WWF

REPORT

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WORKING TOGETHER TOWARDS RESPONSIBLE ARTISANAL AND SMALL SCALE MINING

Estelle Levin Ltd.

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ARTISANAL AND SMALL-SCALE MINING IN AND AROUND PROTECTED AREAS AND CRITICAL ECOSYSTEMS PROJECT (ASM-PACE)

METHODOLOGICAL TOOLKIT FOR BASELINE ASSESSMENTS AND RESPONSE STRATEGIES TO ARTISANAL AND SMALL-SCALE MINING IN PROTECTED AREAS AND CRITICAL ECOSYSTEMS

BY J. HINTON AND M. R. HOLLESTELLE

30 JUNE 2012

The aim of **ASM-PACE** is to address the environmental impacts of artisanal and small scale mining (ASM) whilst building on its economic, social, and empowerment potential in some of the world's most important ecosystems. The Programme uses a scientific foundation of knowledge, participatory methods and rights-based approaches to work with miners and their communities – rather than in opposition – to design sustainable, win-win solutions that will last. The Programme, which is focused exclusively on ASM occurring in protected areas and critical ecosystems, has the following objectives:

1. Characterize the short- and long-term environmental impacts of artisanal mining on protected areas and sensitive ecosystems at the regional and global scale and on the people who depend on these ecosystems Characterize the short-and long-term social impacts of artisanal mining on supply chain operators and their stakeholders, paying particular attention to ASM's impact on vulnerable groups, such as indigenous peoples.

2. Identify potential solutions and alternative approaches through assessment of past efforts (both successes and failures) to address the identified short and long-term environmental and social impacts.

3. Develop a platform for constructive dialogue with all stakeholders and facilitate win-win solutions for ecological impact mitigation and socio-economic development.

4. Produce concrete improvements in sensitive ecosystems through sustainable solutions that reduce the ecological and social damage caused by ASM, whilst building on its economic, social, and empowerment potential.

5. Identify practical recommendations for improving governance through national and regional policy reform and institutional strengthening based on project findings.

6. Make publicly available a resource base for others to use who wish to understand and address this issue, including practical tools, such as guidance documents, methodological tools, e-newsletters and knowledge products.

For more information please visit *www.asm-pace.org*.

Estelle Levin Ltd. is a boutique development consultancy specialising in natural resources governance and sustainable supply chains. Much of its work is in the extractives sector, on behalf of clients like development agencies, NGOs, mining companies, consultancies, industry associations, and end-users like jewellers. Working individually or by bringing in the relevant expertise, we help organisations mobilise natural resources in ways that achieve their development and commercial ambitions whilst ensuring empowerment and environmental protection; development through sustainability and sustainability through development. Please visit *www.estellelevin.com.*

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

ASM-PACE is coordinated through WWF's Central Africa Regional Programme Office (WWF-CARPO), which is the largest program office of WWF International. For more than 20 years, WWF and its partners have been working throughout the Congo Basin region to:

• Create a network of protected areas to conserve biodiversity

• Encourage logging and mining companies to promote good management practices

• Promote the reduction of greenhouse gas emissions from deforestation and degradation of forests

• Support sustainable business practices and financial investments in development and infrastructure projects

• Improve the livelihoods of indigenous and local peoples

• Reduce wildlife poaching and the bushmeat trade

For more information, please visit *www.panda.org*

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GLOSSARY

A   **Artisanal Small-Scale Mining (ASM)**

Mining conducted with rudimentary tools such as picks and shovels or simple machinery, usually informal or semi-formal individuals or small groups of people or communities on a subsistence basis. Unlike large scale mining, ASM is often an illegal, unformalised activity.

Active Workings

Areas inside a mine where miners actively work or travel. These areas are well ventilated and should undergo continuous safety and health inspections.

Adit

A type of entrance into a hill (mine) which is horizontal.

Alluvial and Colluvial Mining

The process through which alluvial minerals, such as gold dust and nuggets, are recovered. Alluvial mineral (also called secondary deposits) has been degraded from the primary source (e.g. kimberlite for diamonds; ore for metals, etc.) typically through erosion by natural forces and deposited through hydrological systems in a new environment, such as a hillside, a present or ancient river bed, ocean floor, or shoreline.

Assay

The process of testing samples of ores or minerals to determine the amount and purity of valuable metals contained within.

B   **Base Metal**

Typically a non precious metal such as copper, aluminium, nickel, zinc and lead.

Blasting

Detonating explosives to loosen rock and ore for excavation.

C
Capital cost

The total investment needed to complete a project and bring it to a commercially operable status.

Critical Ecosystems

A site of High Conservation Value (HCV), critical to the protection of a particular ecosystem or species. The site may not be a protected area but it is a WWF Priority Place. OR The site affected is not a protected area or a WWF Priority Place, but it is in one of the Global200 Priority Ecoregions[1].

Colluvial Mining

Refer to alluvial mining.

Community Mining

Refer to Artisanal and Small-scale Mining.

Concentrate/Concentrator

The higher grade material produced from separation and concentration processes that try to separate valuable minerals from non-valuable ones (gangue). For example, in gold mining a sluice box does not recover only gold, but "concentrates" the gold with other heavy minerals. This "concentrate" must be panned (or may be amalgamated with mercury) to further separate gold from these waste minerals (tailings). Panning, sluicing and jigging are all methods for concentration.

Crusher/ crushing

Machines which reduce the size of the ore to a specified size for further grinding.

Cyanide

A very toxic chemical used to dissolve gold and silver from the ore.

D
Daily Activity Clock

An itemised list of activities carried out by an individual or group during each hour of a standard day.

Dump

Waste material extracted during mining and placed on the surface in a large pile.

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[1] Olson & Dinerstein, 2002.

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E   **Exploration**

The search for new minerals/ore deposits. Includes prospecting, sampling, mapping, drilling, etc.

Extraction

The mining and removal of ore from a mine.

Ecological Footprint

Measure used to calculate the human pressure on natural resources.[2]

F   **Fill**

Material put back in place of extracted ore.

Focus Groups

Involves dividing people into groups in order to carry out activities and discussions for the purpose of research**.**

G   **Gangue**

Waste rock contained within or surrounding an ore. This waste must be separated for the extraction of the mineral.

Gravity Separation

The separation of the valuable mineral, e.g. gold or cassiterite, from waste. Due to gold being denser than the waste, it sinks to the bottom when shaken in a pan with water.

H   **Headframe**

A structure supporting the shaft and hoist (hoisting) pulley. Often refers to the hoist itself.

High Conservation Value (HCV)

It is an area of biological, ecological, social or cultural value which is considered to be of outstanding significance or critical importance at the national, regional or global scale, as defined in the *ProForest HCVF Toolkit[3]*. These values need to be protected and hence it is these values that determine whether a specific ASM site is in an ecologically sensitive zone.

High Conservation Value (HCV) Assessment

The term is used to refer to the complete process of identifying HCVs and develop management and monitoring plans to ensure that the values identified are maintained or enhanced.

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[2] http://www.footprintnetwork.org
[3] www.proforest.net

I   **Industrial Minerals**

Non-metallic, non-fuel minerals used in their natural state in the chemical and manufacturing industries. They require some beneficiation. Examples: asbestos, gypsum, salt, graphite, mica, gravel, building stone and talc.

Institutional Analysis

An approach used to assess the capacity and behaviour of an organization.[4]

J   **Jackhammer**

Rock breaking pneumatic hammer or rock drill.

K   **Kimberlite**

The most common host rock of diamonds.

L   **Legislation**

Legislation is the body of laws and regulations used to fulfil policy objectives. The sectoral laws (e.g. a Mining Act or Forestry Act) provide the rules of conduct for what must be done and the Regulations under a given law describe the specific procedures or requirements of how to do it. The legislation also outlines (most) rights and obligations of the duty-bearers and rights-holders with respect to that sectoral law.[5]

Legal Mandate

In the context of this Methodological Toolkit, legal mandate is defined as any provision in statute or regulation or any court ruling that imposes an enforceable duty upon a group, organisation, governmental body, or individual.[6]

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[4] Siteresources.worldbank.org (2009) *World Bank Poverty and Social Impact Analysis Workshop.* Available at: http://siteresources.worldbank.org/.../12996_workshop_instanalysis.pdf
[5] Sources: Hinton, J., Okedi, J. et al, 2009, Small Scale Mining Handbook: A Guidebook for Improving the Performance of Artisanal and Small Scale Mining in Uganda, publ., New Vision Commercial Printers, 432p.; and
Pers. Comm, 2011, J. Okedi.
[6] Definitions.uslegal.com (2001) *Federal Mandate Law & Legal Definition.* Available at: http://definitions.uslegal.com/f/federal-mandate/

M   **Medium and Large scale Mining**

Mining operated by professional, corporate outfits legally and in the pursuit of profit. High level of mechanisation and capitalisation; low labour intensity.

Mineral Processing

Processing involves steps taken to "add value" to the ore once it is extracted. This may include (for hard rock deposits): crushing, grinding, separation of ore minerals from tailings (e.g. using sluice boxes, jigs or by panning). It also includes how water and tailings are managed throughout this process.

For alluvial, colluvial or highly weathered ores (that are almost like soil), crushing and grinding is usually not necessary.

Mineral Supply Chain

A channel of distribution beginning with the supplier of mineral material or ore, extending through a manufacturing process to the distributor and retailer, and ultimately to the consumer.[7]

Mining Rushes (or Rushes)

A surge in activity in a specific area by individuals seeking to capitalize on newly discovered valuable minerals present in the area e.g. gold rush.

N   **Native Gold**

Gold in its free state. Also called placer gold or free gold.

O   **Open Pit**

A surface mine, open to daylight. Also referred to as open-cut or open-cast mine.

Ore and Ore Grade

Ore is rock that contains economically valuable minerals in high enough concentrations to mine them at a profit. Ore grade is the percentage of metal or mineral in an ore. For precious metals like gold or silver, the grade is usually described as grams per tonne (e.g. gold ore containing 9 g/t gold). For base metals (like tungsten, tin or lead) the grade is described as a percentage (e.g. cassiterite ore containing 48% tin) while for gemstones like diamonds or sapphires, then it is described as carats per tonne (e.g. one carat = 0.2g).

Overburden

Waste rock or cover above an orebody.

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[7] Dictionary.reference.com (2012) *Supply chain | Define Supply chain at Dictionary.com.* Available at:
http://dictionary.reference.com/browse/supply+chain

P   Protected Area

A location that receives protection because of its recognised natural, environmental and/or cultural values. There are different kinds of protected areas, which vary by the level of protection depending on the enabling laws of each country or the regulations of the international organisations involved. The term 'protected area' also includes Marine Protected Areas.[8]

Policy Mandate

Something which an organization is empowered or expected to do by the affinity of the activity or alignment with the primary objectives of an organisation. It differs from a legal mandate in that it is neither required nor supported by law.

Proven Reserves

Reserves that have been sampled extensively and in sufficient detail to render an accurate estimation of grade and tonnage.

Q   Quarry

A type of open-pit mine from which rock or minerals is extracted. Quarries are generally used for extracting building materials.

R   Reclamation

The process of returning the land to another productive use or restoring the land to its approximate original appearance after mining has been completed.

Recovery

The amount of valuable mineral from ore that is collected through mineral processing. Most processes are not 100% efficient so a percentage of valuable minerals often are wasted. For example, a weak sluice box might only recover 40% of the gold in ore.

Regulation

A regulation is a rule through which the Government applies the law. Government's departments, agencies and local governmental bodies have the power of issuing regulations prescribing administrative conditions and restrictions in a particular sector which must be fulfilled by residents and/ or other entities.[9]

RAMSAR Site

Areas protected by The Convention of Wetlands of an International Importance for the conservation and sustainable use of wetland areas.[10]

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[8] See http://www.protectedplanet.net/search/ for more information
[9] (2010) *Webster's New World Law Dictionary*, Wiley Publishing, Inc., Hoboken, New Jersey
[10] http://www.ramsar.org

S   Seasonal Calendars

A tool which explores changes taking place over the period of a year. For example: how much work people have at different times of the year or how their incomes change in different periods, or the seasonality of other important aspects of livelihoods such as food and water availability.[11]

Secondary Minerals

Ore minerals deposited as a result of alteration or weathering of a primary deposit.

Sectoral Policy

A Sectoral Policy is a plan that outlines overarching goals and objectives of a sector and typically describes political, management, administrative and financial mechanisms to achieve these goals for that sector (e.g. minerals, forests, environment, and health). Often, the missions and mandates of sectoral ministries and their respective departments are also provided. Sectoral Policy is generally guided by the presiding Constitution and national poverty reduction strategies/development plans.[12]

Stakeholder

Any group or individual who can affect or is affected by the achievement of the objectives and initiative of an organization or business.[13]

Stamp Mill

An early method of crushing gold ore. Heavy iron pestles are continuously dropped into a trough containing water and the ore until it is fine enough to filter through screens. Also called a stamp battery.

Stockpile

Mined ore kept aside prior to processing which could be used as a strategic above-ground ore reserve.

Surface Mining

Refer to open pi**t.**

T   Tailings

The word defines the fine-grained waste or residue from mineral processing. It is mostly made of gangue minerals. Tailings are often dumped into the nearest river or anywhere convenient but should be kept in a "tailings dam" or some sort of impoundment.

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[11] Unodc.org (2000) *Guidelines on Gender Mainstreaming in Alternative Development*. Available at:
http://www.unodc.org/unodc/en/alternative-development/gender-mainstreaming-inalternative-development.html
[12] Hinton, J., Okedi, J. et al, 2009, *Small Scale Mining Handbook: A Guidebook for Improving the Performance of Artisanal and Small Scale Mining in Uganda*, publ., New Vision Commercial Printers, 432p.; and Pers. Comm, 2011, J. Okedi.
[13] Freeman, R. Edward and McVea, John, A Stakeholder Approach to Strategic Management (2001). Darden Business School Working Paper No. 01-02. Available at SSRN: http://ssrn.com/abstract=263511 or http://dx.doi.org/10.2139/ssrn.263511

U   **Underground Mining**

The aggregate of operations below the surface to open and develop a deposit and remove ores, non-metallic minerals, and coals.

Unit Operations

Any part of a potentially multiple-step process which can be considered to have a single function – it is a basic step in the mining process.[14]

V   **Vein**

A mineralized area having a more or less regular development in length, width and depth. It is clearly separated from neighbouring rock.

Vulnerable Person

A person at great risk from situations that threaten their survival or their capacity to live with a minimum of social and economic security and human dignity.[15]

W   **Waste Rock**

Waste rock is often dug up with ore but the concentrations of valuable minerals may be too low to be mined at a profit. However, what is considered as waste rock may be influenced by several factors. For example, with rising mineral prices, what is seen as waste rock can become ore in the future. Or waste rock could be mined and processed at a profit using better technologies (i.e. it might contain fine gold that cannot be seen or is too difficult to recover), instead of the inefficient methods used at many ASM sites.

WWF Priority Place

Thirty-five regions scientifically identified by the World Wildlife Foundation as being home to irreplaceable and threatened biodiversity, or representing an opportunity to conserve the largest and most intact representative of their ecosystem[16]

Yield

An expression of the amount of product (nominal or actual) that can be manufactured from a given input of raw material. Also referred to as product recovery.

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[14] National Open University of Nigeria; School of Science and Technology (n.d.) *Industrial Chemical Technology Unit 1*. Available at: http://www.nou.edu.ng/noun/index.htm
[15] http://www.redcross-eu.net/en/ (2012) *RedCross - EU Office - Home / Red Cross/EU Office /EU NATIONAL RED CROSS SOCIETIES /.* Available at: http://webcache.googleusercontent.com/search?q=cache:ZU17AhEu6DAJ:www.redcross-eu.net/en/Red-Cross-EU-Office/EU-NATIONAL-RED-CROSS-SOCIETIES/British-Red-Cross/+&cd=1&hl=en&ct=clnk&client=firefox-a
[16] WWF.panda.org (2011) *WWF - Earth's most special places*, available at: http://wwf.panda.org/what_we_do/where_we_work/

ACRONYMS

ABCG	Africa Biodiversity Collaborative Group
ARM	Alliance for Responsible Mining
ASM	Artisanal and Small-scale Mining
ASM-PACE	Artisanal and Small-scale Mining in and Protected Areas and Critical Ecosystems
CBO	Community-based organization
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DRC	Democratic Republic of Congo
EBA	Endemic Bird Areas
GIS	Geographic Information System
HCV	High Conservation Value
HCVA	High Conservation Value Area
HCVF	High Conservation Value Forest
IBA	Important Bird Area
IUCN	International Union for Conservation of Nature
LSM	Large Scale Mining
NGO	Non-governmental organisation
PROFOR	World Bank's Program on Forests
UNDP	United Nations Human Development Report
UNEP	United Nations Environment Programme
USAID	US Agency for International Development
WHO	World Health Organization
WWF	World Wide Fund for Nature
WWF-CARPO	World Wide Fund for Nature Central Africa Regional Programme Office

1. INTRODUCTION

Artisanal Mining in Protected Areas and Critical Ecosystems: the issue

Is it possible to make ASM a sustainable activity? Can it be done in ways that do not damage, but rather protect environmental resilience? The tools in this toolkit are designed to help its user find answers to this question.

Artisanal and small-scale mining (ASM) poses a major threat to biodiversity and ecosystems worldwide, from the Amazon to the Congo Basin Ecosystem to World Heritage Sites in Southeast Asia. An exploitative and often a poverty-driven activity, the majority of ASM is done with little regard for the environment, typically due to the miners' lack of resources or knowledge on managing their impacts. Putting local and regional conservation successes at peril, typical ASM impacts range, for example, from damage and destruction of critical ecosystems by removing and discharging top soil and laterite into waterways, to the irresponsible use of toxic mercury. Indeed, mercury contamination poisons the miners and their families and affects downstream populations and species dependent on the rivers and lakes. Associated activities, such as clearing of forests and gathering forest resources for food and timber, to support mining camps and villages destroy critical habitats and threaten endangered species.

At the same time, ASM alleviates poverty. Miners mine because it brings them more income than other livelihoods, such as agriculture or other traditional income generating activities. Simply trying to stop the often illegal mining activities by using eviction strategies is generally not effective; experience has shown that after a short period of time the miners will return unless enforcing agencies have the resources (and mandate) to continuously engage in evictions.[17]

Since ASM practices are increasing around the world, most notably within protected areas and other critical ecosystems, WWF and Estelle Levin Ltd. have partnered to help decision makers manage the conservation vs. development trade-off that this phenomenon presents.

Purpose and Objective of the Methodological Toolkit

The Methodological Toolkit is designed to help users identify workable, informed solutions that contribute to long-term development whilst protecting and safeguarding fragile ecosystems, whether they are officially protected or not. Recognising the difficulty in protecting an area's environmental importance without local community support, this project uses a scientific foundation of knowledge-based, participatory methods and rights-based approaches to work with miners, their communities and other stakeholders –– in order to design sustainable solutions. This means finding ways to allow people to benefit from their resources without undermining the resilience of the ecosystem.

ASM IS A GROWING AND COMMONLY ECOLOGICALLY DAMAGING ACTIVITY, BUT ONE WHOSE IMPACTS CAN BE MANAGED AND MITIGATED.

The Tools were pilot tested in Liberia and Gabon in 2011 and Madagascar in 2012 and are currently being used by WWF and Estelle Levin Ltd. to review different approaches taken in different countries for balancing conservation and economic priorities in protected areas affected by ASM. Lessons learned through these assessments will be used to devise and test suitable solutions in a number of national parks. The aim is **to create pragmatic and sustainable win-win situations and guidance documents for countries, conservation organizations, local communities and other stakeholders** faced with this dilemma.

The Methodological Toolkit's utility is that it should enable its users to assess and understand ASM in protected areas and critical ecosystems (PACE), and to identify strategies for mitigating it.

In line with the goals of the ASM-PACE Programme, the Methodological Toolkit has been designed to help users to:

1. Rapidly assess and map environmental, social and economic impacts of Artisanal and Small-scale Mining, with a particular focus on protected areas, critical ecosystems and vulnerable groups.
2. **Identify potential solutions and alternative approaches** through assessment of past efforts (both successes and failures) to address the identified short- and long-term environmental impacts.
3. Identify and develop measures that can **produce concrete improvements in critical ecosystems** through sustainable solutions that reduce the environmental and social damage caused by ASM, **whilst building on its economic, social, and empowerment potential.**

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[17] Hund, K., Levin, E., Villegas C. M., Weinberg, R. (2012) *Artisanal and Small-scale Mining in Protected Areas and Critical Ecosystems: Global Scoping and Solutions*, FORTHCOMING

Target Users

This Methodological Toolkit is designed for use by different users in different contexts and countries, in line with ASM-PACE's programmatic goal, to strengthen the knowledge base on ASM in protected areas and critical ecosystems by compiling a publicly available **resource base**. This is aimed at individuals and organisations – including NGOs, government and development agencies, academics and other stakeholders – who are engaged in efforts to assess and develop effective strategies for managing ASM in PACE. The Toolkit further provides a basis for monitoring and evaluating the situation and efficacy of responses to it.

The Toolkit is composed by **practical tools**, such as guidance documents, other methodological tools, and knowledge products for others to use.

This Methodological Toolkit can be divided into two main research areas:

1. Off site office research and correspondence, derived from:
   - Literature, maps and reference research for background information and
   - Aerial photos, imagery and Google earth for land use and degradation

2. On site filed inspection and activities, which include:
   - Field research with essential stakeholder involvement, leadership and guidance
   - Meetings, workshops, exercises and demonstration with translators if necessary and provisions for semi literate - literate participants.

Recognize that a Scientific Solution is not always Possible[18]

Members of the Research team may be concerned they cannot obtain scientifically sound data in this type of research, which is based on the principles of rapid assessment; consequently, they may hesitate to use the data found in their reporting. Conversely, at the practitioners' level decisions will often have to be made in the absence of full information – that is, without scientific certainty.

Often, there is no scientific solution to a question if little is known. It is advisable not to be overly concerned at this shortcoming, as this does not mean that reasonable, informed decisions cannot be made. To ensure this, the researcher responsible for the assessment may choose to involve experts who are comfortable to express informed opinions based on experience and a sound understanding of what is already known. Hence, although it is likely that scientific certainty may not be possible to be obtained, through the guidance of your research and validation of your findings by experts (be they practitioners or scientists), your findings can become sufficiently credible to support informed decision-making.

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[18] This section is an adaption from Rayden, T., (2008) *Assessment, management and monitoring of High Conservation Value Forest A practical guide for forest managers*, ProForest, Oxford, UK , p12

2. THE METHODOLOGICAL TOOLKIT

The basket of Tools provided in this Toolkit will mainly deal with ASM baseline assessments to reveal:

    a. the scale, scope, character of ASM
    b. its environmental context
    c. its social, economic and political context
    d. its impacts, including the basic environmental impacts of ASM, as measured by a rapid environmental assessment
    e. key stakeholders and their attitudes and opinions on how to manage the issue.

Nevertheless, other applications of the Tools (for example, for an intervention impact assessment or programme design) are also possible.

Before you begin

Before the research in *ASM in Protected Areas and Critical Ecosystems* is designed and conducted, users should have an understanding of the tools and be aware of a few important principles and practices.

What tools to use and when to use them

The full list of methodological tools is shown in Table 1 on page 18. Depending on the objectives of the work, different tools can be drawn upon. Some of these tools are for data collection; others are for analysing this data and presenting the findings.

**DEVELOP AND UNDERSTAND YOUR STUDY OBJECTIVES AS EARLY AS POSSIBLE
AND ADAPT THE TOOLS TO SUIT THEM**

In general, it is useful to note that:

- Depending on the scope, objectives and budget of the study, it may not be possible or necessary to use all of the tools. Review each of the different tools in detail when starting the work, using: **Tool #1: Study Preparation** – which is designed to have its component tools conducted in sequence (i.e. #1a then #1b then #1c etc.); **Tool #1a: Developing a Research Plan** – all of the tools can be readily adapted for different objectives and this process should begin as early as possible; while **Tool #2: Analysing Policy, Legal and Institutional Framework** –is conducted throughout the work, beginning with the literature review and through to the conclusion of the field work.
- The field or community-based tools, specifically: **Tool #3: Community Transect Walks and ASM Site Visits**, **Tool #4: Stakeholders, Interviews and Focus Groups**, **Tool #5: Environmental Assessment** and **Tool #6: Reporting and Stakeholders' Recommendations** – can be run concurrently (depending on the size of your team) or in sequence. It is useful, although not essential, that all team members visit the ASM site(s) early on in the field work to give a broad understanding of the situation before other tools are used.

Table 1: The Methodological Tools

Tools	
Tool #1:	**Study Preparation**
Tool #1a:	Developing a Research Plan
Tool #1b:	Conducting a Literature Review
Tool #1c:	Mapping and Consulting Stakeholders
Tool #1d:	Assessing and Preparing for Security Risks
Tool #1e:	Refining the Study Design
Tool #2:	**Analysing Policy, Legal and Institutional Framework**
Tool #2a:	Analysing Policy and Legislation
Tool #2b:	Characterising the Institutional Framework
Tool #3:	**Community Transect Walks and ASM Site Visits**
Tool #3a:	Community Transect Walks
Tool #3b:	ASM Site Visit
Tool #3c:	ASM Site Assessment Checklist
Tool #3d:	Using your ASM Data to Make Useful Estimates
Tool #4:	**Stakeholders, Interviews and Focus Groups**
Tool #4a:	Consulting Stakeholders
Tool #4b:	Preparing for Interviews and Interview Guides
Tool #4c:	Focus Groups and Exercises
Tool #5:	**Environmental Assessment Tool**
Tool #5a:	Determining if ASM is in an area with HCVs or in a PA
Tool #5b:	Focus Groups, Stakeholder Analysis and Environmental Impact Exercises
Tool #5c:	Informing the Environmental Impact Inventory
Tool #6:	**Reporting and Stakeholder's Recommendations**

Working with stakeholders and participants

For most assessments of ASM in PACE, much of the work will be done by or in partnership with larger in-country organizations. Often these will be located in capital cities or major urban centres where access to an abundance of information is possible. Before central stakeholders are consulted, you should begin to map out who they are and what sort of information you need from them to meet your objectives of your study of ASM in Protected Areas and Critical Ecosystems.

