CASM Annual General Meeting 2004
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EXECUTIVE SUMMARY

The Communities and Small Scale Mining (CASM) Secretariat held its Fourth Annual General Meeting and Learning Event from October 11th to 16th in Colombo, Sri Lanka, where 130 conference participants from around the world came together to share knowledge, experience and desires for positive change in the artisanal and small-scale mining (ASM) sector.

The conference was an opportunity to discuss CASM's recent initiative to take a more active role in facilitating, designing, pioneering, and mobilizing for development in its focus areas. The title learning session provided participants with detailed knowledge of Sri Lanka's gemstone industry, and this knowledge was complemented by presentations on gem mining experiences in Namibia, Madagascar, and Thailand. Plenary sessions covered diverse topics in the areas of fair trade and certification, lessons learned in gender mainstreaming and child labor, and ASM in Asia. Progress reports on partnership and technical assistance programs gave participants insight into specific projects in Asia and Africa, while also reviewing CASM's Global Partnership Program and other assistance efforts in World Bank countries. In workshops, participants had the chance to learn more about and contribute to the discussion of conflict resolution, setting up a gem cutting industry, gender mainstreaming, and the elimination of child labor. After the conference, participants were given the opportunity to learn more about Sri Lanka's gem mining industry by visiting the mining city of Ratnapura.

Some key observations from the conference include the following:

- A shift in focus from gathering and disseminating knowledge to more actively facilitating development is creating a more dynamic CASM, better poised to address its strategic objective of reducing poverty and building sustainable communities.
- Global and regional partnerships are the key to unlocking small-scale mining's potential.
- It is imperative to eliminate child labor from small-scale mining. With education and employment alternatives, this goal is also attainable.
- More effort must be made to mainstream gender issues, as improving the agency and working conditions of women in small-scale mining will benefit the industry as a whole.
- While many challenges lie before fair trade and certification programs, the process is well begun and holds great promise.
- Training programs and government initiatives can ensure fairer prices for small-scale gem miners, and small value-added operations can greatly increase gem export revenues.

With input from small-scale miners, government officials, representatives from international organizations and donor agencies, and researchers working with miners, this conference provided a forum for the participants to bring forward the essential issues that must be addressed to alleviate poverty by advancing sustainable development in communities affected by ASM.

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1.0 INTRODUCTION

Artisanal and small-scale mining (ASM) provides an important source of livelihood for rural communities in developing countries throughout the world. ASM refers to a wide spectrum of activities including small, medium, large, formal and informal, legal and illegal mining, which typically involves the use of rudimentary processes to extract economic minerals from ore bodies. ASM is often characterized by extensive negative environmental, health and socio-economic impacts. However, ASM can also provide livelihoods for miners and their families for extended periods of time. CASM's Annual General Meetings are an opportunity to tackle the main issues challenging ASM, with the aim of advancing CASM's mission to support poverty alleviation by advancing sustainable development in communities affected by ASM.

One hundred thirty people from around the world, representing the Sri Lankan local mining community, various governments, multilateral and bilateral development agencies, research and academic institutions, non-governmental organizations, and private consultants convened in Colombo to participate in the opening ceremonies and technical program, which ran from October 11th to 16th, 2004.

The theme of the conference was Gemstones: From Mine to Market, and the technical sessions included in-depth examinations of all aspects of gemstone mining, processing, and marketing, focusing on Sri Lanka, but including experiences from Thailand, Namibia, and Madagascar. Other technical sessions targeted critical challenges facing ASM including:

- Fair trade and certification,
- Regularization of ASM,
- Technical assistance programs,
- Indigenous peoples and ASM,
- Gender mainstreaming, and
- Eliminating child labor from ASM.

Three special workshops examined conflict resolution and consensus building, the nuts and bolts of setting up a gemstone cutting business, and gender and child labor.

This was CASM's first AGM in Asia and presentations on ASM in China, India, Mongolia, and the Philippines, in addition to Sri Lanka and Thailand, explored ASM in Asia. In its annual business meeting, CASM reported on its activities for the year, including presentations on the various programs and projects that CASM participated in, and a plenary session mapping CASM's direction for the future. After the formal event, around forty participants continued the learning event with a field trip to Ratnapura, Sri Lanka's traditional gem center, providing some first-hand insight into the gemstone industry.

2.0 MONDAY OCTOBER 11TH

2.1 Press Conference

Mr. Jeffrey Davidson welcomed the press and other delegates. He stated that over ten million people are involved in mining activities for their livelihood around the world. CASM was created to try and organize a network where knowledge and technical assistance could be coordinated among countries where small-scale mining occurs. In the case of the fourth Annual General Meeting and Learning Event, Mr. Davidson asserted, other countries could learn much from the host country of Sri Lanka. He mentioned that three workshops would be conducted and that the 80 participants from around the world could learn much from this conference.

Mr. Davidson then welcomed questions from the press. In response to the question of whether CASM has any projects currently underway in Sri Lanka, Mr. Peter Harrold of the World Bank stated that there were no projects at present and that for most of the attendees this would be their first visit to Sri Lanka. Mr. Davidson added that, considering the experiences of other countries in Asia, Latin America, and Africa, Sri Lanka might well be able to benefit from similar projects, and that preliminary discussions with NGOs interested in working with Sri Lankan small-scale mining communities were underway. When asked why the organizers had chosen to hold their meeting here, given Sri Lanka's relatively small contribution to the international mining industry, the panel responded that Sri Lanka has been able to export equipment, training techniques and management practices, and that the key reasons for choosing Sri Lanka were the nature of its small-scale mining industry, its gem cutting industry, and the overall experience of its gem trade. The question of child labor, both generally and in Sri Lanka specifically, was raised. Although the panel was uncertain as to whether child labor occurred in Sri Lankan mining, it was soon observed that national legislation prohibits it, and that miners generally respected that law. A representative from the ILO stated that in many countries children are working in poor conditions and that there are a number of programs to remove children from the mining sector.

3.0 TUESDAY OCTOBER 12TH

3.1 Opening Session

3.1.1 Opening Remarks

Mr. Jon Hobbs of the UK Department for International Development welcomed guests of honor, participants and all those present, and introduced this year's theme. New themes included expanding life cycle considerations of CASM from mine to market, moving away from gold to focus on precious and semi-precious stones, and looking into Asian regions as well. Workshops to be conducted would cover conflict resolution, child labor and women in mining. Mr. Hobbs emphasized the World Bank's continued commitment to human rights and the recognition of small-scale mining, and called upon governments and the World Bank to continue improving policies. He discussed a number of recent initiatives since the 2003 AGM, including the Extractive Industries Review, the development of the Global Mining Dialogue, and the Extractive Industries Transparency Initiative. Ongoing ASM issues include involving the private sector, developing business, and improving resource management. To abolish poverty, an increase in transparency and good governance is needed. Although many consider mining

unsustainable and exploitative, it is important to remember that CASM's goal is to convert this natural wealth into more sustainable opportunities.

Mr. Jeffrey Davidson of the CASM Secretariat introduced CASM, outlining its history and continuing goals. Tens of millions of families worldwide depend on ASM for their livelihood, and CASM is committed as a global sharing network to reduce poverty among small-scale miners. CASM has been involved in gathering and disseminating international experience and good practice, facilitating the interchange of ideas between diverse stakeholders, and stimulating new ideas through meetings such as this one. CASM is now entering a new phase, where it will not only continue with its previous work, but also become a more dynamic and directed promoter of constructed engagement and intervention. This will ideally ultimately result in the achievement of more sustainable outcomes, communities, livelihoods, regional and local economies, governments, and environments and habitats. He also thanked the people and government of Sri Lanka for their willingness to share their knowledge and experience, as well as their hospitality with the participants, and thanked the participants for making the long journey to engage, interact, share, and develop ideas and approaches for the benefit of ASM.

Chairman Ashok Jayawardena, of the National Gem and Jewellery Authority, extended a warm welcome to the delegates, and invited them to consider important issues in Sri Lanka. He spoke about the gem mining industry in Sri Lanka as a very important and active sector. He also mentioned that the National Gem and Jewellery Authority will take steps to ensure that everyone will benefit from the knowledge shared at the conference. He also hoped that the foreign delegates and members of CASM would have the opportunity to enjoy the beauty of Sri Lanka. He was pleased to mention that the Gem and Jewellery Authority was partly funded by the World Bank when it was initiated in 1980.

Mr. Mano Tittawella, Advisor to the President of Sri Lanka spoke on behalf of Her Excellency the President of Sri Lanka, and welcomed all the CASM delegates. He stated that there is still great untapped potential for gemstones throughout Sri Lanka. Sri Lanka, based on its area, has the densest concentration of precious and semi-precious gems in the world. He said that in over twenty centuries of gem extraction, Sri Lankan mining techniques have not changed, and essentially traditional methods are still used. Exports are approximately 14 million carats of rough gemstones annually to value-added processing in other nations. Sri Lankans have made some progress in mastering heat treatment, and several companies are now engaged in this service. Efforts to further disseminate knowledge about gem processing technology are underway. As heat treatment becomes more common in Sri Lanka, it will make available more stones for the domestic lapidary industry. The development of gem processing and jewelry manufacture in Sri Lanka could generate a great number of jobs. The industry's potential for value addition, profitability and employment generation is high, but remains largely untapped. The Ceylon sapphire, internationally known for its beauty and clarity, must be used as a tool to move into high-end sales for higher value-added opportunities. The four basic elements of the government's current economic strategy all speak to one objective: significant and durable poverty reduction. These elements are: an increase in suitable public investments, targeted toward poverty reduction and development; the reorganization and restructuring of the twelve large corporations known as the "strategic enterprises", to reduce their drain on the federal budget; private sector development and the encouragement of private-public partnerships; and a

government focus on the people's private sector, meaning small and medium industries, which now benefits from the National Council for Economic Development. Unless countries like Sri Lanka can support and follow their small and medium entrepreneurs, it will be difficult to sustain development and poverty alleviation.

Mr. Peter Harrold, the World Bank Country Director for Sri Lanka, recognized the great importance of the ASM sector. He expressed the hope that the conference focus would be the potentially enormous benefits that the sector can bring rather than its negatives. It is critically important in Sri Lanka to focus not only on economic growth, but also on how that growth can generate poverty reduction. This is pertinent when, as has been Sri Lanka's experience, economic growth leads to a corresponding growth in economic inequality. How can the poorest benefit from this growth? Consider Ratnapura, which boasts the greatest gem production in Sri Lanka and is also one of the country's three poorest regions. The meeting's Sri Lankan delegates may learn more from other participants about methods to combat this poverty. Environmental degradation in these areas is also a great problem. This is thus a highly appropriate country for CASM's fourth AGM, and the World Bank Office wishes a most fruitful and constructive week in Sri Lanka.

The Hon. Minister A.H.M. Fowzi, Minister of Environment and Natural Resources, thanked CASM for choosing Sri Lanka to host its AGM and learning event. As a former gem merchant, Mr. Fowzi takes a personal interest in mining. Gem mining in Sri Lanka has been of great economic importance for centuries, and Sri Lanka is famous for producing a wide variety of gemstones. Gem exports annually account for $60 million in revenue, comprising most of the value of Sri Lanka's small-scale mining sector. Sri Lanka is recognized as having one of the most well organized small-scale gem mining industries in the world. Mr. Fowzi is pleased that the Gem and Jewellery Authority is working to mitigate environmental damage from gem mining, and hopes they will continue to safeguard the environment, while promoting the gem industry. We all understand that sustainable development should be accompanied by social and economic development, together with environmental protection. During this short learning period in Sri Lanka, participants will have the opportunity to exchange knowledge and experience with their Sri Lankan counterparts. This will help to develop bilateral relations with the gem industries between countries. Mr. Fowzi wished the delegates all the best in their deliberations.

3.1.2 Keynote Address - CASM: Unlocking The Potential

In his keynote address, **Mr. Peter van der Veen of the World Bank Mining Policy and Reform Division** explained the World Bank's involvement in small-scale mining and its relationship with CASM. He highlighted a shift in opportunities over the past few years, and discussed how to unlock the potential of small-scale mining. These opportunities include a new authorizing environment, a shift in civil societies' and governments' perceptions toward small-scale mining, and the opportunity provided by the development of CASM.

The new authorizing environment is reflected by initiatives such as the Millennium Development Goals (MDG) and the Extractive Industry Review (EIR), which have shown what role societies and governments expect the mining industry to fulfill. The MDG focus on the effort to reduce poverty, including the need to engage in partnerships, reduce the impact of HIV/AIDS and other

diseases, and to mainstream gender issues. The EIR, initiated by the World Bank in 2000, highlighted three enabling conditions; pro-poor public and corporate governance, including proactive planning and management to maximize poverty alleviation through sustainable development, more effective social and environmental policies, and prior informed consultation from communities affected by any new mining activity. Small-scale mining squarely fits into the objectives of the MDG and EIR. In addition, the Johannesburg Summit on Sustainable Development resulted in a demand for sustainable development from large-scale mining, but also from ASM. In keeping with these initiatives, the World Bank jointly develops, with governments, poverty reduction strategy programs (PRSP), which include ever-increasing mention of small-scale mining.

The second opportunity is the shift on the part of civil society and governments to now perceive small-scale mining as an opportunity, not a problem. In the past, it was regarded with ambivalence as an isolated activity, which on one hand provided a livelihood to people, but on the other hand presented various negative social and environmental impacts. However, as a result of several meetings organized by a number of United Nations institutions and the World Bank over the past five or ten years, small-scale mining is now seen as contributing to poverty reduction and building sustainable communities. As a result of lessons learned from past projects, a consensus has now evolved on where to go with respect to communities affected by ASM. For ASM to contribute to poverty reduction, it must be based on the following three pillars of sustainability. First, it has to be an economic activity, resulting in vitality and diversification, and a more equitable distribution of opportunity. Economic activity adds value, and thus provides an opportunity to reinvest income into both the local economy and small-scale mining operations. However, to make ASM an accepted activity, transparent and equitable internal and external systems of governance are required, especially with respect to the legal and regulatory framework. The rules of the game must be well established and respected. The second pillar is environmental integrity, which requires environment management, better mining practices, and the control of contaminants. The third pillar is the social and cultural wellbeing of the community, which entails improving the capacity of a community to plan for its future and to develop its own development plans, leading to better community organization and participation.

