Developing Forest-Smart Artisanal and Small-Scale Mining (ASM) Standards
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Prepared for the World Bank by Levin Sources, the Alliance for Responsible Mining, and Fauna & Flora International
ABOUT THIS REPORT

This final report of the project Developing Forest-Smart Artisanal and Small-Scale Mining Standards/Guidance provides an overview of the project’s purpose, scope, methodology, and process; a condensed compilation of the project’s work products; general recommendations for adoption in global and national processes, and a complete compilation of the bolt-on FS-ASM Standard as annex 1. Four additional annexes set out feasibility studies for piloting the bolt-on FS-ASM Standard in Colombia, Peru, Ghana, and Liberia.

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Alliance For Responsible Mining is a not-for-profit organization, established in Colombia in 2004. It is a leading global expert on artisanal and small-scale mining (ASM) that aims at facilitating the empowerment of artisanal and small-scale miners, their organization, and the adoption of good practices, promoting favorable environments for the inclusion of ASM in the formal economy.

Fauna & Flora International is the world’s longest established international conservation body and a registered charity, which works to conserve threatened species and ecosystems across 40 countries worldwide. FFI saves species from extinction and habitats from destruction while improving the livelihoods of local people. Our vision is a sustainable future for the planet, where biodiversity is effectively conserved by the people who live closest to it, supported by the global community.

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ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ARM</td>
<td>Alliance for Responsible Mining</td>
</tr>
<tr>
<td>ASGM</td>
<td>artisanal and small-scale gold mining</td>
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<tr>
<td>ASM</td>
<td>artisanal and small-scale mining</td>
</tr>
<tr>
<td>ASOCASAN</td>
<td>a community council in Colombia</td>
</tr>
<tr>
<td>CCBS</td>
<td>Climate, Community, and Biodiversity Standards</td>
</tr>
<tr>
<td>CCCMC</td>
<td>China Chamber of Commerce of Metals, Minerals &amp; Chemicals Importers &amp; Exporters</td>
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<tr>
<td>CMO</td>
<td>Comunidad Minera de Ollachea</td>
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<tr>
<td>DDG</td>
<td>Due Diligence Guidance</td>
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<tr>
<td>EGP</td>
<td>Environmental Governance Programme (of UNDP)</td>
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<tr>
<td>ERP</td>
<td>emission reductions program</td>
</tr>
<tr>
<td>ESG</td>
<td>environmental, social, and governance</td>
</tr>
<tr>
<td>FCPF</td>
<td>Forest Carbon Partnership Facility</td>
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<tr>
<td>FFI</td>
<td>Fauna &amp; Flora International</td>
</tr>
<tr>
<td>FREL</td>
<td>forest reference emission level</td>
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<tr>
<td>FRM</td>
<td>Frugal Rehabilitation Methodology</td>
</tr>
<tr>
<td>FS</td>
<td>forest-smart</td>
</tr>
<tr>
<td>FSM</td>
<td>forest-smart mining</td>
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<tr>
<td>GAP</td>
<td>Global Advisory Panel</td>
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<tr>
<td>GCPF</td>
<td>Ghana Cocoa REDD+ Forest Program</td>
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<tr>
<td>GDL</td>
<td>Good Delivery List</td>
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<tr>
<td>GEF</td>
<td>Global Environment Facility</td>
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<tr>
<td>HIA</td>
<td>hotspot intervention area</td>
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<tr>
<td>LSM</td>
<td>large-scale mining</td>
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<tr>
<td>MRV</td>
<td>measurement, reporting, and verification</td>
</tr>
<tr>
<td>NDC</td>
<td>Nationally Determined Contribution</td>
</tr>
<tr>
<td>NFMS</td>
<td>national forest monitoring system</td>
</tr>
<tr>
<td>NGO</td>
<td>nongovernmental organization</td>
</tr>
<tr>
<td>NRDC</td>
<td>Natural Resources Defense Council</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PCI</td>
<td>principles, criteria, and indicators</td>
</tr>
<tr>
<td>REDD+</td>
<td>Reducing Emissions from Deforestation and forest Degradation and sustainable management of forests and enhancement of forest carbon stocks</td>
</tr>
<tr>
<td>RGG</td>
<td>Responsible Gold Guidance (of the LBMA)</td>
</tr>
<tr>
<td>SIS</td>
<td>safeguards information system</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
</tr>
<tr>
<td>UNEP</td>
<td>United Nations Environment Programme</td>
</tr>
<tr>
<td>UNFCCC</td>
<td>United Nations Framework Convention on Climate Change</td>
</tr>
<tr>
<td>UNIDO</td>
<td>United Nations Industrial Development Organization</td>
</tr>
<tr>
<td>VCS</td>
<td>Verified Carbon Standard</td>
</tr>
<tr>
<td>WECMACOS</td>
<td>Weasua Clan Mining &amp; Agricultural Cooperative Society (Liberia)</td>
</tr>
</tbody>
</table>