(Refer to Tool #4a: Mapping and Consulting Central Stakeholders for detailed information).

Basic mining and ASM concepts

Many members of the Research team may have little experience in ASM or mining. Although at least one member of the team should have expertise in this area, every team member should at least have an understanding of basic mining concepts (refer to the Glossary on page 7).

TOOL #1: STUDY PREPARATION

As every ASM community and environmental context is different, Tool#1 intends to provide a foundation for the work and prepare users to adapt and refine the tools for different countries, communities and cases by: conducting a preliminary analysis of existing data, identifying study participants and key informants for the work and designing and scheduling activities (if field assessments are to be undertaken).

Tool #1a: Developing a Research Plan

In some cases, the community (or communities) of interest will be well known to the Research team in advance, while, in other cases, some groundwork must be laid before the design for field research can be finalised.

The Research team should have a clear understanding of objectives prior to initiating any research and begin to outline a research plan and begin to develop a detailed itinerary and budget for the work.

Be mindful that the research design is likely to change as work in the Study Preparation phase is being conducted (e.g. using Tools #1b to #1d) and the study design can be finalised using the guidance provided in Tool #1e: Refining the Study Design. Pre-approval of such changes from partner organizations, clients or donors may be needed.

When developing the research plan you should consider:

The composition of the Research team

- What is the size and composition of your team? (i.e. are two sub-teams possible or desirable? Do the available expertises reflect the capacities needed to do the work?). What is the budget for field work?

- Ideally, the Research team should have a gender balance and be consisted of four people:
    - a Lead Coordinator/Researcher
    - a Conservation/Wildlife Expert
    - an ASM Expert
    - a Social Scientist/Development Expert

In many cases, this team composition may not be financially practical and a single team comprised of people with multiple expertises who can play multiple roles may be more realistic. This may simply include: a Lead Researcher who is either an ASM or conservation expert with an assistant field researcher who fills the gap in ASM or conservation experience. In any event, the team must ensure that local interpretation/translation capacity is strong. This could be via a local team member or 1-2 trusted bilingual counterpart(s) from the community who can also play a role as a "cultural guide" throughout the work.

- Which tools are going to be executed by whom, when and in what order? This decision is essential to make sure you receive your data in the right order so that findings can feed the execution of subsequent tools. Also, it allows you to maximise the effectiveness and efficiency of your team's skills and experience. Lastly, it allows you to minimise on your time and other demands from the population.

Location of your case-study

- How big and accessible is the area of interest? Are there multiple communities that are widely dispersed or just one larger community in a relatively localised area? Is it more useful to obtain a "snapshot" of different sites or an in-depth profile of a single area?

- What factors may be influencing your community selection? Are the communities experiencing research fatigue: for example, have areas been studied multiple times where residents may be annoyed at additional work without obvious benefit? Is road accessibility a factor, i.e. are you identifying only easy to access areas that may be most appealing logistically, but may not best inform the research?

- If the site is far from where you and your team are stationed, you may want to first travel as close as possible to the location and recover from the trip so you will arrive at the ASM site with a fresh mind and body. You can use this break to have a final meeting to respond to any concerns of the members of the team before entering the site.
  If you stop at a town, you can use this time to buy supplies, as items tend to be very expensive in ASM sites (if they are available at all). When you are buying groceries, distinguish between conserves and fresh foods. The latter are best bought at the last town before the site.

Institutional and cultural constraints

- How will you gain permission and/or access to the areas of your case-study? And how long will it normally take to obtain this? Who do you need to contact? Do you need official written authorisation? Are you allowed to enter mining areas at all? Consider both government and traditional (e.g. clans) authorities.

- Are there any religious, cultural days (Fridays, Sundays, etc.), national days (including Independence Day celebrations, etc.) or specific weather conditions (seasons) that will require changes to the schedule?

- While the field itinerary is a starting point, you should develop a detailed plan for all days of the Study (inclusive of desk-based literature reviews, central stakeholder interviews, travel days, pick up from airport, reporting writing, etc.). The detailed implementation plan will be iterative, i.e. developed simultaneously with the detailed budget, below.

Conducting a scoping mission

In some cases, a scoping mission is necessary to identify key stakeholders, assess logistical constraints, and refine the research plan and objectives prior to initiating the actual baseline. The scoping mission would typically involve the research leader and a local field guide/interpreter.

Developing a research plan and objectives

Below is an example of a research plan and objectives:

"National-level review of ASM in protected areas and critical ecosystems contexts

Phase 1

Initial meetings by implementing team with key stakeholders; draft preparation of country profile and information on local ASM practice; development of methodology for site visits and field case-study

1. ***Initial meetings with the research funders***
   The implementing team will work closely with the organizations to access any information they have on the issue of protected areas and conservation governance, ASM occurrence and management in protected areas, programmatic responses to ASM's in protected areas, as well as facilitation of introduction to relevant stakeholders and park authorities. The implementing team will also ask the assistance of the organization in facilitating the process of identifying and reaching contacts to be interviewed where necessary. Likewise, older data will be provided to the team, and will be identified during this initial planning phase in discussion with partners in the country of the case-study. The team understand that the donors may involve other partners to create a support committee for the study and validation of the report.

   These initial meetings with the donors would mark the beginning of data collation for the project. They would also be an opportunity to review the range of potential sources for the collection of information relevant to the project.

2. ***Draft preparation of a country profile and brief descriptive information*** *regarding local ASM practices, general ASM trends in the country of the case-study, the current legal status of ASM, and possible drivers of ASM rushes into protected areas. It will include a focus on their link with environment/biodiversity challenges in the country of the case-study.*

3. ***Preliminary research ahead of selected site visits and field case-study.*** *Identification and contact with key interlocutors/ stakeholders; interviews with select key interlocutors/ stakeholders ahead of site visits and field case-study, contributing to step 4 below.*

4. ***Development of methodology for site visits and field case-study.*** *Refinement of key topics/issues to be covered through interviews in the field. Semi-structured verbal questionnaire for interviewees. Accurate pinpointing of representative, specific and accessible locales, within the protected areas selected for site visit, which have experienced ASM activity. Preparation of methodology for collecting information about the ecological impacts of ASM in protected areas.*

Phase 2 – Site visits

The implementing team will focus on a number of locations for review/documentation of experiences associated with ASM activity: [list the locations you would like to visit for your study]. While it will not be possible within the time frame to visit all locations under review, the implementing team will visit some. This will likely include the following locations: [list the most important locations you need to visit for your study]. However, this is funding contingent and also affected by access considerations, and thus final site visit selection will be at the discretion of the donor organization(s) in close coordination with the implementing team.

Fieldwork and site visits will likely take place in [provide a time frame]. Some flexibility is required on timing given possible weather conditions and access issues at the respective locations.

These site visits will enhance the national-level review of experiences and lessons learned through a gaining of local perspective on the ground.

Methods: Face-to-face interviews with artisanal miners and their families, local officials, park authorities, local villagers.

Accurate pinpointing of ASM activities at the selected sites, with recording of GPS coordinates.

PRA approaches e.g. participative mapping will be used with an open-ended questionnaire to guide the study at each site.

Photographic record of locations where ASM have taken place.

Photographic record, where possible, of environmental degradation caused by ASM in the protected areas.

Output: In-depth research of different perspectives from interlocutors (e.g. motivations of miners/push & pull factors) - focusing on the probably differing perceptions of ASM in protected areas from respective vantage points. This will provide the review with an on-the-ground, indirect dialogue between groups frequently in conflict over ASM in protected areas.

Phase 3

Intensive interviewing with stakeholders; processing of reading lists; writing of national-level review of experiences and lessons learned

1. Period of intensive interviewing with wide variety of stakeholders in the country of the case-study, ranging from current and former staff of donor organization(s), to current and former staff of other conservation and development organisations active in the country, to key personalities in national institutions.
2. Further desk-based processing of reading lists collated in Phase 1.
3. Mapping
4. Writing of national-level overview of experiences and best practices developed in the country of the case-study in order to reduce ASM-PACE conflicts and manage mining rushes. The main lessons and methodologies learned will be explained and summarized, with detailed information provided in annexes where needed. The site visits and case-study will complement the more general lessons and methodologies learned with concrete reporting and analysis of experiences from the field.

Output: National-level review.
Through the analysis of data collected for the review, the knowledge gleaned, with the concomitant synthesis of historical incidences of best practices, will be critical for the subsequent authoring of the draft Rush Management Tool-kit, the development of which being the objective of the project's second part."

Developing an implementation plan

Based on findings of Tools #1a: Developing a Research Plan, #1b: Conducting a Literature Review and #1c: Mapping and Consulting Central Stakeholders, you should determine if the work is feasible. Issues relating to security risks (Tool #1d: Assessing and Preparing for Security Risks), access to the area, unpredicted climatic conditions and so on can emerge or change, requiring adaptation of the study design. Increased emphasis on literature review and more formal interviews, workshops or focus groups with central stakeholders may help fill these gaps if the conditions change. Such changes are significant and should be discussed and pre-approved with partners and funders.

In order to finalise the design of your study, you should develop a detailed implementation plan. Review the sample itinerary for field activities in ***Annex Two: Sample Study Itinerary***, to help you finalise this.

Developing a detailed budget

To bring your study design to finalisation, it is essential to develop a detailed budget. Firstly, ask yourself questions like "How much time in the field is possible/practical?"; 'How long is it going to take to get to and from the research sites?" "What are the actual costs likely to be?" Secondly, consider all the logistical issues, including: vehicle hire, fuel, accommodation, allowances for participants to interviews and/or focus groups, other provisions for focus groups (venue hire, refreshments, flipcharts, markers, etc.), mobilisation costs, telecommunications, stationery, hospitality, etc.

The budget will be iterative – developed simultaneously with the detailed schedule of activities, above. When developing the budget it is advisable to:

a) add a minimum of 7.5% for miscellaneous/contingency, and
b) check and verify costs, departure times and parameters you depend on with the suppliers and with experts. For example, although available timetables may state one thing, the reality of departure and travel time may differ considerably and have a negative impact on your schedule.

Once you have developed the implementation plan and the budget, make sure you review and obtain input from the members of the Research team and other partners in order to finalise them.

Tool #1b: Conducting a Literature Review

Existing reports, assessments and studies of an area, region or country provide an important foundation for the planning, design and execution of subsequent work. Types of literature to consider may include published or unpublished reports, country media reports, maps, statistical databases (e.g. census data) and academic research. When reviewing your literature, make sure that your sources are understandable and in a familiar language.

While a literature review should be conducted at the beginning of the study, additional work will be collected throughout the course of the study (e.g. from local NGOs or government or subsequent internet searches) to help validate or correct findings and fill in gaps from other data obtained using other tools.

The "success" of the literature review will differ from community to community and from country to country. Consider how to proceed in these two scenarios:

- **If a lot of literature exists.** Sometimes, many detailed assessments of different aspects related to ASM, the environment, livelihoods or other issues in the targeted area or region may already exist. If this work has been executed rigorously, the study design may be adapted to fill in gaps or establish links between different components (for example, finding the interconnections between existing detailed environmental assessments and ASM baseline studies).

  In these cases, it will take some skill to decide what is useful and important. Be mindful of "information overload" and remember that it is not always necessary to read every report in its entirety to determine if something is useful for your study of ASM in Protected Areas and Critical Ecosystems. It may take some practice to quickly scan documents and decide whether and to what extent different sections are relevant.

- **If little or no literature exists**. In most cases, the gaps are likely to be substantial and any secondary data (i.e. existing literature) will simply provide a platform or basis to design and prepare for subsequent research as best as you can.

  This should not give you cause for concern as:

  o   unpublished and published literature will likely emerge as the work proceeds; and
  o   primary data that you will collect using other tools will, in any event, fill a much needed gap in the body of work.

As a good starting point, you should read in-country newspapers and other local media.

Different sources of literature

There are a large number of potential sources to consider, some of which may be more accessible as the study is implemented (e.g. local organizations). Relevant and useful literature may be obtained from a range of sources (refer to ***Annex Three: Useful Sources of Information***).

Collecting, analysing and using the literature

To do a literature review[19] you should:

1. Review the study objectives and data you want to collect during the study. Review the sample assessment report outline (***Annex One: Sample Outline of a Study Report***) to give you additional guidance.

2. Search the Internet for online reports and assessments, including those related to the policy and legal framework for mining, environment, forestry and conservation. In addition to national and local government websites, check online publications of international NGOs, conservation and development organizations as well as international institutions.

3. Visit libraries and mapping departments – this may only be possible if the literature review is being conducted in the country of your case-study. Many government agencies (and sometimes international NGOs and donor country offices) have resource centres or libraries. Ministries related to lands, minerals, forestry or the environment also often have mapping or cartography departments that can provide hard or electronic copies of maps of the area. University libraries can also be visited as they may contain detailed reports on your communities of interest (e.g. graduate level theses).

4. Approach journalists and representatives of local organizations. Many key people from different organizations and institutions may have access to literature you did not know existed. Consider who is likely to provide a promising source of information and follow up via emails, telephone calls and/or by personal visits. This can be integrated with other activities (e.g. Tool #4: Stakeholders, Interviews and Focus Groups).

5. As data is collected and information relevant to your study is obtained, begin to draft your ASM Assessment Report (***Annex One: Sample Outline of a Study Report***). This will help you to understand more about your study – key persons or organizations you should pursue – as well as refine it or even adapt it.

What to consider when drafting your research

*   Use a consistent reference system and style (e.g. footnotes, endnotes, references). Directly extracting from existing published or unpublished documents without proper referencing (e.g. quotation marks, paraphrasing, rewriting) is plagiarism. To use several references to support your study adds credibility to your study. However, if you plagiarise, your work runs the risk of losing all credibility and you could be challenged legally.

*   Consider the reliability of the literature as the validity and independence of data from some reports and websites may be questionable. Even methods and analysis of published academic works or consulting reports may not necessarily be accurate.

*   It is important you watch out for information overload and too much analysis and preparation. Spending too much time learning everything about an issue is useful but is likely to be impractical even if the study is only a desk-based review. Be clear about the number of days allocated to the task at hand; stick to what you really need to know for your Study; and be mindful of the fact that more literature can be reviewed as the Study progresses.

Balancing the desire for an excellent product and a delivered product is difficult for many.

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[19] Adapted from: World Bank, 2011, *Toolkit for Profiling Gender and Artisanal and Small Scale Mining*, IN PUBLICATION

Tool #1c: Mapping and Consulting Central Stakeholders

Importance of working with stakeholders and participants

A significant proportion of the Study will include the very important task of engaging international, national and local stakeholders as participants in the research. The most essential element in engaging stakeholders is winning their trust; they will want to know how your study strengthens or threatens their position in ASM. Potential key stakeholders are shown in Table 2 below.

When engaging stakeholders while applying the tools, the Research team should:

- **Prepare in advance and provide a standard explanation of what the project is trying to achieve.** While the main objectives should be fairly consistent, this description may need to be slightly adapted for different stakeholders (for example, conservationists, miners, and government bodies involved in eviction of miners have a different understanding of the situation). This is also a good opportunity to clarify expectations: what is "on offer" (if anything) to participants with respect to the short-term (e.g. allowances) and long-term (e.g. expected action plan instead of research outcomes).
  Being realistic and direct in this early stage will help manage expectations, which is a critical factor in long-term success, especially if a strategy is being developed.
- **It is essential to ensure that there is a member of the Research team with local experience.** The designated member should be able to provide services such as: helping with interpretation in local languages; acting as cultural guide to ensure the team operates in line with local protocols; helping the team get efficient and appropriate access to the relevant mining communities and key informants; knowing where and how to access necessary information (e.g. production figures, trade data, contact information of key stakeholders, etc.). It is essential that this member is viewed as being independent by the key informants and stakeholders; otherwise, the quality of information is likely to be compromised.
- **Be prepared to talk about your study in an impartial and non-controversial way.** Some stakeholders may have strong views about your study objectives or even personal interests in the area. Ethical considerations (i.e. anonymity, accurate portrayal of views and what was actually said) should be clear to participants.
- **Interpret participant views within the context.** Stakeholder views may reflect an organizational mandate while, in other cases, it may reflect the opinions or beliefs of an individual. Personal biases of the participants and the researcher should be kept in mind and clarified with stakeholders in the course of gathering data.
- **Consider the implications of self-interest.** Some participants may have a personal interest in directing the conclusions of your study, benefiting themselves (or other people they may recommend being involved) and/or even impede implementation of the study.
- **Take extra measures to capture views and issues of women, indigenous, illiterate and other vulnerable persons.** Specific measures to engage vulnerable persons will likely be needed to develop an adequate understanding of the local context, and to ensure the findings are valid and develop workable solutions that also benefit those most marginalised. It is generally more effective to go on the ground to mobilise and identify participants than to rely on local counterparts. Effective measures to take may include providing basic childcare for women during interviews or focus groups and conducting separate formal and/or informal meetings with women (as they are likely to be the most at risk if they express their views in public) and other vulnerable persons.
- **Consider your own personal biases and identities and how it may affect the research.** Think about how the Research team composition and personal characteristics of researchers may influence who will talk to them and the types of information they are likely to be given, or not.

Ensure the Final Study Report is made available and produced in a format that is brief and understandable to the participants, by using where possible the local language. Therefore, it should be allocated to local Research team members to develop and translate a summary document.

Because it is impractical (and maybe unhelpful for illiterate participants) to distribute this report to every single participant, key representatives (formal or informal leaders) in the community should be identified early on in the research, engaged as contact points, and given the abbreviated report with the understanding (by them and the community) that they will share its findings with all the community, including women and illiterate persons.

Depending on the scale of the project it might also be recommendable to organise a small debriefing meeting while still on site to explain participants' preliminary findings (as far as possible) and next steps (e.g. when will they get the summarised report, maybe there will be a second trip, to whom you will report, etc.).

Table 2: Potential Key Stakeholder Groups

INTERNATIONAL AND NATIONAL	LOCAL
• Mining, forest and wildlife authorities and their respective Ministries • Environmental protection agencies • Academic institutions (e.g. Universities) • Civil society and non-governmental organizations (international and national) • Potential partner organizations (e.g. country offices of donors implementing complementary programs) • Other appropriate aid agencies	• ASM community residents • Women and men miners and mineral traders • Hunters, loggers, farmers and shopkeepers • Schools and Teachers • Traditional leaders • Local authorities and technical officers (forest rangers, police, mines inspectors, environment officers, etc.) • Large scale mining and exploration companies active in the area • Community based organisations • Adjacent communities who may be impacted by activities

Begin to develop a stakeholder map

Your literature review should have helped identify some key organizations or people who are likely to be "gatekeepers" of knowledge and information and/or have been active in the communit(ies) or region(s) of interest. Discussions or informal interviews with these central stakeholders will also inform your stakeholder analysis of the situation (refer to Tool #4a: Consulting Stakeholders) and your stakeholder map should begin before you consult central stakeholders and be refined throughout the research process. This is an especially important tool for strategic planning.

To begin to develop a stakeholder map:

1. It is essential to compile a list of central stakeholders that will prove to be useful to the study. Again, consider the time allocated to undertake this work and, at a minimum, try to focus on: (i) at least one NGO or organization who has been most active in the area (with preference towards a conservation-, environmental- or livelihood- themed organisation); (ii) mining departments and authorities; (iii) forestry departments and authorities and/or wildlife/conservation/environmental authorities (depending on the type of protected area/critical ecosystem).

2. In some organizations, you may obtain information from only one person while in other cases, you may be able to talk to several or even have a group meeting.

3. List the people and organisations that are involved in the mineral supply chain (supply chain operators), governance of the mineral supply chain or protected area (regulators), protection of human rights or conservation values of the miners (non-governmental organisations), etc. Consider all interests that exist within and related to this issue.

4. Organise these people and organisations into categories. Consider which of these stakeholders are crucial, and which are not. Consider what types of data could be gathered from each stakeholder (see Tool #4a: Consulting Stakeholders, for guidance).

5. Assess your reasons for engaging the stakeholder. Ask yourself: "Are they there to give you information?" "Are they particularly important and bear influence over your ability to conduct the research or the possibility of implementing any future strategy?" "Do you want to get their support for your activities?"

6. Gather contact information for each stakeholder you intend to consult and consider when and how you intend to engage them.

7. Update the stakeholder map as you move forward with your research.

Consulting central and national-level stakeholders

Consulting with key stakeholders is an important part of research design, as they are best placed to know the situation and respective opportunities and constraints for your research. In this phase, consultation will largely be limited to questions relating to scope (e.g. choice of research sites within the protected area or critical ecosystem), staffing for the Research team, key informants for consultation as part of the main research phase, and logistics (e.g. security of transport options, accessibility of the site, availability of supplies etc…).

Detailed guidance on how to consult with key stakeholders is given in Tool #4: Stakeholders, Interviews and Focus Groups.

Tool #1d: Assessing and Preparing for Security Risks

Researchers are inclined to think they are neutral and independent and may believe they neither pose nor face threats – particularly if they believe they are using methods they consider to be "rational", "objective" or "impartial".

**RESEARCHERS MAY ENCOUNTER A NUMBER OF SECURITY RISKS
WHEN UNDERTAKING THE STUDY AND SHOULD BE PREPARED TO
ANTICIPATE IN ADVANCE AND CIRCUMVENT ANY POTENTIAL PITFALLS.**

In reality, the research may take place in an environment where people may care little to not at all about science and, even when research is aimed at finding ways to positively improve situations, what is regarded as "better" is inherently subjective; researchers may be seen as a threat to the interests of individuals or groups. Aside from non-discriminatory violence, your security depends on how you are perceived by stakeholders in relation to their interests and threats thereto.

Assessing and adapting for security risks

Tools #1a-c will help you to make preliminary assessments of the context in which your research takes place. Nevertheless, there are number of specific risks you may need to check and avoid, listed in ***Annex Four: Types of Security Risks to Consider***.

Here are some generic rules of thumb that can help to overcome much of the risks you may face:

1. Understand the situation! Review the common ASM-specific and generic risks you may encounter early in the research (for example, men are perceived to be more important and respected and women less important and more vulnerable) and keep a running list of issues that are likely to emerge while you are conducting the literature review, consulting central stakeholders and throughout the duration of the research.

2. It pays to check with and even work in partnership with local and international organisations present in your area/country of research. Grassroots organisations will be able to tell you whether you can work in the sites you want. Larger international institutions and organisations, such as the World Bank, the United Nations and multinational companies, will have a security policy in place with recent analysis of the situation. Often, private security companies (in some cases serving mining companies) are present on the ground and you can check with their offices to assess how they see the security situation.

3. Remember that some information sources may exaggerate or minimize security risks for their own reasons.

4. Together with your Research team, make a list of likely risks and mitigation measures. All the concerns of the Research team members should be valued and you should jointly make choices and provisions regarding security.

5. Adapt and refine your research plan accordingly. Unfortunately, this may in some cases mean avoiding specific ASM areas or ASM sites altogether (requiring adaption of Tool #3: Community Transect Walks and ASM Site Visits) to obtain as much data as possible from miners off-site, i.e. in nearby communities or towns) or shifting the research focus to different regions of a country altogether.

6. Present your research and its intentions to key stakeholders before you move into the field – particularly to national and/or local governmental institutions (Note that if you do not have their authorisation to be in the area you may risk to be deported, or worse, going to jail). Even though you may hold a discontented view of existing stakeholders in your research, it is important to respect local protocols (no matter how irrelevant these may seem or how time constrained your program is). Note that doing so is not just beneficial to security, it is also pivotal for the implementation of change as change does not happen without all stakeholders being on board.

Tool #1e: Refining the Study Design

Based on the draft research plan, budget and itinerary and building on findings of the literature review, initial consultations with key stakeholders, and security assessment, the study design can be finalised.

The Study objectives and the main data to collect have been described in Tool #1a: Developing a Research Plan. With some background information on the area (using Tools #1a to #1d), the study design can be adapted to suit local conditions and a realistic implementation plan. However, at this stage:

1. Review the findings of your prior work. Are your objectives still applicable and achievable? What other components of the plan should be revisited?

2. Re-assess your budget and itinerary. Are they still workable and feasible? While, ideally, a maximum number of interviews, focus groups, days spent on transect walks etc. would be conducted, in reality, most assessments are limited by a budget. Are the logistic components (access, permissions etc.) requiring changes in the schedule?

3. Review the subsequent methodological tools. Based on your finalised objectives and what you now know about your study areas ask yourself if they are all applicable in their current form: What should be adapted? Which are no longer relevant?

4. Adapt and refine the tools (e.g. interview guides, focus group guides, transect walks) to suit conditions in the Study area.

All Research team members should be involved in this process and be familiar and confident to use them. Consider what is reasonable and possible in the time available.

TOOL #2: ANALYSING THE POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

Many baseline assessments give inadequate attention to the policy, legal and institutional framework that governs the legal rights and obligations of government and a nation's citizens and residents. This might be due to the fact that most research teams lack legal capacity, thus, as suggested in Tool #1a: Developing a Research Plan, when thinking about the composition of the research team relevant legal knowledge should be considered. Depending on scale and type of the research it can be sufficient to have legal advice at hand by an external researcher/adviser to clarify any open questions pertaining to this field.

The Methodological Toolkit does not intend to provide the means for an in-depth policy, legal and institutional analysis, but in the event that legal knowledge is lacking in the team, this Tool will provide the basic means to understand the role of the Government, its institutions and agencies, both at national and local level, when dealing with the mining sector in general and ASM in particular. With the use of Tool #2, you should have some understanding of:

i. whether ASM can be licensed in the country and the requirements and restrictions for this;

ii. how legislation related to conservation and environmental protection in the context of mining is to be applied in the area of interest; and

iii. how policy objectives are (or are not) being applied by regulations agencies and are (or are not) harmonised between the different relevant sectors, and a grasp of the capacity available to do so.

