

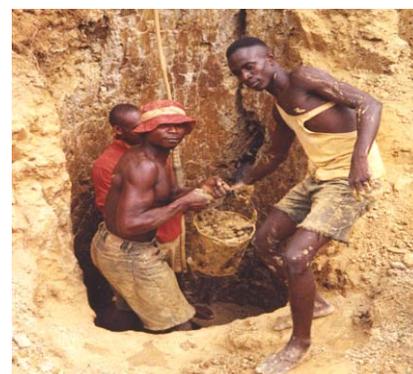


Global Mercury Project

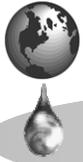


REPORT ON THE POLICY AND GOVERNANCE INITIATIVE

Enhancing Multi-Stakeholder Approaches to Address Mercury, Small-Scale Gold Mining and the Institutional Dynamics of Change



By
Sam Spiegel and Marcello Veiga
July 2007



Global Mercury Project



Removal of Barriers to the Introduction of Cleaner Technologies of
Artisanal and Small-Scale Gold Mining and Extraction

Project Code: EG/GLO/01/G34

REPORT ON THE POLICY AND GOVERNANCE INITIATIVE

*Enhancing Multi-Stakeholder Approaches to Address Mercury,
Small-Scale Gold Mining and the Institutional Dynamics of Change*

Authors:

Samuel J. Spiegel

Coordinator of Policy Development – GMP

Consultant to the United Nations Industrial Development Organization

Marcello M. Veiga

Chief Technical Advisor – GMP

Consultant to the United Nations Industrial Development Organization

July 2007



CONTENTS

I. Introduction.....	4
II. Vision.....	5
III. Aims.....	5
IV. Guiding Principles.....	6
V. Action Framework.....	7
VI. Main Issues Considered.....	8
VII. Action Profiles: Initiatives and Highlights of Accomplishments to Date	
1. U.N. International Guidelines on Mercury Management in ASM.....	13
2. Capacity-Building and Institutional Strengthening.....	17
3. Policies on Mercury and ASM	
➤ 3.1) Legislation and Regulation on Mercury Management.....	17
➤ 3.2) Compliance Strategy.....	26
➤ 3.3) National Mercury Trade.....	34
➤ 3.4) Transboundary Mercury Trade.....	37
➤ 3.5) National ASM Sector Policy.....	39
➤ 3.6) Micro-Finance Initiative.....	46
➤ 3.7) Fair Trade Gold.....	52
4. Global Partnerships for Development.....	56



I. INTRODUCTION

1. In 2006, the Global Mercury Project (GMP) launched the Strategic Plan on Policy and Governance, presenting an action framework to promote the strengthening of policy and governance on issues of environmental management, capacity-building and technology transfer in the artisanal and small-scale gold mining (ASM) sector, with particular focus on the minimization of mercury pollution. This framework builds on initiatives previously carried out by the Global Mercury Project (GMP) and objectives identified through global, regional and national task force meetings and local stakeholder consultation processes. The Strategic Plan takes into account existing regional plans, strategies, and ongoing activities. It is composed of a strategic text, Action Framework, Table of Main Issues Considered, and Action Profiles comprised of main highlights and outcomes of accomplishments to date.

2. The GMP, supported by the Global Environment Facility (GEF), the United Nations Development Program (UNDP), and the United Nations Industrial Development Organization (UNIDO), is a joint initiative with governments to demonstrate ways of overcoming barriers to the adoption of best practices in ASM, waste minimization strategies, and pollution prevention measures that limit contamination of international waters. Working with authorities and public and private sector organizations, the GMP provides assistance in the development of policy, technology support, and capacity-building, at institutional levels and directly in ASM communities. In its pilot project phase, GMP activities focused in six countries - Zimbabwe, Tanzania, Sudan, Brazil, Indonesia and Laos. The Strategic Plan on Policy and Governance complements the strategies of the GMP Education and Awareness Campaigns and Technology Demonstration Units, which are described in other reports. Though not comprehensive of all details, this report highlights the main accomplishments, lessons learned and outcomes of the GMP Policy and Governance Initiative in its pilot phase to inform further developments.

3. The world-wide reduction of mercury use and pollution in mining, as called for by the Global Mercury Project, requires action at all levels of society: training; information; communication; methodological tools; capacity building with financial support; transfer of know-how; knowledge of sound and proven cleaner technologies; as well as policy development, law, and regulation. In more than 50 developing countries, there are as many as 15 million artisanal and small-scale miners who use mercury extensively in gold extraction and processing. As many as 100 million people may be intoxicated by mercury from ASM, which is the single largest source of mercury releases into the environment from intentional use. The urgency of the situation has called for reinforced



global efforts to address hazards at their source, by removing barriers to the introduction of cleaner technologies, and by strengthening policy and institutional measures that will support positive and sustainable change. Building on the knowledge from the GMP Environmental, Health, Sociological, Socio-Economic and Legal Studies, the GMP has been executing targeted initiatives assisting participating governments, on issues ranging from national legislation and institutional capacity to community training, with lessons applied to projects with Governments in other countries as well. A key goal of this report is also to draw recommendations for future projects of a more global reach, for instance, in the promotion of the International Guidelines on Mercury Management in ASM.

4. The effective involvement and coordination by all concerned stakeholders is seen as essential for achieving the aims of the Global Mercury Project. Governments, the driving force of the implementation programs and activities, have been encouraged to seek the assistance of UNIDO in any identified or related technical, strategic or policy matters. The mobilization of non-governmental organizations and existing ASM institutions has been important to ensure the practical application of environmentally sound management. The enhancement of information exchange and education at all levels is of paramount importance for achieving the aims of the GMP, with active participation of governmental institutions. This report emphasizes that sustained progress requires ongoing and dynamic processes of decision-making, policy development and field implementation with broad, inclusive and active stakeholder participation.

II. VISION

5. Building on the achievements of the pilot phase of the Global Project Mercury, this report asserts a vision that the improvement of environmental management in ASM must be accessible to all stakeholders, emphasizing the minimization of mercury use, pollution and exposure and the strengthening of capacity-building.

III. AIMS

6. The fundamental aims of the Policy and Governance Initiative are the removal of barriers to the improvement of environmental management in ASM, particularly the prevention and minimization of mercury use and pollution, the active promotion of the transfer and use of cleaner technologies, and the strengthening policy and institutional measures that will support positive and sustainable change.



IV. GUIDING PRINCIPLES

7. A set of interrelated and mutually supportive principles were developed to support the implementation of the GMP policy and governance activities described under Sections V, VI and VII below. These are:
- a) **To promote and support existing national and regional policy initiatives** for sustainable development on ASM issues, linked with efforts in progress;
 - b) **To collaborate with existing institutions and programs** to develop and promote policies encouraging use of cleaner technology in ASM and the reduction of mercury use;
 - c) **To strengthen the capacity of governments to implement policy and sustain the capacity and technology** after GMP efforts have been completed;
 - d) **To tailor activities to individual countries based on a bottom-up needs -assessment process;** given the specific circumstances of the different countries concerned, each country should be encouraged to identify its own policy needs;
 - e) **To involve experts in designing communication tools** for creating awareness at the highest level of governments, and other institutions, to promote GMP goals;
 - f) **To engage and motivate selective partners to bring added value** to making progress in the short and long-term, **including public-private sector partnerships;**
 - g) **To undertake periodic review** of policy activities in relation to agreed indicators;
 - h) **To promote principles of transparency and accountability** in government initiatives and programs;
 - i) **To integrate gender-specific strategies,** as well as education and training for women, in formulating relevant policies, and to promote the participation of women in policy-related decision-making;
 - j) **To support the implementation of global and regional environmental conventions** and legal instruments related to mercury and related ASM issues;
 - k) **To promote and support South-South cooperation** related to ASM development issues and mercury reduction;
 - l) **To provide assistance for developing and facilitating compliance with multilateral initiatives and guidelines** aimed at reducing mercury; and
 - m) **To recognize the relationship between poverty and environmental stewardship,** including the implementation of poverty reduction strategy programs to support GMP objectives.



V. ACTION FRAMEWORK

1. International Guidelines on Mercury Management
Development of <i>UN International Guidelines on Mercury Management in Artisanal and Small-Scale Mining</i>
2. Capacity-Building and Institutional Strengthening
Strengthening of Multi-Sector Cooperation with Government Agencies and other Organizations in Support of Capacity-Building, Training, Technology, Education, and Mobilization of Resources to Facilitate and Assist in Fulfilling the Aims of the GMP
3. Policies on Mercury and Artisanal and Small-Scale Gold Mining
➤ 3.1) National Mercury Use
➤ Assistance to Governments in the Development of Appropriate National Policy, Legislation and Regulation on Mercury Management in ASM
➤ 3.2) Compliance Strategy
➤ Reinforcement of Government Capacity to Promote Compliance with Regulations in ASM Communities through Education, Monitoring and Enforcement Strategies
➤ 3.3) National Mercury Trade
➤ Development of Knowledge and Tools for the Reinforcement of National Capacities to Monitor and Regulate the Domestic Trade and Distribution of Mercury Used in ASM
➤ 3.4) Transboundary Mercury Trade
➤ Assessment and Recommendations on the Transboundary Trade of Mercury with a View of Reinforcing Capacities for Regulating the Export and Import of Mercury Used in ASM
➤ 3.5) National ASM Sector Policy
➤ Development of Recommendations to Governments on Policy to Enhance Coordination, Pro-Poor Empowerment and Rights in the ASM Sector
➤ 3.6) Micro-Finance Initiative
➤ Development of Pilot Programs Enabling ASM Communities to Access Credit and Finances to Support Technology Transfer
➤ 3.7) Fair Trade Gold
➤ Development of Global Certification Criteria and Equitable Market Policies and Processes for Fair Trade ASM Gold
4. Global Partnerships for Development
Strengthening and Expansion of Global Partnerships for Development - Joint Activities, Regional Network Capacity-Building, Global Awareness and Resource Mobilization



VI. TABLE OF MAIN ISSUES CONSIDERED

Activities	Main Issues Considered
<p>1. Development of <i>U.N. International Guidelines on Mercury Management in Artisanal and Small-Scale Mining</i></p>	<ul style="list-style-type: none"> · Guidelines aimed at minimizing mercury use in ASM and reducing environmental and occupational hazards · Technical guidelines on mercury use; emission controls; recycling; and tailings management; exposure controls; location of use; storage; and disposal · Specific guidelines on the protection of water bodies · Guidelines on clean-up and rehabilitation · Recommendations for licensing mercury distribution and use · Recommendations for instituting mercury regulations in mining to phase out mercury use over short and long term · Recommendations on accountability and liability issues concerning mercury management practices (with specific consideration of the role of miners, millers, etc) · Recommendations on accountability and liability issues concerning public and occupational exposure and environmental contamination · Recommendations for developing community-based as well as national monitoring and enforcement
<p>2. Strengthening of Multi-Sector Cooperation with Government Agencies and other Organizations in Support of Capacity-Building, Science, Technology, Training, Awareness and Mobilization of Resources to Facilitate and Assist in Fulfilling the Aims of the Global Mercury Project</p>	<ul style="list-style-type: none"> · Promotion of effective sustainable partnerships with major stakeholders and opportunities for joint for environmentally sound management activities emphasizing mercury minimization and the strengthening of capacity building · Cooperation and partnership at all levels between public authorities, international organizations, the industry sector, NGOs and academic institutions · Participation in the implementation of GMP Education and Awareness Campaigns and Technology Demonstration Units in project sites; and joint activities in other ASM regions · Enhancement of information exchange, education and awareness-raising in all sectors of society



