted to: Mr. Ludovic Bernaudat, Project Manager, Water Management Unit
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Introduction

From November 14th to November 28th, 2013, the first phase of the UNIDO/GEF-FFEM health education component was carried out in Burkina Faso. The goal of this trip was to scope out the organisational structure of the health system and the non-governmental organisations involved in health planning and service delivery, in order to develop a health network and a delivery mechanism for health programming specific to the context of ASGM in Burkina. This was done in the capital and in the province of Ioba, where AGC is installing the first mercury-free system and training centre on an ASGM site called Zopal/Koper as part of its project with USDOS, and in collaboration with the UNIDO/GEF-FFEM- *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.* In addition, a mini-survey was administered on the Zopal site to find out the gaps in knowledge and beliefs about mercury and dust health issues generated by ASGM activities. Finally, individual training and awareness-raising activities were performed with the health authorities and the process of validating the training material was started.

Meetings and visits were held in Ouagadougou and in Dano, as well as the mining community of Koper. The meetings in Ouagadougou were held with the Ministry of Health divisions of community health (including HIV/AIDS department), health service delivery and health statistics. In Dano, meetings were held with the health centre authorities as well as staff of the health post in Memer (site of the AGC mercury-free system).

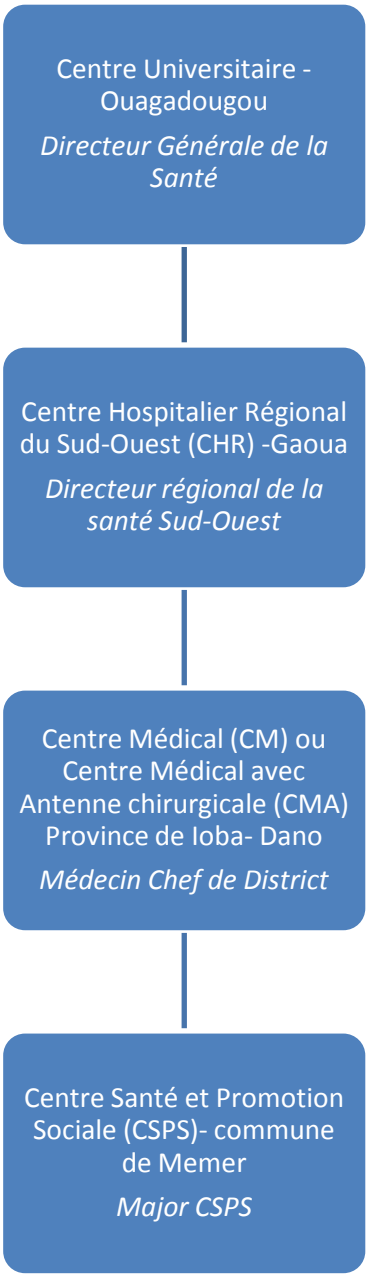
From November 28th to Dec 2nd, meetings were held in Dakar, Senegal, in order to pursue approval for the second phase of the UNIDO/GEF-FFEM health education component. Meetings were held with the Kedougou district health authorities and attempted with the national health authorities. In addition, the process of validating the training material was also started. Finally, a meeting was held with World Vision Senegal, in order to explore the potential for collaboration in the Kedougou district.

Health system organisation in the context of the ASGM sector in Burkina

Overview of the Health System

The health system in Burkina is divided according to the country's geopolitical divisions, where the national health authorities sit in the capital city, Ouagadougou, and the remaining health structures are divided into medical Regions and further sub-divided into medical Provinces. The *Centre Universitaire* houses all specialized medical services and is headed by the *Directeur Général de la Santé.* There is one *Centre Hospitalier Régional* per region and it houses common medical services such as general surgery, dentistry and radiology, headed by the *Directeur Régional de la Santé.* Finally, each province has a *Centre Médical* (or Centre *Médical à Antenne Chirurgicale*), providing basic medical services and procedures such as malaria and TB treatments, C-Section deliveries, wound irrigation and sometimes minor surgeries. The *Médecin Chef de District* heads this centre. At the bottom of the structure of the system, and present in most *communes*, is the *Centre de Santé et Promotion Sociale* (CSPS), headed by a nurse (Major), where vaccination, consultation, and deliveries are conducted.