The third opportunity is CASM, which has brought together a number of donors and has become a forum where small-scale mining can be discussed, and an agenda and strategy developed and moved forward. CASM has also become an instrument to actually reach out to donors, bilateral institutions and others to build further support. CASM was established in 2001, with the mandate to collect and share the accumulated wisdom of the past decade on ASM. Its overall aim is to contribute to the reduction of poverty and the construction of more viable livelihoods in rural areas where ASM is a significant activity. CASM partners include DFID, the World Bank, Conservation International, the International Council on Mining and Metals, the ILO and various UN Agencies, like the ILO, UNIDO, UNCTAD, and UNEP, and the Institute for Geo-Resources & Environment from Japan. In addition, CASM has been able to mobilize trust funds from various donor countries to leverage what is being done with CASM beyond the base funding.

CASM's strategic objectives are reducing poverty, building sustainable communities, enhancing governance and transparency, improving environmental sustainability and natural resources management, and improving health in mining areas, closely matching the MDG. CASM has also

been responsive to the MDG objectives, in the areas of governance and working to integrate small-scale mining into rural economy, the empowerment of women, the elimination of child labor, and environmental health, including public health and safety and HIV/AIDS in mining areas.

At last year's AGM in Ghana, a lively discussion developed with respect to where to go with CASM. It was felt that CASM should expand beyond its initial focus on the gathering, dissemination, transfer, and interchange of knowledge and experience, to also facilitating, designing, pioneering, and mobilizing for development in its focus areas. CASM needed to use the knowledge it was accumulating in order to guide governments and other stakeholders with respect to designing ASM programs, to pioneer in certain areas and to mobilize support and financing for various projects. However, CASM's expanded role would not include executing large ASM projects.

This expanded role for CASM is demonstrated in the new Nigeria Sustainable Management of Minerals Project. The Nigerian government, the World Bank, and CASM are cooperating to implement this 5-year program, which focuses on developing Nigeria's enabling environment, ASM, and private sector development, with respect to its minerals sector. The ASM component involves a comprehensive and integrated approach concerning the formalization of the legal regulatory framework to establish the legal rights and obligations of the various players, the establishment of an environmental framework, micro-finance and matching grant schemes to allow ASM to access finance, new marketing arrangements with respect to the various minerals in the country, capacity building at both the government and community level, and extension services to transfer business, environmental management, and operation skills. The project will be implemented in selected pilot areas.

The real challenge will be to create a shift in the role and perception of the various stakeholders. For the government, it involves a shift from owner/operator to regulator, and from a policing function to an enabling/facilitating function. For the small-scale miner the shift is from being an illegal miner and outsider, to a participant in the regulatory framework, with all of the associated obligations. ASM marketing and commercial structures are usually opaque, non-market based, and rather exploitive, and the benefits fall into the hands of just a few. The project will introduce new market structures to open up the sector, and establish transparent market-based, fair, and equitable arrangements for sharing of rents. The project utilizes a community-based consultative process and will use base-line assessment studies to measure progress. Community development plans will be jointly developed with those communities and be implemented by multi-stakeholders, including NGOs, the private sector, and local, regional and central government levels. CASM will participate in the whole project, working as a third party to independently advise the government and the World Bank with project design and implementation, and monitoring the project. With government buy-in and a community-based approach, the goal of poverty reduction, sustainable communities and reduced environmental impact can be reached.

3.2 Gemstones: from Mine to Market

3.2.1 Legal, Fiscal, Institutional And Infrastructural Aspects Of The Gem Industry In Sri Lanka

Several Sri Lankan institutions concern themselves with the national gem industry: the National Gem and Jewellery Authority, which addresses promotion, development, and regulation of the gem and jewelry industry; the Export Development Board, which helps to promote the industry; and the Sri Lanka Gem and Jewelry Association, which is involved in private trade and trade promotion. More than 166,000 Sri Lankans are involved in the gem and jewelry industry; over thirty percent of these are in an unofficial capacity. **Professor P.G.R. Dharmaratne, Chairman of the Geological Survey and Mines Bureau**, outlined the ways in which these institutions, and miners themselves, regulate and manage the gem industry in Sri Lanka. Between 1980 and 1993, Thai nationals had exclusive rights for the export of rough gems. Since 1993, this inter-governmental agreement has been null. Only heat treatable rough gems may be exported. Generally, the import and export laws regarding gems are permissive; the import of pearls, rough gems, cut and polished gems, diamonds, synthetics, gold, silver, and all machinery or equipment used in gem processing is duty free. At the same time the above goods, with the exception of the tools and machinery, are exempt from value-added tax. Income from the supply of gems and the export of gems and jewelry is also tax-free.

To start a gem mine, one should have a 2/3 share in a piece of land, or lease land from a private party. The right to mine for a one-year term must be leased from the NGJA, which also holds gem land auctions for mining rights on crown lands or bodies of water. In 2003, there were 3702 licenses issued for gem mines, 255 for lapidaries, 2917 for gem dealers, and 486 blocks auctioned in the land auctions. Exploration licenses are not required. If land ownership is clear, the license can be obtained in 2-3 weeks. Generally, a mine may operate five pits, but up to ten are sometimes allowed. Several regulations apply to gem mining; women do not mine, and the law prohibits children under the age of 18 from being employed in mining. Apart from the US$ 10 licensing fee, the mine operator must also pay an approximately US$ 10 refundable security deposit for the restoration of the land. The deposit is only returned if the land is restored after use, and monies collected by the NGJA where operators have failed to restore the land are used in restoration projects elsewhere. Larger machinery (backhoes and bulldozers) is only allowed in special cases, and for this the fees are five and twenty-five times the usual amount, respectively. Large-scale, mechanized mining is prohibited. Licenses are renewed annually and renewal is subject to demonstrated adherence to laws and regulations. About twenty percent of mining is done illegally.

One percent of gem sale income is paid to the NGJA, and the remainder of the income is tax-free. The following scheme has evolved over the years, is not legislated, and varies somewhat from mine to mine. Roughly three percent is given to charity, twenty percent goes to the landowner, ten percent goes to the water pump owner, and the remaining amount is divided into shares based on the number of miners working in the mine. Each miner and shareholder receives a half share, while the mine manager receives a full share. In most cases, this means that the miner receives 2.5-3.5 percent of revenue from gem sales. An insurance scheme was launched in 1996 with mine operators contributing ten rupees (roughly US ten cents) per miner. It was abandoned two years later, as: claims amounted to less than 5% as compared to the subscription; mine operators complained about the extra cost; fatal accidents were extremely rare, occurring mostly in illegal mines; even minor accidents were rare; and mine operators generally attend to the needs of miners when necessary.

3.2.2 Supporting Development of the Gem Industry With Sound Geo-Scientific Information

Mr. Sarath Weerawarnakula, of the Geological Survey And Mines Bureau of Sri Lanka, reviewed the general geology of the island, specifically examining typical gem-bearing formations, and proceeded to discuss opportunities to find new gem deposits through the use of scientific knowledge. Nearly all gem-mining operations occur in secondary alluvial deposits, but occasionally primary deposits are accidentally found and are mined. Alluvial deposits generally consist of single sedimentation with single gem-bearing gravel layers, or multiple sedimentation with multiple gem-bearing gravel layers (usually only two layers). While basic aerial photo interpretation combined with auger sampling could serve as an accurate prospecting method, these deposits are most often found using traditional methods, such as using a steel rod to probe gravel beds. This reliance on traditional methods often leads to haphazard mining and unnecessary environmental damage.

Primary deposits are scattered throughout the highland complex, and are not systematically mined. Although accidentally found primary deposits can cause gem rushes, these deposits remain largely untouched. Mr. Weerawarnakula estimated that not even one percent of gemstones in Sri Lanka have yet been mined. He described the mineralization associated with different geological formations containing primary deposits, including mega lineaments, pegmatites, scarns, and contact metasomatic alterations. In primary deposits, which may run up to 1000 meters deep, only some shallow surface mining has been done. Deeper mining has not been attempted because the higher associated costs exceed the small-scale miner's capacity. The Geological Survey is working on detailed Gem Potential Maps of Sri Lanka based on 1:50,000 scale maps, which can provide the basis for a more scientific approach to prospecting primary gemstone deposits.

3.2.3 Ceylon Sapphire: The Way Forward – Export Growth Strategy for Gem and Jewellery

Although women may not be involved in mining in Sri Lanka, they are involved in commercial strategy, especially regarding the progress of gems from mine to market. **Mrs. Indira Malwatte of the Sri Lanka Export Development Board (EDB)** presented the export strategy for the gem and jewelry sector, which is one of Sri Lanka's key export sectors. The revenue from Sri Lanka's export of gems and jewelry has underperformed in comparison to Singapore, India, Hong Kong, and Thailand. Recent major cooperative initiatives in India and Thailand between the private and government sectors have succeeded in developing their resources, simplifying import and export procedures, and reforming policy. The underperformance of Sri Lanka's gem exports is due to poor utilization of its gem-bearing deposits, large exports of rough stones or geudas, a lack of financing options for gem traders, and the informal nature of much of the sector. Sri Lanka's poor jewelry export performance is due to the non-availability of cut & polished gemstones in sufficient quantities, insufficient financing to hold stocks, few modern skills in jewelry manufacture, and a lack of innovative designs.

The way forward for Sri Lanka is to focus on developing the Ceylon Sapphire, which is recognized internationally as a premium product. The private sector and the government must be united to spearhead a plan that develops the image of Sri Lanka as the trading and production hub for sapphires, focuses the gem and jewelry industry on sapphire production specifically, and ensures maximum value addition to local raw materials by avoiding the export of gems and promoting jewelry exports. To create the sapphire hub, several areas must be developed: the raw

material base, international quality certification, world class training, support services, and specialized financing. Environmentally friendly, semi-mechanized mining should be developed to increase production in appropriate areas. An in-depth joint National Gem Deposit Survey should be undertaken by the Geological Survey's Mine Bureau, the National Gem and Jewellery Authority, the Gem and Jewellery Research and Training Institute, and the University of Moratuwa. With regard to international quality certification, a certified gem-testing laboratory with a qualified gemologist as its head must be established, and the present Assay Office must be accredited with the appropriate international body. Support services should include trade facilitation, refining, and packaging. Domestic banks need to be extended technical expertise so that they can provide specialized financing. Banking in Sri Lanka does not currently enable small and medium enterprises to hold stocks of inventory, denying them the opportunity to heat treat, cut, polish, and grade their stones, and then export a finer product. By implementing this plan, Sri Lanka could improve local employment and industry, while dramatically increasing the earning power of its gem and jewelry exports.

3.2.4 Care to be Taken in Sri Lankan Gem Industry from Mine to Market

In Sri Lanka, **Tilak Dharmaratne, Director of the Gem and Jewellery Research and Training Institute** explained, the gem industry is in the hands of traditional workmen and trades people, who are often not prepared to change their ways. They frequently make simple mistakes that result in enormous damage to the potential value of the gems. During prospecting, miners use a traditional technique of probing the deposit with iron rods, and the heavy force applied with this method may damage gemstones. Sometimes inadequate care is taken with timbering the mines, as was demonstrated in a resent collapse that killed two miners. Underground, miners often use candles or kerosene lamps for illumination and to identify toxic gases. However, these can increase carbon monoxide levels in the mines, leading to health problems, and may provide inadequate illumination for some gem varieties. Battery powered lamps have been recommended to the miners. Miners wear no protective clothing underground and can get tired due to excessive sweating; a simple light suit could mitigate this problem. Inexpert prospecting also leads to the frequent digging of barren holes, which are then abandoned, potentially causing landslides and collecting stagnant water, which breeds mosquitoes and increases the risk of malaria. Sri Lanka's gem potential must be thoroughly mapped to mitigate this problem, but this has been hampered by inadequate funds and equipment.

During ore washing, miners often throw away rare gem varieties, because they are unaware of their value. When heat treating stones, errors are often made due to the mistaken identification of similar stones. During polishing, stones may be placed asymmetrically in softened wax, leading to poor results. Mistakes may also be made during cutting or selecting the direction of best color. When gems are being set, stones are often not properly fit for the findings, and the girdles are not properly polished, are not uniform, or are damaged. Propagation should be right for crown to pavilion. While storing or transporting gems, different varieties are carried together and are tightly wrapped with rubber bands, damaging the softer stones. Inappropriate cleaning methods for different gem varieties are sometimes used which can damage or destroy stones. During gem testing, the use of primitive methods leads to trouble differentiating between stones. These problems and suggested solutions must be conveyed to the industry, beginning a chain reaction that ultimately raises the standards of Sri Lankan products and services.

3.2.5 Socio-Economic Aspects of Artisanal Gemstone Mining

For over two thousand years, Sri Lanka has been producing precious and semi-precious gemstones, including sapphires, rubies, cat's eyes, topaz, beryl, garnet, moonstone, tourmaline, and feldspar. While these gemstones have been found irregularly through several regions of the country, principal gemfields are concentrated in the Ratnapura District. **Prof. J. Katupotta of the University of Sri Jayawardenapura**, explained the socio-economic history of Sri Lankan artisanal gemstone mining. People involved in a mine include the landowner, the suppliers of wood for timbering, water pump, and fuel, the boss or manager, brokers, and at least eight miners who work in the pit and receive a small weekly allowance. The miners may also receive a small bonus when they find a valuable gem. Skilled miners often work in mines belonging to rich and powerful businesspeople, and are themselves very poor. The mine manager or boss is a highly experienced miner, who may have over thirty years' experience and be over sixty years old. Before a new pit is opened, all partners traditionally engage in religious and ritual activities. These activities also precede washing operations. All the instruments miners use are basic, low-cost items made locally.