Moreover, you should be aware that, in some cases, in the study of ASM in Protected and Critical Ecosystems you will be faced with human rights issues. Therefore, it is important that you are familiar with foundational international human rights legislations such as:

- UN Universal Declaration of Human Rights

- International Covenants on Civil & Political Rights and on Economic, Social & Cultural Rights

- Framework and conventions of the International Labour Organisation

It is also important you are able to recognise which actor(s) is able to claim rights, have a duty to bestow and protect rights, respect rights, and provide remedies when these rights have been infringed.[20]

Tool #2 helps the researcher to understand legally enshrined rights and obligations (duties) in a given country while the institutional analysis characterises the "architecture" in place for government to fulfil their duties and how this is actually taking place on the ground. The Tool describes what to include and look for when using other tools of the Methodological Toolkit. For example:

- Much of the "theory" of the prevailing policy, legal and institutional framework can be obtained during the literature review (Tool #1b: Conducting a Literature Review) and central stakeholder consultations (Tool #1c: Mapping and Consulting Stakeholders) while the actual "practice", or how the policy, legal and institutional framework is being instituted on the ground, will mostly be understood while using the different field-based tools.

- While consulting stakeholders, conducting interviews and focus groups on access, control and ownership of resources (Tool #4: Stakeholders, Interviews and Focus Groups), you can obtain much insight into the extent that certain groups and individuals (such as community members) understand and interpret their rights, whether this interpretation is consistent with the law and how they are trying to claim their (perceived or actual) rights. Similarly, discussions with community leaders and/or miners during site walks and visits (Tool #3: Community Transect Walks and ASM Site Visits) or during introductory meetings can yield information on how government agencies are responding to ASM activities in protected areas.

- Multiple tools can provide insight into formal and informal institutions (such as national NGOs, community based organisations, informal groups and other associations), their respective mandates and objectives and how these are being applied (or not) in the communities of interest.

**ANALYSIS OF THE POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK
CAN BE DONE CONCURRENTLY AND TAKES PLACE FROM THE
START OF THE RESEARCH THROUGH TO FINAL ANALYSIS AND REPORTING.**

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[20] Read the UN Guiding Principles on Business and Human Rights (2011) for more information

Being able to assess the institutional and capacity gaps of a government

The Government – through its institutions – is required to protect rights, making sure that adequate remedies are available (if these rights have been infringed) as enshrined in national and international legislations. On a practical level this is not always achieved. While there may be adequate and fair laws, mandates may be conflicting or contradictory in some areas (e.g. issuing exploration permit and the designation of national parks may overlap) or the laws may be poorly enforced.[21]

For example, a specific government institution may be mandated to regulate and enforce laws related to wildlife protection while another body may be charged with promoting rural livelihood alternatives. A range of factors may hinder effective enforcement, such as unclear roles and responsibilities between or within State authorities and agencies, insufficient budget allocation or misuse, inappropriate policy objectives, lack of training of government officers, corruption, lack of technical equipment or skills, and so on.

Policy, laws and institutions therefore often represent an important part of the "problem" that must be sufficiently understood to assess ASM in protected areas and subsequently develop workable solutions. Furthermore, identifying entry points or specific recommendations for policy, legislation and institutional reforms in support of appropriate, effective responses to ASM in protected areas is a sphere where ASM-PACE assessments can make an important contribution

Preparing to analyse the policy, legal and institutional framework

Before you begin to initiate the assessment, it is important to understand the difference between Sectoral Policies, Legislation and Regulations (for definitions refer to the Glossary on page 7).

You should also know that[22]:

- *Most sectoral laws and institutional mandates are overlapping and must be adhered to concurrently.* In the case of ASM in protected areas and critical ecosystems, this is likely to include laws related to mining, forestry, land, conservation, wildlife or national parks, environment, labour and safety and health, among others. A *common gap* in legislation is lack of harmonisation (or even conflicting provisions) of laws, in many cases making formalisation of ASM or conservation of critical ecosystems extremely difficult.

- A *"Policy Mandate"* is not the same as a *"Legal Mandate".* A policy mandate is a document stating the objectives of an organisation (in this case the Government and/or its departments and agencies) and the actions it will to fulfil these objectives. It is distinct from a legal mandate in that it is neither required nor supported by legislation.

  A government body (e.g. mining, forestry or wildlife department or authority) may have a policy mandate to fulfil well-conceived policy objectives but a *common gap* is that these mandates are not sufficiently enshrined in law. If such roles and functions (e.g. ranging from regulation and enforcement to extension service provision to intersectoral coordination) were enshrined in law, government would be required to fulfil these functions.

  The distinction between policy and legal mandates is important because only the latter can be legally challenged by individuals, groups and/or organisations. Therefore, Government and/or its departments and agencies are vulnerable to challenges if they do not comply by their own laws and regulations and will be more inclined to listen to clear recommendations following ASM-PACE assessments.

- *Policies, legislation and institutions change over time* as lessons are learned and economic, social, environmental, political, cultural and other conditions change. Ideally, these reforms are in-line with what is suitable for a given country or sector and are informed by new evidence, experience and the reality on the ground.

- Reforms to policy and law usually require acts of Parliament (or a comparable government body) to be enshrined. Unless there is a major impetus to do so (e.g. a major flaw is discovered or other urgent need of national interest identified), this process typically takes 3 to 5 years. Making recommendations for reforms to policy or sectoral law are nevertheless important as changes are ongoing and it is not uncommon for policy and laws to be updated every decade or so. *However, regulations can typically be changed or promulgated quite quickly by ministerial order*

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[21] Moser, C., Norton, A., Conway, T., Ferguson, C., and Vizard, P., 2001,*To Claim our Rights: Livelihood Security, Human Rights and Sustainable Development*, Report: Overseas Development Institute, 79p.
[22] Hinton, J., Okedi, J. et al, 2009, *Small Scale Mining Handbook: A Guidebook for Improving the Performance of Artisanal and Small Scale Mining in Uganda*, publ., New Vision Commercial Printers, 432p.; and
Pers. Comm, 2011, J. Okedi.

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(i.e. by the Minister presiding over a sector). New regulations can be developed or amended by Statutory Instrument as agreed by relevant government authorities if a clear justification is made for doing so.

- International, Regional, National, provincial and municipal regulations may all apply to your situation. Regional (e.g. European Union) provincial and municipal regulations are easily overlooked while they may prove very important. Relevant regional laws / treaties may not have been promulgated into national laws (e.g. border control, trafficking of precious metals/ stones). Provincial and municipal laws / regulations may have been drawn up to circumvent national laws or to cover for a lack of field presence of national institutions to implement the national laws.

Analysis of the policy, legal and institutional framework therefore ***provides an invaluable platform to recommend more sustainable and realistic solutions for dealing with ASM in protected ecosystems.*** Through evidenced-based research and thoughtful, defensible analysis, the assessments conducted under ASM-PACE can inform appropriate reforms and create a lasting, positive impact beyond the time span of a project in a given country, potentially with broader implications and benefits to other jurisdictions as well.

Tool #2a: Analysing Policy and Legislation

A policy and legal analysis can be achieved in a reasonable time. These suggestions will help streamline the process:

- *Focus on mining and conservation.* The full body of environmental legislation is usually abundant and comprised of multiple regulations (e.g. water, hazardous waste, waste discharge, air emissions, etc.) and will likely provide far more detail than you need.[23] Often, land legislation is extremely relevant also, particularly if the ASM area is just outside of a protected area. This is because the difference between "surface rights" (i.e. land rights) and "subsurface rights" (minerals) is often a contentious issue and source of conflict for local land users.

- *For the Minerals Policy, focus on goals, objectives and mandates* related to ASM and environmental protection. For Forestry, Wildlife or Conservation Policy (which may be captured separately or jointly under national environmental policy), pay most attention to goals, objectives and mandates for protection, regulation and enforcement. In both cases, how do the policies refer to national development plans or poverty reduction strategies? Do the policies refer to each other explicitly? Or indirectly?

- *Laws and Regulations* are often a bit more complicated to decipher (unless someone on your team has a background in such analysis) but are still easily searchable. Review the table of contents first then jump to sections that are most relevant to the research.

- *Research existing literature.* In some cases, someone may have already assessed the effectiveness of policy and legislation. Consider their point of view in such research (i.e. strong opinions for or against ASM).

- *Central Government consultations* can probably answer your questions before doing intense analysis. Reading at least the relevant policies first will give you the minimum background to discuss the subject. Asking a relevant government expert to walk you through the supply chain and to tell you which law to apply is a relatively easy way to find the essential laws and regulations (e.g. If I want to become an artisanal miner, what permits do I need? See also questions mentioned in the next section)

What to look for

Key questions to consider during your analysis include:

- *Who determines policy? What is the process?* The organogram obtained or developed during your institutional assessment will be useful for understanding the process further.

- *Are there any major contradictions between policy objectives in the different sectors? How about between the laws?*

- *Are protected areas or other critical areas explicitly recognised or indirectly captured in minerals policy and legislation? How?*

- *Do wildlife, forestry or conservation policy and legislation refer explicitly to mining? Or indirectly?*

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[23] If any environmental sampling protocols are used during the assessment, results will be compared to national and, if unavailable, international standards.

- *Does mineral policy and legislation support licensing of ASM? If so, what are the restrictions on this?* Consider environmental restrictions (e.g. protected areas) that may be covered in cross-cutting categories of legislation (e.g. applicable to exploration and large scale mining also).

- *What are the procedures for the approval of mining access rights generally? And for mining rights in conservation sites or protected areas, in particular? What is the process?* While formal costs are usually provided in regulations also, when consulting stakeholders using other tools, try to obtain information on the informal costs of being legal.

- *What are the procedures and requirements for obtaining and maintaining (complying with) an ASM licence?* Consider financial costs also (i.e. is it even feasible for the average artisanal miner to afford a licence). Consider too: What are requirements for environmental impact assessment for ASM? What are the social, health and safety requirements? What types of permissions are required from traditional authorities and landowners?

- What are the relationships between Large Scale Mining (LSM), Small-scale and Artisanal Mining? Does one prevail over another in the legislation?

- Does policy reflect the reality on the ground? Does legislation capture the objectives of the policy?

- How do activities observed in the ASM communities (e.g. mining, logging, trading, bushmeat hunting etc.) support or contradict policy objectives?

- How is trade in ASM-mined precious metals /stones regulated? To whom do the miners need to sell? How are buyers regulated? How is export regulated?

Baseline statistics (e.g. on the number of artisanal miners in a country, the percentage that are licensed, areas where they are working (i.e. protected areas), and official data on the production of minerals) can provide additional evidence of the efficacy of legislation. Understanding of how policy and legislation are actually implemented on the ground (related to ASM as well as conservation) can be further understood from the institutional analysis (refer to the Tool below)

Tool #2b: Characterising the Institutional Framework

Institutions can be either "formal" or "informal". Tool #4a: Consulting Stakeholders captures both types at a community level (including locally active civil society organizations) while this section mainly focuses on formal institutions that are responsible for implementing the policy and legislation.

Your institutional analysis will essentially involve understanding: (i) what is supposed to happen (institutional structure, coordination arrangements, mandated roles and responsibilities); (ii) what actually happens; and (iii) potential reasons for any gaps between these two.

What to look for

Incorporate these issues while using other tools:

- What is the organizational structure of mining and forestry/environment/conservation authorities (and potentially other relevant government institutions (land use planning, economy)? And how do they relate to one another? During central stakeholder consultations, try to obtain an organogram for the organizations. Sometimes these are also available on ministry or agency websites.

- How are different agencies, departments and institutions coordinating activities, if at all? Central stakeholder consultations and stakeholder assessments, among other tools, will provide more insight.

- How does the level of (de)centralization impact / influence the performance of an institution? What is the degree of decentralization of mining and forestry/wildlife/conservation sector regulation? Are offices locally situated? What are their staffing levels? What are their mandated roles and functions? Are they being fulfilled? What is actually being done?

- Do different departments / agencies coordinate or collaborate in their activities? How? Consider at central and local levels.

- Are policy or legal mandates being supported by adequate budgetary allocations? Are budgets being used according to department, agency or office workplans?

- Are any mechanisms for accountability for fulfilment of mandates in place? How is performance monitored? Are outputs and/or outcomes of work reported on?

- Where is the nearest presence of local government to the area of interest? What are their mandates in the area of interest with respect to ASM, environmental protection, health, infrastructure and services? How do they obtain human and financial resources to fulfil these mandates? Is there a local development planning process in place? (i.e. how are plans and budgets developed and submitted to central government in order to obtain transfer payments and other resources for functioning).

These questions and issues are quite broad so it is important to maintain focus on ASM, conservation and environmental protection and the nexus between them, with particular emphasis on the area of interest for the assessment. To choose a focus, it may help to put the answers to the above questions into a flow chart. You can then choose to leave out certain flows. This can also be of benefit in defining your research questions.

TOOL #3: COMMUNITY TRANSECT WALKS AND ASM SITE VISITS

The previous Tools have provided guidance on conducting desk research on ASM in Protected Areas and Critical Ecosystems. Tools #3, #4, #5 and #6 will direct you on how to continue your study on the field.

Now that a broad analysis of stakeholders and the legal and institutional framework has been done, it is time to visit the actual mine sites. A transect walk is a good way to start mapping out the landscape of your case-study area.

Before you arrive at the mining community:

- The team should agree on some basic points regarding social and cultural precautionary behaviour. Lay down guidelines regarding socialisation, inter-gender social behaviour, the use of alcohol, gifts, and appropriate dress codes and determine who will be the spokesperson for the team.

- Make sure all members are aware of the importance of the methodologies used by the team and that they are comfortable using the methodologies. Some practice during briefing sessions at the office and during daily field-based debriefings will be very useful.

- Agree beforehand how the different team members should report what information (e.g. each makes a report; each provides the rudimentary data to one report writer; etc.). It is helpful to develop a report outline beforehand. If you do, it is best to check the relevance of the outline during the field visit and refine it as needed.

Tool #3a: Community Transect Walks & ASM Site Visits

Transects walks[24] offer an opportunity for direct observation, allowing you and your team to get a feel for the research site. Particularly, if the site was never before visited by other researchers, or if your team never visited the area before, you may enter the area with some insecurity about what to expect and what it is you are going to be confronted with.

A transect walk is aimed at mapping the key features of different land use zones in a community. The likely outcome of a transect walk is the production of a diagram or a map. Since a transect walk is a multi-dimensional mapping exercise, you could spend days on transect walks alone if you so desired with the objective of producing a community profile or even an ethnography.

In order to accomplish your Study objectives, it may be more practical to limit the transect walk to a rapid assessment (although results will also be limited).

Transects are particularly useful when there is a range of land use systems in one community (e.g. agriculture, mining, commercial, etc.). These different land uses may not directly present themselves since a community may not be geographically bound to the ASM base site.

Other camps/villages/settlements can be considered to be part of the community if, for example:

- there is more than one ASM camp

- other locations house people, possibly in camps, who are likely to be servicing the ASM camp(s) (e.g. farmers, hunters, fishermen, as well as owners and staff of local bars, brothels and video clubs)

- the mining camp is dependent on other camps, businesses or individuals for certain services, e.g. a satellite phone and other amenities

- other locations nearby are dependent on the ASM camp

- there is a separate hunting or fishing camp (or camps serving other needs...)

As the above list indicates, often one finds outpost camps belonging together.

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[24] Acknowledgments, amongst others: FAO Participatory Survey Methods for Gathering Information (www.fao.org/docrep/W8016E/w8016e00.htm), FAO Rapid Rural Appraisal (www.fao.org/docrep/W3241E/w3241e08.htm) Participatory Rural Appraisal for Community Forest Management; tools and techniques; Asia Forest Network, Santa Barbara, California USA 2002.

Key aspects of the relationships among camps are as follows:

- Outpost camps may be other ASM camps with limited services or these camps may provide specific services. In the latter case, the outpost camps may service more than one main camp, functioning as satellites for other camps or villages.

- Note that as these camps represent human activities related to the ASM camp, they would still be considered as part of the impact of ASM. If the satellites provide services to other camps in addition to the ASM camp you should make note since the impact cannot be completely attributed to the ASM camp under scrutiny.

- The satellite camps are best to be visited and 'transect walked' as well. If transect walks in other camps are not feasible due to time or other limited resources, a quick mapping exercise with a small focus group or with the camp leader can replace this exercise. A glancing walk through the camp can then provide you with a quick means of triangulation.

In mentioning satellite camps, we have touched upon another important aspect the transect walk can bring about: relations of activities within the larger community. The relations may even be a cause of conflict. Mapping with Venn diagrams is a good instrument to represent these relationships. As conflicts are often between stakeholders, this kind of mapping is best done after it is felt that the stakeholder profiling exercise is completed.

Before you begin the transect walk

Before you begin the transect walk it is important to:

- Draw up a checklist of the major features that the map should include.

- Create a legend beforehand and decide on the symbols to use for each feature. Not only does this allow the team to more actively engage as less time is needed for mapping, it also forces you to think of what features you expect and which you are determined to find so you can propose a list of things you want to see to the person showing you around the community.

Common features of maps are

When drawing a map, the common features to include are:

- physical infrastructure, (e.g. roads, buildings, government offices)

- social infrastructure, (e.g. churches, community centers, hospitals

- mining extraction and processing areas

- mining related infrastructure (e.g. storage buildings, offices)

- waste rock piles and tailings impoundments/dams or waste discharge areas (e.g. rivers, depressions).

- water sources and effluent (wastewater) discharge points or areas

- major physical features (e.g. mountains, hills, rivers, structures)

- agricultural / livestock infrastructure

- hunting / gathering related infrastructure

- hunting / gathering sites, e.g. specific plants used for traditional healing

- fishing waters

Transect Walk: steps and suggestions

- Recording can be quite challenging during a transect walk, because the team members are walking and talking and not necessarily with one another. Stop on the way when interesting issues arise to ensure you can document them.

- It is also useful to divide up responsibilities among the team members. For example, one may take notes, another may ask about commercial activities, another about processing, living areas and so on.

- You can decide how to structure the exercise based on the matters important to the research. For example, it may be

noteworthy that an ASM community has bars and dancing, as this can be a sign of a temporary settlement's evolution into a formally established village or town. However, mapping each and every bar offers little benefit for the purposes of ASM research.[25] Likewise, not every house or agricultural plot needs to be marked, just the zone and its type of use.

- The route is best planned with local residents. It does not have to be a straight line, but it should not be random. It should be chosen to pass through the main land use systems. It may be best to use a route that brings the team back to where it started, or it may need to start beside a mining pit and move up-hill to the edge of a watershed. Sometimes several short transect walks give a better overall picture than one long one.

- When making transect walks on your first day, it is preferable to go together with a community member who can introduce you. Mining communities may not be exceptionally welcoming to strangers, particularly if illegal activities are taking place. The drawback may be that a community leader guiding you on the walk may want to keep a good eye on what it is you are doing and asking. This may limit residents from speaking openly in the presence of authority. Although you cannot move in a community without the blessing of its leaders, you may be able to identify a more neutral community member (which will undoubtedly be determined).

- On that note, it is not essential to be taken through the community by a local resident. The team members may wander alone and maximise the benefits of being forced to interact with both random and selected types of people. This may result in the community getting acquainted with the presence of the Research team. Though you may not be talking to most people, most people will see you passing by and news of your presence will go round. This will likely increase willingness of people to approach you, if only for reasons of curiosity.

- If you have prepared for your transect walk thoroughly, you will know what you are looking for and will have a good idea about which type of respondents you want to talk to. If possible, you could ask to be guided through the community by a group of people, each individual representing a different section of their society.

- It is important that within their respective groups, different representatives may hold some kind of informal authority to help persuade others to open up to you. When gathering such a group of people proves to be too challenging, you can split your transect walk in thematic sections and ask a stakeholder of one group to describe another group and guide you to them or their area of activities in the community (for example, you can ask the community leader, where do women usually cook or work).

- In addition, it is of the utmost importance that you try your hardest to marginalised groups whose voices are not easily heard and/or represented in the community are represented (e.g. women, children, elderly, youth, disabled, ethnic minorities).

Results: producing a diagram

- The diagram resulting from this data collection is best prepared as soon as the walk is completed.

- The rough topography of the walk is drawn at the top and a matrix with the headings of the check list lay out underneath.

- It is important to show the diagram to groups of community members and use it as a basis for discussion about what the team has learned. They can help you cross-check/validate the accuracy of your diagram and can help focus future discussions to examine issues of land use, the severity of constraints and the degree of consensus amongst community members.

- The diagram is an outcome as well as a very useful tool for further mapping exercises with focus groups (refer to *Tool #5b: Focus Groups, Stakeholder Analysis and Environmental Impact Exercises* for information on land use mapping focus groups).

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[25] A partial exception may be when bars etc are all located on one side of the camp as this may have an extra disturbing effect on wildlife on that side of the village due to noise. In this case, a reference as a zone suffices rather than marking all bars. Also note that such an effect would ideally be verified.

Tool #3b: ASM Site Visit

During an ASM Site Visit, a wealth of information can be obtained in just a few hours on a range of issues. This can include the history of ASM, organization of work, environmental impacts, productivity, incomes, the gender division of labour, work burdens and benefit distribution, child labour issues and the relationships between ASM and other livelihoods in a given area.

Preparing for an ASM site visit

1. *Some familiarity with ASM in the area is useful.* From the literature review or other tools, you should gain an understanding of what types of methods and impacts are expected and how many sites are in the area. Given the time available consider how many sites visits are feasible in order to feel confident enough that what you have seen is a reasonable representation of the situation.

2. *Consider security and access issues* such as police clearance and official permission (refer to Tool #1d: Assessing and Preparing for Security Risks). Try to find someone (ideally a miner) who knows the miners on the site(s) and who can accompany and introduce you. Note that it may be risky to go with a local counterpart if he/she is a representative of a forest/conservation or mining authority that may not be particularly welcome.

3. *Think of how you will introduce the study objectives and not make miners feel threatened by your presence.* While you may be well meaning and supportive, other researchers may have come before you with the intent of disrupting livelihoods or evicting miners, thereby posing a risk.

4. *Consider what questions to ask while on-site.* Review the Tools below and ensure the team is prepared to address each of the issues. A pre-visit meeting the night before will be useful, particularly given that splitting up the team (i.e. as individuals or in groups of two) is a useful way to cover a lot of ground and obtain even more data that can be used at a later stage.

5. *Ensure (as for all other activities) you obtain permission to take any photos.* While a picture can be worth a thousand words and such "evidence" is critical for your assessment, not all people may be willing to have their photo taken. Even if a so-called miner-leader may tell you to "feel free", he or she may not be speaking on behalf of individual men and women. Some may also ask for money, which is generally not good practice. Be prepared to explain how and in what context photos will be used.

What you should know before you go to the ASM site

The ASM Expert on your team will need to familiarise other Team members on basic issues in ASM before you go to the site. This should include:

1. Reviewing the checklist to ensure it is appropriate for the mineral being mined. Different mining and processing methods are used in different places. Your ASM Expert should be able to revise the checklist fairly easily as most sections will stay the same.

2. Ensuring each Team member is familiar with the ASM Site Assessment Checklist in **Annex Five** and what all its components mean. Also review the sample completed checklist to ensure the level of detail and type of information needed is clear.

   While much of it may be self-explanatory, the Team ASM Expert will need to go through the checklist step-by-step and explain and discuss each component in a meeting beforehand. Key issues especially related to ASM technologies and practices. The team should also discuss what other information can practically be gathered while on-site.

3. Important issues include knowing what to look for on-site to estimate production and incomes as well as the environmental footprint of the ASM site. Review Tool #3d: Using your ASM Data to Make Useful Estimates to ensure what information is needed to make these estimates.

4. Understanding some basic concepts in mining and ASM. Your ASM Expert should review with the research team basic definitions and issues related to:

   • Different types of mining (e.g. alluvial/colluvial, hard rock, open pit, surface, underground)

   • Different types of ASM operations (e.g. rush, community mining) and the degree of formalization and organization (e.g. organised, semi-organised, disorganised, etc.) and organization of work (e.g. teams, small units, independent) and their significance in understanding ASM at a site.

- Common technologies used in ASM that are likely to be found at the site for both mining, (extraction), mineral processing, waste (waste rock and tailings), and water management (how water may be extracted and how wastewater may be discharged).

- The "unit operations" of mining, i.e. the basic steps in extraction (mining ore) and processing for the mineral being mined. This typically includes extraction (digging or rock breaking), loading and hauling (using basins or buckets or?), processing (the steps involved to separate valuable minerals, e.g. gold or gemstones, from non-valuable minerals).

If Team members are new to ASM, some of the more technical issues (for example, technologies and methods, how to identify waste rock) will need to be described while on-site by the Team's ASM Expert. Some members may be specifically appointed to focus on collecting the environmental footprint data, others on production and incomes, and the remainder looking at more general checklist items.

**ENSURE ALL RESEARCH TEAM MEMBERS UNDERSTAND THE CHECKLIST AND
DECIDE IN ADVANCE WHAT COMPONENTS ARE ESSENTIAL FOR YOUR RESEARCH OBJECTIVES**

Once Team members become familiar with ASM, it will become easier to undertake the work quickly at other sites. Furthermore, the Checklist is relatively extensive and (if time is limited or a large number of sites need to be visited in a short time) it may be practical to split the Team up in groups or individuals to focus on data related to specific topics or issues (potentially including one or two on-site in-depth interviews with male and female miners).

Tool #3c: ASM Site Assessment Checklist

As explained above, an important task for the team's ASM Expert is to make all members of your research team aware of the technical terminology present in the checklist in advance of the ASM Site Visit.

Once on-site, hold a small briefing with miners (those who are interested) to introduce the Study and explain that you would like to understand what people are doing, how they may be benefiting from ASM activities and what their issues, concerns and priorities are. Again, try to make sure your presence is reasonably welcomed by being accompanied by a miner that can introduce you.

Each team member should have a copy of the checklist and use it during and after ASM site visit(s). It should be used as a guide for the site visit but is not a structured questionnaire. Both visual observations and informal discussions with local miners can help "fill in the blanks".

To use the ASM site assessment checklist:

1. Depending on the size of your team and their capacity in ASM, try to break off in smaller groups (2-3 team members), in order to collect more data from a larger number of different miners. This will increase reliability of findings when later compared with data collected by other team members. This is useful because some miners may overestimate while others may underestimate certain data (e.g. number of miners, production, incomes); this happens for a whole range of reasons, including: fear of taxation, robbery or exploitation; not knowing and guessing; or stating what they think you want to hear.