	<ul style="list-style-type: none"> · Identification of priority sites for future capacity-building · Development of national inventories of technology capabilities, production centers and support mechanisms
<p>3.1 Assistance to Governments in the Development of Appropriate Policy, Legislation and Regulation on Mercury Management in ASM</p>	<ul style="list-style-type: none"> · Classification level for mercury as a hazardous substance · Legal base for instituting mercury regulations in mining · Licensing of mercury amalgamation and distribution · Technical recommendations on mercury use; emission controls; recycling; and tailings management · Establishment of technical recommendations for exposure controls; location of use; storage; and disposal · Protection of water bodies from mercury and mining · Accountability and liability issues concerning mercury management practices (with specific consideration of the role of miners, millers, etc) · Accountability and liability issues concerning public and occupational exposure and environmental contamination · Recommendations on clean-up and rehabilitation · Community-based monitoring and enforcement · Clear accountability for miners, mine/land owners, etc
<p>3.2 Reinforcement of Government Capacity to Promote Compliance with Regulations in ASM Communities through Education, Monitoring and Enforcement Strategies</p>	<ul style="list-style-type: none"> · National awareness of laws and associated requirements · National awareness of mercury hazards · National awareness of benefits of compliance through the use of environmentally sound and efficient technologies · Integration of regulatory issues in GMP Education and Awareness Campaigns and Technology Demonstration Units · National training of officers and enforcement agents · National/local level strategies for monitoring/enforcing · Identification of priority sites for monitoring and reclamation
<p>3.3 Development of Knowledge and Tools for the Reinforcement of National</p>	<ul style="list-style-type: none"> · Development of national inventories on quantities of mercury used in ASM, primary international sources, quantities imported, prices, domestic channels, primary dealers, other purposes of mercury, and marketing



<p>Capacities to Track, Monitor and Regulate the Domestic Trade and Distribution of Mercury Used in ASM</p>	<p>mechanisms to, and within, the ASM sector</p> <ul style="list-style-type: none"> · Tools to support sustainable monitoring of the import, sale distribution, and use of mercury · Reinforcement of national capacities to detect and halt illegal traffic in mercury and stockpiling of mercury · Development and implementation of legislation and institutional frameworks, including a legal base for regulating mercury trade and conduct of inventories, e.g. hazardous substance audits, disposal and phase-out plans, etc · Assessment of legality of particular trade practices, such as setting standards for market mercury prices; limiting free mercury dealing by gold purchasers · Licensing traders; etc
<p>3.4 Assessment and Recommendations on the Transboundary Trade of Mercury with a View of Reinforcing Government Capacities for Regulating the Export and Import of Mercury Used in ASM</p>	<ul style="list-style-type: none"> · Analysis of data submitted by Activity 3.3 to prepare national plans to reduce transboundary trade of mercury to a minimum · Review of national waste management infrastructure and systems in the context of transboundary trade by national authorities and tools to measure effectiveness · Development of national regulation and institutional policy to restrict imports of mercury · Assessment of regional and global patterns of transboundary trades of mercury with a view to improving coordination among Governments in developing standards or common approaches to reduce export and import · Promotion of awareness about mercury in ASM as a means of encouraging industrial countries to ban or restrict the export of mercury to developing countries
<p>3.5 Development of Recommendations to Governments on Policy to Enhance Organization, Coordination and Pro-Poor Empowerment and Rights in the ASM Sector</p>	<ul style="list-style-type: none"> · Legal recognition of ASM · Incorporation of a poverty reduction dimension in mining policy, recognizing both the constraints and the potential of ASM as an economic sector · Formalization of ASM activity with incentives for registration · Simplification of registration and licensing procedures · National programs for technology assistance and training



<p>(continued)</p>	<ul style="list-style-type: none"> · Regulatory frameworks on environmental management, health and safety; and associated codes of practice · Implementation of standards from the ILO Convention on Health and Safety in Mines and other relevant standards · Mining titles and designated areas for ASM · Incentives to discourage illegal mining and illegal trading · Access to formal markets and marketing mechanisms · Policies on women and gender in ASM · Children’s issues in the ASM sector · Institutional functions, capacity, coordination amongst Government agencies · Local participation in policymaking, with representation of vulnerable groups in decision-making processes · Resource mobilization to support local delivery functions
<p>3.6 Development of Pilot Programs Enabling ASM Communities to Access Credit and Finances to Support Technology Transfer</p>	<ul style="list-style-type: none"> · Identification and assessment of viable micro-economic development / poverty alleviation models to assist the ASM sector to transfer to cleaner technologies - e.g. village banking, loan-based and equity-based financing schemes, hire-purchase schemes; donor and government support programs; finances through cooperation of ASM miners and mining companies · Implementation of pilot micro-credit programs in GMP project sites, integrated with GMP Education and Awareness Campaigns and Technology Demonstration Units · Development of sustainable long-term community-based financing mechanisms for ASM in GMP sites and nationally · Development of core organizational and trust building activities and training in GMP project sites, following from assessments and consultations with communities, to build capacity for collective transfer to improved technology · Capacity building for cooperatives, guilds, associations, etc. · Development of basic business principles awareness and training for community-based organizational development, incl. issues of shared ownership of equipment, production strategies, cooperative mining, economic behaviors



<p>3.7 Establishment of Certification Criteria and Processes for Fair Trade Gold in ASM</p>	<ul style="list-style-type: none"> · Development of environmental, social, and economic criteria for Fair Trade gold, including mercury-related criteria · Development of organizational capacity in mining communities for meeting progressive Fair Trade Criteria · Development of niche markets for Fair Trade gold by building on previous experience with fair trade markets and establishing supply chain networks which deliver gold from small-scale producers more directly to refineries and linkages between ASM producers to international markets. · Communication and promotion of the initiative’s findings and program of action, including the identification of models of certification and an international certifying agency
<p>4. Strengthening and Expansion of Global Partnerships for Development - Joint Activities, Regional Network Capacity-Building, Global Awareness and Resource Mobilization</p>	<ul style="list-style-type: none"> · Consolidation of strategic partnerships to support regional and global action plans with major stakeholders and opportunities for environmentally sound management activities emphasizing mercury minimization and the strengthening of capacity-building and technology transfer in ASM and related developmental issues · Development of joint activities with other initiatives of UNIDO, UNDP, GEF, UNEP and other international agencies; public authorities; international organizations; the industry sector; mining companies, NGOs; and academic institutions, identifying opportunities and synergies · Identification of opportunities and implementation of programs that replicate GMP capacity-building in other countries (e.g. Mozambique, etc); formation of partnerships with other organizations and developing knowledge on mercury, ASM infrastructures and future needs and priorities · Dissemination of the produced GMP results and identification of opportunities that will allow the project to continue beyond 2007 through self-financing, including conducting donor conferences to solicit financing and workshops with potential contributors · Enhancement of awareness of mercury and ASM issues on a global scale through public media and media for donors

VII. Action Profiles: Initiatives and Selected Highlights of Accomplishments to Date

ACTIVITY 1

International Guidelines on Mercury Management

Development of U.N. International Guidelines on Mercury Management in Artisanal and Small-Scale Mining

OVERVIEW:

In more than 50 developing countries, an estimated 15 million people are involved in artisanal and small scale gold mining (ASM). This activity usually involves the use of substantial amounts of mercury in mineral processing, often in highly unsafe and environmentally hazardous conditions. As many as 100 million people may be exposed to mercury emitted from ASM. Mercury misuse in ASM is responsible for an estimated 1000



tonnes of mercury polluted annually into the environment, with negative impacts in diverse ecosystems including international waters. Globally, many of the hazards are similar - extensive emissions in tailings, contamination of water bodies, vapor inhalation, etc. However, environmental regulations are minimally developed for ASM in most countries, or not yet developed, and consequently, mercury is generally unaddressed. In the absence of an international management code for mercury management in ASM, many governments have been unsure how to address policy in ASM, what hazards are most pressing, and what technical practices should be regulated.

The GMP has combined specialized experts from various countries and disciplines - mining engineers, metallurgists, environmental scientists, toxicologists, and legal and policy experts - to prepare and propose the draft *U.N. International Guidelines on Mercury Management in Artisanal and Small-Scale Gold Mining*. These guidelines provide standards of operation and regulatory guidance for governments. They are designed to promote the minimization of mercury use as well as the elimination of pollution point sources and occupational health risks in mercury management. The guidelines also assist in addressing multi-actor responsibility issues in the ASM setting and include guidance on adoption into national legal systems.



GOAL:

Develop U.N. International Guidelines on Mercury Management in ASM to assist governments in minimizing mercury use in ASM and reducing environmental and occupational hazards. Provisions will address, but are not limited to, the following issues:

- Emission controls to eliminate pollution point sources
- Use of retorts
- Recycling and reusing mercury
- Reduction of mercury in tailings
- Tailings management methods
- Prevention of combined use of mercury and cyanide, and mercury and acid
- Restriction of location of mercury use, with emphasis on protection of village/residential areas and protection of water bodies
- Exposure controls and ventilation facilities
- Protection of pregnant women and children
- Storage and disposal methods
- Clean-up and rehabilitation
- Guidelines for minimizing mass-flows of overburden and/or sand/gravel and sedimentation
- Guidelines for mercury management in gold shops



- Recommendations for licensing mercury sale, distribution and use in mining
- Recommendations on accountability and liability issues concerning mercury management practices in mines, with specific consideration of the role of miners, mine owners, millers, etc
- Recommendations on accountability and liability issues concerning public and occupational exposure
- Recommendations on accountability and liability issues concerning environmental contamination
- Recommendations for community-based as well as national monitoring and enforcement
- Government implementation procedures and guidelines
- Accompanying “model legislation”, including main provisions for implementation



INITIATIVES:

The following initiatives have already been completed:

- A) Review and analysis of laws, regulations, guidelines, and codes of practice available internationally (including GMP countries and others), that address mercury management in ASM and related practices in ASM such as protection of waters, tailings management, occupational risks, etc



- B) Review of reports and scientific literature available internationally, including GMP Environmental, Health, Socio-economic, Sociological, and Legal Assessments, to collect relevant technical and strategic insights into the development of the International Guidelines on Mercury Management in ASM
- C) Synthesis of above information to develop technical and strategic measures for inclusion in the International Guidelines on Mercury Management in ASM.
- D) Conducting of targeted stakeholder consultation processes with miners, Governments, and other groups, to discuss and gain insights regarding additional important measures for inclusion in the International Guidelines on Mercury Management in ASM; and
- E) Preparation of main standards and technical language for incorporation in Draft International Guidelines on Mercury Management in ASM

Recommended future initiatives:

- F) Finalization of first draft, revision and circulation of Draft U.N. International Guidelines on Mercury Management in ASM for comments, amongst GMP Team Members
- G) Revision and circulation of Draft U.N. International Guidelines on Mercury Management in ASM for comments, amongst government representatives in different countries and wider communities of researchers, policymakers and stakeholders
- H) Preparation and execution of plans for the publication and official inauguration of the U.N. International Guidelines on Mercury Management in ASM; and
- I) Preparation and execution of strategies to promote the adoption of the U.N. International Guidelines on Mercury Management in ASM by Governments in countries where ASM is prevalent, globally

INDICATORS OF SUCCESS:

U.N. International Guidelines on Mercury Management in Artisanal and Small-Scale Gold Mining are drafted to provide clear and useful guidelines on specific practices in such ways that draw consensus among government representatives and stakeholders; U.N. International Guidelines on Mercury Management in Artisanal and Small-Scale Gold Mining are adopted by national governments in various countries in the form of new legislation, policy and regulation



ACTIVITY 2

Capacity Building and Institutional Strengthening

Strengthening of Multi-Sector Cooperation with Government Agencies and other Organizations in Support of Capacity-Building, Science, Technology, Training, Awareness and Mobilization of Resources to Facilitate and Assist in Fulfilling the Aims of the Global Mercury Project

OVERVIEW:

Just as legal and regulatory aspects play a key role in strengthening environmental governance in the ASM sector, policy development to address institutional and community capacities is fundamental. The GMP recognizes that strengthening cooperation amongst various government agencies is essential for success. Additionally, capacity-building must occur at all levels. Building local, regional and national capacity for the science and technology of improved mining techniques is essential, as is the mobilization of resources to ensure the uptake of the improved technology. This is not only important to ensure that regulatory standards can be met, but also to ensure that mining activities can evolve in sustainable ways and contribute positively to the economic development of the sector. The GMP has been working with governments to encourage policies that build government capacities at the local level and that enhance collaboration with different institutions. A critical policy objective of the GMP is to ensure that countries can build institutional functions that ensure the sustainability of capacity-building measures as demonstrated by the Awareness Campaigns and TDUs.

