

**Communities and Small Scale Mining (CASM)
Annual General Meeting and Learning Event
September 7-10, 2003 in Elmina, Ghana**

**Workshop "Building a toolkit for
profiling artisanal mining"**

by

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**Workshop "Toolkit for reprofiling ASM"
Objectives of workshop**

- To generate and test ideas for improving future baseline work through discussions with stakeholders
- Leading to improved policies and programs required to achieve the Yaounde goals, i.e.
 - Sustainable reduction of poverty
 - and improvements in livelihoodsin African ASM communities by the year 2015

Workshop "Toolkit for reprofiling ASM" Structure of workshop

- Presentation of draft "kit" (instruction manual) for carrying out future baseline studies
- Discussion of principal "kit" components
- Summary of ideas and recommendations proposed by workshop participants

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Workshop "Toolkit for reprofiling ASM" Principal components of "kit"

- Checklist of critical issues and information necessary
- Benchmark indicators suitable to measure progress towards Yaounde objectives
- Methodology for baseline studies

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Checklist of critical issues and information necessary

- Checklist should allow ...
 - for a **quick check of past baseline work** in terms of its thoroughness and relevance to current understandings of what is required for transforming artisanal activity into a basis for more sustainable livelihoods and communities, and
 - **carrying out future baseline or profiling studies**, which would reflect the Yaounde objectives

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Checklist of critical issues and information necessary

- **Step 1: Initial Brainstorming Framework:**
 - **characterizing ASM** and its developmental role(s) and impact(s)
 - **macro-policies:** effects on ASM (exchange rates, fiscal and budgetary policies and regulations, land right and titling issues)
 - **flows of resources** across sectors and inter-sectoral economic linkages
 - **complementary / alternative livelihood** opportunities and multiplier effects
 - **cross-cutting themes** (HIV/AIDS, environment, health, gender, child labor, ...)

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Checklist of critical issues and information necessary

Outcomings 1: Comprehensive checklist

- vast and extensive menu for possible investigation
- unmanageable for practical profiling field-work
- emphasis on policy and macro-economic issues
- lacking items reflecting the livelihoods of the miners



- To facilitate efficient political **decision-making at the macro level**, oriented towards poverty reduction, future profiling studies requires a checklist that reflects most accurately the **situation at the micro-level**.

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Checklist of critical issues and information necessary

- Checklist has to focus on **critical issues and information necessary**

- Consensus:

Issues and information are critical and necessary if they can be influenced or need to be considered by decision-makers in order to achieve poverty reduction and livelihood improvement in the short- and mid-term



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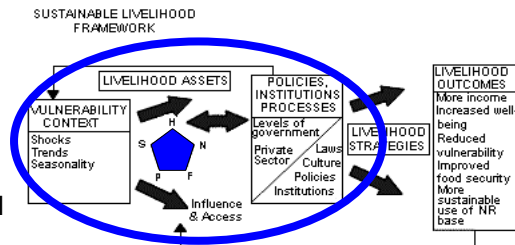
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Checklist of critical issues and information necessary

- **Step 2: Framework for Priority-based checklist:**
 - DFID's **Sustainable Livelihood Framework**, analyzing the "asset pentagon", i.e.

- Human capital
- Social capital
- Natural capital
- Physical capital
- Financial capital



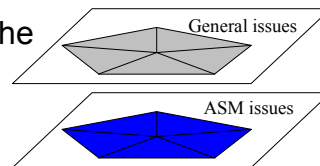
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Checklist of critical issues and information necessary

- **Information necessary on each of the assets can be structured in 2 layers**
 - **General issues:** characterizing the context of the study area
 - **Specific issues:** characterizing ASM within study area, including
 - Assets
 - Vulnerabilities
 - Structures and processes



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Checklist of critical issues and information necessary

Preliminary

Outcomings 2: Priority based checklist:

General issues checklist, characterizing the context of the study area	Specific issues checklist, characterizing Artisanal Small-Scale Mining within the study area	
Natural Capital	Available assets	
	Vulnerabilities	
	Structures	Processes
Social Capital	...	
Human Capital	...	
Financial Capital	...	
Physical Capital	...	

Workshop Task ...

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Checklist workshop

What is most critical to know?

„Setting the right priorities“

- Remember:

Issues and information are critical and necessary **if they can be influenced or need to be considered by decision-makers in order to achieve poverty reduction and livelihood improvement in the short- and mid-term**

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Checklist workshop

Natural capital

What is most critical to know?