All dollars are U.S. dollars unless otherwise indicated.
Deforestation and forest degradation are the second leading cause of global warming. Forest loss disrupts ecosystem services, depletes biodiversity, and ultimately undermines the fulfillment of basic human rights. The mining sector is the fourth largest driver of deforestation after agriculture, wood production, and urban development. It is responsible for 7 percent of deforestation in tropical and subtropical forests, and mining’s presence in forests is significant and growing both for large-scale mining (LSM) and artisanal and small-scale mining (ASM) (‘Levin Sources and FFI 2020).

To tackle the threat that mining poses to forests, the World Bank conceived forest-smart mining as part of their Climate-Smart Mining Initiative, which was launched in 2019. Forest-smart mining (FSM) is mining that ‘acknowledges and understands the relationship between forests and other land uses such as socioeconomic uses and ecosystem services, and actively seeks to reduce loss or damage to those uses, and in some cases, promote a net gain for them’ World Bank. 2019a.

The international policy environment is putting greater attention on forests and is beginning to demand improved environmental performance. For instance, very recently, the COP26 Global Forest Finance Pledges highlighted growing global ambition to halt deforestation. Although it is to be seen concretely how these funds will be distributed and used in the mining sector, these pledges are both a threat and an opportunity to ASM and their stakeholders, especially regulators. The growing financial and political capital in forest preservation might put ASM into conflict with those defending forest interests.

Unless we find a way to introduce FSM practices into ASM operations, the tightening of due diligence requirements poses a risk, once again, to exclude artisanal miners from responsible global supply chains if they are unable to demonstrate responsible business conduct in relation to managing environmental, social, and governance risks, including human rights risks. The exclusion of ASM would imply a further isolation and marginalization of ASM into irresponsible and exploitative supply chains and business relationships, so minimizing the potential of ASM to redeem families from poverty and perpetuating poverty in ASM communities.

It is this project’s objective to provide a significant and innovative contribution by assessing and developing Forest Carbon guidance and tools for the artisanal and small-scale mining sector, including Forest-Smart Principles, Criteria & Indicators (FSM PCI) into existing ASM standards and certification systems, and to support their implementation by identifying REDD+ and environmental/Climate funding opportunities and develop roadmaps for pilot sites.

The existence of a standard for forest-smart ASM will empower miners and local support organizations (for example, nongovernmental organizations, responsible mining and sourcing initiatives, governments, public-private partnerships) to create the conditions that ensure ASM impacts on forests are mitigated and forest values are better protected. This ability to better manage the risks ASM poses to forests and forest values is essential for protecting the human rights of local communities and Indigenous Peoples.

It will also ensure that artisanal and small-scale miners can access responsible financial and consumer markets, to support their formalization and avoid them being pushed further into the illicit economy. Indeed, the consolidation of voluntary supply chain due diligence efforts into mandatory laws for environmental and human rights due diligence by downstream markets risks generating permanent exclusion and further marginalization of these miners.

