

ORGANIZATION OF AFRICAN GEOLOGICAL SURVEYS (OAGS)

THE ROLE OF GEOLOGICAL SURVEYS IN SUPPORTING ARTISANAL & SMALL SCALE MINING

PRESENTED BY

GHANA & NIGERIA

HOTEL VERDE INTERNATIONAL AIRPORT

CAPE TOWN, SOUTH AFRICA

9TH FEBRUARY, 2015

OUTLINE



ASM Background: Importance & Characteristics

Constraints on ASM: Policies & Strategies for Development

Impacts of ASM Activities

ASM: Some Mining & Processing Methods

Role of Geological Surveys & other Relevant Bodies in ASM Activities to Overcome Constraints

Recommendation & Conclusion

BACKGROUND: IMPORTANCE OF ASM

Globally

- Artisanal & Small Scale Mining (ASM):
 - plays a significant role in the mining sub-sector
 - provides livelihood for millions;
 - has the potential to contribute to poverty reduction and stimulates economic growth.

In Ghana

- ASM contributed 34% (**1.4 million ounces**) of total gold production in 2013.
- Total diamonds produced in Ghana since 2008 came from ASMs.
- An estimated 1 million people are directly involved in ASM in Ghana.

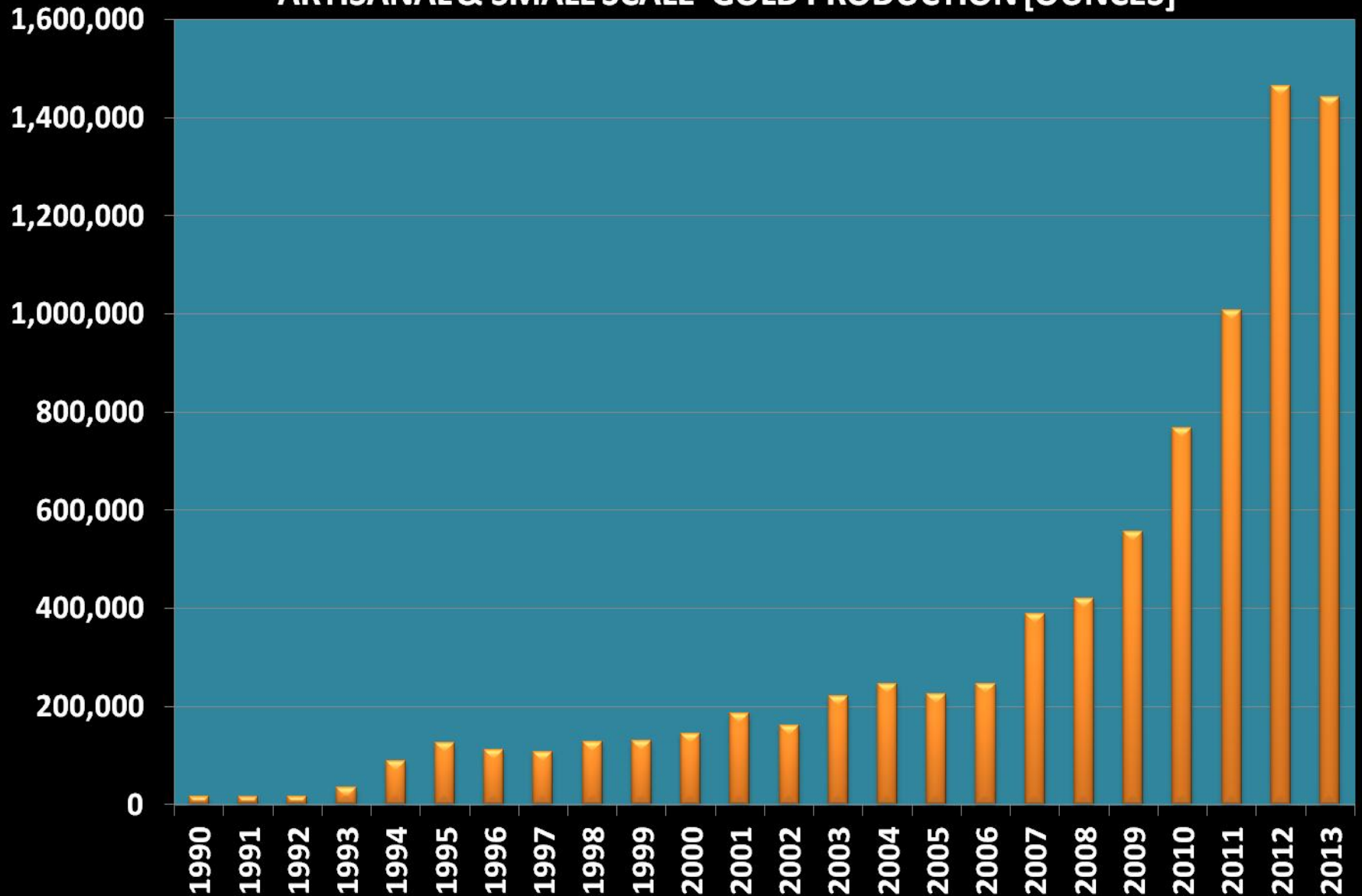
In Nigeria

- Over 95% of mining activities are in artisanal and another 95% of these are illegal (this includes minerals such as Tourmaline, Galena, Limestone, Feldspar, Tantalite, Coal, etc).