Before the State Gem Corporation (SGC) was established in 1972, skilled traditional artisans executed all stages of gem production from mine to market. Ninety percent of these were also farmers, and were often less knowledgeable than the buyers of their product in the value of gemstones. For this reason, they were often at a disadvantage when selling their product. Since the establishment of the SGC, the quality of gem exports has increased, but the miners' standard of living has not. When six years later, in 1978, the open economic policy was introduced, private traders in the gem business appear to have reduced their connection with the SGC and tended to carry out business separately. Interestingly, private sector exports have always exceeded those of the SGC. While opportunities for smuggling were greater before the SGC, smugglers have become increasingly creative and well-organized in the past twenty-five years. Another trend in the gem industry has been the development of the Thai-Sri Lankan gem trade. With the influx of Thai traders, a new class of young intermediaries emerged, who bought gems from miners and then resold them to the Thai traders. This new class had mostly been miners themselves, and they were now becoming significantly wealthier, and able to buy modern homes and new vehicles. As many powerful families in the private sector have reaped economic and social benefits from the gem trade, while miners remain poor and disenfranchised, there is today an illegal operation of gemming activity that is backed by powerful interests. This has a devastating effect on the environment, including vegetation, fauna, and bodies of water, both in terms of water pollution and the alteration of streams and riverbanks. Public awareness must be raised to address these problems, through rural level societies, youth groups, schools, and greater in-depth research. Through this work, the situation of poorer small-scale gem miners can be improved.

3.2.6 Gem Mining Related Environmental Problems in Sri Lanka

Some 500,000 Sri Lankan families depend financially upon the gem industry, with each mine employing an average fifty people. **Rohana Chandrajith of the University of Peradeniya** spoke about environmental and social problems associated with the industry. Gemstones represent 90% of Sri Lanka's mineral exports. Employees receive a weekly allowance and may also get a negligible share of profits from the recovery of large stones. Gem deposits lie in a geologically narrow zone, and gem-bearing gravels are obtained from eluvial, alluvial, and

residual formations. Pit and tunnel methods are common in all Sri Lankan gem fields. Gems are also dredged from riverbeds. Most of the labor involved in the gem industry is from low-income groups; however, they contribute to nearly 60% of the total income from mineral exploitation in Sri Lanka.

Gem mining affects the lithosphere, hydrosphere, atmosphere, biosphere, and sociosphere. These effects include soil erosion, undermining river banks, sedimentation, flooding, landslides, water pollution, ground water depletion, removal of vegetation, damage to wild fauna and flora, health problems, the spread of malaria, the reduction of potential agricultural land, and sociological problems. There is a general lack of awareness of environmental issues among miners and local communities. No legal support exists to mitigate the negative effects of mining. Monitoring systems are lacking, as are sustained environmental impact assessments. Business profitability and economic benefits are a greater concern than problems associated with the mining industry, and there is a weakness in government coordination and enforcement of environmental protection. Finally, NGO assistance or involvement is rare. Proper management, care, and monitoring must be maintained through the participation of the local community, particularly to persuade gem miners to minimize their environmental impact.

3.2.7 Principles of Valuation

Of all tangible objects, gems are perhaps the most difficult to value, argued **Mr. Sheriff Rahuman, Gemologist and Former President of Gem and Jewellery Association.** Their value changes from moment to moment, and at best is the perception of the expert jeweler. Nevertheless, it is possible to work within certain guidelines, and the main principles of valuation can be divided into several factors. First are the intrinsic qualities, or the aspects that cannot be modified by altering the gem, which include attractiveness, fashion, durability, and rarity. The predominance of any one of these factors can be outweighed by the influence of the other factors. The attractiveness of a gem can depend on various qualities, including its color, brilliance, optical effects, and shape. Reds, blues, and greens are considered the most desirable colors. Color has to be brought out by brilliance, another inherent quality of the stone that adds to its attractiveness. Optical effects, like star sapphires and cat's eyes, are intrinsic to the gem and may add to a stone's attractiveness. A gem's shape and the potential for an attractive cut may increase value. Valuation experts therefore must be aware of the new and different cuts that are popular on the international market. Fashion also dictates the value of stones. For instance, black jewelry is not currently popular, but in the late 19^{th} and early 20^{th} centuries was worn as mourning jewelry and hence was in demand. Durability is important, and the big four gems (rubies, blue sapphires, emeralds, and alexandrites) are all hard stones. Size also influences the price of gems, and being either too small or too large may be a disadvantage.

Human factors include the gem's cut, the issue of synthetic gems, and various gem treatments. Cut is critical: a gem should not be lopsided, its outline should be regular, and it should be cut to proper proportions in keeping with its refractive index. While a gem's intrinsic factors may be of the highest order, a poor cut may destroy its value. Synthetic gems cause great disturbances, and when new synthetic gems are brought on the market, the market almost stops until it is determined whether science can distinguish the natural from the synthetic. If it can, then the price for natural gems regains momentum. New gem treatments cause similar upheavals to markets, as happened with the oiling of emeralds in Brazil. Fortunately for Sri Lanka, blue

sapphires have not been subject to any treatments other than traditional heat treatments and thus have a reputation for being unsullied by artificial treatments. The market also reacts to supply and demand, marketing, and the stability of prices. While absolute price lists are impossible, every gem dealer must have a pricing structure in his mind. The prices of the big four colored stones have remained quite stable over the past two or three hundred years, and except for human intervention, the supply and demand situation has not significantly disturbed the price of gems. In fact, the big four can be linked to the inflation index. Thus, while gems in general are extremely difficult to value, and each gem is unique, the main commercial gems have sustained their value.

3.2.8 Heat Treatment to Enhance the Color of Gems

Mr. Sarath Munesinghe of Radiant Gems International, Ltd., spoke on the basic aspects of heat treatment for colored gems, focusing on methods rooted in Sri Lankan tradition. Heat treatment has been established in Sri Lanka for at least one hundred years. The first stones to be heat treated were rubies, employing a simple process still used today. To prevent the ruby from cracking, local heat treaters coat it with lime and place it on coconut charcoal, and then gradually and gently heat it by blowing on it for days. Teams of men work together, using traditional blowpipes, to ensure steady and even heating, with generally excellent results. Even at the relatively low temperature of 870 to 1000 degrees Celsius, bluish hues will reliably disappear from rubies and pink sapphires.

Sapphires and rubies are made of corundum, or aluminum oxide. The color in the stones comes from iron, chromium, and oxygen, and various combinations of these can be influenced by heat treatment. Heat treating can take place in an oxidizing or reducing environment. Each condition is better suited to certain stones, and using the wrong method may ruin a gem. In the case of all heat treatments, stones must be slowly heated to 500 degrees Celsius, or they will crack from the heat. Once this temperature is attained, the stones must be further heated to between 1500 and 1800 degrees, depending on their composition. Similarly, stones may be quickly cooled to 500 degrees, but from that point on the cooling process must be gradual to allow the iron atoms to stabilize in the gems' crystal matrix. Blue sapphires, which must be treated in reducing conditions, may be heated to remove rutile needles or dust imbedded in the stone. The heat causes the iron and titanium oxide that make up the rutile to better disperse within the corundum matrix. If sapphires are immediately heated to a high temperature without checking them first, it becomes impossible to differentiate between blue and yellow sapphires, which require different treatment conditions. It therefore benefits treaters to heat them only to 1500 degrees and check them before heating them further.

Caution is required when creating reducing conditions with a gas or oil oven, as a balance must be struck between supplying adequate oxygen for fuel, while preventing excess oxygen from polluting the reducing atmosphere. The oxidizing method, which is used to treat rubies and yellow sapphires, is much easier, as temperatures can be achieved more quickly, and without concern about limiting oxygen. Barium, the use of which must be disclosed, may be used to enhance the color of rubies, but creates a highly toxic vapor. Small amounts of aluminum dust may be added to prevent cracking, but all the elements that are required for the color are already in the stones. It is a great source of pride for Sri Lanka to possess the knowledge to successfully

bring out the beauty in a wide variety of stones, and to produce high quality sapphires and other stones using largely traditional methods.

3.2.9 Lapidary and Business Presentation

As most people know, there are four Cs to consider in evaluating a gemstone – clarity, carat, color, and cut. With expert cutting, a stone's value can increase. A good cutter can remove impurities, maximize the stone's carat, and orient the stone to best highlight its color. **Mr. Anura Wijemanne of Pala Gem and Mineral, Ltd.**, explained the history and current nature of Sri Lankan gem cutting. Historically, the art of gem cutting was traditional knowledge, passed on through generations, and most cutters lived in the Ratnapura area. The advantage of these cutters lay in the local availability of an unusually large variety of stones, so that diversified experience developed and could be shared. Gem cutting in the past has been a cottage industry, with one or two cutters in each home. But to develop a large scale cutting industry, a huge stock of material must be available. A perfect example is the large find of white topaz in the 1980s, which met a high demand in the USA, where making it blue increased its value. This gave Sri Lankan cutters the opportunity to develop skills in cutting calibrated stones. Modern machinery has enabled the industry to further advance its skills. While imported cutting machinery originally gave cutters the chance to perfect their work, the machinery that is used today is domestically produced at about twenty-five percent of the international price.

There are 300 registered lapidaries in Sri Lanka, with facilities that employ anywhere from ten to five hundred people. In addition to their own cutting, larger factories also do service cutting, receiving rough material from other countries. If cutting is of a world-class standard, and yields are good, service cutting may become one of the major export earners for Sri Lanka. The government has helped to improve the trade in cut gemstones, by recently allowing any kind of rough stone to be brought to Sri Lanka by any dealers to be cut, without any duty or customs delays. Duty free imports for all gem cutting accessories are also allowed, and have been beneficial. The government is further assisting by encouraging foreign investment in joint ventures. Banks are also helping, with a new scheme for small and medium scale heat treaters and lapidaries to receive bond facilities at a very low interest rate, without requiring collateral. To improve gem cutting standards, two different syllabuses have been introduced at the Gem and Jewellery Research and Training Institute, at the beginner and advanced training levels. An apprenticeship program further helps graduates in joining the workforce.

In 2002, a handful of lapidary organizations joined together under the Gem and Jewellery Association, along with gem traders and jewelry manufacturers. The Association lobbies government, organizes seminars and competitions, and promotes domestic gem and jewelry value addition. By working together with private industry and government, the Gem and Jewellery Association hopes to greatly advance the Sri Lankan gem cutting industry.

3.3 Other Countries' Gemstone Experiences

3.3.1 Changing the Operation Climate in Madagascar Mining Sector

After providing a quick overview of Madagascar, **Mr. Olivier Razafimandimby of the Government of Madagascar**, explained that mining contributed 5% of the nation's GDP, up from 3% in 1988. Prior to 1988, Madagascar's policy and legal framework were not attractive

for potential investors, its mining lease grants were not transparent, and governance in the mining sector had problems. Since then, much work has been undertaken to render the mining sector fully transparent, promote large scale mining investment, eliminate smuggling within the gemstone sector, and increase the value-added contribution of the mining sector. In 1999 a new mining code was released, giving all investors the same standing, and simplifying licensing procedures. In addition, labor standards, environmental protection measures, and improved socio-economic programs were included. The Madagascar Mining Cadastre Office was established, with a "first-come-first-served" computerized management system for mining leases. The system is internet linked, allowing anyone in the world to see what sites are available. Exclusive, temporary exploration permits are now available locally, with only higher level mining activities being centrally managed.

Prior to reforms, less than 10% of the value of the production of gemstones was officially known, high quality gemstones were exported through the black market, and 98% of stones were exported rough. Mining areas had the character of a permanent gemstone rush, much of the trade was controlled by intermediates, both local and expatriate, and legal export procedures took too long. Reform efforts reorganized the sector by giving more responsibility to local communities and authorities to manage the gemstone rush effects and by the establishment of the Institute of Gemology of Madagascar. New administration offices were located in the areas with the highest concentration of mining, and capacity building was undertaken to provide local communities and authorities the skills to manage the new legal framework and arising social and environmental issues. The illegal artisanal miners were formalized and training booklets for small scale miners were published in French and Malagasy.

The Institute of Gemology was established to provide world-standard instruction to Malagasy gemologists in stone buying and selling, banking, appraisal and consulting. The institute will also strengthen capacity in lapidary arts to enhance value addition and attract buyers for cut and polished stones. A gemological laboratory will pursue research and issue internationally recognized certificates for gemstones. In collaboration with USAID, a buying center will be established to allow small-scale miners to sell stones at better prices while providing a secure location. A "one-stop shop" will allow exporters to pay the government directly, with no extra tax for gemstones. Geological and air geophysical surveys have been implemented to update current cartographic information and develop a capacity to teledetect mining potential. Finally, all of the information collected will be stored in a computerized database, with a local server where all people in the mining sector can access the information.

3.3.2 The Gemstone Sector of Namibia and the Sysmin Experience

After offering a brief profile of Namibia, **Mr. Veston Malango of Ongopolo Mining & Processing Ltd** introduced the importance of its gemstones and small-scale mining sector. There are approximately two thousand Namibian small-scale miners, although the number is hard to verify, mining a wide variety of stones. Most important are diamonds, followed by tourmalines and to a lesser extent garnets and topaz. Namibia's mineral resources are vested in the state, but security of tenure is guaranteed and mineral rights are protected. Namibia's new minerals policy, enacted in 2003, committed the government to promoting small-scale mining activities and providing loans to viable small-scale mining projects.

In 1993, an EU Sysmin agreement provided 40 million ECUs for loans and grants to a portfolio of projects including a N$ 20 million grant (US$ 3.1 million) for ten "Support for Small-Scale Mining" projects, eight of which subsequently failed. Under the Sysmin grant, small miners were brought together under the Small Miners' Association of Namibia (SMAN). In addition, a loose organization called Small Miners' Assistance Centre (SMAC) was created to provide technical services to SMAN members; however, this arrangement failed because organizational sustainability was not addressed. SMAC was later changed into the Namibian Small Miners' Assistance Centre (NSMAC), with more attention paid to ensuring its organizational continuity.

In 1996, the Government established the revolving Minerals Development Fund (MDF) to use the remaining Sysmin funds and additional support from NSMAC, the Directorate of Mines, and the Geological Survey. The MDF includes a small-scale mining representative on its board. As of 2004, it had loaned roughly N$ 92 million (US$ 14.3 million), and granted N$ 9 million (US$ 1.4 million). Loans have a generous repayment period and low interest rates, and the repayment rate is 92%, compared to a rate of 80% for Sysmin. The higher rates of failure with the Sysmin loans are attributed to a lack of manpower, greater bureaucracy, and slower decision-making capabilities due to being located in Brussels. Despite the MDF success in loaning to small-scale mining, the only two gemstone projects failed, due to the difficulty in proving the economic viability of a tourmaline deposit. Future policy challenges include determining how best to fund NSMAC and how to provide effective financing to gemstone miners. The Namibian gemstone market needs to be better organized, with buying centers established and import/export regulations and taxes simplified, enabling small-scale miners to receive a fair price. Towards this end, Ongopolo's Tsumeb Specimen Mining group is working with miners to improve the marketing of their products.