2. Try to collect information on production and incomes being mindful that the information requested may be private and confidential (the checklist gives you guidance on how to do this). For instance, you can carefully ask a series of innocuous questions to determine production of minerals (e.g. gold), then in a later discussion on the trading chain (how is the mineral sold? To whom?), you can determine the sale price on the ground. Analysis of this is discussed further in Tool #3d: Using your ASM Data to Make Useful Estimates.

3. The most vocal miners may be speaking from a position of self-interest and, although they may be easier to talk to, they may not necessarily give accurate information. Ensure you also talk to those who appear to be most marginalised, representing different roles in the organization of work (e.g. digging, hauling, processing). Make an effort to obtain information and views from women, young people, elderly and illiterate persons.

   Even if you have filled in an "answer" on your checklist (e.g. number of fatalities per year), it is useful to ask the same question of many people to get the facts straight.

4. Document some telling statements verbatim (word for word), make sure you ask permission first. Recording and using quotations can add a human face while succinctly capturing the heart of an issue in your report. Consider the following:

"Our garden is gold, mining is what we farm, and we grow gold.
Gold mining is the mainstay of the population here"   Women Gold Miners

"When there is nothing in the stomach, you can't even manage to
dig the hole"   Male Gold Miner

"Government seems not bothered about our plight; no health services, no water
interventions…. why should we be told to pay mining tax to government?
We cannot! "   Male gold miner

5. **The checklist is not a questionnaire.** Do not go through each section of the checklist with someone at your side. It is simply there to guide for the Research team about the data that is desirable (but not always possible) to collect. Use observations and casual discussions about issues to get information the site.

   For example, you can ask miners to describe the process, how they are working, the tools and equipment they are using, the type of ore (if they know it) and how work is organised. During the same discussions, you can casually ask how many basins are washed in a day or how quickly a pit can be dug (by how many people). Some issues emerge naturally. During the same discussions, you can carefully explore other issues (e.g. conflict, environmental, accidents, social etc.). As another example, when discussing health issues at the site, it is likely the conversation will naturally move into discussions of mine accidents and occupational safety risks and/or sanitation and hygiene issues.

   Much of the information in your checklist can be filled in after (rather than during) the discussion but take a notebook to capture additional valuable details, stories and experiences of miners.

6. Collect what data is possible but recognize that you may not be able to collect everything because: (i) some data on the checklist may not be relevant to the site (depending on the nature of ASM, mineral being mined, etc.); (ii) levels of mistrust and suspicion may be very high and, despite all attempts, miners may not provide some of the information you want.

   Just collect what you can within reason! A useful benefit of working in groups of smaller teams to collect the same data is that you can meet with fellow research team members after the visit to compare notes and fill data gaps.

Refer to ***Annex Five: ASM Site Assessment Checklist Form***.

NB: both the Checklist and Tool #3d use artisanal and small-scale gold mining as an example. However the ASM Expert should be able to direct the team on how to adapt these tools for the study of other materials and gemstones.

Tool #3d: Using your ASM Data to Make Useful Estimates

A powerful advocacy tool and point for discussion with local and central government and other sector stakeholders is the amount of money that miners inject into local economies and the value of production. These estimates should be used with caution and the inherent uncertainties highlighted. Using the data you collected from the ASM site(s), you can roughly estimate production and incomes.

Estimating Daily and Annual Mineral Production

You may have obtained mineral production statistics for the area from central government (e.g. Ministry of Mines) or regional mining officers. While useful for comparison (and inclusion in the Study report), if these do actually exist they are often inaccurate (i.e. due to informality of ASM, smuggling, lack of government presence on site, etc.).

A Simple Gold Panning Operation

The approach to estimating ASM production is described below using as an example of one of the most common gold separation and recovery methods (i.e. panning of alluvial gold).

First, compare, discuss and agree on the data collected in the ASM Site Assessment Checklist with the Research team members. As data was estimated (or could have been inaccurately reported by miners), do these for each checklist item to agree on reasonable values for data collected.

Once you have discussed and agreed on data you think is reasonable, the basic calculation to roughly estimate Daily Mineral Production for the site is:

Average Daily Production (grams)   =   # of miners   x   # of pans/person/day   x   grams produced/pan/person

Number of Miners:
Checklist Items #A8 and #A9.

Note: cross check this with Item #A10 and #G9, which look at seasonality issues.

Number of pans/person/day:
Checklist Item #D3: How many pans are typically washed per day?

Note: cross-check by considering how many minutes it takes to wash a single pan and explore, with the miner, what other activities they are doing throughout the workday.

Production/pan/person:
Checklist Item #D3: How much gold/mineral is typically obtained from one pan?

Note: Cross-check #1: Watch the entire panning process to see how much produced in a pan. The grade will be different in ore from different places, so it is good to collect data from miners on different parts of the site.

Cross-check #2: Does this make sense according to reported daily production (#D3) and the number of pans washed in a day?

Cross-check #3: Does this make sense according to reported daily earnings (#E7) and the reported sale price (#E2)?

To roughly estimate Annual Gold Production for the site:

Avg. Annual Production (kg)   =   avg. # of days worked per year   x   average daily production (grams) ÷ 1000

Number of days worked per week (Item #G8)
x   No. of weeks/year (Cross-check Items #A10 and #G9)
—   Number of days lost to illness and injury (Items #G6)

=   Average number of days worked/year

From above calculation
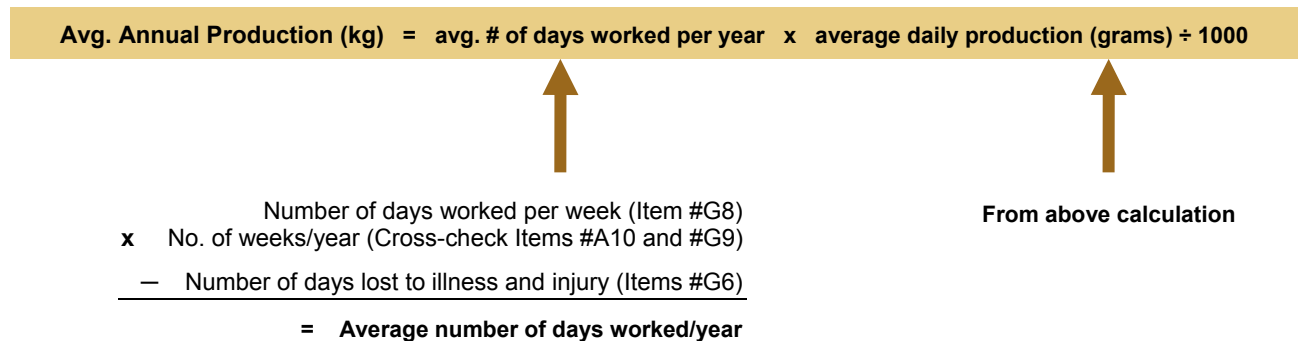
To improve on this rough calculation, you can explore with miners the differences between rainy season and dry season production as presented in the daily production estimate data (Item #D3).

A Rough Cross-Check for the Site

You can do a *very, very rough cross-check* of production estimates by calculating the following:

Avg. Annual Production (kg) =	total volume of voids (m3) x density (t/m3) x average grade (g/t) ÷ No. of years in operation x 1000

Total Volume of Voids
Use Checklist Item #B3

Total the volume of all of the pits and shafts

Density

*For **alluvial deposits**: roughly estimate this at 1.8 t/m3*

Average Grade
Use Checklist Item #D3.

Average the number of grams per pan and multiply by 50 pans/tonne

No. of Years in Operation
Use Checklist Item #A11:

Number of years the site has been active.

Adapting Calculations for Different Mining and Processing Methods
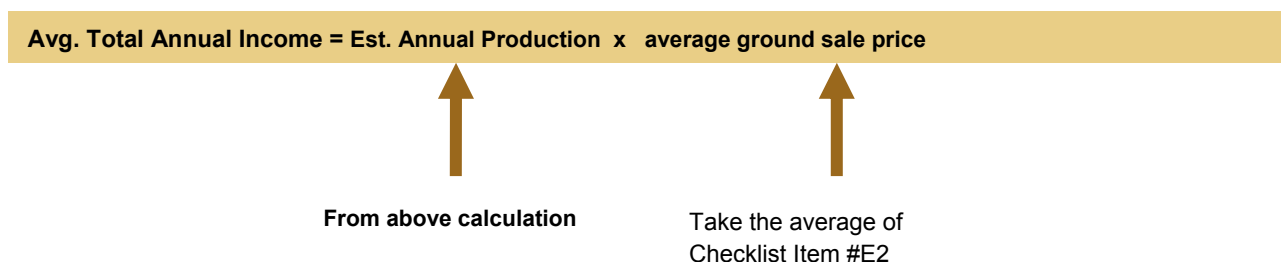
Your ASM Expert should be able to adapt this approach to different technologies and different mineral commodities. He/she can also adapt the calculations if the organization of work is based on teams (e.g. production per team) rather than individuals (e.g. production per panner).

When adapting the calculation, your ASM Expert should consider:

- Checklist Item #D1: The weight of a "unit of production". Ask miners (or even take a sample of a unit, e.g. basin, pan or shovel, and or count number of shovels per wheelbarrow) for this (Cross-checked this with Items #C2 and #C3). Consider that: A basin holds about 30kg of ore; a medium size pan holds about 20 kg.

- For sluices/jigs, you will need to determine how many basins/wheelbarrows are poured into the sluice/jig until it is cleaned (i.e. concentrate removed from the bottom and panned). Often miners do not know this, so you may need to count yourself. All of the concentrate from sluicing or jigging is panned to separate valuable minerals (e.g. gold, tin) from other heavy minerals.

Estimating Miners Incomes

Continuing with the example of gold production, to roughly estimate Annual Total Incomes for the site:

Avg. Total Annual Income = Est. Annual Production x   average ground sale price

From above calculation

Take the average of
Checklist Item #E2

To improve on this estimate:

- Look at the reported selling prices for your mineral. You can compare the price to the international price (www.Kitco.com is a good source) and, unless the local trading system has changed drastically, you can use the ratio to estimate an average ground sale price for the site over the period of one year.

- For the average annual income, simply divide by the total annual income. Consider the fluctuating number of miners in different seasons.

- You should consider the reality at the site. Incomes will vary from role-to-role at the site and depending on how earnings are made (e.g. paid for work or paid by production, how profits are shared etc.). You can compare your estimate with the earnings reported by miners in Item #E7.

These estimates for incomes are rough tools but given the time available at the ASM site, they provide some indication of the local economic contribution of ASM. Subsequent interviews and observations in nearby villages should also provide some sense of where the money is spent (i.e. is it repatriated elsewhere or mainly spent locally).

TOOL #4: STAKEHOLDERS, INTERVIEWS AND FOCUS GROUPS

This Tool will guide the Research team on how to deal with stakeholders – whether they represent international organisations, institutions, or local communities – in order to increase the team understanding of ASM in PACE already obtained from Tool #1: Study Preparation (especially following your literature review)and Tool #2: Analysing Policy, Legal and Institutional Framework.

The Research leader has the task of using the skills and experience of the team in order to gain as much information about the subject from those who are directly and indirectly affected by your study. Therefore, it is important to take the time to properly brief the team before doing interviews and focus groups.

Tool #4a: Consulting Stakeholders

This Tool contains advice on how to deal well with all level of stakeholders during the research. You will find guidance on how to hold a discussion or informal interview with central, national and local level stakeholders.[26]

Consulting central and national-level stakeholders

1. For each of the central stakeholders you intend to consult, prepare a list of questions and types of information to obtain for each central stakeholder. You can review the suggestions below as well as Table 2 on page 26 as guidelines, but do not overload participants with a comprehensive checklist.

2. Try to make appointments in advance via telephone or email. If this is not possible, visit the organizations and, by briefly stating your purpose, be directed to who seems to be the "right" person(s) to talk to. Keep in mind the need to respect formal protocols as you may need to speak to senior members of staff first, before contacting a technical person at a lower level. A letter of introduction can help the process.

3. During meetings, introduce the purpose of your meeting and objectives of the Study. In most cases, comments will arise even before you have asked any questions. Take notes (or even tape record with their permission) of the discussion.

   Do not spend more time writing and looking at your notebook than engaging with the person in front of you (this is where working in a team can be helpful: as one member of the team is directing the interview, and another is taking notes). Even more importantly, do not impose your views or spend more time talking than the participant(s).

4. At the conclusion of the discussion, express your appreciation for their time. Make sure you remember to (if relevant) obtain contact information for any persons they think are important for you to talk to in the field and any other literature that may be useful.

5. Ensure that a copy of the final Study Report is distributed to this participant and/or his or her organization.

Types of data to collect and analyse from national and central stakeholders

Data obtained from central (national level) stakeholders can give insight into a broad spectrum of topics, including those related to:

- Relevant conservation, forestry or mining policy and legislation and how it is being practically applied on the ground. Understanding the difference between what is meant to happen and what actually happens (theory versus practice) will help you identify gaps, challenges and constraints in effective responses to the situation.

- Institutional roles and structures (i.e. regulatory bodies and their mandate) and how the legislation is actually brought into force at a grassroots level. It is useful to examine mining, forestry or wildlife authorities who may or may not be decentralised and, even if stationed in or near the area of interest, may face different challenges in fulfilling their mandates.

- How different institutions and organizations are interfacing with each other (if at all). For example, are mines

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[26] Adapted from: World Bank, 2011, *Toolkit for Profiling Gender and Artisanal and Small Scale Mining*

authorities coordinating with forest or park authorities concerning ASM, the issuing of exploration permits, the presence of large scale mining? This may be a procedural requirement at central levels, but how is it applied on the ground?

- Information on traditional authorities in the area and their jurisdictions (for example, clan chiefs, town chiefs, paramount chiefs, etc.) To gain access to some rural areas, you may have to first understand existing traditional structures and who you must meet before you can actually work in an area. Include these in your stakeholder map (Tool #1c: Mapping and Consulting Stakeholders) as more information is obtained.

- History of ASM and/or conservation activities in the area as well as the nature of exploration, mining and forestry companies that may be relevant to the situation.

- The current land use/land allocation plan of the area where you are doing your research.

- Views and perspectives concerning how the situation of ASM in Protected and Critical Ecosystems could and should be addressed.

- In some cases, it is useful to ask for recommendations as to how the study design could be adapted for the given context. Many central stakeholders may also have insight into **security risks** in undertaking field activities and can provide guidance on how to mitigate them (see Tool #1d: Assessing and Preparing for Security Risks).

- Contact information for other relevant persons or organizations, particularly those active within the communit(ies) or region(s) of interest.

- Secondary data (literature) that you may not have been aware of or have had difficulty obtaining (e.g. unpublished reports, policy or legislation that was not available online).

Local Stakeholder Analysis

Local stakeholders are people or groups of people who are directly or indirectly affected by, or have the power to affect, a situation. While the activity below (Access, Control and Ownership of Resources in Tool #4c: Focus Groups and Exercises) identifies people or groups who control and own different resources at a more "grassroots" level, the stakeholder analysis provides a broader picture of who has power to make decisions about ways in which natural resources are managed in the area.

Generally a stakeholder analysis will provide insight into how different groups and at different levels relate to each other (positively or negatively). It will also give a picture of the relative importance or influence of different groups in terms of natural resource governance.

The stakeholder analysis is closely linked with focus group discussions as participants should have a good idea about existing links between different groups, their activities and the environment. They will also have a sense of their roles as individuals in environmental protection and its importance, particularly given its connection with poverty and development.

A number of exercises are presented below to carry out a stakeholder analysis and would ideally be used over the course of one day. If time is constrained, you will need to scrutinise these activities to see how they can be streamlined to fit your schedule.

Developing a systems diagram

A systems diagram illustrates actors involved in a certain process (e.g. miners, owners, local governments' officers, etc.). The diagram presents how processes are organised focussing on the interaction between actors and resources. Time permitting, this exercise can be done for each individual process (e.g. mining, hunting, getting a license, etc.). A very simplified example of a system diagram on mining may look as follows:

Diagram 1
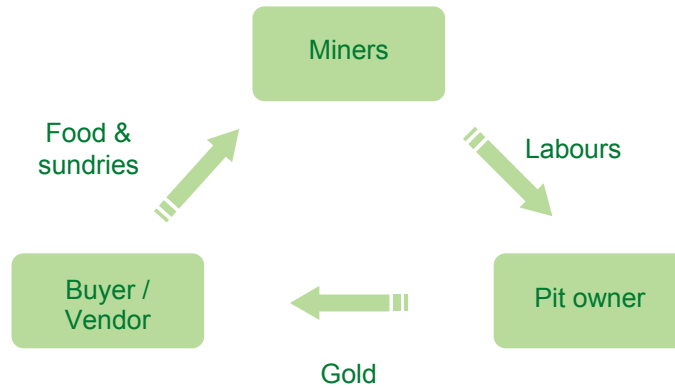
Interactions may include: fees or leases (for example, between industry and the department of forestry); a field officer overseeing the actions of the contractor with respect to the forest resource; and community members collecting forest resources for their own consumption or to sell.

Make sure you will get a view of the relevant processes as much as possible (i.e. do not limit yourself to the views from the ASM camp, as regulators' perspectives may bring different and equally important processes to bear in mind). Furthermore, other stakeholders may have a different appreciation of the process. Ideally, all stakeholders are represented in one group composed of: a male miner, a community/ traditional leader, a female miner, a younger member, a representative of the government/ manager/teacher.

If not done through a group situation, semi-structured interviews can establish the different processes and the types of interaction. Of course, you would have to combine the findings of the separate interviews into one document. It is good practice to present the document you made to the selected stakeholders for verification and additions.

You could also choose to make a diagram, or several, with one stakeholder; have the next stakeholder comment on the result, and so on. The benefit is that this method is faster than making separate models to fuse together. The downside is that you may get less information out of your respondents as they are guided by what you present them with and hence may forget other important processes.

Assessing Conflict

Conflict is normal to human existence and hence is something you should talk about. Indeed, conflict is not unhealthy unless it is allowed to grow into antagonism and/or violence. Consequently, conflict is ideally recognised and tackled well in advance of reaching these treacherous levels, as conflicts become significantly more difficult to solve with each act of violence – be it verbal, symbolic, or physical. Moreover, addressing conflicts often results in obtaining resourceful answers to problems. Conflict is an opening to bring stakeholders together.

The aim of the exercise is to grasp conflict issues and their aggravating potential from the point of view of interviewees or stakeholders. It might be the case that the interviewees/stakeholders see a specific situation as conflictive, but you would not see it the same way. You should also be aware that a conflict diagram is always only a snap-shot of the situation.

There are several models to choose from but here we present the "Conflict Onion model"[27] because of its simplicity and practicality in discussing the interests, needs and emotions of different stakeholders.

Conflict Onion Model:

Use this tool to identify all differences in position, interests and needs and explore similarities in these among different stakeholders.[28] For each stakeholder, identify:

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[27] Fisher et al. (2000) *Working with Conflicts: Skills and Strategies for Action*, London: Zed Books
[28] Engel, A. and Korf, B. (2005) *Negotiation and Mediation Techniques for Natural Resource Management*, FAO, available at http://www.fao.org/docrep/008/a0032e/a0032e09.htm

- **Position –** is the public face of the stakeholder.[29] It is usually enshrined in its values or mission statement in the case of organization (using the Mining Ministry as an example, its public position might be to encourage a country extractive industry for the benefit of the whole population (i.e. development of infrastructures, job creation, etc.). For an individual like an ASM male miner, the position may be to have the freedom to mine anywhere.

- **Interest –** is the outcome a stakeholder wants to achieve from a particular situation.[30] In the case of a Mining Ministry, for example, implementing a national formalisation programme of the ASM sector that states as its main requirement that only country nationals can be formalised, would give them the legal means to do a large scale deportation of foreign artisanal miners. The interest of an artisanal miner is to formalise his position and expand his mining activity.

- **Need –** is the most important facet as it describes the needs a stakeholder requires to be satisfied.[31] For the Mining Ministry this could mean being seen to assert its authority, so that it can demonstrate its relevance when central government budgets are distributed. For an ASM miner, having a livelihood through which to maintain his family is at the core of his needs.

The purpose of this exercise is to move each stakeholder from stating their public position to revealing their interests and needs, in order to find common ground among the various participants and find a basis for constructive discussion:[32] "while interests can often be negotiated, basic needs, such as recognition, (or public positions) are usually non-negotiable".[33]

Figure 1: the "Conflict Onion", Source: Fisher et al. (2000)

As a group facilitator or interviewer, you could ask the stakeholders to think about the impacts of violence, the costs of conflicts and, possibly, the damage to their public image and position. Also, make sure that the stakeholders focus on their long-term interests as a way to move forward, instead of holding their inflexible, short-term position that makes them unable to explore possible solutions.[34]

For example, an ASM community near a Protected Area is constantly blamed for poaching and the illegal trade of endangered species, an activity that they believe is carried out by a handful of foreign intruders. The Government is under pressure from international conservation and wildlife organisations to take bold actions and stop the illegal trade; conflict arises as a full scale eviction seems the only conclusion. However, by analysing the situation using as the starting

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[29] Hulley, C. (2007) *Youth Peace Building Training: Sudan,* Centre for the Study of Violence and Reconciliation, available at http://www.csvr.org.za/index.php?option=com_content&view=article&id=1634%3Ayouth-peacebuilding-training-sudan&Itemid=2
[30] Hulley, C. (2007) *Youth Peace Building Training: Sudan,* Centre for the Study of Violence and Reconciliation, available at http://www.csvr.org.za/index.php?option=com_content&view=article&id=1634%3Ayouth-peacebuilding-training-sudan&Itemid=2
[31] Hulley, C. (2007) *Youth Peace Building Training: Sudan,* Centre for the Study of Violence and Reconciliation, available at http://www.csvr.org.za/index.php?option=com_content&view=article&id=1634%3Ayouth-peacebuilding-training-sudan&Itemid=2
[32] Hulley, C. (2007) *Youth Peace Building Training: Sudan,* Centre for the Study of Violence and Reconciliation, available at http://www.csvr.org.za/index.php?option=com_content&view=article&id=1634%3Ayouth-peacebuilding-training-sudan&Itemid=2
[33] Engel, A. and Korf, B. (2005) *Negotiation and Mediation Techniques for Natural Resource Management*, FAO, available at http://www.fao.org/docrep/008/a0032e/a0032e09.htm
[34] Engel, A. and Korf, B. (2005) *Negotiation and Mediation Techniques for Natural Resource Management*, FAO, available at http://www.fao.org/docrep/008/a0032e/a0032e09.htm

point the interests of the stakeholders, there is ground for consensus. It is in the interest of the ASM community to report any poaching which is threatening the long term stability of their activity and livelihood. It is also in the interest of the Government to boost its capabilities for protecting national parks by using ASM miners as "eco-guardians", thus managing the ASM activities and reducing poaching.

It is useful for the facilitator/interviewer to draw the Conflict Onion diagram before starting to assess a conflict; this would help you to think about the various positions, interests and needs. Also, it would be interesting to compare 'your' diagram with those of the various stakeholders; it is not a question of getting it right or wrong, rather it will give you a fascinating insight on the perceptions of what conflict is and who/what is at its source.

Closing the Focus Group

At the end of this lengthy group discussion, ensure you allocate sufficient time to:

1. Ask participants to provide any recommendations/changes that are needed in the community based on the findings/conclusions from each exercise (alternately, this can be done briefly at the end of each). For each recommendation, ask who should be responsible for taking this action (e.g. individual women and men; local opinion leaders, ASM associations; local government; central government (specific ministries or departments).

2. Thank them for their excellent participation; provide contact information of the community representative, who will receive a full copy of the report at the end of the Study and distribute it to the community.

Tool #4b: Preparing for Interviews and Interview Guides

Different types of interviews require different approaches. Consequently, it is important to be as prepared as possible when going into an interview and be aware that different issues can arise.

Preparing for an interview

Remember these basic principles when preparing for an interview:

1. Review the sample interview guides *(Annex 6: Sample Interview Guides)*. Based on what you know about your case-study area, identify if there is any missing information; where possible, change questions to make them more relevant to your study and the context you are working. Adapt the interview guides, keeping in mind the overall objectives of the Study.

2. Deciding who to interview is not always easy. People commonly recommend individuals they know or have an affiliation with, but who may not necessarily be part of the stakeholder group you want to target (for example, someone who traded gold once may be recommended by their cousin but the person is not exactly a trader). If you are at an ASM site and you are holding a discussion with a group of miners or organising focus groups, the miners can self-select representatives for an interview. However, consider that most vulnerable people are unlikely to be selected for this and "positive discrimination" towards women, marginalised and vulnerable groups will be needed.

3. Be prepared to adapt to situations as they occur. For example, women may need to, now and again, respond to children who may be playing in the vicinity or others may enter the room when sensitive issues are being discussed.

4. Use copies of your semi-structured questionnaire as a guide. You do not need to read directly from them but try to cover all of the issues. You may need to re-word questions in a few different ways to make sure the interviewee fully understands what you are asking and get a reasonably detailed response. It is also useful to ask someone to give a specific example to help explain their point and give it meaning within the local context.

5. Listening is more important than talking. You may need to clarify or explain a few issues or concepts, but your main role in the interview is to be an active listener. Do not ask leading questions or give potential answers as this will influence the response you will receive. Always use open-ended questions and do not judge the response.

6. Dealing with issues of confidentiality and consent. Prepare a brief statement explaining the study, the reason for the interview and a request for consent – ensure you begin the interview with this discussion. It should be clear to the participants that they are free to participate and can stop the interview at any time they wish.

7. Decide how the interview data will be recorded and managed. A tape recorder can be helpful as it enables you to take only brief notes while maintaining focus on what the participant is really saying (but first ask the interviewee for permission). In some cases, a second member of the team can supplement note taking.

8. Decide how you are going to compensate the participants. You should appropriately compensate interviewees who have given up their time to help you in the research. This ranges from giving out simple brochures and mementos to providing small refreshment during the interview. Be aware of the level of poverty in which you are conducting your study and check how other researchers have dealt with the matter. For example, in developing countries, particularly in remote areas, bringing basic painkillers and anti-inflammatory medication is well appreciated, though typically more by women than by men.