GOALS:

GMP goals are to build on the specific local strengths to address the following:

- Promotion of effective sustainable partnerships with major stakeholders and opportunities for joint environmentally sound management activities emphasizing mercury minimization and the strengthening of capacity building
- Cooperation and partnership at all levels between public authorities, international organizations, the industry sector, NGOs and academic institutions
- Participation in the implementation of GMP Education and Awareness Campaigns and Technology Demonstration Units in project sites; joint activities in other ASM regions; establishment of education centers for ASM located in critical ASM regions
- Enhancement of information exchange, education and awareness-raising in all sectors of society
- Identification of priority sites for future capacity-building
- Development of national inventories of technology capabilities, production centers and support mechanisms



INITIATIVES:

Considerable effort has been underway to build capacity and promote technology transfer. Details are available in reports on the GMP Education and Awareness Campaigns and Technology Demonstration Units. In keeping with the above policy objectives, these initiatives have included the involvement of various public authorities in addition to NGOs, academic institutions, and other stakeholder institutions.

INDICATORS OF SUCCESS:

Local and national governmental and non-governmental organizations are effectively engaged in technology transfer, strong relationships are built, and human and financial resources are mobilized to promote technology transfer

HIGHLIGHT

Building the Capacity of Miners and Government Institutions in Laos

In Laos, the implementation of GMP capacity-building activities will take place within the eight villages of the Nam Ou and Mekong rivers. These rivers were the subjects of the environmental and health assessments. Implementation will kick-off this Spring with stakeholder workshops in Vientiane and Luang Prabang. The Vientiane workshop will target government ministries and departments, including the Department of Geology and Mines, Ministry of Health, and Ministry of Science, Technology and Environment. The Luang Prabang workshop will be dedicated to training local officials, especially village heads, the Women's Union and Youth Front, and a subcontractor who will carry out the TDU and Awareness Campaign activities.

Other potential partners in GMP implementation could include the World Bank, World Wildlife Fund, Earth System Laos, and Ecalao. Field implementation will follow the stakeholder workshops, focusing on introducing simple manual sluice boxes, a variety of carpets, and retorts.



Government representative and artisanal miners discuss retorts in Laos

HIGHLIGHT

**Working with Sudanese Authorities to Develop
Community Awareness of Safe Practices of Mining and
Institutional Support Services for Training in the Field**

A GMP educational campaign was implemented in Sudan to teach local trainers, including the Geological Research Authority of Sudan (GRAS), local media professionals, and nurses on issues of mercury poisoning, behavior change education strategies and family health. The actions started in the village of Gugub, where trainers were taught by GMP experts how to deliver awareness campaigns to miners. Once on site, trainers demonstrated screening, sluicing, and panning technologies to miners working in the village.

The campaign received significant attention from local television when Blue Nile State television produced a 45 minute documentary of the events. The report featured interviews with community leaders, and was broadcast across the state in the week following the campaign. To create a public presence in the villages, educational materials about the use of mercury were translated to Arabic and distributed to miners as teaching aids. The result of the 2004 health and environmental studies were delivered to the communities. Participants were provided health counseling based on their age and how much mercury they were exposed to.

Approximately 110,000 miners in the Blue Nile region are currently working by the river. The GMP has increased awareness of sustainable practices by promoting an understanding of ecosystem factors of health, and by building the capacity to embrace technological solutions that increase productivity and protect the environment. With support from local government leaders as well as national officials, the campaign is anticipated to grow to surrounding regions where mining activities are proliferating.



**GMP Sudanese nurse discusses health awareness
with the head of the Gugub village**

HIGHLIGHT

Working with Brazilian Leaders to Improve Mercury Awareness and ASM Institutional Support Systems

The awareness campaign in Brazil started with the return of the health results to miners from Sao Chico and Creporizinho. The 704 medical exams and chemical analyses of blood, hair, and urine were delivered and explained to the affected communities. Several educational seminars were held, and interest in demonstration of retorts was high, in part because of the rising cost of mercury in the region. This stage of the campaign was designed primarily to announce the TDU and full awareness campaign that will be conducted in the first half of 2006. More than 1000 educational posters and brochures were distributed, and a local poet, Mr. Edmilson Santini, composed rhymes (locally known as “cordel”) to deliver 500 brochures entitled: “Don’t cry for the spilled mercury.” CDs with Mr. Santini’s songs were distributed, along with T-shirts given to miners.

Since then, a variety of institutions have collaborated on ASM training, led by the Center for Mineral Technology and the Ministry of Health were the Association of the Gold Miners of Tapajos (AMOT); the Vice-Mayor of the municipality of Itaituba, and representatives from the municipal departments of Mining and Environment, and Health. AMOT is coordinating interested parties to participate in next steps of the campaign and expand into new regions.



Training campaign in Brazil



ACTIVITY 3.1

Legislation and Regulation on Mercury Management

Assistance to Governments in the Development of Policy, Legislation and Regulation on Mercury Management in ASM

OVERVIEW:

As ASM continues to expand globally, governments are increasingly recognizing the need to institute new policies to strengthen the management of environmental, health, social, economic and legal aspects of this sector. However, as ASM is an informal sector and its associated legislative frameworks are minimally developed in most countries, mercury controls remain largely unaddressed in law and policy. Globally, most countries, even those with substantial ASM sectors, have not yet established legislation and regulation for environmental management aspects of ASM. Lack of knowledge on mercury issues has been identified as a significant barrier. While the GMP is preparing the U.N. International Guidelines on Mercury Management in ASM (Activity 1), the GMP policy experts are also working directly with the governments of the GMP countries to develop and/or strengthen national legislation, regulation and policy measures to address mercury in ASM.

GOALS:

Based on the specific country conditions, and legislative and regulatory frameworks that exist in each of the participating countries and their respective jurisdictions, the GMP is assisting governments in developing policy to minimize mercury use in ASM and reduce environmental and occupational hazards. Depending on local conditions and specific needs, legislative and/or regulatory provisions may address issues such as:

- Mercury management practices and emission controls to eliminate point sources of pollution
- Use of retorts
- Recycling and reusing mercury
- Reduction of mercury in tailings
- Tailings management methods
- Prevention of mercury/cyanide interaction
- Restriction of location of mercury use, with emphasis on protection of village/residential areas and protection of water bodies
- Exposure controls and ventilation facilities



- Protection of pregnant women and children
- Storage and disposal methods
- Clean-up and rehabilitation
- Licensing mercury sale, distribution and use in mining
- Mercury management in gold shops
- Accountability and liability issues concerning mercury management practices in ASM (with specific consideration of the role of miners, mine owners, millers, etc)
- Accountability and liability issues concerning public and occupational exposure
- Accountability and liability issues concerning environmental contamination
- Community-based as well as national monitoring and enforcement
- Government implementation procedures and guidelines
- Other specific legislation and regulatory provisions as appropriate to the local conditions.

INITIATIVES:

The following initiatives were completed in some cases, and are currently in-progress in other cases:

- A) Review of legal classification level for mercury as a hazardous substance
- B) Verification of existing laws concerning mercury management and the management of other toxic substances
- C) Verification of / recommended development of a legal base for instituting mercury-specific regulation in mining
- D) Development of recommendations and draft measures on policy/regulatory mechanisms for licensing of mercury amalgamation and distribution
- E) Development of technical recommendations and draft measures on mercury use; emission controls; recycling; and tailings management
- F) Development of technical recommendations and draft measures for exposure controls; location of use; storage; and disposal
- G) Development of specific provisions and draft measures for the protection of water bodies from mercury and/or mining



- H) Investigation of possibilities for developing policy mechanisms on accountability and liability concerning mercury management practices (with specific consideration of the role of miners, millers, etc)
- I) Investigation of possibilities for developing standards for accountability and liability concerning public and occupational exposure, and environmental contamination
- J) Investigation and development of recommendations on clean-up and rehabilitation
- K) Investigation and development of mechanisms for community-based monitoring and enforcement; and
- L) Formulation of recommendations for clear accountability for miners, mine/land owners, millers, etc.

PRIORITIES:

In addition to completing country-specific work currently underway regarding the above initiatives (see Highlight boxes below), overall policy initiatives planned include focusing on the following prioritized objectives:

General Use of Mercury

- a. Restrict mercury-amalgamation to locations designated for mining, performed only by miners with amalgamation licenses
- b. Eliminate mercury amalgamation without the use of a retort to contain vapor
- c. Eliminate the practice of whole ore mercury-amalgamation on copper plates.

Location of Mercury Use

- d. Eliminate the use of mercury within 100 meters of public streams and water bodies
- e. Eliminate the use of mercury within 100 meters of houses
- f. Institute the requirement that mining managers, where applicable, establish designated areas for retorting and that no amalgamation shall occur outside this area



Storage and Disposal of Mercury

- g. Institute the requirement for mercury to be stored in air-tight containers that are kept under a layer of water when not used
- h. Eliminate the placement of mercury into solid disposal systems or wastewater disposal systems

Additional Exposure Controls

- i. Institute the requirement that mine managers, where applicable, ensure that no pregnant women or children under the age of sixteen years enter the structure, facility or locale in which amalgamation is carried out
- j. Require that safety gloves be worn when handling mercury

Require the licensing of Mercury

- k. Require licensing for the sale and distribution of mercury
- l. Institute licensing requirement for the purchase of mercury
- m. Institute specific licensing requirements for mercury-amalgamation in ASM

Establish mechanisms for government enforcement and monitoring

- n. Clearly identify relevant government enforcement officials
- o. Establish specific and appropriate penalties for violations

Institute mechanisms for community-based enforcement and monitoring

- p. Stipulate that responsibility of compliance falls upon miners as well as mine managers and/or owners of operations where applicable; and
- q. Stipulate that mine managers, where applicable, keep records of all mercury brought onto the mining location, date acquired, and amount

INDICATORS OF SUCCESS:

Governments in the various partner countries review GMP-drafted policy measures and recommendations that address the above issues; the number of jurisdictions where these measures are reviewed and/or adopted into law; and the breadth of the measures included in the policies and regulations reviewed, developed and/or adopted.

HIGHLIGHT

New Mercury Policies in Zimbabwe: Promoting Cleaner and Equitable Technology Standards

The GMP team has worked with the Zimbabwe Ministry of Mines to develop capacity-building policies in artisanal and small-scale gold mining (ASM) communities. Following stakeholder consultations, GMP experts worked with various agencies to prepare Regulations on Mercury Management in ASM. These constitute multiple new steps in Zimbabwe, setting standards on practices to eliminate hazardous mercury emissions, exposures, and other environmental health aspects in ASM. Regulations also addressed the purchase, trade and storage of mercury. Meetings, small workshops and large seminars were facilitated by the GMP team with national and local officials from the Ministry of Mines, the Ministry of Environment, and the Ministry of Health, as well as mining associations (e.g. Zimbabwe Panners Association and the Zimbabwe Mining Federation) and other organizations. These talks reinforced the shared commitment on policies to phase out mercury in ASM over the next year and in the long term. In the short term, policy efforts focus on instituting and enforcing clear regulations and codes of practice to minimize mercury-related and other environmental hazards in ASM.