On the one hand, the miners will have to demonstrate that they are putting in place measures to mitigate their impacts on forests in a process of continuous improvement; on the other hand, it is problematic if downstream actors expect some of the most marginalized members of their supply chains to absorb the costs associated with this—it is a shared responsibility.

Finally, an effective Forest-Smart ASM Standard has the potential to make use of carbon markets as a mechanism for project finance for forest-smart ASM initiatives, by providing project developers with a tool to monitor and assess progress toward healthier forests with greater biomass above and below ground relative to baseline, which will store and sequester carbon from the atmosphere thanks to the efforts of more environmentally conscious and active artisanal and small-scale miners.
The World Bank’s attention to the impacts of ASM on forests began in 2010 when the PROFOR Trust Fund financed the WWF and Levin Source’s ASM-PACE program “ELL and WWF. 2012. in order to understand the impacts artisanal and small-scale mining was having on the world’s protected areas and critical ecosystems. This included a rapid global review and detailed research in globally significant forest landscape types in Gabon, Liberia, and Madagascar, with matched funding supporting additional research in the Democratic Republic of Congo, Ecuador, and Sierra Leone. This work was instrumental to raise awareness of the fact that ASM is happening in high-value forests and documented the ways in which it impacts the environment, including forests.

In 2017, the World Bank began work on forest-smart mining as a unique concept as part of its Climate-Smart Mining program, building upon the successes of prior work on forest-smart agriculture. The PROFOR Trust Fund financed three related studies on ASM, LSM, and offsets, implemented by a consortium of Levin Sources (as lead), Fauna & Flora International, and the Swedish Geological Survey (SGAB) in cooperation with Freshfields Consulting, which concluded in 2019 with the publication of three reports as well as an executive summary (“World Bank. 2019a, 2019b, 2019c, 2019e)). These reports sought to identify good and bad FSM practices in the mining sector, to extract lessons learned and define the key principles for diverse stakeholders on how to be forest smart. These studies were presented at numerous international forums, with the official launch of the studies at Chatham House, London, and at the World Bank’s Climate-Smart Mining Facility at the World Bank headquarters in Washington, D.C., in March and May 2019, respectively.

In 2020, the Forest Carbon Partnership Facility (FCPF) made funds available to the Extractives Industries and Environment & Natural Resources Units of the World Bank to carry out the study Developing Forest-Smart Artisanal and Small-Scale Mining Standard/Guidance, and a sister study Guidance to Applying Nature-Based Solutions in the Large-Scale Mining Sector that examines the scope for mining companies to more robustly finance and support nature-based solutions. The FCPF funded these studies to get the private sector more directly involved in financing nature-based solutions.

The specific objectives for the project are:

- To produce a set of detailed technical guidelines and PCI for FSM ASM;
- To design a process to include FSM guidelines and PCI in existing ASM standards and certification systems, as well as targeted government policies and legislation;
- Processes to apply Forest-Smart ASM standards and certification systems are developed in selected pilot sites. Feasibility studies are conducted and detailed roadmaps and budgeted workplans are developed” (World Bank 2020).

This final report provides an overview of the project’s purpose, scope, methodology, and processes, and a compilation of the project’s findings, recommendations, and products. The authors acknowledge with gratitude the valuable inputs from the Global Advisory Panel, contributing to the conceptualization, development, and validation of the main deliverable, the Forest-Smart Artisanal and Small-Scale Mining Standard (FS-ASM Standard and Guidelines), produced as annex 1 to this report. The report provides general recommendations for the adoption of the FS-ASM Standard in global and national processes. In addition, there is a suite of road maps, workplans, and budgets for ground-validating the standard in the pilot sites in Colombia, Peru, Ghana, and Liberia.

The report is structured as follows:

Chapter 1 presents the objective, purpose, and vision of the project, as well as the methodology on how the bolt-on FS-ASM Standard was drafted.