BACKGROUND: ASM GOLD PRODUCTION [1990-2013]

(COURTESY- MINERALS COMMISSION)

ARTISANAL & SMALL SCALE GOLD PRODUCTION [OUNCES]





BACKGROUND: CHARACTERISTICS OF ASM

- Intense use of manpower;
- Low level of technology;
- Significant source of employment;
- Low production costs;
- Stimulates local economies;
- Potential precursors to the development of large scale mines;
- Involvement of many stakeholders;
- Significant environmental degradation: pollution, unreclaimed pits etc;
- Poor safety and health conditions.

Level of Development

- Unemployed rural populace could hardly bear the capital or technological cost required to develop proper mining cultures;
- Low level of development leads to a large number of unemployed that engage in illegal mining as a means of livelihood.

Taxation

- Numerous uncoordinated taxes and levies are paid to Government, MDAs, Chiefs & Landowners.

Geological Information

- Little or no geological information on occurrences of most minerals.

Securing Finance

- Very difficult to secure finance from financial institutions and banks for lack of collateral.
- Interest and inflation rates are usually too high.

Growing Antagonism Between ASMs and Large-Scale Companies

- Clashes between ASMs and Large Companies undermine international investor confidence.

Lack of Technology & Machinery

- Lack of modern technology, inadequate technological expertise.

Credit and Loan Schemes

- Government to provide incentives to the financial institutions like tax cuts;
- ASMs should be offered a range of measures to facilitate access to credit;

Building Appropriate Legal & Regulatory Frameworks

- People should have easy access to mining titles and legal channels for production;
- Legal & regulatory frameworks must be transparent, consistent & non-discriminatory.

Offering Incentives For Regularization

- These include tax allowances for new enterprises, exemptions from import duties on mining and related equipment or supplies, access to finance, assistance with exports, etc;
- Penalties and punishment dealing with illegal mining activities and environmental pollution laws should be reviewed;
- Organizing ASMs into cooperatives.

Creating Necessary Services

- Government to organize services that meet miners' real needs;
- Rendering extension services to ASMs.

Ensuring Coherent Administration

- Government to ensure that all relevant Ministries coordinate their policies and to decentralize as many activities as possible to ensure that they mesh with other strategies for promoting rural development.

Integrating ASM into Formal Mining Sector

- Specific mining engineering & management courses to be developed by local universities & institutions in collaboration with foreign institutions to produce competent technical staff & management;
- ASM cooperatives to be technically proficient in adequate managerial skills;
- Proper documentation of all ASM activities is vital.

Major Social Impacts

- Over population
- Family disorganization
- Increase in school drop outs
- Prostitution
- Drug abuse
- High cost of living
- Infrastructural breakdown

Environmental Impacts

- Indiscriminate use of hazardous chemicals like mercury and cyanide
- Direct dumping of tailings and effluents into streams & rivers
- Threats from improperly constructed tailings dams
- River siltation
- Erosion damage & deforestation
- Noise & vibration

HEALTH RISKS ASSOCIATED WITH ASM

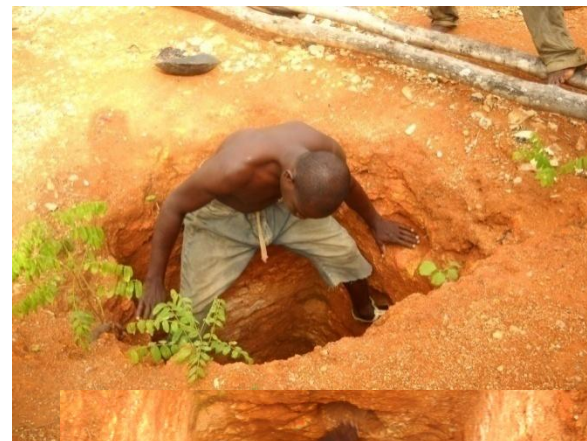
Health Risks Include:

- Respiratory tract diseases, especially pulmonary tuberculosis & silicosis;
- Rheumatism from standing in cold water without proper boots & clothing;
- Mine sites are breeding grounds for water borne diseases such as malaria, schistomiasis, onchocerciasis and bilharzia;
- Women miners that come in contact with chemicals can develop health risk to foetuses and breast-feeding infants;
- Skin rashes, headaches, vomiting, diarrhea;
- Drug/alcohol abuse, prostitution leading to spread of AIDS, rape, theft, sexual abuse;
- Eye diseases, especially acute conjunctivitis.