3.3.3 The Gem and Jewelry Industry in Thailand: History and Experience

Gems and precious metals have been used to create artifacts and ornaments amongst Thais for centuries, explained **Wilawan Atichat of the Gem and Jewelry Institute of Thailand.** Thailand has long been recognized as the world's foremost colored stone center, as well as for craftsmanship in heat treatment and cutting and polishing of gems. Over the last 30 years, Thailand has moved from primitive gem mining to more mechanized gem mining, including small, medium and large scale operations. The progression to more mechanized mines has led to better safety records and the government now requires that environmental reclamation of mining areas is undertaken to prevent landslides or damage to drainage systems.

Following a sharp drop in gem and jewelry export growth in 1997, the Ministry of Commerce, the Ministry of Industry, Chulalongkorn University and the Thai Gem & Jewelry Traders Association established the Gem and Jewelry Institute of Thailand (GIT) in 1999. The GIT's Mission was to boost the gem and jewelry industry, to ensure customers' confidence in Thai products, and to develop, promote and support the gem and jewelry industry. GIT's facilities include a sophisticated laboratory to analyze and assess gems to ensure compliance with international standards, and a precious metal laboratory. The GIT undertakes research in gemstone color communication, determining the geographic origin of stones, determining the authenticity of diamond colors, grading rubies and sapphires, marketing, determining indications of heating, heat treatment methods, and setting gem cutting standards and quality controls. The GIT also works to develop human resources through providing courses, and its information

center includes a gem and jewelry database, library and museum. Since its founding, the GIT has contributed to increased export revenue, including gaining market share in Japan. It has also participated in a number of international gem committees and conferences and has received international registration for its laboratory. The success of the GIT is due to the strong technical background of its staff, its status as an unbiased organization, its strong research and information based approach, and its modern equipment.

The government has recently exempted gold and gemstones from the value added tax, in an effort to make Thailand a one-stop shopping center and build a larger trading base. The present and future success of the industry are based on gem mining providing an ample supply of raw stones, fine craftsmanship, reasonable labor costs, attractive investment incentives, modern gem cutting and jewelry design, close government/private sector cooperation, the success of the GIT, and promotional activities, such as the Bangkok Gem Fair and the Bangkok Fashion City Project.

4.0 WEDNESDAY OCTOBER 13TH

4.1 Fair Trade and Certification

4.1.1 The Oro Verde Experience in Colombia, S.A.

The Choco region in Colombia is well known for its biological and cultural diversity. Gold and platinum have a history of importance for the local economy; however, informal and mechanized mining have come at a cost. Deforestation and erosion have caused the loss of biodiversity and the destruction of waterways. Mercury and oils pollute the water, air and land, poison local communities and lead to the loss of agricultural land, unemployment, food insecurity, and public health problems. **Ms. Catalina Cock of Oro Verde** outlined a model that promotes environmentally and socially responsible practices on behalf of artisanal miners through a strict system of certification developed with the local communities in response to the local situation.

Oro Verde's certification includes the following criteria: no large-scale ecological destruction can take place that cannot later be repaired; toxic chemicals such as mercury or cyanide should not be used; areas mined should obtain ecological stability within three years; any organic layer of soil removed should be re-established; levels of sterile soil and the shafts produced must not exceed the carrying capacity of the local ecosystem; sediments reaching the streams, rivers and lakes should not damage the native aquatic ecosystem; any mining activities should have the consent of the Community Council; biodiversity indicators of the ecosystems that are affected should be established and monitored throughout the mining process; the statement of origin of the gold produced should include the name of the corresponding municipality; in forested areas no more than 10 percent of any one hectare should be worked in any two years; and miners must comply with local, regional and national institutions' laws and regulations.

The Oro Verde Corporation (Green Gold), is a cooperation between two local community organizations, a local NGO and the Fundación Amigos del Chocó (AMICHOCO). Local organizations handle the community work, education and training, mining operations and mine reclamation. AMICHOCO provides networking, marketing, gold transformation, commercialization, and the promotion of analogue forestry. To date, 90 units have been organized and certified as green miners. Miners are paid a premium for their certified gold.

Challenges for Oro Verde include the difficulty in replicating the initiative in non-gold mining industries, as well as other communities, consolidating international markets for certified products, strengthening the credibility and recognition of the certification system, and developing appropriate legal frameworks for mining communities. Oro Verde is part of the Association for Responsible Mining (ARM), an international strategic alliance seeking to establish itself as a world authority in the establishment of criteria for and certification of socially just, economically equitable and environmentally responsible mining. With the cooperation of ARM and other organizations, Oro Verde's success can be replicated in other contexts around the world.

4.1.2 An Integrated Diamond Management Scheme in Sierra Leone

Although diamond exports account for twenty percent of Sierra Leone's GDP, the diamond industry since the 1930s has not transferred much of its wealth to local mining communities or the laborers it employs. While Sierra Leonean diamonds did not cause the nation's recent civil war, they prolonged and financed it. As **Dr. T. Alpha-Kpetewama, Executive Chairman of Peace Diamond Alliance**, explained, his organization strives to convert diamonds from a source of conflict and civil strife to one of peace, economic growth and development. PDA is a non-profit association of private and public organizations, working to ensure that the Sierra Leonean diamond industry promotes peace and economic development, becoming fairer and more transparent. Internationally, USAID, MSI, and DfID mainly support the PDA. The PDA's proposed Integrated Diamond Management Proposal (IDMP) is composed of three key elements: a financing scheme to provide credit to cooperatives so they can sell their winnings at the highest possible prices, a buying scheme enabling diggers and miners to receive top prices from reputable buyers, and an Earth to Export scheme to track diamonds from extraction until they are delivered overseas. In 2001 the government launched the Diamond Area Communities Development Fund (DACDF), whereby 25% of diamond export taxes are sent to diamond mining communities. This funding has resulted in plans to implement diverse community development projects including health centers, road construction, and community centers.

The PDA is working to train local miners to evaluate their winnings and increase earnings. The World Bank recently awarded a grant to the PDA to strengthen implementation and management capacities. The PDA has also introduced a self-regulating Code of Conduct to govern areas of transparency and accountability, the environment, and child labor. The alliance still faces numerous challenges, including: obtaining full community support, accurately reflecting the community, ensuring gender sensitivity, widening the coverage and content of training, monitoring the use of DACDF to ensure maximum benefits, securing badly needed funding for IDMP, ensuring members honor pledges, and continuing work on alternative livelihoods. Despite these challenges, the PDA is confident that through its initiatives Sierra Leone's diamond resources can come to be known as "development diamonds."

4.1.3 Development Challenges of Ensuring Integrity in Supply And Demand For Certified Stones

Mining of gold and precious stones is often characterized by high social and environmental costs. People buying jewelry today cannot be sure that their purchase did not contribute to these costs. **Thomas Siepelmeyer, of Fair Trade in Gems and Jewelry Ltd. (FTGJ)**, explained that his organization is an initiative of geologists, mining engineers, gem cutters, and marketing

experts to engage in fair trade and business dealings to market precious metals, gems and jewelry from small-scale miners. FTGJ acquires diamonds from Lesotho, rubies from Madagascar, sapphires from Tanzania, silver from Bolivia, and gold from Argentina. In addition, FTGJ provides consulting services. Diamonds and colored gemstones are cut in India by organizations that comply with the ILO standards for cutting facilities. The gold is mined through placer deposits and mercury-free gravity methods are used to recover gold. Silver is purchased from a refinery that acquires it from small-scale miners who rework old mine tailings. Partners include Projekt-Consult, the International Union of Chemical, Energy, and Mine Workers (ICEM), EcoAndina, an environmental group in Argentina, and Fatal Transactions, which organizes the fight against war diamonds. Quaker International has provided microfinancing to miners, and a professional organization of German goldsmiths and silversmiths has adopted a policy of using green and fair gold, encouraging members to purchase products from FTGJ.

By using the principles of fair trade, small-scale producers in developing countries are given the opportunity of trading their products under better selling terms and conditions. Eligible producers must be legal and organized in the form of a cooperative, association, or small-scale company. Their approach to mining has to demonstrate a responsible attitude toward the environment and a social conscience with a commitment to ILO and other international conventions, including preventing child labor.

To assist with marketing, the 5C trademark was created, with the 5th C representing conflict-free, child labor-free, and corruption-free diamonds mined and processed under clean social, environmental and working conditions. While FTGJ does sell some jewelry, including internet sales, most of their products are sold directly to gold- and silversmiths, who work closely with their own customers. Challenges facing FTGJ include customers' concern that fair trade goods are not the same quality as mainstream items or that they are too expensive. These are overcome by selling products directly to established jewelers to ensure quality and by purchasing directly from producers to keep prices reasonable.

4.1.4 Design and Implementation Challenges in Colombia and the Potential for Sri Lanka

Mining, be it done by small or large miners, is not a sustainable endeavor, argued **Dr. Ranil Senanayake of Rainforest Rescue International**. However, it is an essential activity for civilization and thus must be carried out in a responsible way. The Oro Verde Certification project in the Choco region, Colombia, (see the associated presentation in section 4.1.1) was focused on ensuring fair treatment for small miners and securing the environment. Certified green gold is environmentally and socially friendly and completely free of any contact with toxins. As a large part of the gold market is for items such as wedding bands, purity is marketable.

Protecting the high biological and cultural diversity of the Choco region through a certification program required that a wide range of criteria be met, covering ecological, health and social factors. After reviewing the criteria, which included mining techniques, to environmental and social responsibilities, Dr. Senanayake described indicators used to measure compliance. Indicators were developed in cooperation with the local communities, and biodiversity indicators were based on science but designed to be recognizable and meaningful to the local communities.

The project started in 1999, and has gradually built capacity. Challenges included the difficulty of maintaining an audit trail at the gold refining level, and the applicability of existing scientific information and techniques to the field. To overcome these challenges, new refiners who work with small quantities of gold were found and the regional scientific investigators were better trained to work with the communities.

Certification efforts have proven workable in the Choco region, and the Association for Responsible Mining (ARM) was organized to extend certification to other areas and minerals. ARM has agreed that Sri Lanka, due to its ancient history of gemstone mining cooperatives and its rigid code of behavior and reclamation, is an excellent location to look to extend certification. Additionally, Sri Lanka's mineral sands represent an opportunity to develop new methods for small-scale mining, instead of inviting a large international firm to exploit these deposits. To conclude, Dr. Senanayake urged CASM to initiate and develop small processes for local people and a new approach to technologies to help small miners.

4.2 Lessons Learned: Gender and Child Labor in ASM

4.2.1 The ILO-IPEC Effort to Eliminate Child Labour

One to two million children work in artisanal and small-scale mining, estimated **Dr. Michael Priester of Projekt-Consult**, reporting the results of his study for the ILO. Both boys and girls work in mining and can start as early as 3 years of age. Boys work predominantly in exploitation and transport, and girls usually work in mineral concentration and mining related services. Child labor in mines comes in many forms. In the case of bonded child labor, children are given away to work off a parental debt. In other cases children are self-employed, often orphaned by war or disease, and are working to survive. Many children work within a family context, contributing materially to the family's livelihood and encouraged by the family, as they are perceived to be learning work skills. Children do a wide variety of jobs in mining, from ore extraction and transportation, to washing sediment, burning amalgam, and performing support tasks, such as brick-making, hauling water, and cooking, in the mining area. Mining is always hard and dangerous work for children, who are exposed to a myriad of dangers, from slight bruises to fatal accidents, from pain to skeletal disorders. The mining activities are often illegal and unsecured, and usually occur in rural areas with little social infrastructure and under harsh living conditions. Labor arrangements are mostly unfair and education and social development are neglected. For all these reasons, mine work is a material breach of children's rights; it is recommended that children not be allowed to work in mining under any circumstances.

A review of ILO projects involving mining and child labor demonstrated that families generally favor alternatives to involving their children in mining. Where schools and childcare facilities are made available, the effort to end child labor in mining has been successful. Initiatives made by target groups themselves, such as the auto-financing of childcare services and adolescent peer coaching in Nepal, are particularly promising. There are still many challenges ahead, including a lack of methodology for baseline studies; the need for more skills in addressing child labor; the greater involvement of stakeholders in developing appropriate tools and measures; raising awareness, creating ownership, and empowering communities; sustaining the positive impacts of projects; and meeting the high demand for family income. Child labor issues need to be

integrated both vertically and horizontally in the development framework, in mining and rural development projects where ASM occurs.

4.2.2 Gender in Artisanal and Small Mines: An Overview

Women are present in large numbers in small-scale mining throughout Africa, Latin America and the Asia-Pacific, and often bear the brunt of its negative impacts. **Dr. Kuntala Lahiri-Dutt of the Australian National University** discussed the role of gender in ASM. Gender arrangements transform biological differences and sexuality into power relations and human agency. Gender refers to the social differences and relations between girls and boys, women and men. These are learned, vary widely within and between cultures, and change over time. Despite the general conception of mining as a masculine job, the involvement of women in small-scale mining specifically is generally high and is increasing.

The percentage of women involved in small-scale mining varies widely by region, but overall is estimated at 30%. Women's work in ASM is often informal, with little decision-making power, low status and income, less job security and more social and economic constraints than that of men. Women tend to do more manual work, as machines are often considered part of the male domain. Typical work includes crushing, grinding, sieving, washing and panning, carrying and amalgamation. All of the usual difficulties of ASM are borne by both men and women, but women frequently have additional under-recognized burdens. For example, a Tanzanian report highlights that mining is a demanding physical activity for women but downplays the fact that women need consent from husbands to apply for loans. Gender barriers prevent women from accessing the full benefits of ASM. These include inequities in political power and access to resources (capital, information, education and training), the lack of basic human rights, the presence of socio-cultural constraints, the absence of women in public office, and a lack of recognition of ASM as an activity contributing to poverty alleviation. Gender inequalities are more pervasive than other forms of discrimination, cut across other forms of inequality, and are often more severe among poor.