Figure 1- Organisational structure of health services for the province of Ioba and ASGM site of Zopal/Koper



Capacity in the province of Ioba

Medical professionals

The health system capacity was assessed in order to best evaluate the possibility of integrating an ASGM public health strategy with the existing local system. We looked in particular at the province of Ioba. The population covered by the *Centre Médical* in this area is over 300,000. The province employs approximately 4 medical doctors, 60 nurses, 40 midwives, 1 epidemiologist and 1 nurse specialized in dentistry. These employees are dispersed across 1 *Centre Médic*al and 37 CSPS. The health professionals have a very high patient caseload and are unfortunately unlikely to be able to undertake additional tasks, such as a ASGM public health strategy. At most, their capacity may be increased to allow limited individual counselling on best prevention strategies and identification of symptoms in order to facilitate data gathering and surveillance of ASGM-related illnesses. Therefore, without additional medical staff, the NGO communities will need to be capacitated to provide health training in the ASGM communities themselves.

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Surveillance system

The Burkinabe disease surveillance system is divided in 2 levels:

1) *Infectious diseases sentinel system:* The CSPS are expected to produce a weekly report highlighting any elevated cases of infectious diseases. The district epidemiologist will immediately bring up the information to the national authorities if the illness rates meet a certain threshold (epidemic).
2) *Regular activities and cases monitoring*: The CSPS are required to produce a monthly report of activities and a case-count of all conditions treated. This formed the basis of the data collection used to determine level of services in the region.

A review of the monthly reporting system made it clear that it would be relatively easy to integrate a tracking mechanism for ASGM-related conditions. For example silicosis, neurological disorders and musculoskeletal disorders, could be tracked provided that health professionals have the ability to diagnose such conditions. A promising initial meeting with the *Direction Générale des Études & Statisques Sectorielles* was held in Ouagadougou, and it appears that the DGESS would be very interested in trying to improve their data collection to include ASGM diseases.

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Reported health risks

In general, the health professionals interviewed reported the following concerns (below) relative to ASGM – this is supported in part by a 2012 official epidemiological report[1] obtained by the epidemiologist in Dano and by a report commissioned by the HIV/AIDS division[3]. When available, rate of illnesses as per the reports are in brackets and the national average is included for comparison[2] where possible. However, note that for the CSPS, the prevalence rates were calculated using the total population covered as per the health authority's data, which we know is not taking into account the large number of migrants working on mine sites across the region. This may bias the data towards an overestimation of the prevalence rates in the region.

- Increase in population compared to allocated resources for health services. For example, the province reports 3389 people living in Koper village. However, AGC estimates that in the Zopal mining site only (a neighbourhood of the village), at least 5000 people reside.
- High rate of respiratory illnesses such as pneumonia and bronchitis (1562 total cases; 753 cases children under 5; 609 adult cases[1]- a maximum estimate would put it at 24% prevalence rate in children under 5 as compared with 11% prevalence rate for children under 5 nationally[2])
- High rates of work-related traumas and road accidents (137 work-related traumas cases-1.5% prevalence rate , and 106 accident cases- 1%[1])
- High rates of intestinal diseases (780 cases or 8.3%[1])
- High rates of sexually transmitted diseases (6.5 % ASGM communities across the country[3], 1.2% national population[3])
- High rates of alcohol and drug consumption
- Numerous myths and beliefs linked to preventing mercury and dust related illnesses. For example, drinking tonic water or condensed milk is believed to rid the body of mercury.

Non-governmental organisations operating in the region

REVS+ is based out of Bobo and has been in operation in several regions of Burkina Faso for over 20 years. They have a permanent branch in the province of Ioba. They specialize in direct community-based prevention and care activities, mainly on the topic of HIV/AIDS, but also nutrition and childhood education. They have operated on several ASGM sites across Burkina.

[1] Secrétariat Général du Ministère de la Santé, *Rapport de Janvier à Décembre 2012*, CSPS de Memer
[2] Institut National de la Statistique et de la Démographie, *Enquête Démographique et de Santé et à Indicateurs Multiples (EDSBF-MICS IV)*, 2010
[3] Conseil National de Lutte contre le Sida et les IST, *Cadre stratégique de lutte contre le VIH, le SIDA et les infections sexuellement transmissibles (CSLS) 2011-2015*

BURCASO is a regrouping of associations specializing in HIV/AIDS prevention and comprehensive care for communities affected by the epidemic. They have been in operation for 12 years and have branches in all 13 regions of Burkina Faso. Their activities focus on capacity-building training for community associations on a variety of topics, and their operations include ASGM communities.