ASM: SOME MINING & PROCESSING METHODS

MINING HARDROCK THROUGH PITTING



LOCAL UNDERGROUND SHAFT (GHETTO)



PRIMARY CRUSHING OF MINED ORE BY MANUAL MEANS



PROCESSING OF ORE USING MANUAL STAMP MILL



PROCESSING OF ELLUVIAL MATERIAL USING CHANG-FA



SLUICING AND PANNING OF GOLD ORE



POLLUTION OF RIVERS THROUGH DREDGING BY ILLEGAL MINERS



DESTRUCTION OF LAND BY ILLEGAL MINERS



INADEQUATE SAFETY MEASURES



MD7034 Sgt. Peter Toddy
slashed in the skull, both
hands and face, when trying
to prevent thieves from
stealing electric cables at the
back of the Obuasi Mine
Stores on 26/08/05.

ROLE OF GEOLOGICAL SURVEYS & RELEVANT BODIES IN ASM ACTIVITIES TO OVERCOME CONSTRAINTS (1)

Role of Geological Surveys & Minerals Commissions

- Intensify education to rural populace through TV and Radio Talk Shows and Seminars;
- Support the ASMs through research & development of appropriate technologies and training;
- Organize training courses in basic geology, surveying, mineral processing, environmental management and reclamation;
- Hold regular Geology Clinic as a platform for educating the ASMs on different mineral resources;
- Encourage ASMs to use tested and efficient equipment like “Sika Bukya” in processing the ore;
- Encourage ASMs to go into agro geology by providing information on locations of suitable local mineral-based deposits and organic ingredients.

ROLE OF GEOLOGICAL SURVEYS & RELEVANT BODIES IN ASM ACTIVITIES TO OVERCOME CONSTRAINTS (2)

Small & Medium Scale Industries Equity Investment Scheme (SMSIEIS)

- Mining sector should be given priority for equity investment by banks with the introduction of SMSIEIS (Nigeria);
- ASM Credit Guarantee Scheme (Nigeria);
- Solid Minerals Development Funds (Nigeria);
- Mineral Development Fund (Ghana).

Minerals Commission, Mineral Resources Committee, etc

- To be established to oversee and control the activities of the mining sector and also to formulate policies governing ASM.

Mining Support Service Companies

- To be encouraged to provide technical assistance in mineral exploration, contract mining & minerals processing and financial & managerial support to ASMs.

ROLE OF GEOLOGICAL SURVEYS & RELEVANT BODIES IN ASM ACTIVITIES TO OVERCOME CONSTRAINTS (3)

National Awards Scheme

- To help curb the menace in ASM operations.

Environmental Regulations & Penalties

- Environmental provisions to be structured in such a manner to discourage illegal mining;
- Penalties should range from regulations to fines and imprisonment for non-compliance.

Mining Incentives

- 100% local ownership of ASM (Ghana);
- Withholding Tax (5% in Nigeria)
- Minimal Windfall Tax
- Import duty waiver on imported mining related machinery (Ghana)
- Tax holidays of 3-5 years (Nigeria)

RECOMMENDATION & CONCLUSION



**NEED TO IMPROVE
SUPPORT TO
ARTISANAL & SMALL
SCALE MINERS**

RECOMMENDATION & CONCLUSION

- ASM issues cannot be solved by mining sector solutions alone. A comprehensive approach is needed to address the multifaceted challenges of ASM;
- Strategies to address ASM issues must have an Alternative Livelihood Component;
- Formalization can work best when ASMs can be contained in one site and actively supported;
- Availability of sites suitable to ASM makes it easier to form a cluster and organize miners, but ASMs must be convinced that prospective sites hold economic promise.

RECOMMENDATION & CONCLUSION

- The Geological Surveys and Universities/Institutions offering mining related courses are to develop programmes designed to cater for the needs of the ASMs.
- Geological Surveys are to continue to provide the needed information to enable ASM operate more efficiently and economically;
- Minerals Commissions/Ministries of Mines are to provide and promote innovative technology transfer, industrial growth and human development to ASMs to facilitate their empowerment and sustainability;
- Geological Surveys are to enjoy assistance from local governmental, NGOs & academic institutions to enable improvement upon environmental performances of ASMs.

Thanks
For Your Kind Attention