The Millennium Development Goals (MDG) recognize a collective responsibility for halving world poverty by 2015 and make an explicit commitment to gender equality as an end in itself. Toward this goal, ASM should be acknowledged as a major livelihood activity, capable of reducing poverty, in addition to recognizing the important roles of women in ASM. To put gender onto the mainstream mining and development agenda, the visibility of women's work must be improved by undertaking gender audits of mining projects. Conventional models of the household must be challenged. Analysis and research must move to gender-aware from gender-blind to create synergies and trade-offs, by introducing gender inequality as a variable. ASM economies need to be reconceptualized, using micro-level measures and participatory approaches that include changing and creating institutional frameworks and participatory poverty assessments with women. While there is no universal approach, a gendered view will be a critical instrument in highlighting the contribution of ASM, in using its potential as a tool for poverty reduction, and in creating sustainable livelihoods for local communities.

4.3 ASM in Asia

4.3.1 Traditional Artisanal Gold Mining Among the Kankana-ey and Their Current Concerns

The Kankana-ey of the Philippines are traditional small-scale miners, in contrast to some other indigenous groups which have more recently become active in ASM. As **Dr. Evelyn Caballero** of **Ateneo De Manila University** explained, many indigenous small-scale miners in the Philippines have a subsistence-based socioeconomic cultural tradition of mining, which in the case of the Kankana-ey extends back 800 years. Mining methods used by the Kankana-ey in the present day were recorded by Spanish explorers in the seventeenth century, and Chinese records of Philippine gold production date from as early as the thirteenth century. While the Kankana-ey believe that their god and their ancestor spirits own their resources, the community's elders manage those resources and are responsible for resolving conflicts regarding mining.

Both placer and lode mining are cooperative family work, and both men and women are active in mining. Some tasks, such as gold processing, are women's work; women are also responsible for health, education, and other community welfare decisions. The Kankana-ey women use milling and gravity methods to separate gold from ore, in contrast to gold rush miners who employ mercury. The Kankana-ey also place great emphasis on recycling virtually all their liquid and solid byproducts. In addition, the rituals and traditions surrounding mining among the Kankana-ey are complex and focus on sustainable, responsible mining.

The Kankana-ey have a number of concerns regarding their current mining situation. Due to the expansion of large commercial mining, the area available to them has been reduced. Additionally, the development of the Acupan Contract Mining Program, whereby mining corporations contract work to small-scale miners, has resulted in an influx of non-traditional miners from other regions. The Kankana-ey subsequently feel marginalized. They are also concerned about environmental degradation from large-scale mining, but fear that accountability is lost through the contracting system. The increased presence of cyanide in the area has resulted in concern over water pollution. The degradation of traditional values and methods also worry the Kankana-ey, but they maintain that their tradition is still strong and is generally still being followed. Perhaps with new realizations on their part, and the assistance of the outside world for increased resources and capabilities relevant to their culture, the traditions and techniques of the Kankana-ey can be saved from further degradation.

4.3.2 The Formalization of the Artisanal and Small Scale Mining Sector of the Philippines

There are 200,000 Filipino artisanal and small-scale gold miners, with an additional 100,000 miners involved in industrial mineral production. These miners support one in every 75 Filipinos and most (80%) are subsistence miners. ASM produces almost all of the country's industrial mineral output, and up to 80% of its gold. **Mr. Edmund Bugnosen** illustrated the current concerns and issues of ASM in the Philippines, and introduced its formalization.

There are numerous environmental, economic, welfare and social concerns surrounding ASM in the Philippines. Formalization helps to address these issues, through legalization, the provision of institutional and administrative support and decentralized management and issuance of permits and licenses. Many laws directly apply to ASM in the Philippines, including: PD 1150 – Gold panning and sluicing permits; PD 1899 – Development of small mineral deposits (SSM

permits); RA 7076 – Identification and segregation of peoples SSM mining areas (SSM mineral production sharing contracts); and AO No.97-30 – Small-scale mine safety rules. A number of permits are available specifically for small-scale miners, including the Gemstone Gathering Permit, the Gold Panning and Sluicing Permit, Commercial and Gratuitous Guano Extraction Permits, Commercial and Industrial Sand and Gravel Permits, and Small-Scale Mining Permits and Contracts. These permits range in duration from three months to two years, are renewable, and require that miners follow certain regulations, including limited production quantities, non-mechanized and explosive-free methods, and the exclusion of child labor.

The Provincial Mining Regulatory Boards (PMRB of 1991) are composed of representatives from all stakeholders, and serve to identify, segregate and declare people's small-scale mining areas, the management and regulation of said areas, and the settlement of disputes and conflicts that may arise. At the same time, Small Scale Mining Offices attend to regulatory functions and provide technical assistance and training to small-scale miners and assist the PMRB, while the Natural Resources Development Corporation, a government company, controls and manages gold-rush areas.

Formalization has encountered many stumbling blocks. The concept of segregating and declaring specific locations as small-scale mining areas (RA 7076) has not worked. The legislative approach (PD 1150) to legalize gold panning and sluicing inside existing mines claims (allowing two different mining rights over one area) is not successful. The restrictive provisions of the different permits and licenses available to miners hinder the development of viable and well-planned small-scale mining operations. The staggered licensing practice (one for mining, one for processing and another for marketing) is also not helpful. Furthermore, the support institutions suffer from a lack of funding.

On the other hand, special 'reactionary" laws that have been passed seem to be working; government control of a major gold rush had positive results in terms of tax collection and environmental protection, and problematic pebble picking in one area along the coast now appears under control. Also promising is the emerging interest in contract mining, which is seen to be promoting better relations and partnerships between ASM and large mining companies. Formalization has also addressed the rampant illegal sand and gravel operations, and almost all sand and gravel operations are now covered with permits.

4.3.3 The Ninja Miners Project

The phenomenon of "ninja miners," so nicknamed because of the distinctive large, green basins they carry on their backs, are the subject of a study presented by **Ms. Chimed Erdene Baatar of Eco-Minex International**. In addition to gold, Mongolia is the world leader in fluorspar exports and hosts one of the world's largest copper mines. There are over 100,000 illegal placer ninja miners in Mongolia, and some 20,000 ASM hard rock gold miners. While some of these miners employ imported technology, most operate at a basic level and engage in extremely difficult physical labor. Most of the hard rock miners use a hammer and chisel to manually extract ore, and some of their operations are up to 65 meters deep.

The Soviets developed large open pit coal mines to serve the energy needs of the new small industrial cities, plus clay pits (bricks and ceramics), sand pits, limestone pits, gravel pits and salt

mines. Thousands of exploration geologists and drillers over the decades systematically documented the mineral resources of Mongolia, but this vast task was never completed. The end of the Soviet system meant the departure of most of the specialists and collapse of the Mongolian economy. The agricultural system contracted sharply due to the sudden lack of cash for fertilizer, fuels and seeds, and tens of thousands of Mongolians abandoned the cities and reverted to being pastoral nomads. After disease wiped out many herds, urban and rural poor who lost their animals turned to placer mining, because of the low start-up costs. Other ninja miners are pensioners who are forced by poverty to continue working, and an increasing number of university students who mine during the summer months.

The ninja miners, who mine gold, coal, fluorspar, mercury, and other minerals, are vulnerable to significant health risks, including the dangers of unsafe mercury use, accidents in underground mines, particulate inhalation, and general physical exhaustion from hard labor year-round, often in extremely cold winter and hot summer conditions. Children, women, and the elderly often work in these extreme and unsafe conditions. Children are especially common in fluorspar mining. The ger (traditional nomadic dwelling) towns that spring up around mine sites provide basic services, but can also become centers of crime and violence. One ger town earned the nickname Persian Gulf due to its dangerous reputation and the frequent incidents of police brutality occurring there. Environmental risks, from the unsafe use of mercury to the burning of tires to melt permafrost, are also widespread. Clearly, there is vast scope for improvement in the conditions under which the ninjas mine.

4.3.4 ASM in Mongolia: Issues and Way Forward

Ms. Delgertsoo Tsevel of the Mongolia Business Development Agency spoke on the development of ASM gold mining in Mongolia, and examined the issues surrounding this sector's emergence. There has been a series of four gold rushes, some of them concurrent, in Mongolia since 1990. The first gold rush started in 1990, and continues to the present. It is predominantly placer mining, done by some 130 companies using mainly Chinese dredges. Some new technology has also come in from Germany, Japan, and the USA. These operations, and the royalties they pay to the government, have helped to stabilize the economy. As the recovery from these placer operations is low, the ninja miners stepped in. The second gold rush, which began in 1995, is the result of this development. Over 100,000 ninjas began panning tailings from these placer operations. In some cases, they dry-wash tailings; this is a novel technique used by approximately 5000 ninjas in the Gobi desert. There are also several ninjas who mine hard rock deposits, using mercury to amalgamate their gold. The ninjas can be far more flexible than the large placer operations, and are able to mine otherwise inaccessible deposits. Late 2003 saw the beginning of the third gold rush, when large Mongolian companies like Boroo and Bumbat began hard rock mining. The fourth gold rush, beginning shortly after the third, came when international companies like Ivanhoe entered Mongolia's hard rock gold exploration. There continues to be great opportunity for the expansion of gold mining in Mongolia.

While the first and third rushes financially benefited the Mongolian government and local companies, only the second benefited the nation's poor. The fourth gold rush may only provide financial gains for the foreign companies involved. The second gold rush provided employment in small cities and villages, increased gold exports, employed over 1,000 undergraduates during the summer months, and provided a financial safety net for the nation's poor, but had negative

impacts on health (through mercury contamination), and resulted in increased prostitution, child labor, alcoholism, environmental damage, and smuggling.

Until 2003 the government estimated the number of ninja miners at 30,000, but the ninja population is actually closer to 100,000. This shocked the government and a law to control and restrict ASM was presented before Parliament, but has still not been passed. To move forward, the government and the miners must engage in dialogue. Additionally, the many benefits of ASM must be acknowledged, as well as its negative impacts. To enable this dialogue, a non-governmental national ASM association must be established, while the government must also create an ASM agency. The NGO would have branches at the local level, with a small and active secretariat. These groups would focus on ASM monitoring, mercury use reduction, safety and health initiatives, microcredit programs, microleasing, technical assistance and protective legislation for Mongolian ASM. Further, a center of ASM expertise can work to maximize gold recovery and improve product marketing. Together, government and the miners themselves can improve ASM in Mongolia.

4.4 Workshop: Conflict Resolution / Consensus Building

The workshop, which was facilitated by **Dr. Saleem Ali of the University of Vermont**, began with a "polarity exercise" in which participants were asked to write down five negative words and five positive words about small-scale mining. After a few minutes they were asked to exchange papers with their immediate neighbor. Each participant had to introduce himself and give his designation before giving his neighbors positive and negative words. The polarity exercise revealed a considerable balance between positive and negative attributes of ASM.

Conflicts become more intractable when they are polarized. There is unfortunately a natural proclivity to polarize conflicts because it is much easier to see things in stark black and white terms. However, clarity does not necessarily indicate objectivity or accuracy. To resolve conflicts it is important to mentally put oneself in the opponent's position and try to relate to what might be the opponent's rationale for behaving in a particular manner. This is the first step to reduce polarization.

Several questions were asked by Dr. Ali after the polarization exercise to initiate discussion: What are the sources of power for small-scale mining communities? Is there an absence of trust between players and if so why? How would you define a resolution to a conflict? What are the traditional techniques for conflict resolution in your community?

The next part of the workshop was aimed at preparing a conflict assessment in which participants were asked to consider the full range of "stakeholders" and issues in small-scale mining conflicts. Stakeholders included small scale miners; multinational mining companies; mineral processing centers; environmental NGOs; indigenous rights NGOs; human rights NGOs; local, state, and national governments; and consumers. Issues included environmental impact; employment; economic viability; assessments of how to privatize; property rights of communities; indigenous sovereignty; alternative livelihood resources; access to markets; and taxation of revenues.

Community participation is based on trust. Developing trust requires repeated interactions, transparency, and preventing violations of agreements and accountability. To develop trust there

are four factors to be considered: repeated interactions; reliability of stakes; quick feedback of changes; and long time horizons for agreement.

If a conflict is a zero sum distributive conflict, one side has to lose for the other to gain. In general, we should always be trying to find ways of bargaining to move away from zero-sum conflicts and have an integrated solution. Conflict "management" has been the old business approach to dealing with conflicts in which immediate short-term solutions are sought rather than long-term resolution of the conflict, which would anticipate future problems as well as immediate remedies. Therefore, management is a reactive approach and resolution is a proactive approach. Power dynamics exist in many forms, just as there are many kinds of power. Physical force is not always the most salient source of power. For example, a crying child has little physical force but has tremendous power over the action of parents depending on the context (in a public setting versus a private setting). Similarly, configuring negotiating power in the right context can have a major impact. To build consensus, the focus must be on negotiation rather than consultation. It is important for communities to feel that they are part of the negotiation process and not just at the passive periphery of a consultation.

Resolution, negotiation, and consensus are achieved in different ways. Alternative Dispute Resolution (ADR) is aimed at reducing litigation, which can be expensive and can also damage relationships in the long-term. However, there are certain areas where litigation may be essential; for instance, in matters involving criminal activity. There is also a difference between democratic processes and consensus-building processes. Democratic processes involve a vote in which the minority must accept the view of the majority no matter how polarizing it may be. However, consensus-building processes involve a confluence of views leading to a solution that may not fully satisfy everyone but is also less likely to completely antagonize parties. Hence consensus processes are more likely to lead to long-term resolution. A mediator can be very helpful in resolving polarized conflicts. In mining conflicts, often the government ends up playing a mediating role; however, this is not always the best approach since governments often have a direct tax incentive in mining projects and can thus appear to be biased despite their multiple roles as environmental and social impact enforcers. For this reason, a neutral party acceptable to all sides is best suited for a mediating role.

Participants presented conflict resolution techniques from New Zealand (Maori tradition), Colombia, Papua New Guinea, Somalia, Kenya, and Sierra Leone. Key elements of this discussion included the need to avoid romanticism and focus on cultural relativity when employing traditional techniques, and allowing grievance proceedings to take place after chiefs had had their say.

Participants were subsequently divided into groups and asked to work on developing solutions to conflicts in their experience and what they might now do differently based on the workshop. A number of recommendations, identified for ten stakeholder categories, emerged and can be divided in diagnostic, preventative, and curative conflict resolution activities. The diagnostic recommendation was to evaluate existing land tenure regimes, power structures and institutional paralysis, trust erosion due to past violations, and poor risk communication and "gambling" psychology. Preventative recommendations included making the physical environment more "community friendly," considering the social psychology of conflict, ensuring technical support parameters by providing necessary skills and equipment, scientific panels that provide coverage

of differing perspectives on environmental impact, and property rights regimes that are more clearly defined and equitable, including cooperatives and trust establishment. Finally, curative recommendations proposed included separating issues that are antagonistic and joining synergistic issues, increasing the role of mediators, and preparing benefits packages for communities after needs assessments are conducted.