Health Context Specific to the site of Zopal (Koper commune, Memer village)

This is a legal medium-sized artisanal gold mining site located just a few kilometres outside of Memer village, and about 25 km from the capital of the province, Dano. The site is on the concession of a junior exploration company, ACC, which has granted a 3 years exploitation authorisation to the owner of the Zopal site, Mr. Issa OUÉDRAOGO. Mr. Ouédraogo employs approximately 3000 people on his site but this is preliminary because the demographics are still being collected. Immediately next to the site, there is a temporary village used by both the Zopal miners, as well as another neighbouring mining site. The village has a population of approximately 5000 people. It is a very organized site, with clear hierarchy and ownership, as well as official security provided by the gendarmerie (but paid for by the concession owner).

This new community has few services and poor infrastructure and it is likely viewed by residents as temporary. There is no garbage disposal system, latrines or drinking water readily available for the inhabitants. Drinking water is brought in and costs substantially more than outside the community. The miners and inhabitants access the health services of the neighbouring community, Memer. There is a school, but it is seldom used by the children living in the new community adjacent to the mines.

Occupational health and safety has been considered in the design of the Zopal site. The owner demands a least a 5m separation between shafts, requires the shaft managers to use timber to re-inforce shafts and prevent collapses, and also insists that rope cranks for hauling materials up and down the shafts are made with a braking system. Although these elements are substantial improvements over many other sites in Burkina, they could be further improved with additional safety measures, such as the systematic closing and filling-in of inactive mine shafts, surface enclosures around the shafts, mills, and generators, and the use of individual protective devices, for example effective dust masks. One of the most important improvements yet to be made is that, as in most sites in Burkina, mercury is used systematically in the extraction of gold, and the amalgam is burned in open air, either at the site *comptoir*, or within the village (often in residences) and so acute exposures occur that are entirely preventable. Finally, a huge amount of dust is generated by the mills within the site and the village, and no dust control or dust exposure limitation measures are in place on the site.

A survey was performed on the site and adjacent new village in order to rapidly assess the demographics, health knowledge and beliefs related to mercury and dust in the community. A small initial sample of 43 people was interviewed, including 35 men and 8 women. The average time for a person to have been working on this site was 4 months. Only 51% of the men surveyed were aware of the danger of mercury, and none of the women knew about it. On the other hand, 100% of the people

interviewed were aware of the danger of dust, and 40% attempted to protect themselves using mainly crude masks or scarves – sometimes airlines eye covers. Age distribution and education level are shown in Figure 2 and 3 below.