Available assets

- Inventory of mineral resources and types of deposits exploited by ASM (including estimates of extension, tonnage and grade)
- Past, actual and projected future mineral production by ASM

Vulnerabilities

- Ownership of resources (formality/informality, ...)
- Knowledge of mineral deposits (extension, tonnage, grade)
- Conflicts of resource usage (between different segments of mining, environmental concerns, land use, ...)
- Requirements for obtaining formal access to resources (mining titles, land rights, etc.)

Structures

- Mining authorities, Geologic services, Environmental authorities
- Large and medium mining companies operating in "ASM-areas"
- NGOs

Processes

- Mining rights, Land rights, Water rights
- Provision of geological services for exploration of ASM mineral deposits
- Titling issues, legal status of ASM

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Checklist workshop

Social capital

What is most critical to know?

Available assets

- Community and family context of ASM, gender roles within and related to ASM
- Typical organizational structures of ASM
- Organizational structures integrating ASM groups within Chamber-type umbrella organizations (ASM associations)
- Public opinion about ASM

Vulnerabilities

- Inventory of existing conflicts (between rivaling ASM-groups, between miners and local communities, between ASM-miners and mining firms, etc)
- Effectiveness of miners associations in representing ASM interests at government level
- Migration issues: Positive effect: Avoiding migration (Providing employment in rural areas); Negative effects: Promoting migration towards "boom towns", disrupting local organization processes

Structures and processes

(considered assets of ASM)

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Human capital

What is most critical to know?

Available assets

- Population involved in ASM and their idiosyncrasies
- Health conditions and nutrition standards in ASM communities
- Educational opportunities in ASM communities, availability of primary, secondary education
- Access to information: general and ASM-specific information (training materials, com.prices)

Vulnerabilities

- Specific occupational and environmental health risks of ASM
- Possible correlation between incidence of AIDS and ASM specific conditions (percentage of HIV infected people reported higher or lower than in national average?)
- Health, educational and nutritional situation for children
- Child labor: Physiological issues, Health hazards of child labor, Educational issues.

Structures

- Health care facilities in ASM communities (public, private and traditional health care) (quality, quantity, roles, accessibility)
- Educational (schools) and training facilities

Processes

- Personal capacity building and forms of leadership

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Financial capital

What is most critical to know?

Available assets

- Employment opportunities provided by ASM and economically linked activities
- Income generation from ASM [desegregation as far as possible: at national level (relevance of ASM for foreign export balance and GDP), district -, local and individual level]
- Identification of cross-sector effects and flows of economic resources across sectors
- Estimation of tax income from formal ASM miners vs. informal tax income

Vulnerabilities

- Ownership of production facilities (equipment owner, ...)
- Access to credit and dependencies from private creditors and money lenders
- Arbitrariness of prices for products, lacking marketing information systems
- Linkages with criminal activities: Drug traffic, weapon traffic, money laundering, smuggling

Structures

- Fiscal authorities, Official credit lines for ASM.
- Mineral buyers, buyers organizations, money lenders.

Processes

- Effects, constraints and opportunities of official exchange rates or market regulations on costs, revenues and incomes of miners.
- Linkages between fiscal policies and ASM: Direct taxes, fees and royalties, Indirect taxes

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Physical capital

What is most critical to know?

Available assets

- Technology used in ASM and degree of mechanization, including assessment of suitability in terms of productivity and mineral recovery
- Average and minimum investment required for a typical production unit to improve productivity and mineral recovery
- Typical housing of miner's families (correlation between quality vs temporary nature of ASM)
- Endowment of ASM communities with public infrastructure

Vulnerabilities

- Continuity or discontinuity of services, vulnerability due to seasonal changes (transport during rainy season, water supply during dry season...)
- Quality of services, responsibilities for maintenance
- Proximity and access to basic services (health, schools, ...)

Structures

- Authorities on national, district and local level, in charge of basic infrastructure
- Existence of investment promotion programs

Processes

- Culture of appropriation of local public infrastructure by local population
- Levels of local governance based on democratic rights and responsibilities; local autonomy of budget

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Benchmark Indicators Criteria for indicator selection

- Indicators provide information/data on the state of a system and its change over time
- Basic requirements of indicators
 - be measurable with reasonable effort
 - provide meaningful, accurate, quantitative data on the system variable measured
 - be relevant for policy and program design
 - be easy to understand and to communicate
 - be limited to avoid information "overload"

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Benchmark Indicators Measuring progress

- Change/progress is measured by comparing identical indicators of consecutive years
- **Types of indicators proposed**
 - National and regional level indicator
 - ASM community level indicators
 - Mining operation level indicators

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Benchmark Indicators What is poverty?