4.5 Workshop: Nuts and Bolts of Setting up a Gemstone Cutting Business

To begin the workshop, which was facilitated by **Mr. Thomas Cushman of Allerton Cushman, Rohitha Perera of Beehive Industries** showed a video detailing how his business grew from working with one rented machine to a successful venture with over 600 employees, and then fielded questions from the workshop participants. Mr. Perera explained that to start a successful gemstone cutting business required first gaining experience from a school or existing business and then starting small, with one or two polishing machines. Second, a secure supply of gemstones and a clean, convenient location was required. Being close to a source of gemstones was useful, but not necessary; clean air requires moving out of town. Third, a well-trained workforce requires a good training program. To create a larger-scale cutting operation requires good customers and close attention to quality. Mr. Perera now also manufactures his own polishing machines, both for the domestic and international market.

Tobias Häger of Johannes Gutenberg University then provided a presentation on training and the practical requirements of setting up a gem industry. Developing nations should have a basic knowledge of the gemstone industry in order to add value to the raw stones they produce. For example, in 2001, almost all of the rubies and sapphires in Madagascar were exported in their raw state. Much value can be added if after mining, the stones are cut and marketed locally before being sold on the international market. To have a successful gem industry, knowledge must be made available about mining, processing, and marketing techniques. Local miners, cutters, processors, traders, custom officials and gemologists are all groups who can benefit, in addition to local teachers and trainers. Mining knowledge should include a basic understanding of everything from geology and prospecting to gem identification, cutting and evaluation. Processing and marketing knowledge should include an understanding of how to develop secure supplies of gems, financing, identification and valuation, domestic and international prices, cutting and treatments, taxes, and regulations. Gem identification can be carried out with simple tools like sticks of different hardness, balances, and refractometers. Valuation is determined by the 4 C's: cut, carat, color, and clarity, but these can be difficult to determine for rough stones and require a basic knowledge of gemstone cutting. This includes an understanding of the direction of best color, different kinds of cuts and the correct proportions for those cuts, how to identify inclusions in rough stones, and how the stone might react to different treatments.

Local gem industries can further be supported by transferring knowledge from countries with a long gemstone tradition, reducing import taxes for cutting machines and accessories, providing businesses with tax credits, holding marketing events, and increasing the export tax on rough stones to pay for the above suggestions. Banning the export of rough stones only promotes illegal exports. With a better understanding of mining, processing and marketing gemstones, and a supportive policy framework, gem-producing countries can earn more money and employ more labor, thus reducing poverty.

Finally, **Thomas Cushman** described his experiences in establishing a gemstone school in Madagascar. The school took one year to set up, is now supplied with cutting machines and instructors, and is currently training forty students. The school is geared toward training small independent cutters, as small operations can supply the local market and provide much more employment. Large cutting operations need large customers, and these are far more difficult to come by, as is securing a large and steady supply of rough stones. Instruction is provided in French, while the lapidary portion of the course will soon be available in Malagasy. Students are required to be able to read and write. To set up a small gem-cutting operation, the best option would be to hire an expert from a traditional gem-cutting nation to provide startup assistance. A cutting machine costs around US$2000, if bought from an industrial country, but can be bought in Sri Lanka for US$650.

The workshop discussion covered a wide range of topics and consisted of both questions and answers, and general debate. Regarding rough gemstone export restrictions, the panel recommended that they generally do not work and encourage corruption. A healthy gemstone cutting industry needs to be able to import and export rough stones. Participants were especially concerned with how miners, or countries with small gemstone production, can get a fair price for their stones. The panel responded that since each stone is unique, there is no easy answer. The real value of a rough stone is its potential as a cut stone. Sellers need to develop a cutter's eye. The group discussed how there needs to be competition amongst buyers. Local governments must provide an open market, and financing options to local industry. Sellers need to be able to go from buyer to buyer in order to develop a sense of the market price. Both training and experience is vital, and miners must be wary of collusion between buyers. Miners' organizations can also improve miners' bartering power. Cutters take substantial risks in predicting a stone's cut value, and demand a premium in addition to their overhead costs. Overall the workshop, in conjunction with the gemstone presentations from the conference, provided a thorough overview of the gemstone sector.

4.6 Workshop: Gender and Child Labor

With the focus of current efforts in ASM on integrated community development, it is critical that the concerns of women, men and children be incorporated within all programs and projects. In particular, it is critical that efforts be undertaken to eliminate child labor in ASM and to mainstream gender in order to advance positive change in ASM and improve the health and well-being of those impacted by these activities.

The child labor workshop, facilitated by **Susan Gunn of ILO-IPEC**, commenced with a presentation by **M.P. Joseph of the ILO** on a pilot project to eliminate child labor slate mines in Markapur, Andhra Pradesh, India. Almost 1.4 million children are engaged in child labor in the state of Andrha Pradesh. Prior to the program, around 9000 children were actively mining in the slate quarries and working in slate processing factories in and around Markapur. In pits, children were involved in carrying waste material to the surface from 06:00 to 13:00 for roughly 10R per day (~ US$ 0.23 per day). Approximately 70% of workers were girls, mainly between the ages of 6 and 15 years. Between 1988 and 1998, the Government of India's National Child Labour Project (NCLP) ran twenty schools in twenty-five villages through which they rehabilitated 1000 children per year from work in the slate mines. Despite these efforts, the child labor force in the slate mines of Markapur remained at around 6000. Between 1998 and 2004, the ILO

International Programme on the Elimination of Child Labour (IPEC) implemented an integrated program in forty villages in Markapur comprised of interventions targeting: prevention, rehabilitation, livelihood support, and environment building. Transitional education centers for children, micro-entrepreneurship for their mothers, linkages with trade unions and government and technology changes in pits were all key elements of this integrated approach. With the elimination of child labor in the forty target villages and reductions in slate mines not specifically targeted, this program has emerged as an impressive model for the elimination of child labor in ASM.

Workshop participants indicated that the methods for addressing child labor are well established and, with the child workforce in ASM numbering around 2 million, total elimination in ASM seems a feasible objective, particularly in comparison with other sectors (e.g. agriculture). Further, it was indicated that all concerned – families, local community leaders, politicians, mine owners, trade unions – can appreciate that this is a problem that needs solving.

The workshop discussion identified the following key components of a strategy to eliminate child labor:

(1) Raising awareness – Changing mindsets is a main challenge in the elimination of child labor. Tradition says that a family working together is a perfectly satisfactory means of keeping food on the table and learning trades, but in the context of ASM, where risks to children are unacceptably high and education is critical for their futures, this belief no longer applies. The children being exploited, their families, governments, local leaders, and the international community, as well as mine operators, need to be sensitized. Careful study of the cultural and economic context is crucial to this.

(2) Integration with development – Action against child labor in ASM does not have to stand on its own. It can piggyback on industry training, rural development, trade union activities, HIV/AIDS programs, other child labor projects such as child soldier integration efforts, and even routine school programs.

(3) Education and vocational training – It is not a question of merely ending child labor but of providing alternatives. Schools must be available and many innovative models are known (e.g. transitional schools). However, basic education is not enough – training in vocational skills, geared to the realities of the local market, is probably the most important intervention from the perspective of the families concerned.

(4) Economic empowerment through decent work – The best long term, sustainable way to eliminate child labor is to create decent work for adults. Strategies include making ASM more profitable; engaging large formal mines with the issues confronting ASM; income-generating activities for families, especially women; instituting appropriate technologies that reduce child labor; reviewing local legislation regarding ASM for consistency with ILO C.182; and developing effective measures for enforcement through capacity-building of inspectors.

Immediate actions identified by workshop participants included qualitative and quantitative information on the location, nature, context and scope of the problem of child labor in ASM, and local demonstration projects to overcome the sense that "it cannot be done." Projects in different contexts would demonstrate that child labor in ASM can be eliminated.

The discussion on gender mainstreaming commenced with a presentation by facilitator **Jennifer Hinton, of the University of British Columbia**, on the nature and scale of women's participation in ASM and the need for mainstreaming gender in projects, policies and programs. It is estimated that 6 million women are engaged in ASM, with the largest contingent being in Africa, where an average of 50% of miners are women. Despite this reality, women tend to realize fewer benefits and are harder hit by the negative impacts of ASM than their male counterparts. In order to achieve positive changes in ASM, it is critical that the concerns and experiences of women as well as of men become an integral part of the design, implementation, monitoring and evaluation of policies and programs. Main components of a gender analysis for the purposes of mainstreaming include the examination of gender-based differences in labor market participation; understanding gender-based constraints and opportunities with respect to issues such as knowledge and skills, access, responsibilities, economics and decision making; and reviewing the different implications of a program or policy for women and men.

Hinton then directed the discussion to explore what concrete steps are needed to undertake gender mainstreaming in ASM. In order to advance gender issues in ASM, the following key components were identified:

(1) Raising awareness of women and men, as well as local, national and international organizations including government agencies, NGOs, CBOs, religious organizations and donor agencies. A strategy for raising awareness may include implementation of formal information campaigns at various levels; the participation of women and men in all phases of projects; and disseminating positive case studies on the advancement of women in ASM communities. It is evident that efforts must be taken to overcome discriminatory social taboos and traditions.

(2) Equitable participation of women and men in projects is critical. Specifically, male and female field staff should jointly undertake community-based project work; male and female formal and informal leaders should be identified and included; and meetings and discussions should be held with both women and men – together and separately – to ensure all voices are being heard.

(3) Baseline studies require the collection of qualitative and quantitative data on gender based differences in labor market participation and the constraints and opportunities for both women and men in terms of advancing gender equity. Collection of sex-disaggregated data is not sufficient to ascertain the differential impacts and benefits of mining on women and men.

(4) Implications of projects and programs on women and men should be assessed prior to implementation. Diagnosing gender implications will support both project success and gender equity as both women and men will be target project beneficiaries.

(5) National governments should consider gender implications of policies, particularly those that address land rights and the right to work. Further, mining departments and extension offices should be staffed with both women and men to ensure accessibility of services to both sexes. Government agencies should also participate in gender awareness raising efforts in ASM communities.

(6) Networks of women in and between ASM communities should be strengthened and resourced through current efforts in formalization processes and other community-based projects. Women are less likely to be included in associations than men and networks may provide a source of support and advocacy.

(7) Capacity building and training projects should target women as well as men and allow both groups to have equal choice of livelihood options. Livelihood programs must be directed at women as well as men in order to improve well-being and support diversification. Micro-finance has been significantly more successful with women than men and should be explored as a means to facilitate this.

5.0 THURSDAY OCTOBER 14TH

5.1 Building Partnerships – Progress Reports

5.1.1 CASM Global Partnership Program

When CASM first applied for the World Bank's Development Grants Facility Global Partnership Program in 2002, it was denied, as the WB was not convinced that ASM was a priority concern. **Mr. Jeffrey Davidson of CASM** explained how CASM successfully obtained approval for a grant in 2004, and outlined how the grant will be employed. On the strength of EIR interim recommendations regarding ASM, the application was revised and resubmitted, and in June 2004 CASM received a three-year grant totaling US$ 925,000. US$ 275,000 is available for this fiscal year.

The funding will be used to build and strengthen global partnerships in ASM; monies must be dispersed to "partner" organizations to support work relating to CASM's mission and objectives. The time frame for this year is tight, as potential partners must be identified, and agreements negotiated and signed. Partners must be legally registered institutions with appropriate geographic coverage, possessing a mixed portfolio of low and higher risk projects. The grant must leverage additional investment in ASM, and each partnership will receive between US$ 25,000 and 75,000. Readiness to implement is also key in selecting partners.

In the initial phase, four prospective partnerships for 2005 were identified. Of these, agreements were reached with three: IDRC/MPRI in Latin America (US$ 75,000), the Peace Diamond Alliance in Sierra Leone (US$ 47,000), and the Australian National University Program for Natural Resource Management in Asia/Pacific (US$ 65,000). Grants will be used to support capacity building of new institutions, learning events, networking and interchange and research. In the future, calls for partnership proposals will be advertised and criteria published; expressions of interest for 2006 partnerships will be solicited in early 2005, so that the CASM management group can review and select successful proposals by April 2005.

5.1.2 CASM-China Progress Report

China is home to approximately six million small-scale miners, or roughly half of the world's total. **Dr. Shen Lei of the Chinese Academy of Sciences** argued that CASM cannot be considered a global organization without including China, and thanked CASM for its support.

In January 2004, CASM-China Regional Network was inaugurated in Beijing. The inaugural meeting brought together 43 participants from 24 agencies to discuss what goals could be achieved in China's complex and often sensitive ASM sector. The organization was formalized, and is now housed in the China Mining Association. Information sharing is being fostered through a registered website and web-based knowledge center (www.casmchina.org), which gathers and disseminates information on global ASM projects, conferences, and news. A Chinese

ASM journal, with articles dating from 1996, will soon be made available on the website. The knowledge center also provides an open forum for discussion surrounding ASM. CASM-China has organized two projects so far: the first, on the success of small coal mining reform, is based on cooperation between the College of Economics and Business Administration, the University of Chongqing, the Chongqing Bureau of Land and Resources, and the University of Dundee. The second, on ASM policy and law, has won a grant from the National Sciences Fund of China. In April 2004, CASM-China hosted a multi-stakeholder regional meeting in Shahe City, Hebei Province, and a second regional meeting was held in Chongqing in September 2004.

From its inaugural meeting to the present, CASM-China has provided an unprecedented forum for diverse stakeholders to share knowledge and experience in ASM. Many issues and challenges remain, including the lack of legal ASM status in China, a severe absence of resources for addressing rampant health and safety problems, cases where tight government controls prohibit mines from taking positive initiatives, and a negative public and governmental view of ASM. CASM-China is taking concrete steps to meet these challenges, by working to ensure that ASM is specifically included in the current revisions of China's Mineral Resources Law, promoting the consideration of ASM in regional resource management planning, instituting appropriate health and safety measures, and working to combat poverty among small-scale miners. CASM-China is working toward developing additional projects with both Chinese and international partners, including drafting a practical national policy for ASM, studying different nations' ASM law and policy to determine best practices, carrying out baseline studies on China's ASM, and building indicators to appraise successful ASM operations.