Figure 2- Age distribution Zopal site and village

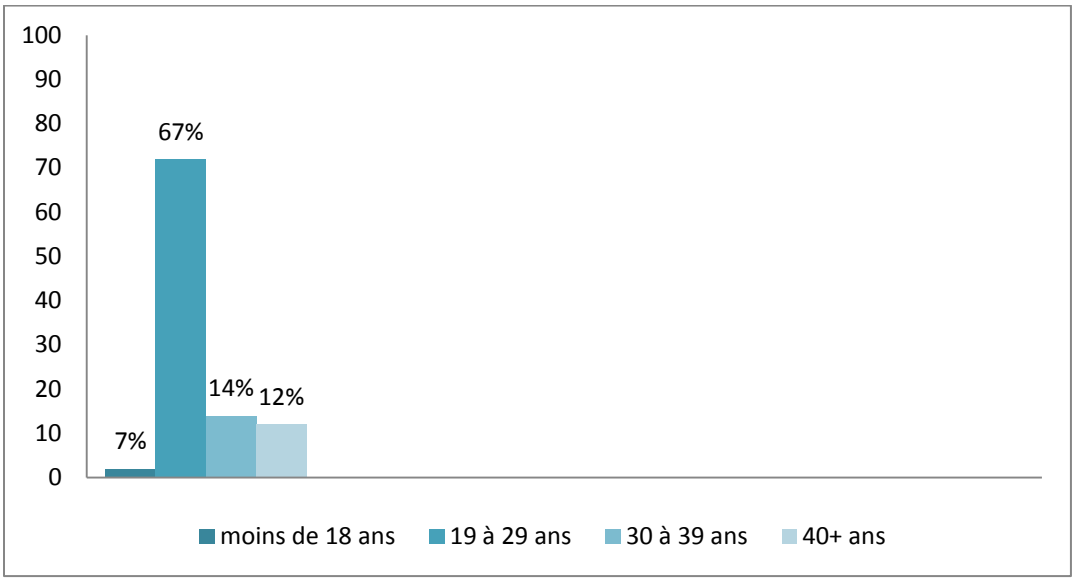
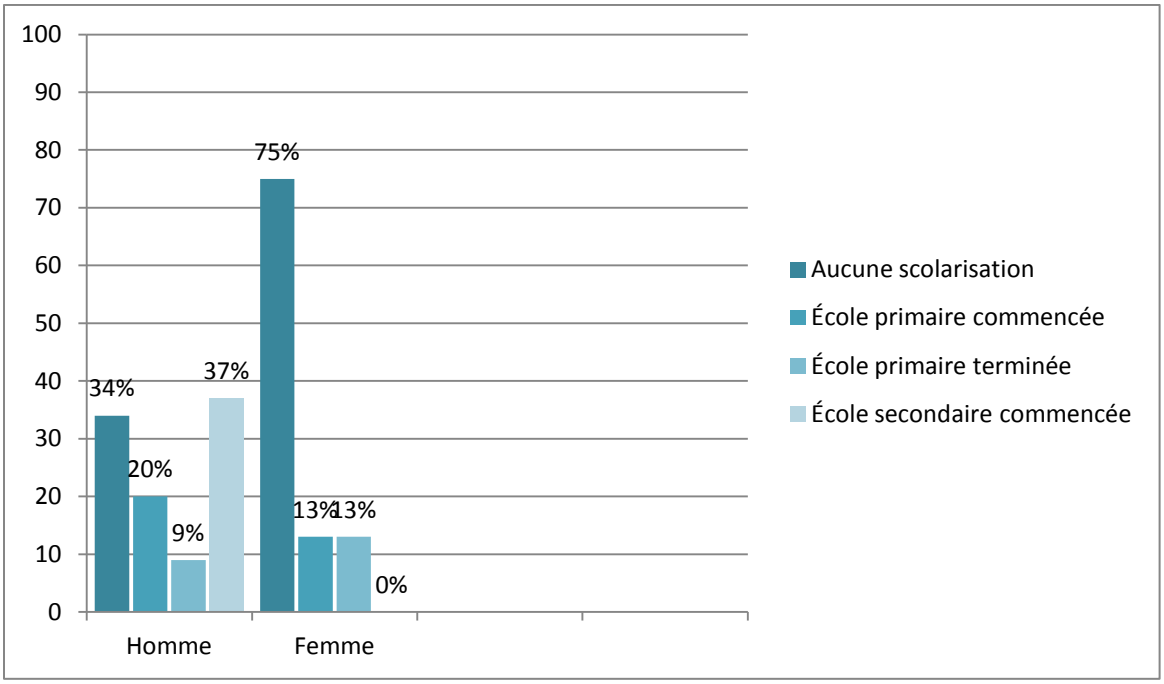


Figure 3: Education level – Women are generally significantly less educated than men



Development of the health education program components and delivery mechanism in Burkina

Several meeting were held in Ouagadougou and Dano with the health authorities in order to raise awareness of the various ASGM-related health issues in Burkina. Individual training on such issues was conducted with several levels of government where the health training material was shown, explained and distributed in order to obtain feedback and validation. The training material was very well received, and we expect to finalize the validation and feedback by the end of January 2014, and proceed to the full training program in the region immediately after that. A draft version of the material has been included in the Annex.

In general, Burkina's health sector is well aware of ASGM and its effects on health. The various officials that we met were very interested in collaborating with AGC and wanted to be involved in the project. In addition, the director of the *Ecole Nationale de Santé Publique,* responsible for training health professionals such as nurses, midwives and all nursing specialties, is very interested in developing a **new ASGM continuing education module** for their professors next year and hopes that we can participate in doing so.