The Regulations on Mercury Use provide standards for amalgamation, including the use of retorts, and for reducing mercury in tailings. Specific provisions protect pregnant women and children from exposure. The regulations include mechanisms for community-based enforcement and monitoring. The policy to ban copper plates is designed to significantly improve environmental health and ensure that fair technology is used so that miners receive a reasonable percentage of gold from the ore they mine. The Ministry of Mines will introduce these laws in 2007, as Statutory Instruments under the Mines and Minerals Act. A local team, led by the Department of Metallurgy and Institute of Mining Research, is conducting field demonstrations to educate stakeholders on how to comply with the standards (see page 33); the new law will be formally introduced after these demonstrations.



**Left: Officials at the Zimbabwe Ministry of Mines with GMP policy experts
Right: Miners express views on the need for better milling technology standards**

HIGHLIGHT

Environmental Responsibility and Multi-Actor Accountability: Proposed Labor Laws in Zimbabwe

In addition to technical regulations on mercury management (described on the previous page), GMP policy experts prepared recommendations and draft regulation on Water Protections, the Duties of Milling Centre Managers and Claim-Holders, and other issues that resulted from the policy reviews and stakeholder consultations. These proposals were also presented and discussed on a preliminary basis with the national directors of the Ministry of Mining and Mineral Development as possible regulations to incorporate into law in 2007, subject to further discussions and revisions.

Most significantly, the draft measures propose clear lines of responsibility for miners as well as milling centre managers and claim-holders, with various environmental management issues addressed and penalties provided for legal infractions. In Zimbabwe, miners generally bring their ore mined to milling centers for processing. Mercury is used heavily on these premises, and tailings management and mercury handling often present serious risks to health and the ecosystem. Because the relationship of miners and millers is not generally of a formal employer-employee nature, traditional legal definitions of employer responsibility do not necessarily apply. The draft measures acknowledge the need for shared responsibilities among the different people involved in ASM mining and processing. Responsibilities addressed in the draft regulations relate to mine management, fair labor practice, safety, health and the preservation of the environment. Mercury issues are particularly emphasized, so that millers are responsible for sound mercury management on their premises and for ensuring compliance with regulations. Among the issues addressed, the draft regulations stipulate that milling centre managers must set aside a designated location for amalgamation and equip that facility with retorts. The provisions also stipulate that milling centers must not exist within 100 meters of water bodies, and the combined use of cyanide and mercury is prohibited.



Miners Using Mercury in a Milling Centre in Kadoma District, Zimbabwe
(Note: the new Mercury Policy phases out these amalgamation plates)

HIGHLIGHT

Adoption of New Mercury Regulations for Mining and Gold Shops in Kalimantan, Indonesia

GMP policy experts conducted a series of consultation meetings with officials from the Indonesian Ministry of Energy and Minerals, the Ministry of Environment, the Central Kalimantan Provincial Government (Mining, Environment and Health Offices), as well as the District Environmental and Mining Offices. Consultations were also held with other stakeholder organizations such as the Indonesian Mining Association, in the discussion and development of plans to strengthen mining and environmental regulations on mercury management in ASM.

The District Government of Kalimantan has adopted the GMP recommendations to introduce and implement regulations on mercury management, following stakeholder consultations from 2005 to 2007. The regulations address the sale and use of mercury, with focus on the regulation of mercury in gold shops. GMP efforts will focus on adoption and implementation of these regulations at the local district level to address critical pollution point sources and health risks. As part of the campaign to implement this policy, various gold shops have been engaged and have transferred to cleaner practices by using fume-hoods. *17 shops adopted fumehoods by March 2007.*

The Local District Government in the GMP Kalimantan pilot region has taken a leadership role in these interventions. Also, working with the National Director of the Legal Department of Ministry of Energy and Mineral Resources, the GMP established plans to discuss how the district-level developments could be applied nationally in the future as well under the Mining and Environmental Laws.



Mining waste with mercury emitted into a water body in Kalimantan (left); and fume-hood reducing mercury use and emission in a gold shop (right)

HIGHLIGHT

Introduction and Adoption of National Mercury and ASM Laws in Laos

GMP policy experts are currently preparing measures on mercury management to provide assistance to the Lao PDR Department of Geology and Mines in developing legislation and regulation on artisanal and small-scale gold mining. This is being formulated based on the health, environmental, technical, social and economic assessments of ASM communities in Laos and stakeholder consultations that were undertaken by the GMP. Various technical aspects of ASM are addressed in these proposed regulations: washing, sluicing, tailings management and disposal, mercury amalgamation, and other aspects. Examples of measures for incorporation are:

“...The holder of an ASM license shall not heat mercury amalgam to recover the gold without using a retort, which must be used to contain the mercury vapour releases...”

“...No person shall amalgamate the entire ore, through the use of a mercury-copper plate or putting mercury into any gravity concentrator or ball mill...”

“...No person may discharge mercury, or mercury-contaminated tailings, into a water body...”



Miners in Lao PDR panning gold in the Mekong River

HIGHLIGHT

Working with the Tanzanian Government on New Policies in Artisanal Mining

The Tanzanian Government recently initiated policies to take new steps promoting capacity-building and regularization in artisanal and small-scale mining (ASM) communities. In November, GMP policy experts held a series of meetings with officials from the National Ministry of Minerals in Dar es Salaam as well as local mines officers at the mining sites to discuss government and community-based policy issues. Working with the Office of the Commissioner of Minerals, meetings focused on environmental, health, technological, economic, social and legal issues from GMP assessments, which reinforced the importance of: a) having clear codes of practice in small-scale mining, and b) providing training and extension services in mining communities to promote the adoption of safer, more productive and environmentally sound.

The GMP has assisted the government in developing a Code of Practice for Small-Scale Mining, which offers standards and procedures of operation to supplement the 1999 Mining Regulations. Working with government and community stakeholders through a participatory process, the GMP has intended for this Code to serve two primary purposes: 1) show how miners can adopt good practices of small-scale mining and comply with the Regulations; and 2) assist government inspectors by identifying standards that relate to the Regulations and that will minimize risks to safety and the environment. The GMP also plans to assist the government in developing recommendations to incorporate mercury management in the Regulations, to address emission and exposure controls and strategies for minimizing mercury use by recycling safely and efficiently.



GMP policy experts and the Geita District Mines Officer convene meetings with miners association on policy and micro-credit issues to gather perspectives from the mining community



ACTIVITY 3.2

Promotion of Compliance

Reinforcement of Government Capacity to Promote Compliance with Regulations in ASM Communities through Awareness-Raising, Monitoring and Enforcement Strategies

OVERVIEW:

The GMP has been assisting governments in the development of both regulatory and capacity mechanisms to manage mercury in ASM. The capacity measures show miners benefits of reducing mercury use in terms of efficiency and cost-effectiveness. It is essential that governments be given assistance to conduct community awareness campaigns, as well as establishing sustainable monitoring and enforcement strategies.

GOALS:

The GMP aims to provide governments with tools and mechanisms to promote the following:

- National awareness of laws and associated requirements
- National awareness of mercury hazards
- National awareness of benefits of compliance through the use of environmentally sound and efficient technologies
- Integration of regulatory issues in GMP Education and Awareness Campaigns and Technology Demonstration Units
- National training of officers and enforcement agents
- National/local level strategies for monitoring/enforcing
- Identification of priority polluted sites (e.g. hot spots) for monitoring

INITIATIVES:

Some initiatives are already underway to assist governments to train government officials on enforcement of key regulatory issues, to develop monitoring and enforcement strategies, and to facilitate community training on relevant laws within the GMP Education and Awareness Campaign and Technology Demonstration Units, demonstrating benefits of adopting best practices. Other initiatives, tailored to each country's needs, will be finalized in the first half of 2006. Focus is placed on collaborative activities with miner associations and other community institutions.

INDICATORS OF SUCCESS:

Governments are provided by the GMP with tools and mechanisms that assist them to promote compliance with relevant environmental and safety measures, according to local priorities.

HIGHLIGHT

Mining, Watersheds and Protected Lands in the Brazilian Amazon: Using Satellite Imagery to Inform Policy

In regions across the Brazilian Amazon, mining causes significant mercury pollution, leaving profound environmental and social impacts. While the GMP's capacity building program works to reduce mercury-contaminated sediment movement into streams and develop proper native vegetation in the riparian zone, the project also undertook a review of Brazilian laws and policies of protected watershed areas and natural reserves. Additionally, the project has developed innovative GIS-based mapping techniques to assist in the discussions on government policies concerning the protection of the designated lands.

Natural reserves are the foundation of the Brazilian Forest Code, which, in 2002, set new regulations for the establishment of natural protected areas along hilltops, ridgelines, riparian zones, and upland catchments, relying on key geographic features of watersheds. This new legislation deters all commercial land use on reserves and imposes severe restrictions for uses such as mining. While this represents a remarkable advance in environmental legislation, these increased protections still remain a reality only on paper. The lack of appropriate countrywide topographic datasets and the expertise required for manually mapping the reserves, along with difficulties of enforcing regulations "on the ground", were identified by government agencies as main barriers in enforcing the current legislation. Recent technological advances in Geographic Information Systems and high-resolution topographic satellite imagery, such as those provided by the Shuttle Radar Topography Mission, have allowed this issue to be revisited. The solution to this problem relies on accurately mapping and quantifying current and potential land use conflicts on a regional, watershed basis, thus enabling a reliable evaluation of its political and economic scope.

The GMP is developing the application of this methodology for mapping permanent preservation areas in the Tapajos River Basin, located in northern Brazil. This will allow new and innovative ways of monitoring mining activities that relate to environmental legislation on protected lands. This GMP program is also developing the use of the satellite imagery to track the mobility of mercury from mining sites in the sediments of rivers and streams, in order suggest new policy measures to promote capacity-building and reclaim impacted areas.



Aquaculture in the Brazilian Amazon

HIGHLIGHT

Indonesian Authorities Launch New Programs on Technology Support and Capacity Building

In Indonesia, implementation of the GMP Transportable Demonstration Units and the Awareness Campaign activities closely involved Government trainees. This also involved public awareness and media campaign to increase knowledge about health hazards related to mercury and cyanide exposure. The GMP has partnered with local NGOs to implement the campaign and the government has taken a strong role.

In Galangan, Central Kalimantan, the Bupati, the President of the Local District Government in Kalimantan has dedicated finances in the 2008 government budget for technology education and assistance services to reduce mercury in gold shops and mining areas. Under this plan, 5 government departments – Mining, Health, Environment, Industry and Trade, and Education — are collaborating to target pollution point sources in gold shops as well as mines.



The Head of the Local Government (left) launches the district mercury education plan, emphasizing technology improvement at all urban gold shops. This follows from a stakeholder workshop discussion (right).



GMP experts planning with community members in the mining area

HIGHLIGHT

Strengthening Public Sector Institutions for Delivering Technological Assistance in Zimbabwe's Mining Communities



A student named Trust (left), based at the University of Zimbabwe, is coordinating a study to show miners the benefits of replacing mercury amalgamation plates with sluices and centrifuges. He is working with a team of trainers at the university as well as with the Department of Metallurgy at the Ministry of Mines. The Department of Metallurgy is supporting resources for the tests and training activities.