5.1.3 Workshop Report: Small-Scale Mining is Here to Stay

A workshop on ASM took place in Zimbabwe from 21-23 July, 2004. **Ms. Margaret Manyanhaire of Gold Mining & Minerals Development Trust, Zimbabwe**, reported on the workshop and its outcomes. CASM provided US $10,000 to fund the workshop, which was also financed by the Gold Mining & Minerals Development Trust and other contributions. One hundred participants from Zimbabwe, Tanzania, Zambia, and South Africa attended the workshop events, including a pre-workshop field trip to Hope Fountain Custom Gold Processing Plant 20 km outside Bulawayo, two days of presentations, and workshop discussion and recommendations. One of the central themes of the workshop was "unraveling traditional myths versus technical advancements and environmental concerns in gold processing." Gold trading policy as it applies to ASM was also discussed. From a technical perspective, the relative merits of stamp and ball mills were examined, and several varieties of concentrator were reviewed, including copper plate, blanket, and centrifugal.

Zimbabwean ASM has grown tremendously in the past few years, and now represents roughly eight percent of the GDP. Where it was only ten percent of all mining activity in 1978, it is now responsible for over 95%. Over 500,000 Zimbabweans are involved in the diverse ASM sector, which mines gold, chrome, tantalite, and precious stones. This striking growth has been caused by a number of factors: the opening of mining opportunities to the general population; intermittent droughts that have driven the people to non-agricultural sources of income; hardships borne of economic reforms; a general national economic decline coupled with shortages of foreign currency on the legal market; and an attractive gold price, particularly on the black market. Just in the past year, a new trend is underway to tighten controls, reform

marketing, and implement an attractive pricing policy to compensate for previous security problems and losses of ASM products to externalization.

While gold ASM in Zimbabwe has been very productive, a number of impediments hinder its development. No appropriate legislation exists for ASM, large companies work against it, speculation is rampant, and adequate financial and technical resources are lacking. Health and safety are of grave concern, as protective measures are minimal. From Zambia and Tanzania, Zimbabwe has learned the need for an enabling legal and institutional framework for formalizing ASM activities, a deliberate government policy on promoting ASM, and appropriate marketing strategies and pricing policies. Gender mainstreaming must be promoted to provide an enabling environment for women in mining, and networks must be developed to provide women miners with technical and business skills and financial support. Financial support generally is limited, although some effort has been made by the government to implement a plant and equipment hire scheme. Private sector financing is prohibitive due to the need for collateral and extremely high interest rates. Generally, better financing, fewer government controls, and a holistic approach to the myriad financial, health, and environmental problems associated with ASM are required to ameliorate the conditions of Zimbabwean small-scale miners.

5.1.4 A Global Inventory of Past Assistance Efforts and Current Criteria for Assistance Related to Artisanal and Small-Scale Mining on the part of Development Assistance Organizations for Communities, Local Authorities, and National Governments in Bank Client Countries

Dr. Steffen Tebbe of entec AG Consulting and Engineering discussed an inventory of activities, projects, and publications in the past ten years by development assistance organizations working in Bank client countries. Accompanying the inventory was a survey of funding agencies, and recommendations for follow-up. More than 230 organizations, consultancies and platforms were analyzed on the internet, and a circular letter was sent to eighty organizations and sixteen consultancies. Over 420 projects and publications were identified in an external database; over eighty percent of these were new entries. Around 400 deal with projects, documents, and events, while the rest refer to articles, journals, and books. More than 200 organizations and consultancies were identified in an external database; of these, 127 were organizations, 28 were consultancies, and 48 were networks and platforms. About forty funding agencies have been identified. A small number of these are of relevance for most of the activities: EU, WB, ILO, DEZA, DFID, and IDRC. Most of the activities focused on Africa and Latin America.

Recommendations for further work resulting from this inventory are: supplementation of the inventory with outstanding information on relevant projects and documents, maintenance and continuity of both the databases and the contacts resulting from the inventory, and reflection on options for the generation of added value from the information in the database.

5.1.5 Responsible Mining from the Ground Up: Developing Regulations and Certification Criteria

In July 2004, NGOs, entrepreneurs and miners from Colombia, Mongolia, Peru, Sri Lanka, Philippines, Ecuador, the Netherlands, and the United States came together in Quito and founded the Association for Responsible Mining (ARM). **Elizabeth Wahl of ARM** introduced the organization and its mandate as a voluntary accreditation facility for the certification and

establishment of socially just, economically equitable, and environmentally responsible mining. ARM espouses responsible mining from the ground up, based on successful practices, multiple stakeholders, and dynamic parameters.

ARM focuses on fostering awareness of socially conscious, ecological mining, in mining communities and among merchants and consumers of mined products. A central feature of this work is to establish a guarantee that products have been ecologically mined, in accordance with strict social standards, and to assist in the enactment of laws which help to protect mining communities and local ecosystems. The certification scheme also requires an institutional framework to facilitate its success and to monitor implementation. Through a "bottom-to-top" process, where ongoing education and training of miners and local communities occurs in conjunction with the certification process and awareness building among merchants and consumers of mined goods, socially just, economically equitable, and environmentally responsible mining may be achieved.

5.1.6 Mining, Sustainable Development, and Consensus Building among Stakeholders

Dr. Mike Katz, of the University of New South Wales, spoke about the importance of considering and including all stakeholders in addressing the issues surrounding small-scale mining, from government and big industry to individual subsistence miners. Other stakeholders may come up with excellent ideas, theories, and projects to ameliorate the negative aspects of small-scale mining, but without the support and involvement of large-scale industry and government, little progress will be made. Generally, small-scale miners are sandwiched between more powerful entities, which often pay them no notice other than to use their presence as an indicator of promising deposits. What these larger actors must realize is that small-scale mining, like agriculture, forestry, fishing, and many other subsistence income generators, is an essential part of the rural communities that most concern development initiatives. The recent commitment of industry leaders like Rio Tinto and BHP to the Global Mining Initiative will positively impact the success of similar initiatives, whether they are directed at large- or small-scale mining.

Dr. Katz presented an outline of all the stakeholders that must be considered, addressed, involved, and educated for social responsibility and sustainable development in mining. These included governments; industry; unions; small-scale miners; communities; indigenous peoples; non-government organizations; funding and development agencies; colleges, schools, and the academic community; and other associations and organizations. Each of these stakeholders has its own issues and responsibilities, and must receive targeted education, training, and care to ensure the knowledge and involvement necessary for the entire mining system to collectively work toward sustainable development and social responsibility.

5.2 Technical Assistance Works in Progress

5.2.1 Mercury and ASM in Mongolia

Mercury poses a significant risk to health and environmental welfare in Mongolia, as **Mr. Peter Appel of the Geological Survey of Denmark and Greenland** explained. In the first place, it is a great concern in the area of gold ASM. Although few small-scale placer miners use mercury, it is used in large quantities by almost all the hard-rock miners. Ore from hard rock mining is then processed in the villages; retorts are not used and mercury waste is accumulating at an alarming rate in village solid waste. There is evidence of many social and health problems related to

widespread mercury usage by these hard-rock miners. Of equal or greater concern is the small-scale mining of mercury on the Boroo River. In 1913, a Chinese mining company began hard rock gold mining in the area. They stored their processing mercury in a large tank, and even after the company ceased mining in the area the tank remained. In 1956 the tank exploded, resulting in between 5 and 10 tonnes of mercury being deposited on the Boroo River. Small-scale miners have been recovering this mercury under extremely hazardous conditions. Local people also use the river water for their daily needs, and eat fish from the river. High concentrations of mercury have been found in urine samples from these people.

Based on his research, Mr. Appel proposes two new projects. The first is a teaching program, which would train small-scale miners, local doctors, and village officials in the hazards of and alternatives to mercury use. Retorts would be introduced on a wide scale, as would the use of nitric acid, under well-ventilated conditions. Fortunately, Mongolian small-scale miners are highly receptive to alternatives to their current mercury use. In the case of local doctors, their training would educate them in recognizing and working to prevent acute and chronic mercury poisoning. Integral to this program is the training of local teachers who can continue the education process. In the case of the Boroo River mercury spill, Mr. Appel proposes a pilot project that treats a twenty-meter square section of the contaminated area, to a depth of two meters. The soil would be passed three times through a cascade of special amalgamation plates and subsequently analyzed for mercury content. The project would treat approximately 800 cubic meters of soil over a two to three month period and would demonstrate the feasibility of reclaiming a heavily contaminated site.

5.2.2 Community Perceptions Regarding the Influence of Mining on the Environment From Sinharaja and Kanneliya

This collaborative research project began in late September 2004, and is still in progress. **Mr. Robin Lock of Rainforest Rescue International** (RRI) and two students from Sri Lanka's **Ruhunu University** presented on the project's findings to date. The project's objective was to talk to people in mining areas, including miners themselves, and discover their opinions on gem mining's environmental impact. In light of the devastating landslides in May 2003, including in forested areas that have not traditionally suffered landslides but where mining is prevalent, the project sought to determine if people in gem mining areas identified a connection between mining activity and environmental degradation. Ten students of Ruhunu University, along with one professor and a coordinator from RRI, conducted a survey of residents in the Sinharaja Rainforest, in a few gem mining villages. Surface and shaft mining are both common in this area, and mining is done in paddies, riverbeds, riverbanks, and forest. Mining occurs almost as much in protected areas of forest as in unprotected areas.

Seventy percent of people interviewed felt that deforestation was the leading cause of landslides, while twelve percent identified mining. Slightly more than half (53%) of miners claimed not to care about the environment, while 47% did express concern. A number of factors limited the project, including time constraints and heavy rains which interfered with the interviewing process. It is also possible that interviewees gave misleading answers, as illegal mining is occurring. Based on this research, the team made several recommendations. Monitoring programs, a more active forest protection policy, a good soil/watershed protection policy,

environmental awareness programs, further research on the issue, and a more sustainable approach in the industry can all help to alleviate the environmental impact of gem mining.

5.2.3 The PASAD Experience: Support Project for the Artisanal Diamond Sector in the Central African Republic (CAR)

The Support Project for the Artisanal Diamond Sector (PASAD) in the CAR was implemented by BRGM from 1996 to 1998. **Remy Pelon of the Bureau de Recherches Géologiques et Minières (BRGM)** explained that after the CAR became independent in 1961, domestic miners increasingly drove diamond production. Diamonds are found primarily in two distinct zones; primary deposits and placer deposits. Approximately 70% of diamonds found are of gemstone quality, which make up roughly 50% of the CAR's exports and contribute about 4% of its GDP. While there are 80,000-100,000 artisanal diamond miners in the CAR, with some 300,000 dependants, only 4,000 miners are officially licensed. Women and temporary male workers do much of the excavation and handling work; however, organized teams of workers and the chiefs of the site receive most of the mining income. Miners sell their product to collectors/investors, who sell the stones to the state purchasing office for overseas sales. Major issues facing the artisanal miners include the decrease of easily exploitable reserves, limited technical skills, poor profitability with high-risk investments and an unstable legal framework, and socio-cultural challenges including health, security, education and resistance to change.

PASAD's objective was to help miners move toward a more efficient and sustainable system, by organizing a rational exploration of prospective mining sites in conjunction with miners and the authorities, to conceive and test new mining methods and techniques, to explore for new areas with geological and mining potential, and to cooperatively engage stakeholders to ensure the sustainability of the sector. Toward this end, PASAD held meetings and seminars, and hosted a radio program. Six local mining technicians were trained to provide direct support to miners, including evaluating reserves, demonstrating prospecting, extending existing mine sites, promoting new processing methods and techniques, and providing artisanal mining services. PASAD also worked to identify potential regional reserves to ensure the sector's longer-term viability, and undertook techno-economic studies on different models of mineral extraction, based on artisanal, improved artisanal, or partly mechanized mining.

Six years on, the local training and seminars, the communication programs, and the technological support can all be judged to have been successful. However, the lack of financing options for the miners remains a fundamental problem. Credible investors are difficult to find and the financial sector needs to be engaged to better learn how to work with the miners. Microcredit schemes may provide some answers. There is also a need for a durable commercial company that delivers artisanal mining services. Finally, good governance must be the foundation of successful change in the sector.

5.3 CASM and ASM – Where do we go from here?

5.3.1 CASM Annual Business Meeting/Annual Report 2003 – 2004

As **Mr. Jeffrey Davidson of CASM** reported, CASM was established in March 2001 with funding from DFID and the WB; its secretariat was established in the WB. From 2001 – 2003, CASM's focus was on networking between stakeholders, website and knowledge center development, and information exchange and learning. 2003 marked a shift in CASM's approach,

toward becoming a more dynamic and deliberate promoter of constructive change and engagement. Designing alternate pathways, advocating pro-action, mobilizing new resources, and pioneering new approaches all fall into the scope of this new focus.

In January 2004, the Strategic Management and Advisory Group (SMAG) was introduced. SMAG is a strategic "thinking" group, empowered to revise strategic objectives and improve implementing strategies. It affirms CASM's central strategic objective, which is to reduce poverty and promote sustainable communities. To redesign the CASM program, a basis must be established for building a global partnership. The scope of support for local and regional initiatives must be widened by broadening selection criteria. New instruments for more effective support and guidance to governments and technical assistance agencies must be developed. Finally, the discussion and resolution of difficult and controversial issues, as well as opportunities associated with ASM, must be advanced.

Funding for CASM comes from a number of sources; core funding is from DFID and the WB, while WB Consultancy Funds, the Global Mining Research Alliance, the Danish Trust Fund, and the ILO provide designated funding. Total funding for the 2004 fiscal year was US $635,184, $119,966 of which was carryover from the 2003 fiscal year. Of the remainder, $333,200 was core funding and $182,018 was designated funding. Disbursements for fiscal year 2004 totaled US $275,990. Of this, approximately 38.3% went toward learning events, 8.1% funded networking, 29.9% contributed to knowledge development, and 21.7% covered administration costs.