Finally, the structure of the health surveillance system in Burkina is conducive to the incorporation of small data collection changes that will allow the tracking of relevant ASGM health data. This would allow obtaining a clearer picture of the health status of ASGM communities and could represent the beginning of a model to be adopted by other countries.

Update on Senegal

Meetings were held in Senegal with the Kedougou *Médecin de District,* a well-known occupational health doctor (consultant for the University and ministry), the official in charge of health surveillance data in the region and *World Vision Senegal*. Once again, individual training and awareness-raising was conducted, and the training material was presented and distributed for feedback and validation.

In contrast with Burkina, it remains difficult to obtain a meeting with the national health authorities in Senegal, let alone proceed to awareness-raising or to obtain collaboration for the project. The issue seems to be at the upper levels, since the Kedougou authorities are sincerely interested in the project and in receiving training, but are reluctant to embark into it without the due approval of their superiors. This seems to be a common problem encountered by many NGOs in Senegal. The best approach, and one that has been adopted by other organisations)is to forge ahead locally and then present the results to the national authorities and obtain their involvement. Unfortunately, this bureaucratic hurdle is delaying the health component of the project slightly, and perhaps more importantly, is preventing AGC to access the university sector and present the idea of curriculum development. Nonetheless, AGC is working on these relationships and is confident to be able to move forward in the near future.

Work Plan and Potential Next Steps in Burkina and Senegal

Activities	Year 1 (2013)				Year 2 (2014)			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Establishment of a health network								
Awareness-raising of health authorities								
Initial Health Context Assessment in the pilot sites regions								
Sustainable Health training curriculum is developed for the local health district professionals								
Health professionals training								
NGO training**								
University, Technical Lycees and Professional Associations curriculum development for new graduates that will work in the sector**								
Occupational Health and Safety training for miners is developed and conducted in parallel with technical								

training**								
Preliminary recommendations on the development of an enhanced surveillance system in ASGM for common or suspected conditions linked to the sector**								

** Depending on additional funding

ANNEX 1- List of Contacts

Burkina

Entretien individuel:

SABADOGO, Larba : épidémiologiste CMA Dano
SOW, Hyacinte : MCD Dano
OUEDRA, Job : Medecin-chef adjoint Dano
DRABO, Salimata : DG Santé Région Sud-Ouest (Gaoua)
ZANGO, Joseph : Environnement et Prévention à Dano
OUEDRAOGO, Valentine, Mme : Ecole National Santé Siège National, Directrice études et stage
SAWADOGO, Cyril : Infirmier Centre transfusion sanguine, Secrétaire administratif du Syndicat des orpailleurs
VALEA, Dieudonné Dr. : Médecin de santé publique, Directeur du suivi, de l'évaluation et de la capitalisation, Ministère de la santé
TRAORE, Irène, Coordonnatrice de l`Unité Centrale de Planification et Suivi-Évaluation (Secrétariat Permanent du Conseil de Lutte contre le SIDA et les IST)

Sénégal

Demande d'audience envoyées- Aucune rencontre possible durant cette visite :

Dr DIACK : Directeur général de la santé / Ministère de la santé et la Prévention
Dr TALLA : Directeur de la lutte contre la maladie/ Ministère de la santé et la Prévention
Dr Moussa MBAYE : Secrétaire Général du Ministère de la santé et la Prévention
Pr AMADOU DIOUF : Directeur du Centre Antipoison /Ministère de la santé et la Prévention
Président du comité national codex du Sénégal
Dr Aminata TOURÉ : Centre Anti-poison/Ministère de la santé et la Prévention

Entretien téléphonique ou Skype :

Dr Doudou SENE : Médecin spécialiste en santé publique, Chef du service national de l'information sanitaire et sociale, Ministère de la sante et de l'action sociale

Rencontrés :

Dr Abibou NDIAYE : Médecin spécialiste en Santé Publique et Médecin chef de la région médicale de Kédougou
Esther Lehmann-Sow, Directrice Nationale
Sagane Thiaw, Directeur des opérations, World Vision Sénégal
Dr Abdéramane KONE : Expert-conseil et formateur en santé sécurité environnement du travail (consultant)