The President of the Zimbabwe Panners Association (left) conducts a demonstration during one of the policy consultation workshops. The ZPA is coordinating a program to engage its members nationally to promote training in all of the provinces of Zimbabwe.



ACTIVITY 3.3

National Mercury Trade

Development of Knowledge and Tools for the Reinforcement of National Capacities to Track, Monitor and Regulate the Domestic Trade and Distribution of Mercury Used in ASM

OVERVIEW:

In addition to strengthening cooperation amongst various government agencies, the GMP recognizes that tools are needed to reinforce national capacity to track, monitor and regulate the domestic trade and distribution of mercury.

GOALS:

GMP goals for this activity are to:

- Develop national inventories on quantities of mercury used in ASM, primary international sources, quantities imported, reported use of mercury where imported, domestic channels, primary dealers, prices, other purposes of mercury, and marketing mechanisms to, and within, the ASM sector
- Develop and implement tools to support sustainable monitoring of the import, sale distribution, and use of mercury
- Reinforce national capacities to detect and halt illegal traffic in mercury and stockpiling of mercury
- Develop and implement national legislation and institutional frameworks, including a legal base for regulating mercury trade and for the conduct of inventories and related activities, e.g. hazardous substance audits, disposal and phase-out plans, etc
- Assess regulatory options to address particular mercury trading systems, such as setting standards for market mercury prices; limiting free mercury dealing by gold purchasers; licensing traders; centralized control of mercury sales, etc

INITIATIVES:

- Initiatives are underway to investigate the mercury flow into and throughout the various countries aimed specifically at creating national inventories on quantities of mercury used in ASM, primary international sources, quantities imported, prices, domestic channels, primary dealers, other purposes of mercury.



INDICATORS OF SUCCESS:

Comprehensive information is gathered and tools are developed to ascertain quantities of mercury being distributed and their source; and tools are developed to track, monitor and regulate mercury in each of the participating countries.

HIGHLIGHT

Regulating Mercury Trade to Miners: Proposed Legal Provisions in Zimbabwe

Numerous reports have emphasized that the development of monitoring and regulation of mercury trade would be a crucial step to decrease the negative health, social and environmental impacts caused by mercury in Zimbabwe. In December 2005, GMP policy experts prepared draft regulations under the Mining Laws to address trade and distribution of mercury within the ASM sector. These were discussed with Senior Directors of the Ministry of Mines and Mining Development as measures that could potentially become part of a larger national effort, including other sectors besides mining, to regulate that trade of mercury that is used for ASM. The draft measures address licensing for the purchase of mercury and for amalgamation purposes. Measures are also proposed to institutionalize community monitoring of the quantities of mercury used for ASM.

Provisions for amalgamation licensing include:

- “1) The use of mercury for amalgamation purpose shall require an amalgamation license, which shall be applied for by the manager of the mining location at which the amalgamation is being contemplated;
- 2) An amalgamation license shall be issued by the Mining Commissioner and shall specify the mining location at which amalgamation is being licensed, to whom the license is granted, and the site within the mining location at which amalgamation shall take place, designated by a plan.
- 3) An amalgamation license shall be valid for 1 (one) year and may be renewed.
- 4) In the event of breach of these regulations, the Mining Commissioner may cancel the amalgamation license for the mining location for which the breach has taken place.”

Provisions for purchase of mercury include:

“...no person may purchase mercury for amalgamation purposes unless they hold an amalgamation license.”

The drafted regulations include penalties for contraventions of provisions of these regulations.



HIGHLIGHT

Regulating Mercury Trade to Miners: Proposed Legal Provisions in Kalimantan, Indonesia

Following discussions held in March, 2007, the District Government is pursuing measures to regulate the trade of mercury. This involves the development of a licensing system to ensure that gold shops manage recycled mercury appropriately, which will reduce overall use and emissions considerably. The Department of Industry and Trade in the District Government is responsible for implementing this measure. While licensing trade is considered to be an important part of the mercury strategy, it is believed that illegal mercury trading systems are difficult to change, but that recycled mercury can be managed appropriately. The emphasis is on regulating mercury use and appropriate technology in all instances.

HIGHLIGHT

Regulating Mercury Trade to Miners: Actions Taken in Brazil

GMP assessments were conducted to track the amount of mercury that is traded in Brazil as well as other GMP countries. In 2005, the total amount of mercury that was officially imported into Brazil was 43,260 kg, valued at 1,070,342 US\$. Brazil has imported mercury from several countries, with the most coming from the Netherlands. As with most countries around the world where ASM is prominent, there has generally been a rising demand for mercury in the market due to the increase in ASM activities.

Brazil Mercury Imports, 2001-2005

Year	Value (US\$'000)	Quantity (kg)	Unit Value (\$/kg)
Total 2001	\$378,875	62,545	\$6.06
Total 2002	\$327,343	68,885	\$4.89
Total 2003	\$484,216	80,779	\$5.99
Total 2004	\$469,300	37,788	\$12.42
Total 2005	\$1,070,342	43,260	\$24.74

Following initial consultations, the Brazilian Government agreed to vigilantly monitor mercury trade to better understand ways of curbing the illegal distribution of mercury. The Brazilian Government authorities reported to the Global Mercury Project that 138 Kg of mercury were seized by illegal mercury dealers in 2006.



ACTIVITY 3.4

Transboundary Mercury Trade

Assessment and Recommendations on the Transboundary Trade of Mercury with a View of Reinforcing Government Capacities for Regulating the Export and Import of Mercury Used in ASM

OVERVIEW:

Mercury trade is of considerable international concern. The GMP recognizes that its policy activities, therefore, must not only address the capacity of countries to track and regulate internal mercury trade, but also to regulate the export and import of mercury. Thus, in addition to developing and promoting regulatory mechanisms within the country, policies addressed at transboundary mercury trade are also extremely important. These must be addressed both from the perspective of countries that are importing mercury as well as the perspective of countries that are exporting mercury.

GOALS:

GMP goals for this activity are to:

- Build on the analysis of data submitted by Activity 3.3 (sources and quantities of mercury imported, etc.) to reinforce and/or develop national plans to reduce transboundary trade of mercury to a minimum
- Review and compare reported use of mercury domestically and exported mercury statistics
- Review national waste management infrastructure and systems in the context of transboundary trade by national authorities and tools to measure effectiveness; review/develop frameworks that recognize mercury as a hazardous substance
- Develop national regulation and institutional policy to restrict imports of mercury
- Assess regional and global patterns of transboundary trades of mercury with a view to improving coordination among governments in developing standards or common approaches to reduce export and import
- Promote awareness about mercury in ASM as a means of encouraging industrial countries to ban or restrict the export of mercury to developing countries

INITIATIVES:

The GMP policy team was recently expanded to focus on these goals (specific initiatives and indicators shall be elaborated upon in the future.)



INDICATORS OF SUCCESS:

International actions taken to support the restriction of mercury trade; and governments of the participating countries are able to regulate export and import of mercury across their borders.

HIGHLIGHT

GMP Contributes to Global Awareness of International Mercury Trade Reduction Measures

The GMP submitted the report *“Global Impacts of Mercury Supply and Demand in Small-Scale Gold Mining”* for the 2007 U.N. Global Environment Ministerial Forum in Nairobi (February 2007, Nairobi Kenya). The report was circulated to member state governments globally and provided the foundation for discussions at the Forum. Among other results, this report and other contributions like it have had the following results

The GMP has been active in raising awareness of mercury and ASM-related concerns in international policy arenas. Team members have reached out to various media sources internationally, including newspapers, scientific journals, conference presentations, etc. to promote awareness of the issues and the policy initiatives underway.

Since 2005, the GMP has been contributing to the awareness of the landmark decision of the European Union Council of Environment Ministers in 2005 to end all international trade of mercury by the European Community. The EU decision, reached June 24th in Luxembourg, calls for a phase-out of mercury trade by no later than 2011. It also reiterates the EU commitment to achieving a global phase-out of all mercury production, use and trade, and reinforces the need for binding international law. The EU trade restrictions are the first effort to prevent the spread of mercury to countries in Africa, Asia, and South America, where mercury use is prevalent, particularly in small-scale gold mining. The EU, U.S., and China are the main exporters of mercury. A phase-out of mercury use in North America and Europe has made the developing world the primary destination for the world’s mercury.

The United States recently cited the GMP report in explaining its policy decision (February) to refrain from releasing mercury stockpiles onto the global market.

Discussions are still being pursued on the global level to decide what actions countries will take to reduce trade.





ACTIVITY 3.5

ASM Sector Policy

Development of Recommendations to Governments on Policy to Enhance Organization, Coordination, and Empowerment in the ASM Sector

OVERVIEW:

As ASM activities continue to proliferate in Africa, Latin America and Asia, the need for heightened attention on policy measures to promote sustainable livelihoods and protect the environment is increasing rapidly. ASM activities are highly unorganized around the world, often operating illegally, outside formal economic marketing systems, and with little access to public services. An important component of the strategy to reduce mercury use in this sector is to support the transformation of ASM into formal and organized activity, so as to better promote health, environmental stewardship and social and economic well-being.

GOALS:

GMP goals for this activity are to assist governments in the following areas:

- Develop / strengthen the legal recognition of ASM activity and its associated categories (mining types - e.g. medium-scale, small-scale, artisanal, alluvial, panning, etc)
- Incorporate poverty reduction dimension in mining policy, recognizing both the constraints and the potential of ASM as an economic sector
- Formalize ASM activity with incentives for registration
- Simplify registration and licensing procedures
- Promote the establishment of national programs for technology assistance and training, (dovetailing with Activity #2)
- Promote the strengthening of, and implementation of, regulatory frameworks on environmental management, health and safety; and associated codes of practice, (dovetailing with Activity #3.3 and 3.4 related specifically to mercury control.)
- Implement standards from the ILO Convention on Health and Safety in Mines and other relevant standards
- Promote the granting of mining titles and designated areas for ASM, to discourage illegal mining in other territories; review the effectiveness and possible policy



- challenges of such existing programs (e.g. Brazil's "Reservas Gampeiros", created in 1988)
- Promote the development and implementation of incentive-based mechanisms to discourage illegal mining and illegal trading
 - Promote access to formal markets and marketing mechanisms
 - Address issues of concern for women and children in particular
 - Address the functioning of various institutions, promoting coordination amongst government agencies and local participation in policymaking, as consistent with Activity #2, but for broader sectoral issues.
 - Promote the development and implementation of pertinent law enforcement strategies
 - Mobilize resources to support local delivery functions

INITIATIVES:

Preliminary legal studies on ASM sector policies were completed in four countries: Indonesia, Tanzania, Zimbabwe and Sudan.

Recommendations from these preliminary reviews were delivered to the governments of these countries. Currently, the GMP team is conducting follow-up investigations to determine next steps and specific policy focuses for prioritization in each jurisdiction.

INDICATORS OF SUCCESS:

Well-developed policy recommendations are submitted and reviewed by the participating governments. Further details on indicators shall be elaborated upon in the coming months.



HIGHLIGHT

ASM Policy Recommendations Submitted to the Indonesian Government

In November, GMP policy experts conducted a series of consultation meetings (pursuant the various GMP goals) with officials from the Indonesian Ministry of Energy and Minerals, the Ministry of Environment, the Central Kalimantan Provincial Government (Mining, Environment and Health Offices), and the District Environmental and Mining Offices. Consultations were also held with other stakeholder organizations such as the Indonesian Mining Association, in the discussion and development of plans to strengthen mining and environmental regulations.