- "Inability to attain a minimal standard of living" (World Bank, 1990)
- "Pronounced deprivation in well-being" (World Bank, 2000/2001), includes:
 - Material deprivation (income, consumption)
 - Low achievements in education and health
 - Vulnerability and exposure to risk
 - Voicelessness and powerlessness

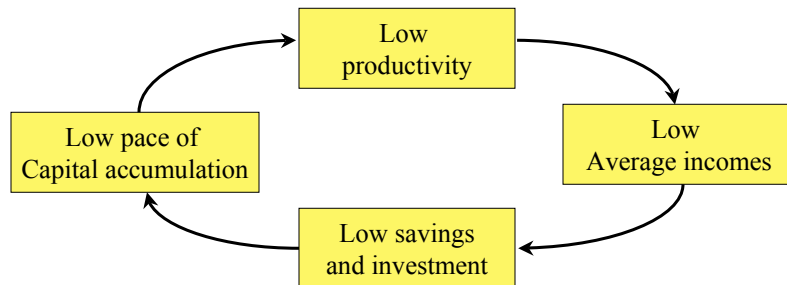
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Benchmark Indicators

Poverty drivers



Source: Samuelson, P.A. and W.D. Nordhaus. Economics, 1989.

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Indicator workshop

What are the
best indicators?

National level indicators

- National indicators allow to compare the ASM sub-sector to national averages; many are collected and published by the World Bank annually
- Poverty indicators
 - Population below 1\$/day and 2\$/day [%]
 - Poverty gap at 1\$/day and 2\$/day [%]
 - Country-specific poverty line [\$/year]
 - Population below national poverty line [%]
 - Rural
 - Urban

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Indicator workshop

What are the best indicators?

National and regional level indicators

- Human capital indicators
 - Life expectancy at birth [years]
 - Under-5 mortality rate [per 1,000]
 - Prevalence of child malnutrition [% children <5]
 - Adult illiteracy rate [% of people 15 and above]
 - Children 10-14 in labor force [% of age group]
- Regional level indicators
 - Population in target area [survey year]
 - ASM population in target area
 - Share of ASM population [%]

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Indicator workshop

What are the best indicators?

ASM community level indicators

- Human capital
 - Health
 - Population per physician/nursing person
 - Access to safe water source [%]
 - Lost workdays of ASM due to illness [days/year]
 - Lost workdays of other household member due to own or child illness [days/year]
 - Under 5-mortality rate
 - Education
 - Net primary enrollment ratio [% of age group]
 - Percentage of cohort reaching grade 5 [% male and female]
 - Adult illiteracy rate [% male and female]

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Indicator workshop

What are the best indicators?

ASM community level indicators

- Social capital
 - Percentage of ASM with links to
 - Occupation-based mutual help groups
 - Community-based social assistance groups
 - Informal savings and credit groups
 - Participation in formal safety net
 - ASM having health insurance
 - ASM entitled to unemployment benefits
 - ASM entitled to retirement funds

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Indicator workshop

What are the best indicators?

ASM community level indicators

- Gender and children participation
 - Share of women in ASM
 - Average cash income of from mining women/men
 - Children below 10 in ASM labor force
 - Children 10-15 in ASM labor force

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Indicator workshop

What are the best indicators?

ASM community level indicators

- Natural capital
 - Household ownership land
 - Share of ASM households owning land [%]
 - Average size [hectares/household]
 - Household ownership of livestock
 - Share of ASM households owning livestock [%]
 - Average number by type

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Indicator workshop

What are the best indicators?

ASM community level indicators

- Physical assets
 - Home
 - Share of ASM households owning home [%]
 - Average size [m²]
 - Availability of electricity [%]
 - Availability of piped water [%]
 - Availability of toilet [% of households by type]
 - Transport vehicles
 - Share of ASM households owning motor bikes, boats or cars [%]
 - Share of households owning consumer durables
 - Radio, TV, refrigerator [%]

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What are the best indicators?

ASM community level indicators

- Financial assets

Income

- Average net income of miner from mining
- Average income from mining per household
- Estimate of household cash income from non-mining
- Total average household cash income
- Estimate of non-cash income from food production
- Number of persons per household
- Total average income per person

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Indicator workshop

What are the best indicators?

ASM community level indicators

Expenditures [US\$/month or year]

- Average household cash expenditures for food
- Average household cash expenditures for non-food
- Total average household cash expenditures
- Share of cash food budget in household income

Savings

- Share of ASM owning savings in cash assets [%]
- Share of savings as percentage of income [%]

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Indicator workshop

What are the best indicators?

Mining operation level indicators

- Human capital
 - Mine safety
 - Protective equipment [US\$ (book value)/unit]
 - Number of lethal accidents [per year per district]
 - Lost workdays due to mine accidents [days/year/capita]
 - Operational efficiency
 - Labor productivity [unit product/day worked]
 - Mineral recovery [%]

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Indicator workshop

What are the best indicators?