9. Review and discuss the interview guides and all of the above issues with your interpreter (if being used) beforehand.

Interview guides

While a large number of interviews would obviously generate more data, for the purposes of a rapid assessment, you should at least try to conduct an interview with:

- 1 of each of the predominant 'types' of miner, e.g. according to gender, membership in a vulnerable group, role in production, importance of mining (primary or secondary occupation), so on.
- 1 mineral trader or dealer
- 1 community leader/local teacher
- 1 forest ranger or other related authority responsible for the management of the PACE
- 1 mines authority (if regional/local officers are present)
- 1 shopkeeper
- 1 hunter (if applicable)

There are many other additional "good candidates" for interviews and the interview guides can be easily adapted for any of these. Remember that – in any event – a lot of data gaps will be filled by using other tools.

Refer to ***Annex 6: Sample Interview Guides*** for examples.

Tool #4c: Focus Groups and Exercises

A focus group is a form of "group interview" that enables researchers to get information, views and opinions from a larger number of people at one time. Focus groups are often undertaken with different groups separately (e.g. women miners, men miners, local government officials, farmers etc.) but can also incorporate a cross-section of representative women and men from different stakeholder groups. You should be flexible in terms of number of participants; note that the smaller the size of the group, the more instructive it is likely to be.

Preparing for focus groups

1. Preparing for focus groups requires similar considerations as when preparing for interviews. Issues of consent, how participants will be identified and how data will be recorded are just as important.

2. It is important that at least one member of the team should act as a dedicated note taker and be instructed to take very specific, detailed notes (including verbatim quotations if they succinctly characterize an issue or topic). This is a difficult task; agree with your team members that this task will be rotated and make sure that the designated facilitator of the focus group is attentive to the needs of the note taker, whilst keeping the discussion lively (i.e. bring order if there are several people talking at the same time; slow the discussions if it is too fast and repeat a statement or ask a person to repeat his/her statement for the benefit of the note taker).

3. Try to locate the focus group in a commonly known place that is as close as possible to where people live or work. Schedule times that are convenient for participants, keeping in mind lost work time and challenges often faced by women, in particular, in terms of domestic work burden and comparative lack of autonomy.

4. Focus groups usually take up to 3 hours so sometimes need a few additional provisions to make sure participants are comfortable. These include: refreshments (or even lunch if it runs into lunch time), short breaks, on-site child care to enable mothers with small children to participate; charts and posters for those unable to read; flipcharts and markers; and (typically) a very effective interpreter.

5. Sign-in sheets are essential, particularly if small allowances will be given to attract people to attend. A team member should be at a main table near the entrance to register names. Consider that several participants may not be literate, and a system where everyone's name is written can be useful.

6. It is extremely important that participants know that, even though their names may be included on the list, their responses will be kept confidential (i.e. they will not be identified at any time or in any way in any Report or document).

Facilitating Participatory Focus Groups

Introducing methods to increase participation, engagement and understanding during focus groups is a way to support collaboration and knowledge sharing, both between participants and between participants and the researchers. Focus group guides (next sections) have been designed to incorporate some useful participatory tools but much of the success will rely on the way in which the focus group is facilitated.

Consider these **basic principles of effective facilitation**[35]:

1. The job of the facilitator is to create a friendly and open environment. It is essential that the designated person has the right skills for encouraging participation; making sure that there is an atmosphere of mutual respect and each opinion is valued.

2. Asking questions or explaining in a way that people understand and are aware of issues is crucial. While sometimes clarification or rewording of questions is needed, the facilitator is not there to answer questions.

3. Difficult situations commonly arise during focus group discussions – be prepared to use the following examples when your participants:

    - Start Separate Side-Conversations: Say: "I'm sorry, would you mind rejoining the group as this is really interesting?"

    - Go Way Off Topic: Say: "That's interesting, what do the rest of you think about…" (back to the topic).

    - Give no response to a question: Remain silent. Someone will speak as they begin to feel uncomfortable. If no one does, re-state the question in a different way.

    - Dominate the room: Stop making eye contact with the dominant participant. You can say "Thank-you for your contribution. Can we get some opinions from the rest of you?" or "What do the rest of you think of that?"

    - Intentionally Disrupt the Discussion: Develop with the group an agreement on how participants should behave (e.g. respect others' opinions)

    - Are annoyed or defensive about topics or questions: Make sure that everyone has come of their own free will. Avoid upsetting questions or save them until the end when people are more relaxed.

4. Make a conscious effort to ensure views of men, women and other vulnerable groups are captured in focus groups. Using a range of techniques (large groups, small groups, and partnered activities) can help adapt to different constraints faced by individuals.

5. Do not limit yourself to the views of one or a limited group of stakeholders (e.g. from the mining camp). Other stakeholders' perspectives may bring different yet equally important elements to the fore. Furthermore, other stakeholders may have a different appreciation of the process.

6. Some stakeholders may feel restricted to speak freely in the presence of others, usually this involves authority relations. This ranges from a miner in a focus group with the pit -owner and/or with the chief, to park managers in a focus group with the minister and a presidential advisor. Try to be sensitive about this in your design of the focus groups and during your focus group sessions. If during your focus group sessions you notice restraint by some participants, approach these people at a later stage to informally gauge their opinion. The best way to do this is by asking for clarification of the topics discussed during the focus groups. For instance: "Sorry, I seem not to have really understood how the miners are paid for their work. Could you run me through it once more while I buy you a soda?"

Each focus group can be conducted within 2-3 hours but, if researchers are first using them or related discussions prove to be useful, they can take up to 4-6 hours. Because there is an internal learning process (for researchers and participants) that will inevitably take place, it would be most useful to use the first four focus group guides with the same group of participants over a 2-day period.

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[35] Adapted from: World Bank, 2011, *Toolkit for Profiling Gender and Artisanal and Small Scale Mining*, IN PUBLICATION

Box 1 Assessing Signals of Conflict during Focus Groups

A way of looking for conflict during the focus groups is done by way of paying attention to positive and negative relations. If cooperation runs smoothly, leaving all benefiting and all putting in the effort happy, the cooperation will involve positive relations. Whether these positive relations were there before or are the result of the successful cooperation does not matter at this stage. Such causal matters are for theorists, and not necessarily for practitioners.

Positive relations are surrounded by the so-called Seven Caring Habits:[36]

- Supporting
- Encouraging
- Listening
- Accepting
- Trusting
- Respecting
- Negotiating differences

Negative relations, in turn are surrounded by Seven Deadly Habits:[37]

1. Criticizing
2. Blaming
3. Complaining
4. Nagging
5. Threatening
6. Punishing
7. Bribing, rewarding to control

Hence, what you need to do is pay special attention to signs of any of caring and or deadly habits when discussing topics in your focus group. If in general, focus groups are difficult to manage, you will no doubt be confronted with the deadly habits. As such, this is an indication of animosity in the community.

Guides are provided below for running three different focus groups:

- Using Daily Activity Clocks to Understanding Livelihoods
- Using seasonal activity clocks to Understanding Livelihoods
- Access, Control and Ownership of Resources

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[36] Glasser, W., (1999) *Choice theory: a new psychology of personal freedom.* New York: Harper Collins
[37] Glasser, W., (1999) *Choice theory: a new psychology of personal freedom.* New York: Harper Collins

Using daily activity clocks

Understanding the impacts of human activity on the environment requires characterizing the spectrum of different activities people undertake on a daily and seasonal basis. These activities can also provide insight into:

- Different people's different vulnerabilities, the coping strategies they use and how these strategies can create or mitigate environmental impacts.

- Differences between different livelihood groups and between women and men in terms of capacity to escape poverty.

- The links between the nature and burden of work and relative poverty and – from this – how poverty is linked to ecological effects.

Daily activity clocks can be useful for identifying how different tasks and responsibilities undertaken by women and men in different livelihood groups affect or reflect their relative poverty levels, and – for the next activity on seasonal calendars - how these activities are linked with natural resource effects.

Daily activity clocks should be used as a pre-cursor to (i) seasonal calendars as they help people think of their livelihood activities in a much more specific way; and to (ii) access, control and ownership of resources focus groups as it will help participants think specifically about each of the resources needed for different activities.

A sample Daily Activity Clock is shown in Figure 2 below.

To develop these clocks as a platform for discussion:

1. Break participants into small groups of about 3-5 people (depending on your total group size, have about 4 groups maximum). Form groups along main livelihood lines (people who characterize themselves as miners, hunters, farmers, etc.) and by gender.

   Because reporting back will take longer than you think, you may consider having only two groups (women and men).

2. Review a sample Daily Activity Clock and explain that each group will develop their own clock. Go through a few examples on a daily activity clock. Introduce definitions of "productive", "reproductive" and "community work" and ask for examples of each. Do not introduce the discussion questions yet.

3. Tell groups they will have about 20 minutes to fill in their clock then they will have 5 minutes to report it back to the rest of the group. Have team members regularly visit the groups to see if the exercise is well understood and to guide where needed (especially if some members of the group cannot read or write). Each activity clock should be posted on the wall at the front of the room.

4. Guide a general discussion on the findings of the exercise. Some guiding questions (below) will help but keep in mind you will also need to use probing questions to examine the issues further:

   - What are the main similarities and differences between women's and men's clocks? How about between different livelihoods?

   - On average, how many hours in a day do women and men in different livelihoods spend on each productive, reproductive and community role? (mark on each clock)

   - What are the impacts of these differences on family wellbeing in terms of time to make money? Time to socialise? Family health? Development?

5. Ask the participants to list the main conclusions from the exercise. Write them on a flipchart as they are given.

6. Ask them to provide any recommendations/changes that are needed in the community based on the findings/conclusions from the exercise? For each recommendations, ask who should be responsible for taking this action (e.g. individual women and men; local opinion leaders, ASM associations; local government; central government (specific ministries or departments)).

7. Thank them for their excellent participation, provide contact info (the community counterpart), who will receive a full copy of the report at the end of the Study.

Figure 2: Sample Daily Activity Clocks			
TIME OF DAY	**ACTIVITY**	**TIME OF DAY**	**ACTIVITY**
GROUP TWO – MEN		**GROUP FOUR – WOMEN**	
5:00 am		5:00 am	Wake up and pray Fetch wood and make fire
6:00 am	Wake up and Pray Greet family Wash face	6:00 am	Fetch water Prepare breakfast Sweep the compound Tend to chickens
7:00 am	Check animals Check health of family Take Breakfast Send children to school Bathe	7:00 am	Take Breakfast Wash dishes Prepare children for school Send children to school
8:00 am	Go to work (digging at the mine)	8:00 am	Go to work (panning and hauling water at the mine)
9:00 am		9:00 am	
10:00 am		10:00 am	
11:00 am		11:00 am	Look for firewood Look for vegetables Prepare lunch Bathe
12:00 pm	Take lunch and wash plates Rest	12:00 pm	Give lunch to children and father Take lunch Clean up after lunch
1:00 pm	Go back to work at the mine (digging)	1:00 pm	Go back to work at the mine (digging
2:00 pm		2:00 pm	
3:00 pm		3:00 pm	
4:00 pm	Return home Take animals for water Go for malwa (local drink) and laughter	4:00 pm	
5:00 pm	Bring animals back home	5:00 pm	Return home Bath yourself and children
6:00 pm	Take Supper	6:00 pm	Prepare supper Take Supper
7:00 pm	Visit your "sinalia" (available single woman in the area)	7:00 pm	Clean up after supper Plaiting hair
8:00 pm		8:00 pm	Pray and go to bed
9:00 pm		9:00 pm	
10:00 pm	Bathe	10:00 pm	
11:00 pm	Sleep	11:00 pm	
12:00 pm		12:00 pm	
REPRODUCTIVE ROLES 5 HOURS Prayers, greetings, checking the home, washing the face, taking breakfast, grazing animals, preparation for lunch, washing plates, getting rest		**REPRODUCTIVE ROLES** 8 HOURS Fetching wood and water, cooking, breastfeeding, preparing for and welcoming visitors, mourning, giving birth, looking after children	
PRODUCTIVE ROLES 7 hours Going for work, digging using ox-plough, building for people (construction)		**PRODUCTIVE ROLES** 7 hours Going for work at the mine, selling eggs from chickens, plaiting hair, brewing malwa (local alcohol)	
COMMUNITY ROLES 1 hours Visiting relatives, talk politics, helping or going for burials, cleaning roads and wells.		**COMMUNITY ROLES** 1 hours Cleaning the church, cooking for weddings, going for burials, cleaning roads and wells	

Seasonal calendars

Cyclical changes in livelihoods are often a consequence of seasonal changes, usually due to weather (e.g. rainy season, dry season). They provide an indication of how the use of forest goods and other natural resources (water, land, etc.) changes throughout the year and the links between seasonal poverty, ways that people reliant on different livelihoods cope at different times of the year and how these coping strategies affect the environment. Because the Study will (initially) be only undertaken in one season, seasonal calendars also give insight into what you are not seeing or observing during the time you are there.

To run this exercise:

1. Have a flipchart prepared with a picture of a large circle showing the months of the year like the one in Figure 3. Agree on the months when the dry season(s) and rainy season(s) are most likely to start and end.

2. Explain that the exercise is to look at how people in the community rely on different livelihoods and activities at different times of the year.

3. Break participants into small groups of about 3-5 people (depending on your total group size have about 4 groups maximum). Form groups along main livelihood lines (people who characterize themselves as miners, hunters, farmers, etc.) and by gender.

4. Each separate group should develop their own calendar (breaking it into 12 sections of months) and specify the different activities they undertake at different times of the year.
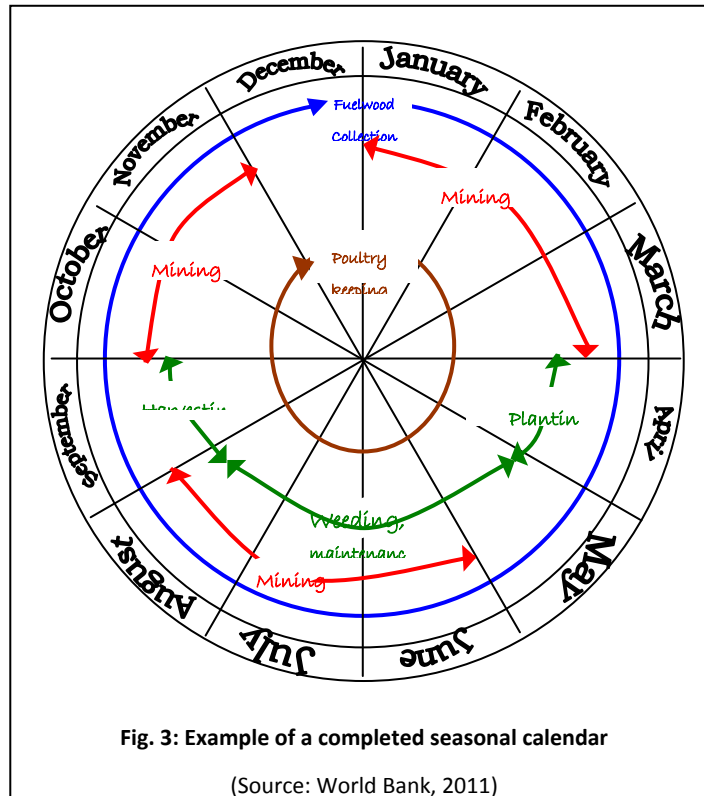
   It is okay if more than one activity is undertaken at the same time (e.g. weeding and mining). As they are preparing their calendars, walk around from group to group and give

Fig. 3: Example of a completed seasonal calendar

(Source: World Bank, 2011)

them guidance if needed – calendars should be pretty specific (i.e. ask them to think about the daily activity clocks as a guide). Give them about 15-20 minutes to do this. Have team members regularly visit the groups to see if the exercise is well understood and to guide where needed (especially if some members of the group cannot read or write – make sure that everyone participates as much as possible).

5. Have each group tape their clock on the wall and briefly present their calendars (3 minutes maximum).

6. On separate flipcharts, make a table like the one below (you may need 2-3 flipcharts to go through it, they could be on a wall and turned landscape). Ask participants to help you complete it, starting with listing each of the main activities identified in the seasonal calendar.

7. Go through each activity separately (as you work through each column). What is the intensity of the use of different natural resources (high-medium-low) for each activity. What is the level of impact of the activity on each of the natural resources' level of exhaustion / capability to be used by the future generation (high-medium-low)? What wastes are produced from each activity? Where are they disposed of?

Activity	FOREST GOODS		LAND		WATER		ENERGY		WASTES PRODUCED
	Reliance	Impact	Reliance	Impact	Reliance	Impact	Reliance	Impact	

While filling in the table is important, this exercise should be used as a basis for discussion. Use probing questions to examine the issue further:

- what sort of impacts? E.g. pollution / exhaustion / system impact vs. individual impact
- Is the activity and / or the impact seasonally or throughout the year?

When you get to the question of wastes, discuss how where the wastes are disposed of affect the other resources. The entire exercise should take about 20 minutes.

Make sure your note-taker is taking excellent and detailed notes of the discussion. And/or you can have an additional flipchart stand to also write important comments.

You may need to explain what forest goods are (or, better yet, ask participants to explain what they think they are and then clarify, if needed) and discuss energy sources (e.g. fuel wood) needed to carry out the activity.

8. Guide a general discussion on the findings of the exercise. Some guiding questions (below) will help but keep in mind you will also need to use probing questions to examine the issues further:

- How do impacts on a resource (e.g. forest) of one activity affect those who rely on that resource for another activity?
- What are the main differences in environmental impacts between the dry season and rainy season activities?
- What are the main similarities and differences between women's and men's calendars? How are women and men differently responding to seasonal changes?
- At the beginning of the exercise, we discussed when the different seasons occur. Has this changed in recent years? Why? (you or may not want to discuss the links between land use, forest protection and climate).

9. Ask the participants to list the main conclusions from the exercise. Write them on a flipchart as they are given.

10. Ask them to provide any recommendations/changes that are needed in the community based on the findings/conclusions from the exercise? For each recommendation, ask who should be responsible for taking this action (e.g. individual women and men; local opinion leaders, ASM associations; local government; central government (specific ministries or departments)).

11. Thank them for their excellent participation, provide contact info (the community counterpart), who will receive a full copy of the report at the end of the Study.

Access, control and ownership of resources

"Resources are any of the assets, materials, abilities or anything that can be drawn on when needed. Resources can be natural (minerals, forests, and water), human (labour, skills), physical (houses, roads, bicycles, and radios), social (extended families and friends) or financial (savings)".[38]

Resources are used to create benefits to improve wellbeing or deal with ongoing, predicted (e.g. seasonal) or unpredicted events (like illness in the family, conflict or heavy rainy season). However, using resources can generate environmental impacts that actually increase vulnerability and therefore the need to adapt or amplify coping strategies. These strategies can, in turn, create even greater environmental effects, thus perpetuating the cycle of increased poverty and environmental degradation. Examples of coping strategies might include clearing more forest for farmland, engaging in the sex trade to supplement household income or going deeper into the forest to mine for gold.

Identifying resources and who has access and control over these resources is a useful way to understand:

- Main resources and assets that different livelihood groups and women and men are using to help them cope with poverty and/or increase wealth and escape poverty.
- Differential capacities of different groups to benefit from their use of resources.
- Who has control or makes decisions about how resources and their benefits are used.
- The links between use of different resources and their environmental impacts (and potential benefits).

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[38] Source: World Bank, 2011, *Toolkit for Profiling Gender and Artisanal and Small Scale Mining*, IN PUBLICATION

Characterizing access, control and ownership of resources and their benefits

In order to conduct this exercise:[39]

1. Introduce the activity by discussing what a "resource" is. Discuss and ask for examples of natural, human, physical, social and financial, writing them on a flipchart. Discuss how use of one or more resources (e.g. labour, minerals and a gold pan) are used to create benefits vis-à-vis other resources (e.g. money).

2. Discuss how resources and their benefits are used to deal with difficult situations. It helps to give one example, say illness of a family member, and then explore another example provided by the group.

3. Write on a flipchart: "access" "control" "ownership". Ask participants to help define what they think each of these means. Clarify as needed. Access is about who usually uses or is **free to work with** the resource. Control is about who usually **makes decisions** about how and when the resource is used. Ownership is about who the resource **belongs to** (who would you talk to if you wanted to buy the resource).

4. Have participants in a group along main livelihood lines (people who characterize themselves as miners, hunters, farmers, etc.) and, if possible, by gender.

5. Provide an *empty* sample table, Explain that each group will make a similar table *representing for their livelihood group*,

   (a) The resources that are used for the different livelihood activities, and who has access, control and ownership of them.

   (b) Once they have done this, they will look at each of the different benefits from their activity and do the same: identify who has access, control and ownership.

   Run through a few examples to make sure the activity is clear and the tables will be sufficiently specific.

6. Again be flexible with time. Tell groups they will have about 25 minutes to complete the activity (give more time if it is needed) and each group should identify someone to report back quickly the results of the activity.

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[39] Adapted From: World Bank, 2011, *Toolkit for Profiling Gender and Artisanal and Small Scale Mining*, IN PUBLICATION

TOOL #5: ENVIRONMENTAL ASSESSMENT

Assessing environmental impacts

For the purpose of this Toolkit the presented Tools for environmental assessment will rather give you a rapid overview on environmental impacts in your research area than provide a proper technically extensive analysis of any environmental impact that may occur in this area. Thus, this section will help you to understand basic environmental impacts in your research area and might give you guidance on where you need to follow up with more comprehensive environmental research. So, you will be able to map out basic impacts on biodiversity, water and further environment-related issues. The tools should also make you aware how the communities / miners see environmental impacts, what they consider as most hazardous relating to their life, how they cope with it etc.

Box 2 – Potential Sources of environmental information

- Government laws and policies on environment and protected areas.
- Agencies managing national parks and other protected areas
- Wildlife surveys carried out for forest management purposes, or surveys by other interested parties, e.g. ministry of Environment, local universities, conservation NGOs, UNEP
- Forest inventory/mapping data from sustainably operated forestry concessions
- Regional/district land-use plans, landscape level management plans and ecological publications, particularly those prepared for protected areas, parks, and nature reserves nearby
- Topographical and hydrology maps of watersheds/catchments and maps of settlements.
- A GIS (Geographic Information System) can be very useful in modelling slopes and distances to local settlements
- Local knowledge and the results of recent socio-economic surveys
- Web-based international sources such as the IUCN (International Union for Conservation of Nature) database of threatened species, the Birdlife International database of important bird areas and their species
- Web-based briefings such as the descriptions of priority ecoregions (WWF) and biodiversity hotspots (Conservation International)

(This section is an adaption from Rayden, Tim (2008) Assessment, management and monitoring of High Conservation Value Forest A practical guide for forest managers, ProForest, Oxford, UK (p12); www.proforest.net).

Tool #5a: Determining if ASM is in an area with HCV or a PA[40]

To determine whether your ASM site is in a Protected Area or whether it is in need of protection is an effort ranging from easy (e.g. gazetted national parks) to very difficult (e.g. a sparsely populated, need of surveyed areas, unwelcoming stretch of land unsuitable for intensive agriculture). In cases where the ASM site is within or bordering a sustainably run forestry concession which is marked by certificates handed out by the government or by internationally established certification schemes such as the Forest Stewardship Council (FSC) (when operating in weaker states, the merit of the certificate is best vetted by experts such as reputable conservation organisations), the concession holder should be able to help you get some essential environmental information as sustainable management often involves doing a baseline biodiversity study of the species and of the ecosystem(s) within the forestry concession.

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[40] This section is an adaption from Rayden, T., (2008) *Assessment, management and monitoring of High Conservation Value Forest A practical guide for forest managers*, ProForest, Oxford, UK, p12

Using HCVS to determine the conservation value of the landscape

Forest managers need to determine if part of their forest area will be considered **High Conservation Value Forest (HCVF)**, and if so, how they should manage these HCVF areas to maintain or enhance the **High Conservation Values (HCVs)** that are present. Where HCVs exist, monitoring is needed to show that management is effective. Consequently, such forestry concessions de facto function like protected areas managed using concise information that can help you in your research.

If the HCVs are not determined by a forestry concession or if you site is not in a forest, HCVs may still be very useful even when using a rapid assessment methodology on a shoestring. Therefore, here the tool will expound on what HCVs are and how some can be determined. In this section you will be introduced to the definition of HCVs, of an HCV assessment, and to the different HCVs.

You will notice that assessing for all HCVs is a meticulous exercise that may lie beyond the scope and/or the resources of your study. If not, you can try and determine the full set of HCVs (see beneath) using the information and experts presented by the HCV network. Through the network, you may be able to find out if national and / or regional workshops on defining HCVs have been held for the region in which your research site is located.

Also, you can restrict yourself to determine all but the social indicators through secondary data, such as surveys, aerial photos, imagery etc., if such is available.

Understand that these outlines are rudimentary excerpts which should assist you to determine the basics only; the purposes of this tool do not go beyond taking a slice of reality and examining it. More in-depth studies should follow logically from your findings if these persuade key stakeholders to take action.[41]

High Conservation Value Forest (HCVF) or Area (HCVA) is a forest (or area) which possesses one or more of the following attributes (please note that HCV definitions can be locally adapted. Several countries have done an attempt to come up with a national interpretation of HCV. If this exist for the country of your study, it will be useful to use):

Table 3: HCV and Type of attributes

HCV	TYPE OF ATTRIBUTES
HCV 1 **Areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, and refugia).**	Reasons for reservation of nearby protected areas (e.g. species protection, landscape value)
HCV 2 **Globally, regionally or nationally significant large landscape-level areas where viable populations of most if not all naturally occuring species exist in natural patterns of distribution and abundance.**	Existence of rare habitats, cultural sites Maps of forest extent and condition of protected areas within the landscape
HCV 3 **Areas that are in or contain rare, threatened or endangered ecosystems.**	Maps of forest cover/condition change Presence and condition of suitable forest habitats
HCV 4 **Areas that provide basic ecosystem services in critical situations (e.g. watershed protection, erosion control).**	The presence of communities in or near the area The presence of communities near water courses
HCV 5 **Areas fundamental to meeting basic needs of local communities (e.g. subsistence, health).**	The absence of certain amenities (e.g. piped water, markets, clinics, good road access) in these communities The presence of gravity fed water systems using streams within the area

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[41] If you need more guidance or wish to expand your work on HCV, you can use the full toolkit as found on www.proforest.net; the site also provides useful links, including the HCV Network.