Working principally with the National Director of the Legal Department of Ministry of Energy and Mineral Resources, the GMP has established plans to draft district-level mercury management regulations that could be applied nationally in the future as well under the Mining Laws. Discussions with authorities also focused on the GMP Indonesian legal expert's report, including the following preliminary recommendations:

1. A Special Provision on ASM in New Mining Law

The Indonesian government is now seeking to produce a new Mining Law to replace the old Mining Law No. 11 of 1967. By establishing this law, the Government wishes to create a new paradigm of mineral development in Indonesia. The GMP legal report recommends the development of special provisions that facilitate the legal framework for ASM recognize its prominence and to promote the formalization of informal ASM activity, as well as the development of accompanying regulatory frameworks.

2. Regional Environment Act and Local Authorities

It is recommended that Indonesia apply a flexible national environmental policy system that leaves monitoring environmental protection powers to local authorities. It is also recommended that local district and provincial authorities be given greater powers to introduce local legislation on certain mining issues.

3. Environment Administrative System

It is recommended that environmental administration be clarified so as to ensure coordination among the relevant ministries and agencies.

4. Community-Based Environmental Management

Mechanisms for community-based environmental management are proposed.

5. Special Environmental Court

It is recommended that Indonesia establish an environment court as a judicial instrument for controlling disputes, incl. impacts from large-scale mining and ASM

7. Government Assistance to ASM

Measures are proposed for regulating ASM, developing alternative livelihood opportunities, supporting formal-ASM activities as a contributor to poverty alleviation, economic mechanisms, promoting women's rights, reducing child labor, etc

HIGHLIGHT

New Mining Law Adopted to Support Rights of Indigenous Miners in Kalimantan, Indonesia

One of the most important issues that was identified in the UNIDO mission undertaken in 2005 was the need for a clear and simple policy to allow illegal indigenous miners to transform into legal miners. Discussions were held with government authorities at the national, provincial and local levels. Following decentralization of powers, it was agreed that the local District Governments now possess the primary responsibility to regulate this activity. Following discussions, in 2006, the District Government introduced a new law – “Regulation on People’s Mining” (Law No. 3 of 2006) – creating a licensing system. Some of the key parts of the new legal framework, as adopted, are as follows:

- *the area that a people’s mining permit given to an individual may cover is a maximum of 5 (five) hectares*
- *a co-operative may be provided with a people’s mining permit covering an area of a maximum of 25 (twenty-five) hectares*
- *a people’s mining area shall be situated on land and shall be at least 200 meters away from the bank of a river*

One necessity for successful implementation is to educate miners and provide incentives showing miners why it is beneficial to register. It is advised that the government should discuss this with miners, gain more inputs and monitor and promote the factors that will encourage compliance. It is recognized that registering legally would help miners to obtain secure land rights, thereby preventing conflict; it is also recognized that such registration can help improve their role in the economy. Additionally, the registration process could help ensure that miners manage the environment responsibly – a crucial aspect.



Workshop on Policy and Governance, Kalimantan

HIGHLIGHT

ASM Policy Recommendations Submitted to the Tanzanian Government

GMP policy experts conducted a series of consultation meetings with the Mining Commissioner and associated directors from the Tanzanian Ministry of Energy and Minerals as well as local district officials in Geita District. Discussions with authorities focused on the GMP Tanzanian legal expert's report, including recommendations on:

- 1) improving the economic contribution of ASM to poverty alleviation
- 2) women's participation in mining
- 3) child labor in mines
- 4) implementation of the Mineral Policy
- 5) legal and regulatory framework
- 6) licensing and registration procedures
- 7) technology assistance and capacity-building

The recommendations were incorporated into the government's 2007 policy review process. Additional next steps are being planned.



Left: Aloyce Tesha, Assistant Country Focal Point, Ministry Energy and Minerals, Tanzania

Right: Children of a mining community in Geita, Tanzania

HIGHLIGHT

ASM Policy Recommendations for the Government of Sudan

The GMP has undertaken consultations with national and district officials in the Geological Research Authority of Sudan (GRAS) and other government agencies in the Ministry of Mining as well as the Ministry of Environment, to follow up on the recommendations prepared by the Sudanese GMP legal expert. Key focus areas include:

- 1) Updating and revising the 1972 Mining and Quarries Act
- 2) Legal and regulatory framework
- 3) Coordination of government agencies – GRAS, the Higher Council of the Environment and Natural Resources (HCENR), Ministry of the Environment, in the Mines and Quarries Board, etc.
- 4) Enhancing rights of artisanal and small-scale miners and building capacity
- 5) Recommendations for law enforcement

A key policy reform that has been incorporated into the new Mining Bill is a licensing system for indigenous mining. By licensing miners, this system may help to improve rights for community mining that will ensure a sustainable livelihood and secure environment. However, further attention is needed to ensure that mining licenses are granted equitably and to ensure that there are benefits of registering (i.e. greater access to formal economic, technological and health services, etc). The policy framework for indigenous mining should be examined with inputs from grassroots stakeholders.



Women mining in Sudan



HIGHLIGHT

Governance Issues Related to Mercury and Gold-Purchasing in Mozambique: Recommendations Submitted to the Minister of Mines

In 2005, the GMP conducted a pilot project in Mozambique to remove barriers to mercury reduction in Manica District. The initiative was supported by Blacksmith Institute, in conjunction with GEF, UNDP, UNIDO and the Mozambique Ministry for the Coordination of Environmental Affairs. In addition to the implementation of a capacity-building program focusing on technology transfer, the fieldwork also yielded various policy recommendations for the government. These recommendations were prepared in the form of a report which was delivered and discussed with MICOA as well as the Minister of Mines and various directors in the Ministry. The recommendations, and the context for them, are discussed below.

During the pilot project activities, it was observed that the government buys only 1kg out of 40kg of gold being produced monthly in the region. In spite of the better price being offered by the government, miners are overwhelmingly selling their gold to the private buyers in the area because of three factors: 1) the private buyers are more present than the government in the mining sites; 2) the private buyers are providing mercury for free (in exchange for a guaranteed gold sale) in an area where mercury is difficult to obtain; 3) the miners are not confident that the government scheme will pay them for all the gold they produce

In light of the above factors, the GMP recommended that the government should buy gold on site. If the government is unable to travel to the mining sites to buy gold, then it is recommended that the government should receive the gold in an appropriate place where (a) mercury exposure is limited and (b) miners can see the gold being cleaned with acid from impurities. Currently, government gold buyers are being contaminated when they buy gold with residual mercury in offices in the town of Manica. One of the solutions is that the government gold buyers should receive the gold in the lab, i.e. under the fume hood and dissolve residual mercury with nitric acid, instead of receiving the gold in the confined office space where contamination is a factor. Doing this, these employees will be able to reduce their exposure to mercury fumes and this would also allow miners to see the mercury being leached directly and immediately see the gold that is recovered. This will increase the credibility of the government gold buyers and will attract more miners to sell gold to them. Additional fieldwork should identify and work with the gold buyers (both government and private) to promote the establishment of cleaner and more efficient technologies, improved facilities and better practices.

The 4 benefits of the recommendations, if implemented, would be:

- 1) improved occupational health in gold-purchasing facilities (less mercury exposure)
- 2) enhanced trust between miners and government gold-purchasers
- 3) increased government revenue from gold produced in the region
- 4) increased prices for miners for their gold



ACTIVITY 3.6

Microfinance Initiative

Development of Pilot Programs Enabling ASM Communities to Access Credit and Finances and Develop Organizational Structures to Support Technology Transfer

OVERVIEW:

The GMP recognizes that in order to successfully implement many of the above activities, and achieve the goals desired with respect to technology transfer and mercury control, many ASM communities will need improved business skills and financial assistance. While the establishment of access to micro-credit for the tens of thousands of artisanal and small scale gold miners is beyond the scope of the GMP, the GMP recognizes the importance of promoting business skills, improving community organizational capacities for collective business, and developing some pilot programs to test the feasibility of various options in this regard.

GOALS:

The main goals of the GMP Micro-credit Initiative are to:

- Identify and assess the viability of micro-economic development / poverty alleviation models to assist the ASM sector to transfer to cleaner technologies - e.g. village banking, loan-based and equity-based financing schemes, hire-purchase schemes; donor and government support programs; finances through cooperation of ASM miners and mining companies
- Discuss with mining communities about specific micro-credit models and opportunities to develop economic strategies to support technology transfer
- Implement pilot micro-credit programs in GMP project sites, integrated with GMP Education and Awareness Campaigns and Technology Demonstration Units; and
- Develop sustainable long-term community-based financing mechanisms for ASM in GMP sites and nationally

INITIATIVES:

Meetings with micro-credit institutions and banks have been underway in the GMP countries to explore different financial schemes and best opportunities for ASM financing



based on interactions with the banks as well as with miner associations and cooperatives. Preliminary reports have been produced for Tanzania, Sudan, Indonesia, and Zimbabwe.

Results obtained thus far reveal a number of strategic opportunities. Some banks expressed interest - potentially - in opening new branches in ASM communities. In other cases, banks indicated that they are already providing some funding to some miners for certain purposes (but only on a very limited basis); in other cases, banks have branches already in ASM areas and are very ready to evaluate applications for loans from miners.

All the banks and institutions with which the GMP team met emphasized that they are interested in developing these programs, keeping in mind that they are profit-based and have particular requirements for assessing any loan applications. Usually, criteria for accessing individual loans involves having collateral, however, many banks also have programs allowing groups without collateral to take out shared loans on a collective basis where each member of the group holds the other accountable (based on "village banking" models and other models). The GMP team has indicated that the different options would be discussed with the miners to identify best opportunities.

The information regarding the banks' programs are being discussed in education workshops with mining associations and cooperatives in Educational Workshops. Additional plans for training on business skills, equipment sharing, cooperatives, collective lending, savings, etc. are also underway. In cases where miners are able to qualify for loans, they need to be able to keep records in order to function in a micro-credit institutional framework. Micro-credit institutions have some book-keeping materials that they use once a program is operational. However, the GMP believes that business skills are important even for miners who are not taking out loans, as "micro-savings" is also an important approach to build the capacity of miners to adopt substantially cleaner technologies that reduce mercury and improve gold recovery.

The following 4 phases of initiatives are being implemented:

Phase 1: Identification of Micro-Credit Opportunities and Challenges in ASM

- a) conduct a preliminary itemization of the equipment and supplies (as well as costs) to be targeted for ASM capacity-building programs and assessment of the local accessibility of the equipment
- b) review literature and readily-available resources to identify micro-credit schemes used in the country
- c) consult miners' associations, government institutions, and relevant NGOs to identify their perception of opportunities for financial assistance and barriers to access, as well as contacting management of local financial institutions (micro-financing agencies and banks) to compile information on individual operating procedure



d) incorporate all readily-available knowledge on micro-credit schemes that are already in place into the community training in the Education and Awareness Campaigns and TDUs .

Phase 2: Development of Models of Microfinancing for ASM

a) conducting consultations with miners, miners' associations, government institutions, and relevant NGOs to assess and explore opportunities for developing credit programs and removing barriers to access.

b) conducting consultations with management of institutions (government, banks, micro-financing agencies, NGOs involved in micro-credit work, etc.) to compile information on individual operating procedures, identifying key elements that make them suitable or unsuitable for ASM applications and possible modifications for adaptability to ASM.

c) design micro-credit programs based on the results of these consultations.

Recommended next steps:

Phase 3: Implementation of Micro-Credit Pilot Programs

Based on findings in Phase 1 & 2, Phase 3 will begin by consolidating a group of stakeholders who will implement a micro-credit program for a 3-6 month pilot period. The equipment demonstrated in the GMP training campaigns will be used for testing since the cost of them will be known and supply channels established. This program will be implemented and monitored with the goal of establishing longer term programs.