Mining operation level indicators

- Social capital
 - ASM associations
 - ASM with membership in ASM association [%]
- Natural assets
 - Mining rights
 - Share of ASM with mining licence [%]
 - Share of ASM with proven mineral reserves [%]
 - Environmental effects
 - Area affected by ASM [ha]
 - Annual land degradation [ha/year/1,000 ASM]
 - Annual land rehabilitation [ha/year/1,000 ASM]
 - Use of mercury in ASM [tons/year]

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Indicator workshop

What are the best indicators?

Mining operation level indicators

- Physical capital
 - Mine assets owned per production unit [US\$/unit]
 - Number of persons/production unit
 - Mining equipment
 - Processing equipment
 - Transport equipment
- Institutional performance
 - Licensing costs [US\$/licence]
 - Average duration of licensing process [weeks]
 - Number of pending licence applications [number]
 - Mine site inspections [number/year/unit]

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Methods workshop

Methodology

Survey methods used in past work

- Usually one or a combination of
 - Literature reviews, including ASM related legislation and policies
 - Field surveys and on-site observations in ASM communities
 - Stakeholder interviews, including government officials, traditional and community leaders, representatives of miners associations, artisanal miners, mineral traders

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Methods workshop

Methodology for future baseline work Limitations

Barriers to collecting *accurate* and *meaningful* data in ASM communities

- Incomes are uncertain, intermittent, variable
- Informality and illegality
- Population of miners is continuously shifting
- Lack of funding for baseline studies.
- Lack of skilled and experienced people, with experience in the area, to conduct the study.

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Methods workshop

Methodology for future baseline work Limitations

People may give false or incomplete information because:

- Fatigue of researchers and research projects that do not bring change
- Secrecy because of (semi)illegality
- Mistrust; what will happen with the information?
- People may not know the answer (e.g. annual household income)
- Questions are not relevant to daily life experiences.

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Methods workshop

Methodology for future baseline work Improving data collection

In Field work: trust and cultural sensitivity

- Work with local consultants: community leaders, miners, and students.
- Be clear and explicit about the intentions and goals of the consulting team, and about what the community can expect in return
- Endorsement from local authorities

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Methods workshop

Methodology for future baseline work Improving data collection

Secondary data: Quality of national statistics

- There is little that can be done
- Cross-check national statistical data with data and qualitative observations from local Non-Governmental Organizations and international organizations including the World Bank, the International Monetary Fund, and the United Nations.

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Methodology for future baseline work Improving data collection

Village surveys: Control groups.

- Quantitatively or qualitatively assess how ASM communities compare to nearby non-mining communities.
- Work with local consultants

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Methodology for future baseline work

General: Interdisciplinary cooperation

- Baseline studies should be conducted by interdisciplinary teams that contain members from both the social sciences (anthropology, economics) and the natural sciences (ecology, engineering).

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Methods workshop

What are the best methods?

Methodology for future baseline work

What information is most difficult to obtain?

- Household level data
- Income and expenditures
- Household or community dependency on ASM
- Data from migrant communities
- Redistribution of mining income

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What are the best methods?

Methodology for future baseline work

Household level data

- Is it necessary to obtain data at this level? For most purposes, village-level data are sufficient
- Work with and train local people to collect data.
- Count on at least 2 months to design and conduct the survey, and another month enter, clean, and analyze data. Training local data collectors may take another several weeks.

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What are the best methods?

Methodology for future baseline work

Income and expenditures

- Use relevant indicators (household or village level) for annual household income rather than US\$-value estimates of real income
- Obtain general estimates from (at least 3) key informants at the village level

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What are the best methods?

Methodology for future baseline work

Dependency on ASM

Rather than estimating the percentage of income derived from ASM, use indicators, such as:

- Cum. number of months household members spent working in mines over the past year.
- Walk around the village with a key informant, asking for each house whether or not someone in that household works in mining.

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What are the best methods?

Methodology for future baseline work

Migrant communities

- Rapid community level surveys that can be repeated every couple of months
- Registration of small-scale miners by local/national authorities

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What are the best methods?

Methodology for future baseline work

Redistribution of mining income

- Household or individual level surveys
 - Costly in money, time, and skills
 - Require relationships of trust with large number of people
- Money transfer institutions may provide an indication
- Survey of home communities

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Methods workshop

Methodology for future baseline work In reporting

Methodological clarity

- Explicitly discuss the methodology used and list sources of information
- Document problems encountered in data collection.
- Consistently use the metric system for measures and convert local currency values to US dollars values.