HCV 6 **Areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).**	The common use of non-timber forest products in people's houses and/or diets The historical use of forest for burial, ceremony, rites of passage and other rituals

For a more detailed guidance on each of the values, *see **Annex 8: Assessing the Presence of HCVs***.

*Please note that a precautionary approach is to be used for determining HCV. This means that when there is some doubt as to the presence of an HCV, the **precautionary assumption** is that the value is present. Incomplete information will not be used as a justification for actions that may negatively affect an attribute of HCV.*

HCVF or HCVA can also been defined as the forest or area that is required to maintain or enhance a High Conservation Value.[42] This definition introduces a management goal and can accurately be described as an HCV Management Area (HCVMA), a term already used in some national HCV toolkits. The introduction of the HCV area next to the HCV forest indicates that use of HCVs is not limited to forests. Indeed, HCV are useful tools in determining whether or not your ASM site is located in an area with conservation value. If you would find this to be so, management of the HCVs found in relation to the ASM should become a high priority of all stakeholders.

Determine if the mine site is in, or adjacent to, a Protected Area

In this section you will find useful parameters for determining if ASM activities are taking place in a Protected Area. You should note that it is not always simple to determine if the mining camp is inside a PA, as the gazetting process is not always clear. Try to obtain detailed mapping and spatial data while you are conducting the Literature Review (refer to Tool #1b: Conducting a Literature Review) or consulting national and central stakeholders (refer to Tool #4a: Consulting Stakeholders).

For the purpose of this Toolkit, Protected Areas are defined as areas of high biodiversity value established as protected for the sake of biodiversity conservation either under international conventions (e.g. IUCN-designated sites, RAMSAR sites, Areas of Zero Extinction), or by national, regional or local governments for at least partly biodiversity conservation (such as nature reserves or national parks).[43] Therefore, you should obtain maps of PAs in your case-study country that fall under national and international conventions.

If the ASM site is in, or close to, a Protected Area, you should identify in which management category it falls under, as that will have consequences for the management options for the ASM site:

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[42] This section is an adaption from Rayden, T., (2008) *Assessment, management and monitoring of High Conservation Value Forest A practical guide for forest managers*, ProForest, Oxford, UK, p12
[43] Hund, K., Levin, E., Villegas C. M., Weinberg, R. (2012) *Artisanal and Small-scale Mining in Protected Areas and Critical Ecosystems: Global Scoping and Solutions*, FORTHCOMING

Table 4: Management Categories of Protected Areas

MANAGEMENT CATEGORY	DESCRIPTION
HIGHEST PRIORITY **Areas of Zero Extinction (AZE)**	The ASM is happening in, on the border of or upstream from Area of Zero extinction—of which there are only 587 in the world. AZEs are the only sites in the world in which Endangered or Critically Endangered species of mammals, birds, amphibians, reptiles, conifers and reef-building corals are known to reside.
HIGH PRIORITY **(Protected Areas)**	The ASM is happening in, on the border of, or upstream from a **protected area**, categories I to IV under the definitions of the International Union for the Conservation of Nature (IUCN) or includes RAMSAR sites.
Nature Reserve *(IUCN Category 1a):*	*An area devoted primarily to the preservation of conservation, scientific research and monitoring, where human impacts are limited as much as possible.*
National Park *(IUCN Category II):*	*"Large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, education, recreational and visitor opportunities"*
Natural Monument or Feature *(IUCN Category III):*	*Generally centred on a particular natural feature, so that the primary focus of management is on maintaining this feature*
Hunting domains, wildlife reserves, marine parks and integral reserves (IUCN Category IV):	*"Conserving ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area"*
RAMSAR Sites	*A list of Wetlands of International Importance.*
MID-PRIORITY **(Critical Ecosystem):**	The site affected is not within the boundaries of a protected area, but is located within a **WWF priority place.**
PRIORITY **(Critical Ecosystem):**	The site affected is neither a protected area nor WWF priority landscape, but is in one of the **Global 200 Priority Ecoregions** as described by Olson & Dinerstein, 2002.
NOT ELIGIBLE:	The ecosystem is not in a protected area, a WWF priority landscape or a Global 200 Priority Ecoregion

Tool #5b: Focus Groups, Stakeholder Analysis and Environmental Impact exercises

Focus groups can be used to assess the environmental impacts of ASM through a number of activities, such as:

- Stakeholder Analysis
- Mapping Land Use and Environmental Impacts
- Characterizing the Environmental Footprint of ASM
- Rapid Variant of the Environmental Reconnaissance.

Ideally, the composition of the focus groups should have one of the following included:

- a male miner
- a hunter
- a logger
- a farmer
- a local government representative/a ranger/a teacher
- a woman

This composition would ensure the interaction of miners with other resource people. However, you can use as much as possible the same focus groups as for Tool #4c: Focus Groups and Exercises. Only one or two focus groups will be enough.

Stakeholder analysis

### Identifying main stakeholders in natural resources management

1. Ask participants to describe the different groups, organizations and individuals that impact the forest in the community (discuss the forest to include trees, water, wildlife and land). Refer to the previous focus group discussions (including land use mapping) if necessary. Have them be specific (e.g. site names, companies, community groups) if possible and try to ensure that miners groups, hunters and loggers are included. List their input on a flipchart(s) and post them at the front of the room.

2. Ask participants to describe the different groups, organizations and individuals that are involved in managing natural resources in the community. Explain this can be formal (e.g. legal mandates) or informal (e.g. how miners may manage water in small impoundments). List their input on a flipchart(s) and post them at the front of the room.

Consider central government, local government (and its different offices), regional offices (e.g. of the forest or mines authorities), local NGOs, CBOs, miners or other livelihood groups and potentially key powerful individuals, among others.

Analysing stakeholders' influence and impact on natural resources management

1. Draw a diagram like the one below on four taped together flipcharts.

2. Go through each of the stakeholder groups one by one.

   a. Have a number of pre-cut coloured circles in a bunch of different sizes. The size of the circle should reflect the magnitude of power of the group. Decide how much power the group has in the community. When you have picked a circle, write the name of the group on it.

   b. Together decide whether the group has a generally positive (+) or negative (-) influence on the forest and its resources. Is it very positive/negative or just slightly positive/negative? Agree together where it should go on along the horizontal influence axis.

   c. What is the interest of the group on conservation of the forest? Discuss whether it is in the group's interest to protect the forest or to mostly use its resources. Where should it go on the vertical interest in forest conservation axis?

   d. Agree on where to place the circle and tape it on the diagram.

**Figure 4: Interest and Influence on Forest Conservation**
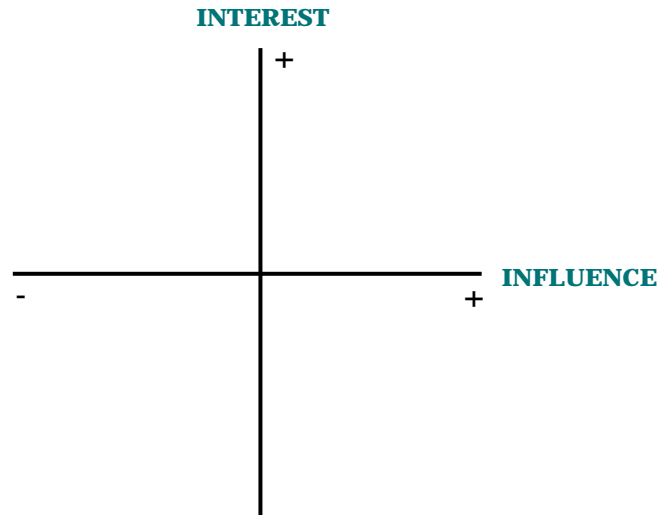
3. Do this for all the other stakeholder groups. It will take some time until people really understand the exercise. New stakeholder groups may arise as the activity is undertaken.

4. Guide a general discussion on the findings of the exercise. Some guiding questions (below) will help but keep in mind you will also need to use probing questions to examine the issues further:

   - Who are the main actors in forest conservation in the community?
   - Are they effective?
   - What sort of activities are they specifically doing to protect the forest?
   - Who has a lot of interest in conservation but is having little impact on the ground?
   - Why is this happening?
   - What can/should be done to improve on this?
   - How are the actors involved in protecting the forest relating with the actors that are mostly impacting the forest resources? Ask for specific examples about how authorities or groups are interacting.
   - Are these relationships positive or negative? Draw lines between circles (e.g. green for positive and red for negative) to indicate the type of relationships. The thickness of the line should indicate how negative/positive (i.e. a dashed green line might be a weakly positive link and a thick red line might denote a strongly negative link).
   - Do any conflicts sometimes occur?
   - What can/should be done to address this?

5. Ask the participants to list the main conclusions from the exercise. Write them on a flipchart as they are given.

For further information on stakeholder analysis please see Tool #4a: Consulting Stakeholders.

Mapping land use and environmental impacts

A land use map created by focus group participants can be a useful starting point to discuss and understand how different activities are impacting the environment.

Figure 5: Sample Land Use Map (Source: ICMM Community Development Toolkit)
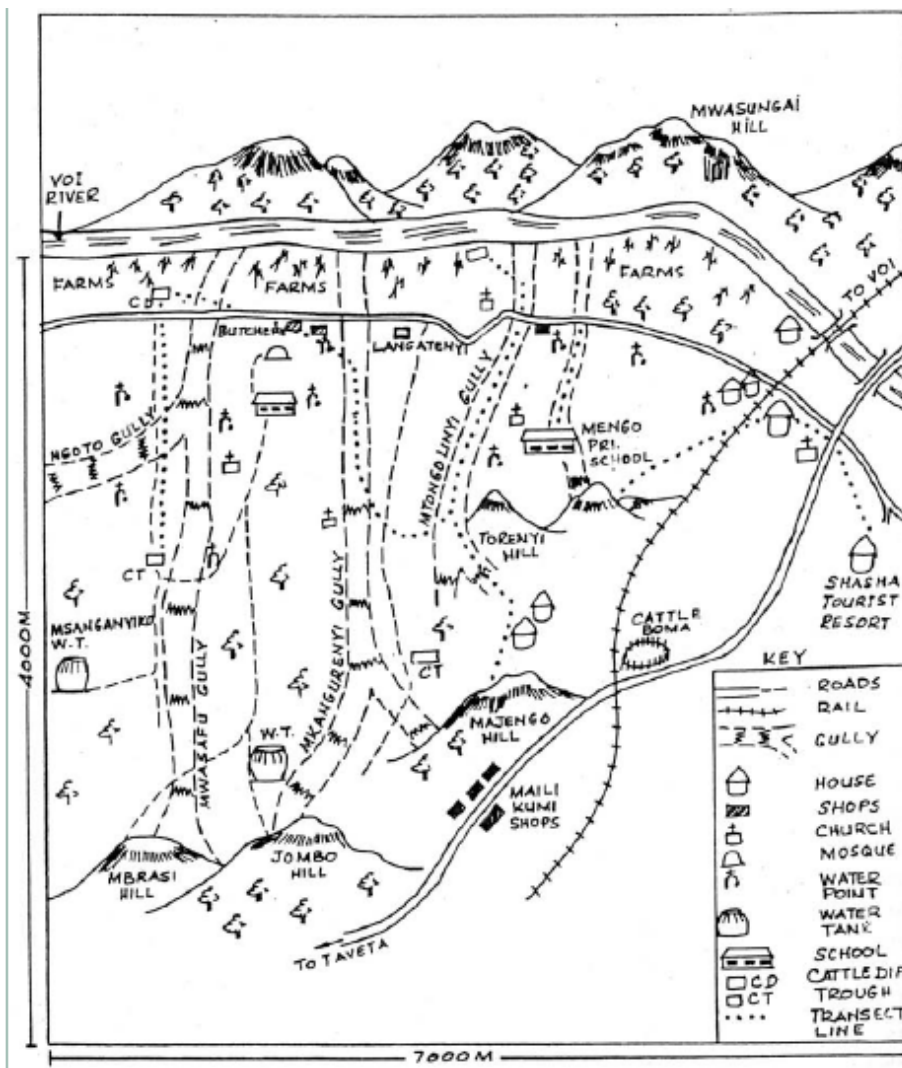
Developing and analysing land use maps

All team members involved in facilitating should already have some sense of the area so they can help participants develop maps showing all types of natural, human, physical and other resources and who is using them.

A sample land use map is shown in Figure 5. To develop and analyse land use maps:

1. Break participants into small groups of about 3-5 people (depending on your total group size, have about 4 groups maximum). Form groups along main livelihood lines (people who characterize themselves as miners, hunters, farmers, etc.) and by gender. Different groups will likely draw different features, providing a useful basis for subsequent discussion and analysis.

2. Ask each group to draw a map of the area. Discuss and agree on the different boundaries that people will use (to ensure that the forest areas, hunting areas, transport routes, rivers and other main environmental features are included). Reassure them that they do not have to be expert artists and it simply needs to represent all of the important features and ways in which land is used in different areas of the community.

3. Provide each group with one large piece of paper (4 flipcharts neatly taped together) and 2-3 other single flipcharts, and multiple coloured flipchart markers. The "extra" single flipcharts are useful as sometimes they will want to do a rough sketch as a first draft before they develop a final large map to report back.

4. Tell groups they will have about 20 minutes to draw their map (it will actually take about 30 minutes) then they will have 3-5 minutes to describe the map to the rest of the group. They should simple highlight the main land uses and point out where they are taking place. Each map should be posted on the wall at the front of the room.

5. Guide a general discussion on the findings of the exercise. Write responses on flipcharts as you go along. Some guiding questions (below) will help but keep in mind you will also need to use probing questions to examine the issues

further:

- What are the main differences between the maps produced by the different groups?
  Are there any differences between women and men?
  Or between different livelihood groups?
  Why do you think these differences came about?

- List each of the major land uses.
  Who controls or is responsible for managing each of the different areas? (Consider both formal/legal authority and informal/actual control)

- Has land use changed over recent years and how?
  Try to find out who has lived there the longest to describe what it was like many years ago.
  Make a list of these changes with the group.

- Have these changes between positive or negative?
  For each change, the positive and negative effects of the change, trying to illicit some linkages with environmental changes.

- Are there any concerns about how land use is changing?
  How do they think this will affect the community?

6. Ask the participants to list the main conclusions from the exercise.
   Write them on a flipchart as they are given.

7. Ask them to provide any recommendations/changes that are needed in the community based on the findings/conclusions from the exercise.
   For each recommendation, ask who should be responsible for taking this action (e.g. individual women and men; local opinion leaders, ASM associations; local government; central government (specific ministries or departments).

8. Thank them for their excellent participation, provide contact info (the community counterpart), and confirm who will receive a full copy of the report at the end of the Study.

Integrating participatory rural appraisal techniques

As with research of the social, cultural, economic, political impacts of ASM in protected areas, participatory techniques can feed the environmental impact study design. Local people will help determine where to look for untouched areas, where to look for hunting trails / grounds, and where to find possible trails not used for hunting. Additionally, by talking with the restaurant holders and with the hunters and fishermen it should be possible to get an idea of what forest products (e.g. fruits, fuelwood, trees, game, fish) are hunted / gathered, how these are collected etc.

Characterising the environmental footprint of ASM

The environmental footprint of ASM cannot solely be assessed during the ASM site visit but much useful data can be obtained and, when combined with data derived from other tools (e.g. Tool #3a: Community Transect Walks) can jointly provide an indication of the ecological footprint.

Specifically:

- **Area Degraded by ASM:** Use the estimate in item #A1 of the ASM Site Assessment Checklist. If sufficient river or stream data can be obtained during the environmental impact assessment (inclusive of river dimensions), this can be included in your estimate for that downstream extent where degraded water quality is evident. If possible, this would be strongly supplemented by air photos or Google earth images. Include areas degraded through associated activities, such as agriculture and construction of housing, for example.

- **Carbon Footprint:** Convert the following to carbon equivalents: fuel consumption from any mechanised equipment; the area of vegetation degraded (using the surrounding vegetation as a baseline); timber and wood consumption; and other sources identified during the ASM site visit. For example:

  o *Wood consumption.* From metres of timber estimated per unit (per shaft, sluice box), you can multiply by the number of units (shafts, sluices). Consider also the structures on site (you can average for a few and extrapolate). The population residing at the site likely also uses wood for cooking and other domestic uses.

  o *Fuel consumption.* Based on the type and number of generators and hours operating per day.

- **Extrapolating to other ASM areas:** Often, you will be visiting only one or two ASM areas within a larger area or region. While again we rely on "rough" estimation methods, if you have collected some data on a number of sites (e.g. during central or local stakeholder interviews) and number of miners at those sites and how long they have been

active (no. of years). From the site assessed, you can use the footprint (per person, per annum) to extrapolate to other sites.

Rapid Variant of the environmental reconnaissance

Measuring exact environmental impact of ASM, following proper bio-assessment methods, may be quite cumbersome and well out of the reach of the resources of your research project. This holds especially true if you are working without solid baseline information on the abundance of species in the larger vicinity of the camp. Without baseline information, any bio measurements will need to be compared to different zones to draw conclusions re ASM camp impact, i.e. an untouched zone and preferably also a zone around a non ASM village comparing 'normal human impact' with ASM human impact. Though thorough, such methods may not be what you can afford.

If time, money and human resources are an issue, it is necessary for you to consider what it is you want to measure at this stage. Is it really necessary for your project to check for all signs of all animals, plant use, logging and other human disturbance? Or do you simply want to get a feel for how far reaching the impact on the surrounding area is? Most likely you are using this tool to get more snapshot like-information to get a grasp of the dimensions of the impact of ASM. If the findings of your study are enough to make stakeholders worry about the ecological impact, larger studies can take place at a later stage. These studies can and should be more elaborate and take place over a longer period of time

For snapshot-like environmental impact findings, it is advisable to depart from the notion of human disturbance rather than to try and measure the abundance of species in the larger vicinity of the camp(s). Though the two are not mutually exclusive, the difference in emphasis will demand less of your no doubt strained budget.

Before commencing, you want to consult local conservation experts to determine signs indicative of human activity. Preferably, one of your team members will be able to identify signs per activity, as you may not know all human activities prone to have an impact on nature beforehand. Also, it is advisable to have people in your team who are trained to spot these signs, as they will execute the survey much faster and more dependably, than non-experts.

Examples of activities and signs thereof are:

- Exploration for gold pits (excavations / small tailings)
- Hunting with weapons (machete cuts)
- Hunting with rifles (bullet cases ?)
- Hunting using traps (traps)
- Gathering, e.g. fruits, plant for medical use (slit braches, no fruits on ground)
- Use of rattan or other products for production of baskets, chairs, etc. (cut of branches of selected flora species)
- Collecting fuel wood (broken tree branches, no twigs on ground)
- Logging (straight cut trees rather than broken, large paths through forest used for tree pulling)
- Agriculture (cleared lands, plots can be at distance from camp)

Use *Annex Seven: Environmental Impact Assessment Form*, to assist you with this Tool.

Tool #5c: Informing the Environmental Impact Inventory

1. Using GIS mapping tools (i.e. map or aerial with transparent overlays on which provided information is visualized) an overview can be created of where people go to find what forest products using which methods (hunting by trap or by weapon, gathering, logging, etc.). This effort must notably also produce a map of frequently used trails and maximum distance from trails obtained in hunting / gathering forest products.

2. The above effort should be added to by an historical dimension so as to see if people through the years have had to go deeper / elsewhere into the forest to find certain species.

3. The resulting map can be further strengthened by asking a mixed control group of hunters and village elders to indicate where which species are found, of course by using an historical spatial mapping approach as well. By asking for species in ways not related to the exploitation of the forest, people may be more open to sharing information.

4. To overcome seasonal bias, a seasonal calendar of forest product flows is to be made, (e.g. dry seasons may be better for fuelwood collection, fruits will seasonally bear fruit, animals' presence may be seasonal etc.)

5. Getting a grip for motivation of hunting / gathering, it is essential to list which species and what products thereof (e.g. fruits/mango, trees/teak) are collected for what purposes, i.e. commercial or subsistence. This knowledge will prove essential in finding strategies to address unwanted utilisation of forest products as alternative livelihood programs tend to address only the commercial value while ignoring the subsistence. Moreover, subsistence use need be addressed differently from commercial use.

TOOL #6: REPORTING BACK AND STAKEHOLDERS' RECOMMENDATIONS

The last day in the field, the team should hold an open, multi-stakeholder meeting to report back main findings, obtain input on their accuracy and adapt the findings accordingly. This is also an opportunity to present preliminary recommendations and obtain additional ones from the community.

Try to ensure representatives of all different stakeholder groups attend, including local leaders, forest authorities, miners, loggers, hunters, farmers and others.

Reporting back and validating findings

1. If possible, prepare in advance a 1-2 page handout in a simple, understandable format, summarising the Study objectives, main findings and conclusions. This should be translated into local language and distributed at the beginning of the discussion.

2. Develop in advance a list of key questions or issues that represent gaps in the data.

3. Present different categories of findings separately (e.g. environment, socio-economic conditions, governance and stakeholders, interconnections between them). Ensure participants are free to ask questions or comment throughout the brief presentation. Mention areas where the team is not sure about their findings and ask for clarification.

4. Go through your "gap questions" one by one and make sure all bases are covered.

5. Ask the participants if they think there is anything else they would like to add.

6. Depending on the purpose of the study, explain what will be your next steps (finalising the study, submitting it to XY, etc.).

Obtaining strategic recommendations

1. Turn flipcharts into a coherent format and post them at the front of the room, each with a different heading: Forest Authority, Mines Authority, Environment Authority, other government agencies, Local Government, local NGOs, miners, farmers, etc.

2. Based on the findings of the work, what recommendations can participants make for each of the groups to manage the impacts of ASM in the protected area or critical ecosystem? Add other flipcharts (groups) if needed.

3. Thank participants for their excellent participation, provide contact info (the community counterpart), and confirm who will receive a full copy of the report at the end of the Study.

Annex One: Sample Outline of a Baseline Assessment Report

Annex Two: Sample Study Itinerary

A sample general itinerary for an 8-day field program (excluding travel) is suggested in Table 5 below. This considers research in only one ASM community and implementation by an "ideal" field team comprised of 4 people:

- a Lead Coordinator/Researcher
- a Conservation/Wildlife Expert
- an ASM Expert
- and a Social Scientist/Development Expert

The team will be subdivided into two sub-teams, one of which will emphasise more technical environmental assessment while the other will have greater focus on socio-economic and livelihood issues.

ACTIVITY	COMMENTS
Team Member 2 and 3 land in Libreville (Gabon)	
Briefing and preparation for field trip	As briefing is largely done through beforehand, a morning talk-shop should suffice. Also, we'll brief once more with the team in Makokou
Leave per plane for Makokou around noon, arrive before 15h	
Assemble full team and run through itinerary and tasks	
Verify equipment, etc. with conservation/wildlife team and assess groceries needed	
Dinner with team	
Buy groceries and sundries	Some may best be brought from Libreville for reasons of availability / pricing
Meeting with prefet, chef de chantier and military leader at the conservation/wildlife organisation's office	Introduce the team and address data gaps
FG with miners Tools #5b (Mapping Land Use and Ecological Impact exercise) & #5c (Informing the Ecological Impact Inventory) merged	With sandwiches at start and refreshments at end to attract / reward participation
FG Miners #4c (Using Daily Activity Clocks and Seasonal Calendars)	FG in meeting room conservation/wildlife organisation's office
Process and 'gap analyse' data in preparation for Minkebe	
Early departure for Minkebe	
Stay the night in same fisher camp or ASM site as visited during Prelim. Collect additional data where gaps have been identified	
Arrive in Minkebe, re assess tasks	
Team 1: Ecolo Recce outside camp opposite of previous ecolo done during Prelim.	If preferred not opposite but different location for one reason or the other, so be it
Team 2: sample taking & environmental impact assessment (adapted)	
Team 3: use map made during Prelim for community transect and update detail on all but pits, including GPS data	
Team 4: Collect data on mining, incl GPS data	
Gap analysis of data gathered	
Address gaps in data	
Team 1 goes ahead using recce methods to collect data	
Team 2 goes ahead for sampling at river	
Team 3 and 4 join at river to depart for Makokou	
Free flow discussion of findings / experiences on boat	

Stay the night in same fisher camp or ASM site as visited during Prelim. Collect additional data where gaps have been identified	If this is feasible time-wise...
Address gaps in data	
Leave for Makokou	
Discuss findings in relation to work waiting in Makokou	
Re assess responsibilities etc. for Makokou	
Arrival in Makokou	
Data processing / preparing workshops in morning	
Interviews with miners (n=2)	
FG with pit owners	Using merged elements of tool #3 & #5, design finalised in morning based on gathered / missing data
Interview local SISED	SISED seems to ignore that her license has been revoked an continuous operations hoping that the government may decide to let them run Minkebe. This may still produce FairGold in some shape or form.
FG Tool #4a Consulting local stakeholders	perhaps leave conflict assessment out given sensibilities
FG Tool #6 reporting back	Not sure if we can report back with all stakeholders. If not, split sessions between miners and other stakeholders
Leave for Libreville	

Annex Three: Useful Sources of Information

ASM – specific resources

Community and Small-scale Mining (CASM) - www.artisanalmining.org

Artisanal Gold Council - www.artisanalgold.org

UNIDO /UNEP Global Mercury Project - www.globalmercuryproject.org/

Alliance for Responsible Mining (ARM) - www.communitymining.org

Conservation, protected areas and wildlife resources

Environmental Performance Index - http://epi.yale.edu/

EU Commission Global Environment Monitoring Unit http://bioval.jrc.ec.europa.eu/

UNESCO website of World Heritage Sites - www.unesco.org

Protected Areas search engine - www.protectedplanet.net

A-Z Areas of Biodiversity Importance - http://www.biodiversitya-z.org/

RAMSAR Sites - www.Ramsar.org

Protected Areas management categories - http://www.iucn.org/about/work/programmes/pa/pa_products/wcpa_categories/

Africa biodiversity collaborative group - www.abcg.org

Cambridge Conservation Forum - www.cambridgeconservationforum.org.uk

News Information on tropical rainforest related issues - www.mongabay.com

Legal Sources

Every country has an official journal in which new (by-)laws are published and/or need to be published in order to be valid. Some countries have online version with on-line archives. If not – www.glin.gov is a wonderful, though not exhaustive, database. Likewise you can turn to www.lexadin.nl and www.droit-afrique.com.