Phase 4: Establishment of Sustainable Financial Programs to Support Small-scale Miners

Once a trial of micro-financing has been conducted and success factors have been identified, a final report will be presented to possible donors/creditors to micro-financing programs indicating results of the field trials and giving recommendations for full-scale implementation.

INDICATORS OF SUCCESS:

Knowledge to improve business practice is effectively conveyed to ASM communities; information about micro-credit opportunities is effectively conveyed to ASM communities; micro-credit pilot programs become operational and can be evaluated so that lessons from this experience can be shared; long-term institutional initiatives are developed or planned

HIGHLIGHT

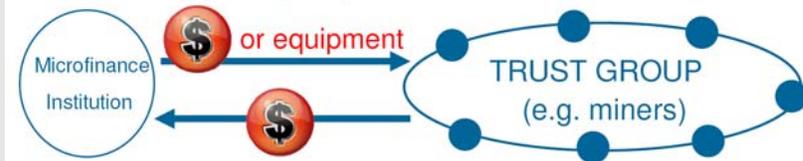
Microfinance Studies Conducted in Tanzania, Zimbabwe, Indonesia, Sudan, Lao PDR and Brazil

2006 marked the launch of the GMP Microcredit Initiative. Consultations with local banks and microcredit institutions were conducted to identify best opportunities for supporting economic loans-based development initiatives to support miners in adopting better technology. Specific technology has been itemized, with efforts underway to build local capacities for fabrication.

In Tanzania and Zimbabwe, following the consultations with banks, GMP held education workshops with miners to present and discuss different financial options for community empowerment through micro savings and loans. The workshops focused on how “village banking” can support technology transfer to increase productivity and earnings and improve safety. Working with officials from the government as well as the private sector, the GMP also linked these workshops to discussions of local community policy concerns, to gain community perspectives for the development of legal and regulatory issues on which the GMP is focusing. Miners have expressed strong interest in pursuing micro-credit opportunities through individual and collective lending programs. For the poorest miners, emphasis is on “village-banking models” where individuals unite to form “trust groups” (usually 5-8 people who know each other) to borrow money or equipment collectively and hold each other accountable for repayment.

What is a Trust Group?

- Trust Groups meet on a regular basis and pool MONEY that each person contributes
- At first the money will be used to make deposits, through an umbrella group or an financial institution
- The Trust Group splits the loan among individuals
- ALL the members of the Trust Group are responsible for ALL its members credit; will collectively repay ANY money that is DEFAULTED (not paid back) by any member of the group



(Spiegel, 2007 “Micro-Finance Strategies in Artisanal Mining Communities”)



Mines Officer speaking at GMP seminar with miner associations in Geita District

HIGHLIGHT

Microfinance Training in Sudan: Linking with NGOs and Government for Local Grassroots Empowerment

Artisanal small-scale gold mining activities represent an essential livelihood source to some of the poorest people of Ingessana Hills in the Blue Nile State. The GMP has recruited an NGO, Practical Action, to organize miners into groups in order to enhance capacities to use collective micro-loans for transferring to improved technology that will reduce mercury use and emission. The pilot project is intended to be the seed of significant change in the Ingessana Hills, but would start small and simple, with 4 groups of 25 people each that will be trained to be successful small scale miners. This success would be key for encouraging other groups in the future. The four groups are selected to involve key figures in the artisanal communities.

They are being technically trained and supported to organize themselves. Since the complete kit (equipments to improve technology) may cost up to US\$ 12,000 (international price tag), each group of 25 miners is trained to assess whether they could afford this kit through a micro-credit scheme, where the repayment should be done in monthly installments payable within 24 months period. It is important to emphasize that to make the repayment affordable for the 4 groups and consequently for the miners, a subsidy (%) from the government or private agencies for the costs of a kit is needed. Therefore, the GMP has developed contact with the governmental and NGO partners as well as local manufacturers who “copy” cheaper alternatives. Hence the installments could reach around US\$ 10/month per miner.

This system would substantially increase the chances of success of these groups – still requiring repayment, as they have a credit and they have to be well trained to manage their small business. The partnership with the government or private agencies is important, as it reduces costs for the miners as well as increases the chances for the community members to acquire efficient gold processing equipment. This subsidy should not be seen as a donation but as a facility for attracting the miners to be organized in groups, introducing the concept of small business and the concept of entrepreneurship and consequently increasing their chances of success.

Envisioned Model:



Women miners in Ingressa Hills



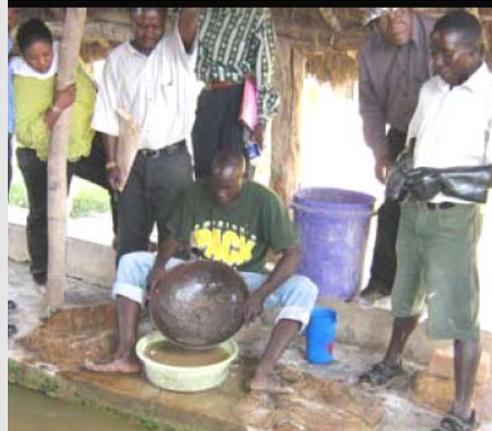
HIGHLIGHT

Trust-Building, Leadership and Organization Training: Pilot Testing New Development Approaches in Tanzania

In May 2006, a team of GMP trainers participated in a pilot initiative to demonstrate and explore how training exercises on trust-building and co-operative organization could enhance livelihoods in ASM communities. The initiative demonstrated the benefits of group decision-making and teamwork in ASM as a way of promoting effective and equitable development –and enabling the conditions for the adoption of cleaner technologies that reduce mercury use.

These exercises followed a series of related training workshops on technology, business development and micro-credit in Geita. This initiative involved women and men in a variety of participatory exercises. Focus group discussion and activities with 13 women working at Blue Reef Mine with the following objectives: develop profile of specific subgroup involved in ASM, test activities designed to promote organizational change and cooperative behaviours, identify current barriers to cooperation and improved organization. Focus group discussion was followed by a series of activities based on economic game theory to derive scientific data on conditions for cooperative and other pro-social behaviour, variables impacting cooperation and factors determining the current uncooperative, suboptimal work structure.

Leadership analysis was conducted with a sample of miners in the local area and mining organizations. The level of leadership capacity varied significantly, across demographic profiles. The outcome of the experience confirmed the strong value in focusing on local leadership development as vehicle for improved community organization and development. The trainers who participated suggested that using the “trust games” approach could help mining associations organize themselves in new ways (ore-sharing, technology-sharing, collective loans, etc) that would raise standards of living and promote cleaner technologies.



Left: *The District Mines Officer, Mr. Kabadi, explains to trainers that primary mining license holders as well as miners should take leadership to improve organization in ASM operations.*

Right: *A discussion amongst trainers explores different methods for engaging miners.*

Right: *Local GMP trainers in Geita examine the organization structure of a mine operation*



ACTIVITY 3.7

Fair Trade Gold

Establishment of Certification Criteria and Processes for Fair Trade Gold in ASM

OVERVIEW:

As is well-documented in GMP reports and other published literature, artisanal and small-scale gold miners are often paid very little for the gold they produce. As this is a poverty-alleviation activity, the miners involved are ill-positioned to demand better prices. Indeed the desperation leads many ASM gold miners to accept very low prices in exchange for free mercury – which they need to produce the gold, in the absence of capacity and resources to utilize mercury-free technologies or dramatically reduce mercury through the use of retorts, as presently promoted by the GMP. In addition to Activity #3.5, which promotes legalizing, organizing and empowering the ASM sector, the GMP wishes to encourage the international community to promote fair gold trade, key not only to poverty-alleviation but also to controlling global mercury contamination.

GOALS:

Main GMP goals for this activity are to:

- Develop environmental, social, and economic criteria for Fair Trade gold, including mercury-related criteria
- Develop organizational capacity in mining communities for meeting progressive Fair Trade Criteria
- Development niche markets for Fair Trade gold by building on previous experience with fair trade markets and establishing supply chain networks which deliver gold from small-scale producers more directly to refineries and linkages between ASM producers to international markets.
- Communicate widely and promote the initiative's findings and program of action, including the identification of models of certification and an international certifying agency

INITIATIVES:

New experts have recently been added to the GMP policy team to assist in investigating the establishment of market incentives for good environmental practice in mining by developing standards for a Fair trade Gold certification process.

INDICATORS OF SUCCESS:

Fair trade for gold initiative can be successfully launched and that lessons from this experience can be shared.

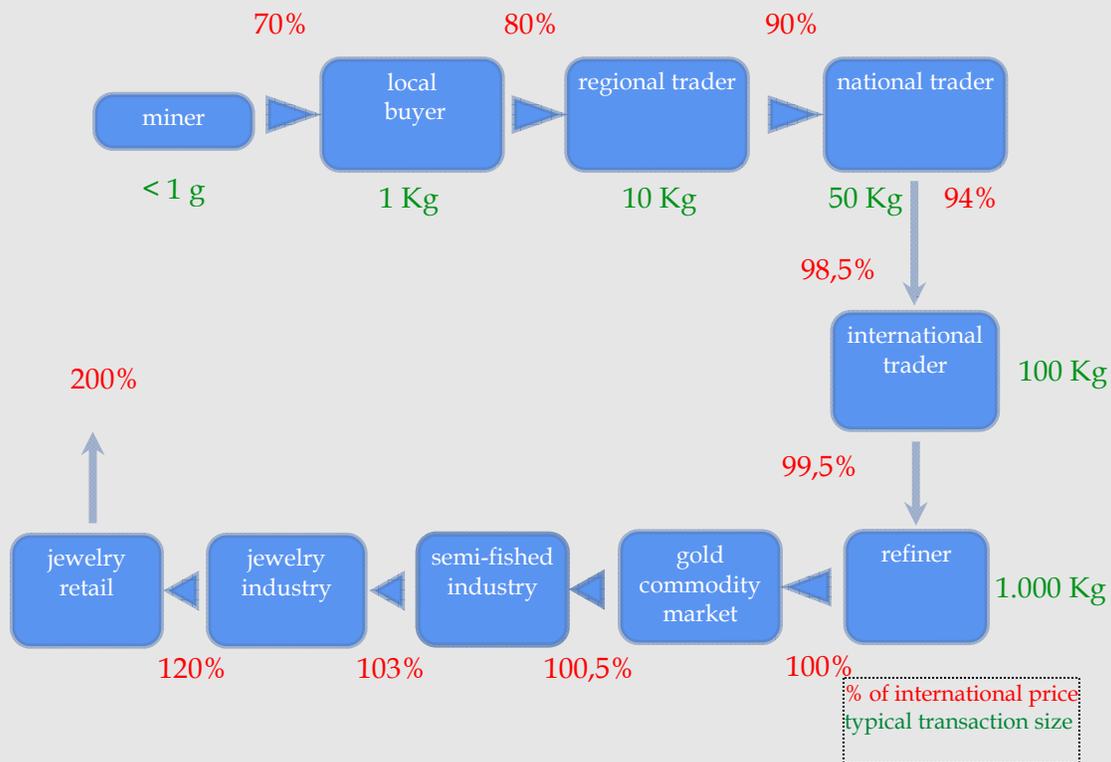


HIGHLIGHT

Developing Global Fair Trade Certification Standards and Linking Fair Trade Markets with Miners

The GMP has supported the establishment of global fair trade certification standards as a catalyst to encourage equitable trade markets (that provide fair prices) and fair production standards (including social and environmental criteria). The GMP has networked with jewelers, other development projects, and other stakeholders in the global supply chain (figure below) to help develop pilot programs to support sustainable improvements in ASM communities.