Chapter 2 describes the rationale and conceptual design of the bolt-on FS-ASM Standard in detail.

Chapter 3 outlines key findings and recommendations to the feasibility of adoption of the bolt-on FS-ASM Standard into six private and multistakeholder standards.

Chapter 4 assesses the feasibility of adoption of the standard into selected pilot sites in Colombia, Peru, Ghana, Liberia.

Chapter 5 outlines opportunities for partnerships, leverage, and funding.

Chapter 6 presents general conclusions and recommendations.

This final report has five annexes. Annex 1 is the main product of this assignment, the FS-ASM Standard and Guidelines as a “bolt-on” standard to existing private and multistakeholder standards. Annexes 2–5 contain the detailed feasibility assessments for piloting the FS-ASM
Chapter 6 of the main report, offering conclusions and recommendations. Key recommendations cover the following elements:

This final report has five annexes.

- Publish and promote the FS-ASM Standard under a Creative Commons license through a concerted communications campaign.
- Pilot the FS-ASM Standard in the countries and sites assessed for feasibility through this project as well as in other countries where stakeholders have expressed an interest (for example, Democratic Republic of Congo, Sierra Leone).
- Take an intentional curated approach to seeding and scaling adoption of the FS-ASM Standard beyond engaged standard setters and pilots.
- Support the integration of the bolt-on standard into existing standards that have expressed interest.
- Develop concrete guidance and training programs for miners, governments, support organizations, and vulnerable groups like women miners, Indigenous Peoples, and local communities on how to implement the FS-ASM Standard.
- Convert the feasibility study methodology designed as part of this project into a publishable blueprint.
- Promote the FS-ASM Standard to emission reductions programs in ASM nations with a view to integrating ASM into REDD+ and voluntary carbon programs.
- Aim to have governments consider if/how to use the FS-ASM Standard to guide the development of regulations and extension services to support ASM to become more forest smart.
- Invite third parties to use the standard as they see fit and where they see possibilities for preventing deforestation and forest degradation or enhancing regeneration.
- Support ASM entities and their stakeholders to be prepared for FS-ASM implementation through capacity building and training.
- Develop tailored messages and briefs for different audiences in selected countries as part of a globally coordinated communications strategy that is localized in partnership with local implementing partners.
1. INTRODUCTION

1.1. Objective, Purpose, and Vision

Per the project’s terms of reference, “the objective of this assignment is to assess and develop Forest Carbon guidance and tools for the artisanal and small-scale mining sector by including Forest-Smart Principles, Criteria & Indicators (FSM PCI) into existing ASM standards and certification systems, and to support their implementation by identifying REDD and environmental/Climate funding opportunities and develop roadmaps for pilot sites. The specific objectives for the project are:

- **Objective 1:** To produce a set of detailed technical guidelines and PCI for FSM ASM;
- **Objective 2:** To design a process to include FSM guidelines and PCI in existing ASM standards and certification systems, as well as targeted government policies and legislation;
- **Objective 3:** Processes to apply Forest-Smart ASM standards and certification systems are developed in selected pilot sites. Feasibility studies are conducted and detailed roadmaps and budgeted workplans are developed” (World Bank, 2020).

Table 1.1 summarizes how each objective has been fulfilled.

### Table 1.1: Fulfillment of Objectives 1–3

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
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<tbody>
<tr>
<td>Objective 1</td>
<td>This has been achieved by developing the “bolt-on” FS-ASM Standard, which includes PCI for artisanal and small-scale miners and guidelines for enabling stakeholders. See more information in chapter 2</td>
</tr>
<tr>
<td>Objective 2</td>
<td>The project has engaged multiple relevant stakeholders through the Global Advisory Panel, developed six tailored strategies for standard setters’ uptake of the FS-ASM Standard, reviewed ASM regulation in selected countries, and developed a proposition for ASM regulatory reforms in selected countries to facilitate the implementation of FS-ASM. See more information in chapter 3</td>
</tr>
<tr>
<td>Objective 3</td>
<td>This has been achieved by conducting feasibility studies and detailing road maps and budgeted workplans in the selected countries: Colombia, Peru, Ghana, Liberia. See more information in chapter 4</td>
</tr>
</tbody>
</table>