There is a great body of literature on human right law. As a starting point visit the Business and Human Rights Portal www.business-humanrights.org and the Institute for Human Rights and Business - http://www.ihrb.org

If the government ministry/department/authority has a website, they may post the policy, laws and regulations also.

General

Laws, S., Harper, C. and Marcus, R. (2003) Research for Development, Sage Publications: London.

Central Government, including mining ministries, environmental agencies, forest and wildlife authorities and statistics bureaux, development agencies (including national development plans and poverty assessments), Central Banks (for basic economic data)

National Statistics Bureau websites

Regional and local governments (e.g. district, state or provincial administration and decentralised government offices, e.g. mining or forest authorities)

Private sector (e.g. active forestry, mining or exploration companies in an area)

Media reports and articles

UN organizations (e.g. UNDP's Human Development Report)

World Bank (e.g. Development Indicators)

World Health Organization (WHO)

International (e.g. WWF, OXFAM) or local NGOs; community-based organizations (CBOs) who are active in the community of interest

International Donor Agencies (e.g. USAID, DIFID, CIDA, etc.)

Academic institutions (e.g. University theses or dissertations), journals and local schools

List-serves and sector specific mailing lists (e.g. Eco-Minerals, Poverty & Conservation, etc.)

Annex Four: Types of Security Risks to Consider

A range of security risks may be encountered in the course of the study. Review some of the common ASM-specific and generic risks that can be encountered with your research team and brainstorm a list of which ones may present in your study area as well as other context-specific risks that are not shown.

COMMON ASM-SPECIFIC RISKS

During Prospecting and Mining Activities

A number of common characteristics of informal ASM, in particular, can lead to ongoing or imminent conflicts between miners and current land users, conservationists, local government, conservation or mining authorities and mineral rights holders conducting exploration.

Artisanal miners often prospect across large areas, digging and abandoning pits or working in rivers as they look for minerals. For much informal ASM, this can be done in a reckless manner, creating environmental effects related to siltation of rivers (potential impacting fishermen, other downstream water users including resident flora and fauna), digging up gardens or abandoning pits that can pose a hazard to animals and humans. Many of these prospectors can be highly mobile and may have little affinity to an area or few (if any) solid relationships with the people living there.

Within protected areas, in particular, most disturbing effects may include cutting of trees to clear access routes into forests and in working areas. Such openings can tend to invite more people in, such as poachers and illegal loggers. Impacts on waterways can also pose a major concern, particularly if water extraction levels are high, work is taking place directly in a river, or waste is discharged directly into a river. In some areas, a decrease of 10% of water supply can mean the difference between life and death for an ecosystem. Particularly if chemicals are used (e.g. cyanide, mercury), activities can seriously harm water flora and fauna.

When pits are being developed at a given site, it grows, either in width or in depth, or in both dimensions, meaning more tailings are discharged, more use of locally sourced wood to support the pit and to build sluices or other equipment, among others. A larger operation may house more workers who need food and a place to sleep, thus increasing elements such as traffic, agriculture, clearing of the land for houses, and logging wood for houses. More people also ultimately mean more human waste.

Influx of Miners in a Camp due to a Rush

A sudden rise of people in one place means a sudden rise in the social environmental and economic impact of ASM. While every rush is different, a number of issues may occur in target areas that can put the research team at risk, either due to non-discriminatory, random violence or perceived threats to interests of individuals or groups.

In some rush scenarios, miners from different regions and countries may come together, bringing with them different attitudes and beliefs. Newcomers may not be appreciated by resident miners who have discovered the deposit. Alcoholism, drug abuse, prostitution and/or a "shortage" of women can also bring about a host of conflicts between camp residents. Illicit arms trades can sometimes occur. Prices of commodities and impacts on the local environment can increase rapidly as demand for food, resources (e.g. wood, water) escalate. The "carrying capacity" of an ad hoc rush community may be inadequate for the number of men and women seeking accommodation in the area. Neighbouring established communities may also have animosity towards the rush community due to environmental and social impacts, real or perceived.

Authorities are never keen to have uncontrolled situations and are hence likely to intervene in cases of rushes, a situation that may be more serious if the influx involves foreigners. This may be addressed in a violent manner and, while it is obviously undesirable to be conducting research in a camp when military forces arrive, in any event such responses can widen the gap between government and artisanal miners, providing food for thought for researchers who may be perceived to be partnered with government. More commonly, local authorities (if present) are ill equipped to manage with the conflict and violence common to a rush scenario for a sustained period of time.

Perceived Affiliations and Objectives of the Research Team

In most cases, close coordination with government agencies and authorities will be needed to successfully undertake the work and establish mechanisms for sustained improvements. The history of relations between these groups and the research team should be understood in order to properly ascertain risks. For example, in cases where there is a national park with rangers, armed confrontations between rangers and ASM miners may have occurred, deteriorating relations between the ASM camps and the authorities and likely increasing the number or arms and the use thereof. Miners may perceive researchers to be working with authorities with whom they may have negative relationships.

Conversely, authorities may resent or have hostility towards the research team if they do not agree with objectives related to developing "win-win" strategies or feel their personal interests may be negatively impacted by the work. For example, in some cases, local leaders or authorities may be engaged in or benefiting from illicit acts (e.g. unlicensed mineral dealing, extorting money from miners, engaging in illegal logging) and may feel threatened if objectives of the work relate to formalisation and/or empowerment of miners.

If these are likely to be major issues, consider how the research team can work in cooperation with authorities and not necessarily include them in visits to ASM sites or other areas that might be high risk. It is important to stress the importance of independence throughout.

GENERIC SECURITY RISKS

Prior Conflicts

Conflicts tend not to arise in isolation. Worse examples are those conflicts where people have forgotten why the conflict is there, but are just antagonistic towards other actors. This is called path dependency. If conflicts have occurred, chances increase dramatically for new conflicts. "Recurrent transgression" communities – that is, communities in which conflict has occurred more often – suffer from such path dependency. Political and security institutions, as do the people in the street, become "habituated" to conflict, meaning they show a tendency to regard conflict as a justifiable – or even necessary – solution to cope real or perceived threats.

Political Disorder

Political disorder can be described as a society without common ground, i.e. people cannot agree on what is best for society. If anything, it constitutes a disapproval of the government by one or more parties. Particularly when such a situation turns into a stalemate, this can well be regarded as a conflict. The more disgruntled the parties become with the stalemate, and the more they lose faith in finding common ground, the nearer the violent eruption of the conflict.

Still, even is disorder is not manifest, like rallies in the streets or heated debates in streets and in council / parliament meetings, there still may be disorder. Some cultures prefer non-engagement as a means of resistance. This may be caused by a generic respect for elders / chiefs or other social norms which do not allow all too public expressions of disapproval no matter how widely shared such disapproval may be. Consequently, to outsiders, local, government may seem orderly. Hence, one needs to look beyond first glance.

On that note, be careful not to confuse your favourable / disapproving opinions regarding a regime with what how the people concerned value their political environment. Non-transparent regimes with little democracy may still be appreciated as they know how to take care of the people's basic needs. Vice versa, progressive idealistic regimes may not be appreciated as people prefer food over words.

Weak Institutions

Two notions of institutions exist, both are important. Commonly, elements of the government apparatus be they local or national, are referred to as institutes or institutions. More tacit institutions are those concerning the moral fabric of a society. One can see how these two should ideally be linked, with the state institutions as executers of the moral standards of a society where the core of the morals is enshrined in laws. The more these three are apart, the more fertile the feeding ground for conflict. Of least concern is when the state reflects the moral fabric though the laws may be poor or not fully enforced. This 'merely' reflects a weak rule of law, an institution in itself, which is a risk when you are used to depend on working with people who respect the law. What is more, it means your work needs to be backed by the powers that be, or at the very least should not antagonise the powers that be for the law will not be there to back you up. What is more, a country where laws are not fully enforced, it is the governing elite who decided there is no need for it. All the more reasons to not so much keep on the right side of law but on the right side of the people in power. Pleasing authorities can be difficult. Besides the random decisions your research may be exposed to, and which you just have to take on the chin smiling, the big risk is compromising your moral standard or indeed international laws. More in the grey zone, your research can be abused by powers in order to further disempowering miners. If such cases, you will have no choice but to abort your research. Yet, if you plan well ahead, having thoroughly applied methods #1a to #1d, you may have been able to circumvent these issues. Still, you always need to remain alert. In no case, allow your research to become a political instrument. Though in some case it can be laudable to challenge the powers that be, you need to ask yourself if your desire to do good will indeed do good rather than be a symbolic gesture that worsens the situation for your research subjects in the long run.

An even more difficult environment to work in is a society where rule of law is particularly weak, and where the governing elite operates according to rent seeking principles rather than according to principles of good governance thus ignoring the moral standards of the people. In short, these states are bound to ignore any benefit of the people it is supposed to govern. This is situation where a country is balancing on the brink of civil war. This is not to say research

cannot be done. Yet, you will need to be extremely careful in your operations.

Most often, you will find a situation where all three are in line yet not necessarily positively: rule of law is weak, yet governance is in line with corrupt and non-rational behaviour of the people. There may be little cause for internal conflict in the country, as people accept the way the country is run, they just wish they were in positions where they could get their hands on state benefits for personal gain. Still, as a researcher you have to aware of the weak rule of law, which will leave you in the hands of will when you cross the wrong people. Also, you need to bear in mind that people can be expected to not be in a job to work, but just to get the money as in such countries the notion that you actually deliver what you are paid for tends to be all but vanished.

Ethnically Polarized Elites

Above we mentioned the citizens as one group. Yet, the political elite may cater very well for one or several groups while actively excluding others. Groups that feel under-represented by the political elite are more likely to challenge the current situation. Additionally, in cases where elites are afraid of being confronted they are even more prone to fuse their concerns with what is deemed national security, often resulting in policies directly aimed at the marginalisation of others. The case of Apartheid is a point in case, though you may just as well come across exclusionary policies which include the large majority, side-lining only one or two groups. More often than not, such exclusions work along ethnic lines. The most dangerous variant is one where deprivation is embedded in an exclusionary ideology adhered to by the elites as we saw in Rwanda before the genocide.

Your risk in such a situation is twofold. Either you do research among the marginalised and thus risk antagonising the elite, or you do research among the included and in doing so gain a blind spot for the situation of the deprived. In cases where your research is aimed to influence policies, you may thus come across resistance to improve the situation of the deprived. Worse, when not prudent, your policy advice may well worsen the situation of the deprived.

Annex Five: ASM Site Assessment Checklist

Name of Researcher: _____

Date: _____ Arrival time: _____ Departure Time: _____

Name(s) of Mine Site: _____ Minerals mined _____

Site Contacts / Persons Interviewed (it may not be possible to get information for all persons interviewed, contacts of at least 2-3 miners will be useful for future reference but some respondents may not want to give them; try to estimate age roughly if not provided):

Name	Age	M/F	No. of years in mining	No. of years at the site	Contact Info

General Description of Site Location:
(E.g. distance to nearest village, rivers, forests, highways or other landmarks near to or within the License Area)

Is the site:　　　□ very accessible　　　　□ fairly accessible　　　　□ accessible with difficulty
Evidence:

Section A: General Information about the Site:(initial visual observations, can be verified by respondents)

A1. What is the area covered by this ASM site?
(try to the estimate area disturbed/de-vegetated): _____m x _____m = _____m2

Describe the area: (e.g. deforested area within a forest, de-vegetated area within a savannah, type of vegetation , proximity to rivers)

A2. Are villages, houses, farms or crops located in the immediate area of the site?　　□Yes　　□ No　　□Maybe

A3. What types of structures are present?　　　□Temporary　　　□ Permanent　　□Don't Know

A4. Where do the miners live?
□ At a camp at the site　　□ In _____ village　　□Both　　□Other:_____

Distance from place of residence to the mine site _____.

Describe: (number and type of houses/other buildings if feasible/small, what are they used for, who lives there (miners, non-miners), types of crops, if present)

A5. What type of mining is happening? (tick as many as apply)

□ riverine alluvial (river bed and/or bank)　　□underground alluvial (pits or shafts/tunnels)　　□ tailings
□surface hard rock　　　　　　　　　　　　　□underground hard rock　　　　　　　　　　　□other

General Description: (a number of small pits/shafts spread across an area? One or two large pits? People in one large group or smaller units?)

A6. How would you characterize the mine?
a. □ rush mining　　　　　　　　□community-based mining
Evidence: _____
b. □formal/licensed　　　　□semi-formal　　　　　　　□informal / illegal
Evidence: _____
c. □organised　　　　　　□semi-organised　　　　　□disorganised
Evidence: _____

A7. How is work organised?　□ site boss/owner is present　　□ teams　　Ave. # per team _____ [_____M; _____F]

(Check all that apply)　　　□ team/unit boss is present　　□ small units　Ave. # per unit _____ [_____M; _____F]

　　　　　　　　　　　□ roles shared/interchangeable, or　　□ individuals　　[_____M; _____F]

　　　　　　　　　　　□ distinct division of labour (i.e. diggers clearly distinguished from haulers distinguished from processors)

A8. How many people do you observe at the site now?			MALE			FEMALE		
	Total	adults	youth	children	adults	youth	children
	- -							

A9. How many people are working at the site generally? (as reported by participants)	Rainy Season Dry Season		
A10. Is there is a difference between the #A8 and #A9? If so, why? (as explained by participants)			

A11. How long has ASM been taking place here? _____ months / years (circle one)

A12. Has there always been this many people?
(ask participants to explain the history, when and why changes in activities occurred)

Section B: Mining (Ore Extraction) Activities

B1. Where Is extraction taking place? (check all that apply) □ In a river, stream or lake □ Next to a river, stream or lake. □ On land □ In a forest □ Other _____	Describe: (proximity to these locations, obvious observed impacts)	B2. What kind of ore is it? (ask a miner) □ Weathered soil or sediment □ Quartz veins in weathered soil □ Quartz veins in _____ host rock □ Other:
B3. What is the extent of area where extraction is occurring? (estimate dimensions visually to fill in the table at the right: V = w1 x w2 x d) Total Number of pits / shafts on-site: _____	Pit/Shaft No. Pit /Shaft# width1 (m) x width2 (m) x depth (m) = volume (m3)	
B4. Ask a few miners about digging/rock breaking: Select two average pits/shafts Pit 1 Pit2 How many days did it take to dig it? How many people were involved? Daily ore production rate per digger: [= pit volume no. of days no. people		

B5. What type of tools and equipment are used for extraction? (check all that apply)		B6. What are the steps in extraction? Who is doing it ? (No. of M/F; <u>Adult</u>/youth/child)	
□ Sledgehammers	□ Water pumps		
□ Iron bars or pry bars.	□ Wheelbarrows.		
□ Shovels/spades	□ Buckets and basins		
□ Jackhammers/concrete breakers	□ Pulleys and winches		
□ Compressor (if so, size/type _____; how many _____)			
□ Excavators (if so, size/type _____; how many _____)			
□ Other (please specify):			

B7. Where is waste rock piled? (check all that apply) Describe: (how big are waste rock piles? Any hazards observed)	□ Piled next to the pit/shaft. [___m away from pit/shaft edge] □ Into a dug basin or natural depression on land	□ Piled next to the pit/shaft. [___m away from pit/shaft edge] □ Into a dug basin or natural depression on land

Section C: Mineral Processing Activities

C1. Where are mineral processing activities taking place? (check one option from each column) Describe(size/nature of area, no. of people):	Distance to the nearest river, stream, lake or reservoir: □ In the water or on the shore/banks □ 0 – 10 metres away □ 11 – 20 metres away □ More than 20 metres away	Distance to open pit or underground workings: □ In the pit or underground. □ 0 – 5 metres away □ 6 – 10 metres away □ More than 10 metres away

C2. What are the steps in mineral processing? Who is doing it (No. of M/F ; Adult/youth/child)	C3. What type of equipment is used to process and recover the mineral(s) of interest?(check all that apply)	
	Crushing and Grinding	Basins, pans or bateas
	□ Sledgehammers	□ Sluice boxes
	□ Small hammers	□ Manual Jigs
	□ Mortar and pestle	□ Mechanised Jigs.
	□ Grinding stones	□ Grease Tables(diamonds)
	□ Other type of crusher: _____	□ Shaking Tables
		□ Hg Amalgamation (gold)
	□ Other type of mill: _____	□ Retorts (gold)
		□ Other: _____
	(specify type, # and size)	
	Loading and Hauling	Other
	□ Sacks, bags	□ Water pumps
	□ Basins, buckets	□ Generator
	□ Shovels	□ Other _____
	□ Wheelbarrows	Describe: (how many, type, size)
	□ Other _____	
	What is the capacity (kg) of 1 ore hauling unit: _____kg	

C4. What is the source of water used for mineral processing? (check all that apply) Describe:	□ River, stream or lake.	□Constructed Reservoir/pond
	□ Borehole [no. of boreholes _____]	□Other (please specify):
	□ Rainwater collection	
	□ Spring water	

C5. Is the operation diverting water from a river, stream or lake using a dug channel or trench?	□ Yes □ No □ Don't Know	Describe:

C6. After processing, where are tailings (fine sand and waste material) and process water discharged? (check all that may apply)	□ Back to the river, stream or lake.	□ In a natural or dug sedimentation pond
	□ Into a dug basin or natural depression	□ Other (specify):
	□ Onto open land	
	□ In an abandoned or unused pit	

Section D: Mineral Production (use local units e.g. carats

D1. How is the ore "loaded" into the mineral processing "system"?(e.g. pan, sluice box, jig)	□ basin/pan □ shovelled from wheelbarrow □ shovelled from stockpile □ other: _____ [____kg/basin] [____kg/wheelbarrow] [____kg/shovel] [____kg/other]

D2. If using equipment other than only panning for recovery (e.g. sluice boxes, screens)

How many "units" (e.g. basin, wheelbarrow etc) are loaded before the "product" is collected? _____ units

How many people are working per processing unit? _____ people

D3. **(a) If panning, how many pans can one person wash in one day?** _____ pans

(b) How any minutes does it take to wash one pan? ___

(c) How much does someone get from a single pan? On a very good day: _____ (points /grams/carats/_____ circle one)

On a bad day: _____ (points /grams/ carats/_____ circle one)

On an average day: _____ (points /grams/ carats/_____ circle one)

(d) How much _____(mineral) does 1 panner get in a day? Average: ____   A very good day: ____   A bad day: ____

Section E: Mineral Trade and Revenue Sharing (use local units and currency and convert later; get responses from >3 miners)

E1. Where do you sell your gold/mineral?   □ at the site □ in _____ village □ other: _____

E2. What is the typical sale price these days?

Miner #1:_____   [_____ per point /gram/carat/_____] circle one local unit.

Miner #2:_____   [_____ per point /gram/carat/_____] circle one local unit.

Miner #3:_____   [_____ per point /gram/carat/_____] circle one local unit.

E3. Do you have a regular buyer or many buyers? (discuss and try to get a sense of how selling/buying is taking place)
E4. How do you divide the revenues from mining? (e.g. divided equally between the team? "pit owner" pays miners?)
E5. How do you get paid for your work? (e.g. own production, number of pans washed; daily fixed rate; based on % of production)
E6. How is each person in different roles paid? (e.g. all profits shared in a team; or diggers, haulers, panners paid differently, or)

E7. How much do you earn in a day? (try to get data from miners in different roles – you will use this to cross-check with other data later)

Miner #1: [m / f] Average day _____   Very good day _____   Bad day _____   Job at the mine: _____

Miner #2: [m / f] Average day _____   Very good day _____   Bad day _____   Job at the mine: _____

Miner #3: [m / f] Average day _____   Very good day _____   Bad day _____   Job at the mine: _____

Miner #4: [m / f] Average day _____   Very good day _____   Bad day _____   Job at the mine: _____

Miner #5: [m / f] Average day _____   Very good day _____   Bad day _____   Job at the mine: _____

E8.   Do women and men get paid equally at the site? (Discuss)

Section F: Environmental Impacts(in addition to those identified above)

F1. What non-mineral natural resources are used in each step of the extraction process? (e.g. timber supports, water in hydraulic monitoring, fuel used in a generator). Describe what is used and how. See Tool#3c to guide you in estimating the amount per excavation or activity.

F2. What non-mineral natural resources are used in each step of mineral processing? (e.g. wood or logs for sluice boxes, water consumed in processing). Describe what is used and how. See Tool#3c to guide you in estimating the amount per excavation or activity.

F3. What non-mineral natural resources are affected at each step in the mining and extraction process? (e.g. area of soil or vegetation degraded by digging of pits or shafts/tunnels, rivers degraded by panning). Describe what is affected and how. See Tool#3c to guide you in estimating the amount per excavation or activity

F4. What is the size and nature of the area affected by tailings (if on land, describe the area (m2) affected, if into a river, describe condition of river in terms of characteristics (width, depth, est. flow as slow/medium/fast), is it silty? Are tailings accumulated on banks and in river?)
_____ m2

F5. Is the river or stream receiving tailings ever completely dammed or blocked?   □ Yes   □ No   □ Don't know

F6. If equipment or machines are used, is there any evidence of diesel or oil spills? □ Yes   □ No   □ Don't know
If applicable, describe any spills (type, size, number) and how diesel, petrol and lubricants are handled/stored:

F7. If there is a camp/accommodation or other facilities on-site, what are the main natural resources used and affected by activities there? (include consumption of bushmeat or fish, logging for wood used in house construction, land cleared for farming, among others)

F8. What sanitation and hygiene provisions are found at the site? (check all that apply) **General comments:**	□ Pit latrines. If yes, describe their number and condition: _____ □ The bush. _____ □ Wash water in jerrycans □ Washing in river or stream □ Central rubbish pile(s). □ Rubbish haphazardly discarded. Describe: □ Other (specify):

F9. What are the main sources of noise pollution coming from the site?
Source   Hours per day   Perceived noise level (very loud/loud/audible/no noise at 50m distance from site)   Comments:

How would you characterize the noise levels at peak operating hours?   □ Very high   □ High   □ Minimal

F10. What are the main sources of other types of pollution/contamination from the site?

Air:

Water:

Land:

F11. What species of animals have been observed by miners on the ASM site and in its immediate area?

How often seen?

Animal　　　　　(daily or almost daily/occasionally/seasonally/rarely)　　　What is the normal response when seen on-site?

What animals used to be commonly seen but are no longer or are rarely seen? Why do they think this is? When was it last seen?

What animals are commonly eaten in this area?

Section F: Environmental Impacts(in addition to those identified above)

Section F: Environmental Impacts (in addition to those identified above)	PPE	By Who	Never	Sometimes	Always
	□ Boots				
	□ Shoes				
	□ Gloves				
	□ Facemasks				
	□ Other:				

G2. What roles do children have at the site? (check all that apply)

13-18 yrs:	□□ none	□□digging	□□hauling/loading	□□processing	□□selling food/drinks	□□other: _____
	MF	MF	MF	MF	MF	MF
6-12 yrs:	□□none	□□digging	□□hauling/loading	□□processing	□□selling food/drinks	□□other: _____
	MF	MF	MF	MF	MF	MF
<6yrs:	□□none	□□digging	□□hauling/loading	□□processing	□□selling food/drinks	□□other: _____
	MF	MF	MF	MF	MF	MF

Comments:

G3. When do most children work? □ all year round　□ evenings and weekends　□ during school holidays

□ rainy season only　□ dry season only

Comments:

G4. What are the main causes of injuries and fatalities at the site? (check all that apply)

Cause　　　　　　　　　　　　　　　When it last occurred　　　　　What happened

□ pit wall failure or shaft/tunnel collapse

□ accidents/injuries with tools or equipment

□ working while under the influence of drugs/alcohol

□ conflict, robbery or theft related violence

□ other

G5. How many fatalities from work related incidents occur on average: _____ per month _____ per year?

Describe:

G6. What are the main causes of illness causing lost workdays at the site? (check all that apply)			
Cause	Times per year	Ave. no of lost workdays per sickness	Comments
□malaria			
□cholera or other diarrheal diseases			
□tuberculosis, chronic cough			
□other			

G7. How many fatalities occur on average: _____ per month _____ per year
Describe:

G8. How many days a week do miners work? Response #1: _____   Response #2: _____   Response #3: _____
M /F   M /F   M /F

G9. Do they work throughout the year?   □ all year   □ rainy season only   □ other _____

□months ____ per year [List months: _____]

Discuss: (Does the number of miners fluctuate throughout the year? Why?)

G10. Are miners working here also involved in any other economic activity? (e.g. trading, farming, logging etc; if so, how much time do they spend doing this compared to other mining)

G11. What are the main social issues at the ASM site? (e.g. conflict over work areas, theft, domestic violence, alcohol related violence etc)
Issue   Evidence/Example

G12. What are the main social benefits from ASM? (e.g. can pay school fees, can buy food, work with friends, etc)
Benefit   Evidence/Example

Annex Six: Sample Interview Guides

SAMPLE INTERVIEW GUIDE #1: A MINER

Commence with introduction of the Study objectives and discussion of consent (only proceed once consent is obtained); be flexible, open and prepared to not receiving any answer to questions that are confrontational. Finally, do not judge!

Livelihoods

1. How long have you been involved in mining?

2. Did you grow up in this area or did you relocate here for other reasons? How long have you been working here?

3. What made you interested to work in mining?

4. What different roles have you had in mining?

5. Did you have a previous occupation? What was it?

6. Is mining your main source of income? Are there any other activities you use for income or to meet basic needs?

7. Do you spend the entire year doing mining? If no, when do you stop mining, and why? What sort of other activities do you do ? (i.e. seasonal, other)

8. What are the main benefits of practicing ASM compared to other activities? How about risks/costs? (ie: health, safety, income)

9. Do you invest your mining income/profit in any other activity?

Environment

10. In your experience, how does ASM impact the environment?

11. Are you involved in other activities which impact the environment? What are they, what are the impacts?

12. Have you worked in other mining areas? If so, what are the main differences in working in a protected area and a different region?