ASM Gold Supply Chain



Brazil Pilot Program - Fair Trade Small-Scale Mining Site

The GMP has identified potential ASM communities suitable for Fair Trade implementation. A review of factors at different sites led to GMP focus on a developing Fair Trade site in the mine operation in the Tapajos, Brazil - Paulo Carneiro Mine, which produces approximately 2kg of gold per month. The mine fulfills 50% of the Fair Trade gold requirements. The GMP aims to help develop this pilot site to meet 80% of the requirements in the short term and to link it with jewelry marketers in the region.



HIGHLIGHT

Fairer Trade: Partnerships between Banks, Gold Refineries and ASM Communities in Tanzania

The GMP conducted a series of consultations with the Federal Bank of the Middle East (FBME) in Tanzania, and its subsidiary Africa Precious Metals Ltd, to identify ways of strengthening economic services in artisanal and small-scale mining communities. Beginning in 2006, meetings were held in Dar Es Salaam to identify ways of improving gold marketing/buying services, gold refinery standards of operation (including safe mercury use), micro-credit services, and other aspects that would improve social, economic, environmental development in ASM communities.

By early 2007, the Federal Bank of Middle East (FBME Bank) Ltd has invested over US\$1million in a new gold refinery plant in Tanzania's Mwanza region to add value to gold exports from small-scale miners. The FBME Bank Chief Executive Officer announced that the refinery would target small-scale miners, who without a defined market-have been loosing out to middlemen and businessmen in the black market, to smugglers and through money laundering. He said the new refinery would cater for small-scale miners by improving the quality of their gold and subsequently their standards of living.

The objective now is to collect "raw gold" through the regional miners associations at attractive prices and refine it to a finished product quality of above 99.5% before exporting it as "bullion gold". According to existing plans, the business would be expanded to other regions of the country, at the appropriate time.

The full production capacity of this unique and modern refinery is estimated at about 50 tonnes of gold per annum. Africa Precious Metals Ltd (APM), a subsidiary of FBME Bank Ltd, which constructed and is operating the refinery, and has opened four regional gold collecting centres at Ushirombo, Rwamagasa, and Nyarugusu called FairTrade Gold Centers (FTGC).

APM will reportedly also expand to other regions of Tanzania to assist and support small-scale miners for the fair trade of their gold on the world market. Delegations of other East African countries (Kenya and Uganda) and the Latin American countries have visited these collection centers (FTGC) and would like to copy this unique project.

Tanzania has become one of the fastest-emerging gold producers in Africa, and seems to be the third-largest gold-producing country after South Africa and Ghana. The annual production of gold has increased from around 43.2 tonnes in 2002 to about 48.0tonnes in 2003. Tanzania now has proven gold reserves in excess of 1000 tonnes. In 2003 Tanzania reported a 20% increase in gold exports from US\$ 41 million to US\$ 50.4m.

The GMP aims to continue to provide assistance in ensuring that the refineries adopt best practices to meet environmental standards (particularly to minimize mercury use), and provide assistance to enable miners to sell gold at appropriate prices and obtain technical support.



HIGHLIGHT

Fairer Trade: GMP Stakeholder Workshops Support Reforms on Gold Pricing Policies in Zimbabwe

Due to the current economic crisis in Zimbabwe, gold mining has grown in importance as a source of survival. Over 2 million people depend on artisanal and small-scale gold mining across Zimbabwe. As environmental threats have increased, the country has also seen growing conflict in the mining sector. In the first three months of 2006, police arrested over 30,000 indigenous miners. Smuggling, illegal mining, mercury and other problems have been cited as challenges. Irresponsible police intervention has also been cited as a major problem. GMP-supported assessments found that these problems were mainly fuelled by the underlying failure to implement economic policies that pay miners fair and appropriate gold prices, which forced them into desperate conditions of work and trade as a means of survival.

Between February and April in 2007, the GMP Policy Coordinator conducted several stakeholder meetings in Zimbabwe to bring together miners, government decision-makers from different agencies, and other organizations, to identify and advance strategies for bringing solutions to the country's challenges in the mining sector. The aim of the meetings was to allow participants to express a diversity of concerns to influence policy changes. In addition to conducting stakeholder meetings, the GMP Policy Coordinator participated in Special Committee Hearings in Parliament to review gold mining policies. A variety of GMP recommendations were generated (as in the reports of the Policy Coordinator), with the major recommendation being to increase the gold price to the official international gold price level in line with inflation.

Following advocacies by various stakeholders, in the second week of May, 2007, two major decisions were reached by the Government of Zimbabwe:

1) Gold Price Increased - The Reserve Bank of Zimbabwe (RBZ) raised the gold support price by 2,178% from Z\$16 000/ounce to Z\$350 000/ounce. This price is estimated to significantly reduce illegal trading, and provide an economic system that will make mining viable.

2) Gold Price Review Committee Established - Significantly, the Parliamentary Committee has moved to establish a review committee to ensure that gold prices are regularly evaluated and adjusted as inflation continues in the future, to ensure fair and appropriate gold prices.

These major policy developments require ongoing monitoring. They represent some out of the many policy recommendations that were generated to encourage positive changes in the mining sector to improve livelihoods, environmental sustainability and the country's development as a whole. It is recognized that "removing barriers to the adoption of improved small-scale mining practices" (the Global Mercury Project goal) requires an integrated approach that is responsive to local, national and regional needs, and that the GMP can continue to play a significant role in bringing together stakeholders in problem-solving and strengthening institutions for development.

Further GMP work is recommended to follow up on these and other aspects of policy and governance in the growing small-scale gold mining sector of Zimbabwe.



ACTIVITY 4

Global Partnership for Development

Strengthening and Expansion of Global Partnerships for Development - Joint Activities, Regional Network Capacity-Building, Global Awareness and Resource Mobilization

OVERVIEW:

The world-wide reduction of mercury use and pollution in mining, as called for by the Global Mercury Project, requires action at all levels of society – by the 55 developing countries where ASM is prominent as well as industrial nations. To sustainably address the challenge of mercury contamination for artisanal and small-scale gold mining, a broad-based approach to development is needed. The GMP is committed to work closely with other agencies, and governments of other countries, to strengthen and expand global partnerships for working together in joint initiatives – regionally and internationally, to promote global awareness of the situation in ASM, mobilize resources, and contribute to sustainable development.

GOALS:

GMP goals are to:

- Consolidate strategic partnerships to support regional and global action plans with major stakeholders and opportunities for environmentally sound management activities emphasizing mercury minimization and the strengthening of capacity-building and technology transfer in ASM and related developmental issues
- Develop joint activities with other initiatives of UNIDO, UNDP, GEF, UNEP and other international agencies; public authorities; international organizations; the industry sector; mining companies, NGOs; and academic institutions, identifying opportunities and synergies
- Identification of opportunities and implementation of programs that replicate GMP capacity-building in other countries (e.g. Mozambique, etc); formation of partnerships with other organizations and developing knowledge on mercury, ASM infrastructures and future needs and priorities
- Disseminate the produced GMP results and identify opportunities that will allow the project to continue beyond 2006 through self-financing, including conducting donor conferences to solicit financing and workshops with potential contributors; and
- Enhance awareness of mercury and ASM issues on a global scale through public media and media directed at donor communities



INITIATIVES:

The GMP policy is currently developing regional and global partnerships with various intergovernmental agencies (UNEP and other UN agencies, etc); companies (such as AngloGold Ashanti, Newmont, etc); the USEPA (in Brazil); and various governments from around the world.

INDICATORS OF SUCCESS:

Partner organizations are working together to promote sustainable development in ASM communities.

HIGHLIGHT

**Preventing Mercury Pollution in Manica District,
Mozambique: Community Capacity-Building with the
Ministry for the Coordination of Environmental Affairs**

The environmental health impacts of artisanal gold mining have been growing concerns in Manica District, Mozambique. Currently, more than 12,000 people in this region are involved in ASM, and most people extract gold using mercury. With support from Blacksmith Institute, experts from the GMP and the Ministry for the Coordination of Environmental Affairs carried out a pilot program to reduce environmental and occupational hazards by promoting safer and more efficient uses of mercury. Training methods were adapted from those being implemented in the 6 main GMP countries.

Assessments in Manica revealed that mercury management practices cause significant pollution hazards in this area; human exposure was a severe problem because miners burned the mercury amalgams in open-air bonfires throughout the community. Based on breath test samples, the average level of mercury in the miners in Munhena, the main training site, was 8.23 $\mu\text{g}/\text{m}^3$. Some burners had above 50 $\mu\text{g}/\text{m}^3$ (50 times higher than the WHO guideline for maximum public exposure to mercury vapor). A training curriculum was conducted to introduce miners and their families to retort technologies and related ways of reducing mercury emissions. Tests performed with home-made retorts, made of salad bowls, showed that mercury emissions can be contained to allow 95% of the mercury to be reused. Miners effectively adopted the retorts and expressed that the relatively inexpensive nature of this technology, costing less than US\$4, was feasible, especially after acknowledging the economic benefits that arise by reusing the mercury. The high price of mercury in Munhena (US\$100/kg) is resulting in heightened attention on the need to minimize mercury losses.

Through discussions with community members and the government, the team identified follow-up plans including the establishment of a community amalgamation centre. The GMP recommends further capacity building in Mozambique and is planning further collaborative initiatives with the support of Blacksmith Institute, UNDP, GEF, and UNIDO in other countries as well, such as Guinea. This pilot initiative with Ministry for the Coordination of Environmental Affairs also generated policy recommendations that were delivered to, and discussed with, the Minister of Mines (see highlight under Activity 3.5 – ASM Sector Policy).



GMP Team demonstrating how to re-use mercury efficiently



HIGHLIGHT

**Managing Environmental Health Risks in Ecuador:
Partnering with Universities and Canada’s Development
Initiatives**

Artisanal gold mining is the main profession of more than 60,000 people in Ecuador, who often use significant amounts of mercury in addition to cyanide. In 2005, the Global Mercury Project began a partnership with a project in Ecuador supported by the Canadian International Development Agency, entitled “Sustainably Managing Environmental Health Risks in Ecuador”. The project is applying an ecosystem approach to health in strengthening core skills, knowledge-exchange, and community empowerment to address environmental determinants of health in selected regions of the country. The GMP has utilized its knowledge-base to contribute to this project by developing training curricula on environmental management in mining, with emphasis on mercury. These curricula are now being utilized by various university-community development programs in Ecuador.

The project is based at the Center for International Health at the University of British Columbia (UBC) and works with three main universities in Ecuador – the University of Cuenca, the University of Machala and the University of Bolivar - to establish capacity to sustainably manage environmental health risks. In undertaking this challenge, partnerships were formed with institutes in Cuba and Mexico to reinforce “South-South” linkages that can enhance sustainability through regional networks of excellence. The project, which has received the BC Centre for International Education Innovations Award, calls for multidisciplinary approaches to promote institutional capacities and community development. Innovative training curricula were developed to manage not only problems of mining contaminants, but also pesticide exposure and vulnerability to vector-borne disease such as dengue and malaria. A series of problem-based learning modules were developed, thus breaking down the barriers between universities and communities and reinforcing local leadership through on-site community training. For the modules on mining and the environment, emphasis is placed in two regions in the country - Machala and Portovelo.

The national scope of the endeavor provides an exciting platform for building interregional, intercultural and inter-university links as well. These elements reflect what the GMP has contributed based on its experience in the six main GMP countries. Involving graduate and undergraduate students from UBC as well as Ecuador’s universities provides an invaluable educational opportunity for integrating the lessons of the GMP into the knowledge and capabilities of community learners and leaders. Partnership talks are further exploring how this program could continue to develop in collaboration with Canada’s Global Health Research Initiative.