CASM's principal areas of progress in 2003-2004 have been: the AGM, the Small Grants Scheme, the website and knowledge center, regional networking and knowledge interchange, technical assistance, and MDG issues. To elaborate:

- 161 participants attended the 2003 AGM in Elmina, Ghana, the majority of whom were Ghanaians. Of the remaining participants, the majority were from other African countries. The Elmina AGM saw the launch of the African Women in Mining Network, and addressed the ongoing challenges of ASM in an environment that has seen twenty-five years of regularization.
- The Small Grants Scheme is of recognized value, but its transaction costs are high. It has been temporarily suspended pending re-evaluation.
- The contact database in the knowledge center has more than doubled, and over 200 new documents have been added to the document database. Several new sections and features have been added to the website, and a monthly electronic newsletter is distributed to website users.
- Work has been done on profiling ASM in Africa; a draft toolkit was completed in March 2004, which will be field tested and refined in Nigeria from Oct 2004 – Feb 2005. A technical assistance and donor support mapping project has been underway since May 2004, to identify lessons learned from technical assistance in the last decade, and to identify priority areas of concern and interest to donors and foundations.
- Regional networking and knowledge interchange has been successful, with the launch of the African Women in Mining Network in 2003, the CASM-China Regional Network in early 2004, and the Bulawayo "Small-Scale Mining is Here to Stay" Workshop in Zimbabwe in July 2004.

- Technical advice, monitoring, and advocacy with government and partner institutions have developed on several fronts: the Mozambique Sector Capacity Building Project (WB), the Nigeria Sustainable Management of Mineral Resources Project (WB), and the Peace Diamond Alliance in Sierra Leone (DGF).
- MDG issues include a formal review and evaluation of the IPEC program for the elimination of child labor from ASM (done in April 2004), and resultant recommendations for CASM: to incorporate child labor issues into work programs, in CASM analytical tools, and in good guidance notes.

CASM has been actively supporting partnership approaches. The 2004-2007 Global Partnership Program Grant to CASM has to date funded IDRC/MPRI in Latin America, Peace Diamond Alliance in Sierra Leone, and the Australian National University Program for Natural Resource Management in Asia/Pacific.

To summarize, CASM in 2003-2004 has concentrated on creating the basis for a more directed and pro-active organization, received positive responses to its activities, with frequent appeals for more, and has positioned itself to provide more effective support and assistance to governments, NGOs, and mining communities.

5.3.2 CASM: Where To Go Now

Following the presentation of CASM's annual report, **Jon Hobbs of the UK Department for International Development** led an open plenary session on which direction CASM should be heading. Questions were projected on a screen before the participants and responses where recorded and displayed in real time. Participants voiced a wide range of opinions and concerns and did not necessarily agree. The questions and responses are recorded below.

First Question:

What were your expectations for the 4th Annual Meeting of CASM?

Participants responded that their expectations were to:

-Expand their network of ASM contacts,
-Find out about other countries' and participants' experiences with ASM,
-Learn how Sri Lanka could benefit from hosting CASM's AGM,
-Leverage the World Bank's connection to CASM,
-Learn about participants' experience with conflict resolution,
-Learn new ideas about ASM, such as certification and fair trade,
-Explore how gender mainstreaming could be incorporated into ASM,
-Discover where one's own work with ASM fits into the global context, and
-Put child labor in ASM on the map.

Were your expectations met?
Participants responded:

Yes	No
The CASM community has become larger and more diverse.	There was not enough time for interactive discussions and the sharing of experiences.
Many new ideas were shared.	There was not enough Sri Lankan content and participation.
CASM brought many people with different backgrounds together.	There was not enough participation from the private sector (large scale mining companies), universities, communities, decision makers, and miners.
CASM successfully moved beyond "just gold."	There was a lack of time and or a forum to share one's own experiences.
Participants learned more about ASM.	There was too much focus on artisanal gem mining.
Many participants were excited to learn about gemstones.	The meeting was too ambitious, and not enough time was provided to cover topics adequately. There were too many presentations, and presentations were too descriptive. Having papers in advance would have been helpful.
Participants found good opportunities for networking.	There was not enough focus on poverty-alleviation.
The conference helped to put child labor on the map.	A poster session would have had value – participants could learn about other topics without adding more presentations.
Participants gained knowledge on the ASM experience in Africa.	The Learning Event should have focused less on gemstone processing and more on mining.
	There should have been more time allocated to workshops, and less to plenary sessions.

Second Question:
How would you measure CASM's success?
(What big levers of change can CASM pull?)
Participants responded that CASM's success could be measured by:
-Its ability to bring in big players from the formal mining industry,
-Its success in encouraging networking and alliance building, and leveraging more funds for ASM – if CASM's scope becomes too narrow, it will reduce its networking potential,
-How widely CASM can provide funds for local ASM groups to become involved with the global community,
-Improving the livelihoods of poor people – fulfilling its mandate to alleviate poverty,
-Being more sympathetic to communities and less donor "owned",
-Maintaining a global focus, and not becoming too focused on Africa,
-How well CASM can target "soft" components, such as gender, microfinance, etc, and then showcase successes,
-How effectively CASM can genuinely mainstream ASM issues,

-Its efforts to discuss and disseminate the best practices of ASM,
-Reducing the risks associated with ASM, such as health and safety, and environmental impacts,
-Providing an effective platform for sharing information that actually leads to the adoption of best practices, i.e. reducing pollution from mercury and cyanide,
-Its success with knowledge sharing – this can be measured by indicators such as comparing its website with those of similar organizations or the number of CASM citations in publications,
-Including gender mainstreaming within all future projects,
-The successful adoption of micro credit and microfinance,
-How successful CASM is at making recommendations to governments with respect to ASM,
-Less governments asking for help with ASM policy, due to getting it right, and
-Its influence on policy in other institutions.

Third Question:
What is the scope of CASM with respect to:
Process
Participants disagreed as to what CASM's scope included. Participants argued that CASM should:
-Focus on mining, not on the whole life cycle,
-Not focus on all products, omitting such items as industrial minerals,
-Focus on poverty reduction and integrated community development – and thus necessarily include the whole life cycle,
-Address child labor in the quarrying and stone crushing sectors,
-Include quarrying and stone crushing, as they involve similar processes and problems to gold mining,
-Should stay away from industrial minerals, as they have less environmental impact,
-Should include industrial minerals, as the sector generally employs many more people than other mining activities and may be more effective at reducing poverty,
-Influence other organizations or forums, by promoting the role and importance of ASM, and
-Stay away from process. There are lots of processes available, such as Sustainable Livelihoods. CASM should focus on its role as a knowledge provider and financial director, and coordinate various workshops and institutions concerned with ASM.

Themes
Participants recommended that CASM address a variety of themes including:
-Providing training about specific topics, such as mine closure, environmental protection, and monitoring, by collecting different training materials from a variety of projects,
-Alternative sources of livelihood, other than mining, for ASM communities,
-Determining how ASM affects poverty alleviation,
-Occupational health hazards and HIV/AIDS,
-The legacy of ASM areas,
-Hosting a workshop on ASM law and policy,
-Creating more partnerships between large scale mining and ASM,
-Sharing high income countries' past experience of ASM with countries that currently have ASM, and
-Using the Millennium Development Goals to help leverage more themes.

Membership
Participants encouraged CASM to increase involvement from:
-Industry,
-NGOs,
-ASM trade unions,
-Industrial relations and unions,
-Small-scale miners, so they can better represent themselves, and
-Forestry, fisheries, agriculture, and health representatives, recognizing that ASM takes place alongside other economic activities.

A participant suggested that CASM should determine its membership by examining what type of meetings it wants. Perhaps fewer papers could encourage a broader involvement.

5.3.3 CASM Communiqué

After addressing the above questions, participants contributed to drafting the following communiqué.

CASM Communiqué

CASM's Fourth AGM raised the importance of ASM as a vehicle for poverty reduction and as a stepping stone for sustainable rural livelihoods. Participants gave CASM a mandate to move forward with the elimination of child labor as a global action item. Child labor in ASM is a barrier to poverty reduction, now and in the future; its global elimination is achievable and should be a priority for CASM. Also highlighted was the importance of promoting the equity of men and women in ASM communities.

Many aspects of the gemstone industry in Sri Lanka were discussed, and participants recommended further involvement and cooperation from the Sri Lankan government to improve the industry. Participants stressed the importance of balancing the needs of miners, industry and the environment, and also expressed concern about ASM in conflict communities, areas and regions.

CASM was encouraged to continue to push the importance of mainstreaming ASM in mining policy. To this end, CASM should support governments in implementing mining policies that take into consideration their impact on the environment and the livelihoods of local communities, and to help ensure that governments have policies and schemes that reflect the realities and experience on the ground. Mining policies should move toward formalizing ASM, while trying to reduce incentives for illegal miners. This will require governments to provide an enabling, supportive environment for ASM. While ASM can raise serious environmental and social concerns, these impacts can be mitigated and ASM's potential for providing livelihoods in rural areas should be emphasized.

The CASM AGM provided an opportunity for African delegates to organize themselves in line with CASM's objectives and they have committed themselves to conducting wider networking under the umbrella of the Africa Mining Partnership (AMP). CASM will continue to develop its

ties in Sri Lanka and work toward developing the constructive dialog created at the AGM. CASM was encouraged to further develop partnerships with other stakeholders: building sustainable livelihoods requires multi-stakeholder cooperation for tackling difficult topics like child labor.

6.0 RATNAPURA FIELD TRIP – OCTOBER 15TH

Following the formal meeting, approximately forty participants joined a field trip to Ratnapura, the heart of Sri Lanka's gemstone industry. The field trip provided further insight into the gemstone industry and Sri Lanka, placing the lessons learned at the conference into the context of local reality.

The first site visit was to a shallow sapphire mine. The mining shaft was approximately six meters deep and well timbered, although partially flooded due to recent heavy rains. Using a manual hoist, gem-bearing gravel was lifted up and placed into a holding area. Using woven baskets, miners would then wash the gravel in a shallow pond. The coarse, clean gravel was collected and hand sifted to identify any gemstones. No mechanical processes or chemicals are used. After the pit was barren, it would be refilled and a new pit dug nearby. Refilled pits quickly re-vegetated. Next, a mining camp in Pelmadulla, outside Ratnapura, was visited. The camp consisted of six wooden thatched head frames built over shafts around 15-20 meters deep. Drifts, or tunnels running perpendicular to the shafts, would extend up to twenty meters, following the gem-bearing sands. Sand was hoisted up the shafts by locally made hand winches and then stored for future washing. Nearby was a traditional river dredging operation, shut down due to the high level of the river, which used long handled poles for recovering gravel.

Gemstone Miners in Pelmadulla

Workers were all shareholders and could earn up to US$ 6000 per year, well above the national GDP per capita of US$ 1000 per year. The average operation, with a crew of about eight people, could yield US$ 100,000-200,000 per year. The workers kept smaller stones, with only stones above twenty carats being divided among shareholders. When large stones were found, potential buyers were called in to the site for an auction. Miners were given 200-300 rupees per week (US$ 2-3) for living expenses. Miners were provided meals at the mines, but most lived in town with their families. Workers were not migratory and would not work for owners who gained reputations of dishonesty.

After visiting the mines, participants visited the National Gem and Jewelry Training Institute. The Institute was set up in the 1970s in order to train locals in gemstone cutting to reduce the export of rough stones. Students are drawn from unemployed local people, and local companies must guarantee to hire students before they start the program. Programs run for eight months,

during which time students learn to cut, polish, and heat treat gems, as well as how to craft completed jewelry. Students provide their own silver. Other required materials, including the semi-precious stones used for class, are provided by the school. The Institute's geuda heating lab has a kiln where oxygen and petroleum are mixed to create oxidizing or reducing environments. About 70% of sapphires in Sri Lanka are milky and colorless, and are referred to as geuda stones, but after heating them for several hours, the stones turn to brilliant blues. The crucibles are made out of aluminum oxide, the same basic chemical makeup of the sapphires, to ensure no interaction with the stones. The lapidary room was used by students working with several polishing machines to learn cutting and polishing. In the finishing room students learned how to make jewelry from their stones, including rings, necklaces, and other items.

The final stop was Beehive Industries and Central Lapidary, the largest lapidary in Sri Lanka. Mr. Perera, the proprietor of the company, had started the operation fourteen years previously with a loaned polishing mill. He had built up the company so that it now employs 600 people, including 480 cutters. Participants first visited the equipment fabrication shop, where Beehive makes all the cutting machines used in the lapidary, in addition to selling machines both within Sri Lanka and abroad. Beehive's machines cost US$ 650, including the hand-piece, or about a third of the cost of a similar machine from an industrialized country. Participants were shown the gemstone cutting section, where Mr. Perera demonstrated how to cut and polish a stone. The diamond section was off limits and was working on a service contract, cutting small 10-point, or one-tenth carat, stones. Participants also toured Beehive's jewelry and pewter sections. The young women and men who cut the stones were trained on site at a separate teaching facility and paid piecework. Employees made on average US$ 80 per month, with individual incomes ranging from US$ 50 to US$ 180 per month, based on quality and quantity of production. While security is tight, employees are not searched unless stones go missing. The facility cuts on average 3,000 stones per day.

7.0 CONCLUSION

CASM's Fourth AGM raised the importance of ASM as a vehicle for poverty reduction and as a stepping-stone toward sustainable rural livelihoods. With input from small-scale miners, government officials, representatives from international organizations and donor agencies, and researchers working with miners, this conference provided a forum for the participants to bring forward the essential issues that must be addressed to alleviate poverty by advancing sustainable development in communities affected by ASM.

Key lessons of the conference are:

- The importance of global and regional partnerships to unlock the potential of small-scale mining,
- The opportunity to eliminate child labor from small-scale mining,
- The need to more effectively mainstream gender issues in small-scale mining programs,
- The promise that fair trade and certification programs hold for small-scale miners, and
- The potential of training programs and government initiatives to add value to gem-producing countries.

Many aspects of the gemstone industry in Sri Lanka were discussed, and participants recommended further involvement and cooperation from the Sri Lankan government to improve the industry. The CASM AGM also provided an opportunity for African and Asian delegates to organize themselves in line with CASM's objectives and commit themselves to conducting wider networking.

CASM's shift in focus from gathering and disseminating knowledge to more actively facilitating development is creating a more dynamic CASM, better poised to address its strategic objective of reducing poverty and building sustainable communities. CASM will continue to develop its ties in Sri Lanka and work toward developing the constructive dialog created at the AGM: building sustainable livelihoods requires multi-stakeholder cooperation.