13. Are there specific regulations in this area about ASM? How do they impact the way you practice ASM and other activities?

14. When you finish mining at a site, do you do anything to return the land to a more natural state? Why (not)?

15. What facilities or resources exist to help you reclaim the land if you or others want to?

16. Do you take any other measure to limit your impacts on the environment?

17. Have outside people moved into the region in order to work in ASM or other areas?

18. What are the changes that have occurred as a result of new people working in the region?

19. What is your family main source of protein? How often do you eat it? Where do you get your sources of food from?

Legality (and knowledge of the legal framework)
(WARNING: Note that in most cases ASM is an illegal activity; be careful of how you phrase your questions)

20. Is it legal to practice ASM in this area? And in surrounding regions?

21. Are licenses required to work in this area? And surrounding regions?

22. Do you have a license? Are there challenges to obtaining a license? What are they?

23. Have any authorities ever advised you about mining or how to get a licence?

24. Have any authorities ever tried to stop you from working? What happened?

25. Do you face any particular challenges working in the forest/desert/etc.? What kind? Can you give an example?

Conflicts

(WARNING: the following have the potential of becoming confrontational questions; ask them with caution)

26. Can you describe your own and other diggers' relationships to mine pit owners? Are relations always good or are there ever problems or disputes?

27. How about with gold buyers?

28. How about with bushmeat hunters? Do you or other miners do both? How are relations?

29. How about park authorities? What are relations like now? What should the relation with this stakeholder ideally be like? What opportunities to improve?

30. What risks do you see for the relations? What are the alternatives to eviction that you think the park authorities should have considered?

31. Do you have any contact with the mining ministry? If so, when do you interact with them and how do they treat you? Are they helpful or not? What are relations like now? What should the relation with this stakeholder ideally be like? What opportunities to improve? What risks do you see for the relations?

32. Local authorities. What are relations like? Do they ever pose any problems for you? How are these problems resolved? What should the relation with this stakeholder ideally be like? What opportunities to improve? What risks do you see for the relations?

33. Security Forces. Are they present in your area and what are relations like? Do you ever interact with them? How and why? What should the relation with this stakeholder ideally be like? What opportunities to improve? What risks do you see for the relations?

34. Relation between 'national' miners and 'foreigners'. Is there any tension there? Same for 'local' miners and immigrants from other parts of the country.

Demographics

35. How old are you? (What is your age?)

36. Do you have a family of your own? How many children do you have? Do your children ever help you mine?

Ask the participant if he/she has anything else to add. If exploration or mining companies have interests in the area, it may be also useful to ask about the effects of this, if any. Thank the participant for contribution and provide contact info (either yourself or a local contact) where they can get a copy of the final report.

Eviction
(WARNING: as this is another contentious/confrontational area; ask these questions carefully)

For a post-eviction context, the following questions may be useful:

37. Were you or anyone you know involved in the eviction of miners from ___(name of location)_____ in _(month/year)_____?

38. Can you tell me about how the eviction happened? Did you receive any advance warning? Who carried it out?

39. How were people treated in this process? (Well, fairly, harshly) Can you tell me more?

40. Were there any instances of abuse? (beatings, shootings, rapes)

41. Did anyone explain why they were evicting people?

42. After the eviction, where did most miners go? (are they waiting in nearby villages for the ERU to leave? Are they at a different mine site?) Did the government offer any help to the evicted miners?

43. Security Forces. Before the eviction, what were relations like? (were they present in the area?) what are relations like now? How often do they visit? What do they do when they visit? What should the relation with this stakeholder ideally be like? What opportunities to improve? What risks do you see for the relations? How did they conduct themselves in the eviction? How should it have been?

44. What are you doing now in order to make a living? (unemployed, part time job, other job, what industry?)

45. Do you plan to return to mining? Why? If so, at another location or to the previous site?

SAMPLE INTERVIEW GUIDE #2: A LOCAL GOVERNMENT/NON-GOVERNMENT LEADER

Commence with introduction of the Study objectives and discussion of consent (only proceed once consent is obtained).

1. To begin with, tell us about your background in local government

2. What is your role in ecosystem management? How are you engaged with local forest/park authorities

3. What portion of the population in your jurisdiction is in the protected area?

4. What portion of the population in your jurisdiction works or gets their income from resources in the protected area? (what kinds of resources? How many miners do you think there are? Are they locals or are they mainly foreigners? From where?)

Livelihood strategies

5. What are the main livelihoods in this area?

6. Have outside people moved into the region in order to work in ASM or other areas?

7. What are the changes that have occurred as a result of new people working in the region? What are the challenges, if any?

8. What are the main benefits of ASM? And main negative impacts?

9. Are there any differences between mining and non-mining households in terms of their ability to cope and their strategies for doing so?

10. (if not mentioned) Is ASM providing alternatives to other livelihoods? What were miners doing before?

11. What do you think are the main effects of these different livelihoods on the environment? What do you think are the main effects of ASM on the environment?

12. Do you think other livelihoods (legal or illegal) would be impacted (increase of decrease) with the increased or decreased practice of ASM?

Governance

13. How are local government and other authorities dealing with the effects of these different livelihoods on the environment?

14. Have any changes in approaches been recently adopted? Why/how did these come about?

15. What are the main challenges for local government in dealing with ASM and other livelihoods?

16. Are there any conflicts between what is being demanded at the national level versus what is required at the local level?

17. What are the main environmental changes that have occurred in the country? And in the protected areas?

18. Has this had any affect on legislation or livelihood or protected ecosystems?

19. Is there any special legislation exists for ASM within protected areas?

20. What are the impacts of this legislation?

21. Are the protected regions stable/secure? Do you think mining makes the situation more or less secure?

Conflict

(WARNING: the following have the potential of becoming confrontational questions; ask them with caution)

22. What are relations like between your local government and the miners? Do you see them as beneficial additions to the area or are they problematic? A mix of the two? Why?

23. What were relations like prior to the eviction, and what are they like now? Any change?

24. Were there any common disputes that typically arose between either communities and the miners or your govt and the miners? For example, disputes over land, pollution, noise, access, behaviour, etc.? Were problems usually

between miners and a certain group of people? For example, farmers, hunters, community women, etc.?

25. Do you have any contact with the mining ministry? If so, when and how do you interact with them? What are relations like now? What should the relation with this stakeholder ideally be like? What opportunities to improve? What risks do you see for the relations?

26. Security Forces. Before the eviction, what were relations like? (were they present in the area?) what are relations like now? What should the relation with this stakeholder ideally be like? What opportunities to improve? What risks do you see for the relations? How did they conduct themselves in the eviction? How should it have been?

27. How do you see the role of foreigners/ immigrants from other provinces to the mine site?

Post-Eviction Context

(WARNING: as this is another contentious/confrontational area; ask these questions carefully)

28. Can you tell us about the eviction of miners from __(location)_____ in (_____month/year_____)?

29. How did it happen? What national and local government departments were involved? Did your unit have any role in the eviction, such as providing information, informing miners, or staff or logistics?

30. Do you think the eviction was a good idea? Was it necessary? Why?

31. What were the other options that were considered besides eviction?

32. What was the plan for the eviction?

33. What actually happened? Did anything go wrong?

34. What impacts (positive and negative) do you think the eviction has had for the area? For the miners?

35. Where are the miners now? (waiting in nearby villages, working at different sites, other? unknown?)

36. Do you think miners will stay out of the park? Why or why not? Is there any sort of follow up programme planned to make sure the miners stay out of the park? Is there enough capacity to implement it? Do you think it will work?

37. What are your opinions of the security forces? Are they playing a useful role or are they causing problems locally? If so, what sort? (Manner of enforcement, harassment of women, disruption to community? Livelihoods? Raiding of food, etc.)

Ask the participant if he/she has anything else to add. If exploration or mining companies have interests in the area, it may be also useful to ask about the effects of this, if any. Thank the participant for contribution and provide contact info (either yourself or a local contact) where they can get a copy of the final report.

SAMPLE INTERVIEW GUIDE #3: MINING AND MINERAL EXPLORATION COMPANY OFFICIAL

Some questions about large scale miners operating in the area (if any?) (Could be for all different groups)

- Have they ever seen any activities/ prospecting
- Is there any LSM taking place in the vicinity?
- If so, what are their relations with the LSM?

Annex Seven: Environmental Impact Assessment Form

Rapid Environmental Impact Assessment Form: mark scores from 1(unimportant) to 10 (very important)

Impacts on Air Quality A substance in the air that can cause harm to humans and the environment. Major pollutants caused by human activity include CO_2, carbon monoxide, sulphur dioxide, nitrogen dioxide, mostly related to burning different types of fuel.		
Air Pollution Factor indicators	**Overall score 1-10**	**Comments**
• significant air pollutant emissions • sources of dust • sources of gases and fumes • a deterioration of air quality • objectionable odours • vehicles traffic • other users of (e.g. diesel) fuel • tree felling for agricultural, building, firewood, or other purposes	[INSERT]	[INSERT]

Waste Items that people or organisations no longer have a use for; or that they are required to discard because it is hazardous.		
Waste Factor indicators	**Overall score 1-10**	**Comments**
• Amount of Tailings • How tailings are disposed. • Amount of Waste Rock. • How waste rock is disposed • Amount of household waste (e.g. cans, plastics, food left over, etc.) • How domestic waste is disposed.	[INSERT]	[INSERT]

Impacts on Water Quality Any chemical, physical, biological change in the quality of water that has a harmful effect on any living thing that drinks it, uses it, or lives in it. It is usually caused by human activities by discharging pollutants, fishing (e.g. overfishing, disruptive fishing methods), rerouting of flow systems, and through tailings into surface water. These are known as 'Point Sources'.		
Water Pollution Factor indicators	**Overall score 1-10**	**Comments**
Is there water pollution from: • Sewage disposal • Pesticides or fertilizers • Oil / Diesel or other fuel • Metals and Solvents • Tailings • Fishing • Other	[INSERT]	[INSERT]

Noise/Vibration Impacts		
The degree to which noise interferes with the peaceful pursuit of normal activities (e.g. sleep, speech, listening to TV/radio); the degree to which it may impair health; the degree to which it may disturb animals. Vibration causing disturbance, annoyance, inability to concentrate; sources include pumps, large generators, mining / building activities.		
Noise/Vibration Factor indicators • Explosives and blasting • Sledgehammers and hammers • Jackhammers or concrete breakers • Other sources of noise or vibration (list source)	**Overall score 1-10** [INSERT]	**Comments** [INSERT]

Impacts on carbon emissions		
Efficient energy use is using less energy to produce the same level of energy service. It is primarily achieved by using more efficient technology or processes, rather than by changing individual behaviour. Examples of how it can be achieved include: better cooking techniques; energy saving light fluorescent bulbs; use of more energy efficient appliances or building design; renewable energy sources e.g. bio-fuels, wind, tides.		
Energy Use Factor indicators How does the ASM affect energy consumption? (e.g. diesel, electricity, fuel wood)	**Overall score 1-10** [INSERT]	**Comments** [INSERT]
Energy Efficiency Factor indicators What energy efficiency measures have been considered / proposed? (e.g. Gas cooking, Fuel efficient coal stoves, solar)	**Overall score 1-10** [INSERT]	**Comments** [INSERT]

Biodiversity		
This can be described as the variety of life in a particular habitat. These include the living things around us like the different animal species; plants; forests; mountains; rivers; seas; gardens; and parks.		
Biodiversity Factor indicators How will the proposal affect biodiversity? • Directly • Indirectly • Cumulatively Will the proposal enhance / maintain biodiversity?	**Overall score 1-10** [INSERT]	**Comments** [INSERT]

Local Environmental Quality (LEQ)		
This may include 'nuisance' that can include "a problem which interferes substantially and unreasonably with a person's well-being or comfort, or the enjoyment of his property"		
Local Environmental Quality Factor indicators	**Overall score 1-10**	**Comments**
What is the impact of ASM on the following: Presence of (il)legal immigrants Health security Commercial hunting Subsistence hunting Trade including ivory, timber, arms Introduction of invasive species Prostitution	[INSERT]	[INSERT]

Summarize Environmental Impacts

Together, work with the group to review the indicators. For each of the categories listed in the left-hand column of the table, complete the summary table below.

Name of ASM site: [INSERT]			
	Positive impacts	**Neutral impacts**	**Negative impacts**
Air pollution Waste Water pollution Noise/Vibration Impacts on Carbon Emissions Biodiversity Local environmental quality			
Additional comments or recommendation:			

Close the focus group by obtaining any additional comments, conclusions and recommendations.

Annex Eight: Assessing the Presence of HCVs

Assessing HCV 1: Species values Identification

HCV 1 requires basic data on species and their habitats. That is: what species commonly occur in the forest area and which species would be likely to occur based on their habitat requirements. Both plant and animal species information needs to be considered.

Much of this information can be derived from general or published sources about the dominant **forest types**. Each will have known associations with particular communities of species, but it may be necessary to consult with an experienced forest ecologist to produce a list of what one would expect to find.

Following this, if the forest area contains habitat types that are known to support rare, threatened, endangered or endemic species, it will be necessary to define where in the area these species are likely to occur. Independent experts may be able to make informed judgements on this (e.g. using literature resources or though the analysis of remote sensing information) but it may be necessary to carry out a survey of the forest area.

If so, it is likely that survey work will need to consider at least the following:

- Bird survey for forest dependent, endemic or threatened species
- Mammal survey for forest dependent, endemic or threatened species
- Consultation with local people, forestry workers and / or conservationist about recent sightings

Survey effort should be concentrated on the confirmed/potential presence of forest dependent, endemic or red-listed species. The Global IUCN Red List of threatened species or the national red-data book of threatened species should be consulted (www.iucn.org). Those that are listed as **Vulnerable (VU or equivalent) Endangered (EN)** or **Critically Endangered (CR)** are most likely to be considered HCV species.

The Birdlife International series on **Important Bird Areas (IBAs)** and **Endemic Bird Areas (EBAs)** is extremely useful. These are indispensable references for global and regional sites of conservation priority, and for information about endemic bird species that may occur in or around the forest area. If available information and/or survey results indicate that a number of endemic, vulnerable, endangered or critically endangered species occur in the forest area, the part or parts of the forest on which these species depend will be HCVF/A. Therefore survey results will need to provide a means to map the actual or likely distributions of the species in question.

Box 3: How many threatened species make a 'concentration'?

> **HCV 1** refers to concentrations of endangered, endemic or migratory species. **Concentration** has been interpreted as:
>
> **Either** the presence of a **number** of different species, all of which are nationally protected or listed as vulnerable by IUCN
>
> **Or** a large population of **one** species that is more severely threatened (e.g. IUCN Endangered)
>
> **Example**
>
> The presence was established of long-tailed macaque, pig-tailed macaque, banded leaf monkey, greater slow loris, agile gibbon and siamang. These species are either listed as Vulnerable by IUCN, or are listed on CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). However, their presence together at the same site was sufficient to constitute HCV status. (Teso Nilo, Indonesia)

> **All or part of the area is likely to contain HCV 1 if:**
> - Several species listed as Vulnerable (VU) Endangered (EN) or Critically Endangered (CR) are likely to occur in your area
> - Your area contains habitat that is of known value to one or more of these species
> - There are several endemic species that are likely occur in the forest area
> - The area provides habitat for a large concentration of migratory species at a critical phase in their life cycle

Assessing HCV 2: Large landscape level forests

If the area is all or part of a large block of relatively intact natural forest it may have attributes of a large landscape level forest under HCV 2. HCV 2 refers to forests that support most of the naturally occurring species in their natural patterns of distribution. Large and relatively undisturbed forest areas may well meet this criterion

To determine if this is likely to apply, it is necessary to assess forest cover and forest cover change over a large scale to judge the relative importance of the area in this regard. If the area is part of a large block of continuous forest where these are rare in the landscape, it is likely to be considered under HCV 2.

It will also be considered under HCV 2 if it is found to contain most naturally occurring species. Sometimes the presence of one or two forest species that require a relatively large forest area can be used to indicate the presence of many more species. Expert advice should be sought to determine if a suitable indicator species exists. In some cases the size of the forest block has been used to suggest an area has HCV 2. However the appropriate size threshold will depend on the environmental context. Depending on the productivity of the forest ecosystem, areas of 20,000 ha may be large enough to support most or all species (including top carnivores) and their natural processes. In other areas the size threshold may be much larger: 50,000 ha or even 100,000 ha.

However, if the forest area has been heavily disturbed by previous logging and/or has been subjected to high hunting pressures, even large areas are unlikely to contain this HCV.

Overall forest condition should be assessed, together with the likelihood that a large proportion of the natural forest species still exist there in patterns of natural abundance. This will be a combination of factors such as size, age, condition, degree of fragmentation and the amount of pressure the forest is under from local people.

It is important to remember that the area may be a part of a larger forest area that altogether is considered a large landscape level forest.

All or part of the area is likely to be considered HCV 2 if :
• It is a significant part of large and relatively intact block of forest where these are rare in the wider landscape

Assessing HCV 3: Rare, threatened or endangered ecosystems

For the assessment of the ASM site and its social economic and environmental impacts, testing for this HCV is relatively laborious. Still, in certain cases it may be worth your while as the ecosystem may be either a resilient or vulnerable one, thus affecting the quality of the ASM impact. Though ecosystems may include several ASM sites, your ASM sites may affect several ecosystems through waterways, or as the pits of the site are dispersed over a large area, even resulting in satellite camps.

Here ecosystem is used to refer to the biological and physical components of an area together with the environmental processes that give it a distinguishable character. It is therefore not intended to apply to vegetation types such as secondary forest which are temporary features of an ecosystem. Ecosystem mapping is a crucial stage in any biological assessment of an area.

A researcher would need to identify the different ecosystem types, both forest and non-forest that may be present (e.g. lowland forest, mountain forest, limestone forest, grassland, scrub, wetland). Would you decide the ecosystems are important for your study, and particularly if your resources are limited, you'd need to make the utmost of secondary sources and of experts. It may be possible for experts to make an indicative assessment based on the available secondary data, saving your study significant resources such as time and money.

Once the ecosystems are mapped, next an assessment must be made of whether the ecosystems present are rare, threatened or endangered in the wider context. Forest habitat types may be deemed HCV 3 if they are:

• naturally rare

• significantly reduced from their original extent by the effects of man.

Forest types and/or habitats that are consistent with HCV 3 will usually be:

Either area proposed for conservation by regional or national land use plans or strategic plans for biodiversity conservation

Or areas that have been proposed for conservation through a well-conceived and robust regional analysis carried out by an expert institution or an NGO (Non-governmental Organisation). Accepted frameworks include eco-regional planning, or Strategic Conservation Planning at an eco-regional or provincial level.

They may also be ecosystem patches that are known to be threatened, but that are poorly represented in the national protected area network.

Again, maps of the region should be consulted to identify the extent and whereabouts of these different ecosystem types in the wider landscape context. For the ecosystems that occur in the area, the question of how significant these examples are in the landscape context must be addressed.

All or part of the area is likely to be considered HCV 3 if
• There are particular ecosystems that are identified in eco-regional/land use plans as significant (e.g. threatened/rare) at the national, regional or international level
• These ecosystem types support some of the species identified under HCV 1

Assessing HCV 4: Ecosystem services

This HCV concerns ecosystem services provided by forests such as watershed/water catchment protection, protection from soil erosion and the role they can play in preventing the spread of forest fire. Future revisions to the ProForest HCV Toolkit may include such aspects as carbon storage (e.g. in peat soils), or other environmental services.

A forest area may be considered HCVF if the forest is protecting or providing one of these services in a critical situation. For example a forest may provide a function in regulating the flow of water within a catchment. This service may be considered critical when people are dependent on the guarantee of water for drinking or irrigation, or where the regulation of water flow guarantees the existence of fishing grounds or agricultural land on which the local people are dependent.

Similarly, a forest area may provide a vital function in stabilising slopes above a settlement, or, in the upper reaches of an important stream catchment. This service may be critical when disturbing operations in the forest would lead to drastic soil erosion with impacts on people's property or livelihoods.

In both these examples, what defines the value is the existence of people who are making use of, or dependent on, an environmental service. Some services provided by forests have widespread and diffuse benefits (e.g. atmospheric effects, or climate control) that are extremely difficult to quantify. There are few robust ways to identify or calculate the effect that a given forest area is having at this wider scale. For this reason, HCV 4 is usually identified on a local scale only, where there are clear links between the environmental service and the immediate user In most cases national classification systems and laws regulating water catchment areas and disturbance to steep slopes will already exist. These systems should be consulted to determine whether such sites occur in your area.

Any relevant classifications and the areas to which they correspond (including steep slope areas, watersheds, and catchment boundaries) should be presented on maps. Streams, rivers and settlements will also need to be mapped in detail. The following questions should be considered:

Are all the relevant regulations and guidelines on slope protection and water course management being observed?

Are there any slope/catchment areas that appear particularly significant to local people?

It is then necessary to consider whether current regulations and restrictions for such areas effectively protect this conservation value. This is a difficult judgement that may mean management goes beyond the existing requirements of the law. Expert opinion should be sought, and consultations should be held with organisations working with the local people before a final decision on the presence of this value is made.

All or part of the area is likely to be considered HCV 4 if:
• The area contains watershed or catchment areas that meet government classifications for particular protection (i.e. high priority or equivalent)
• New/recent settlements in or around the area mean that existing protection classifications may be out of date

Assessing HCVs 5 and 6: Social and cultural values[44]

HCV 5 relates to resources that local people derive from the forest. A forest area needs to be considered HCVF if the local people use the area to obtain resources on which they are critically dependent. This may be the case if local people harvest food products from the forest, or collect building materials or medicinal plants where no viable alternative exists. Some examples are shown in Box 4.

Box 4: Basic needs met from forest areas

- Building materials (e.g. rattans, bamboo, timber poles)

- Medicinal plants

- Hunted meat and or fish

- Other food plants (e.g. leaves, nuts, tubers)

The forest manager will need to determine whether the local people are critically dependent on a product from the forest area. In the case of a food product, this would be the case if it constituted a major or significant part of their diet. The product could be needed throughout the year, or may only be critical during one season, but in either case, the provision of this product would be an HCV. It is important to recognise that changes in land use within and outside the area can change the status of these values over short timescales.

Assessments of HCV 5 will require:

- Review of any social assessments/socio-economic assessments carried out in the area

- Consultations with relevant organisations working on community development with the communities in question (or other similar communities in the area)

- A survey of the relevant communities, to determine their interactions with the forest area and the products and services they use. Note that exercises such as Mapping land use and environmental impacts in Tool #5b: Focus Groups, Stakeholder Analysis and Environmental Impact Exercises, Using Seasonal Calendars found in Tool #4c: Focus Groups and Exercises and other environmental impact tools can assist you in this regard.

- Review of all results/findings to determine the levels of use of each resource.

It may be necessary to set a threshold of dependence where you will recognise a service as an HCV, e.g. if local people rely the forest area for more than 25% of their requirement for the product, the forest area where the product was collected is considered HCVF.

It is strongly recommended that an independent organisation is used to carry out any social surveys that are deemed necessary. Independence from the area's economic stakeholder is necessary to facilitate discussion on some key aspects of area use that may affect, or be affected by ASM operations.

All or part of the area is likely to be considered HCV 5 if:
• Local people appear dependent on one or more of the forest resources where no viable alternative exists

HCV 6 represents areas of cultural significance that have traditional importance to local or indigenous people. These may be religious/sacred sites, burial grounds or sites at which regular traditional ceremonies take place. These are frequently well known by the local people, and most countries forest law requires them to be identified and protected. However, you will still need to assess whether or not this value is present, and if so, whether the existing legal restrictions are sufficient to safeguard the sites/areas.

All such sites should be identified in consultation with the local community during the social survey.

It may be necessary to review maps of the area with local communities, or to carry out participatory mapping exercises in which the local communities highlight the areas of importance to their traditions and culture.

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[44] This section is an adaption from Rayden, T., (2008) *Assessment, management and monitoring of High Conservation Value Forest A practical guide for forest managers*, ProForest, Oxford, UK, p12

Areas and features that are deemed central to a community's cultural identity may be HCVs. However, as with HCV 5 identifying thresholds for when something is or is not critically important is rather difficult. Whatever approach is taken to identifying such areas, the process must involve discussion with the local community.

All or part of the area is likely to be considered HCV 6 if:
• The area contains sites deemed culturally significant by local people

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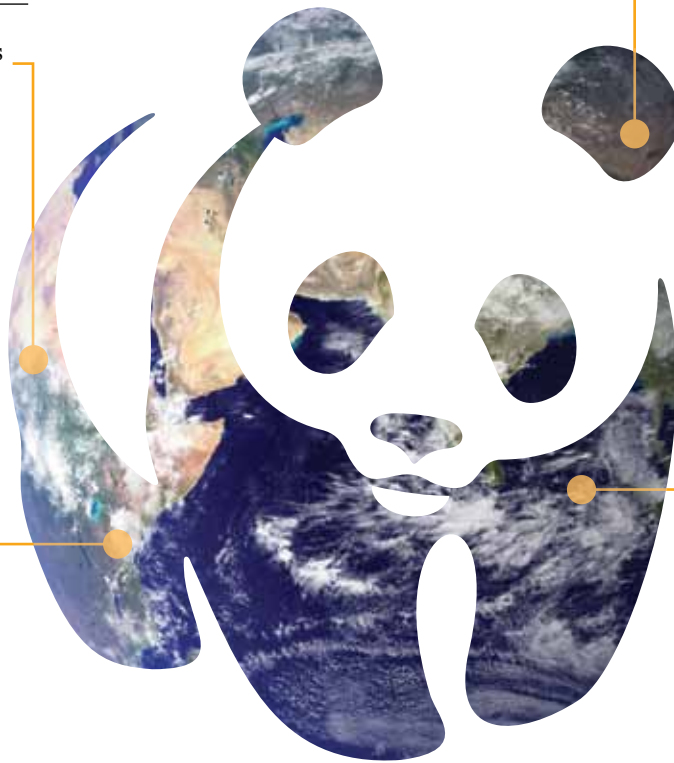
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