The mining sector is the fourth largest driver of deforestation after agriculture, wood production, and urban development. It is responsible for 7 percent of deforestation in tropical and subtropical forests, and mining’s presence in forests is significant and growing for both large-scale mining and artisanal and small-scale mining (ASM) (Hosonuma et al, 2021). Deforestation and forest degradation are the second leading cause of global warming. Forest loss disrupts ecosystem services, depletes biodiversity, and ultimately undermines the fulfillment of basic human rights.

This World Bank–funded project aims to avoid, reduce, mitigate, and manage ASM’s negative impacts on forests and ecosystem services to enable sustainable land use management and to promote sustainable livelihoods, and explore ways to engage ASM in carbon finance. In the context of numerous pledges to protect forests made very recently at the Conference of the Parties 26 on Climate Change in Glasgow, the existence of an FS-ASM Standard should facilitate direction of funding into the ASM sector to support the introduction of forest-smart mining practices and facilitate continued responsible sourcing from artisanal and small-scale miners.

The existence of an **FS-ASM Standard** will empower miners and local support organizations (for example, nongovernmental organizations, responsible mining and sourcing initiatives, governments, public-private partnerships) to create the conditions that ensure ASM’s impacts on forests are mitigated and forest values are
better protected. This ability to better manage the risks ASM poses to forests and forest values is essential for protecting the human rights of local communities and Indigenous Peoples. It will also ensure that artisanal and small-scale miners can access responsible financial and consumer markets, to support their formalization and avoid them being pushed further into the illicit economy. Indeed, the consolidation of voluntary supply chain due diligence efforts into mandatory laws for environmental and human rights due diligence by downstream markets risks generating permanent exclusion and further marginalization.1 On one hand, miners will have to demonstrate that they are putting in place measures to mitigate their impacts on forests in a process of continuous improvement; on the other hand, it is problematic if downstream actors expect some of the most marginalized members of their supply chains to absorb the costs associated with this—it is a shared responsibility.

The standard has been developed as open source “bolt-on” standard to avoid duplicating existing requirements and contributing to the proliferation of standards; it enhances forest and climate requirements of existing standards, guidelines, regulations, requirements, and certification schemes.

It is envisaged that this FS-ASM Standard be used by the following stakeholders:

1. Artisanal and small-scale miners seeking to improve their environmental management and mitigate environmental risk
2. Governments seeking to develop regulations whose enforcement would incentivize the introduction of more environmentally friendly and rights-respecting mining life cycles by artisanal and small-scale miners operating in forests and thereby avoid, minimize, and mitigate ASM’s negative impacts on forests
3. Standard setters seeking to strengthen the environmental and human rights performance of their standards, especially in forested landscapes
4. Responsible sourcing initiatives seeking to strengthen the environmental and human rights performance of the mining entities they are supporting in order to more solitarily support their achievement of the UN Sustainable Development Goals (UN 2015), Paris Climate Accords (UNFCCC 2015), United Nations Guiding Principles on Business and Human Rights (OHCHR 2011), OECD Guidelines for Multinational Enterprises (OECD 2011), Kunming Declaration (UNEP 2021), and so on
5. Large-scale mining companies seeking to enfranchise their ASM stakeholders into larger efforts to mitigate climate change through nature-based solutions or to minimize their environmental liabilities at the landscape level by supporting ASM, as related economic actors, to improve environmental management
6. Emission reductions projects/programs undertaking forest-smart ASM activities operating within the landscape of interest
7. Downstream companies seeking either (a) to develop insetting programs that involve ASM, with a view to offsetting and reducing Scope 3 greenhouse gas emissions, (b) to make market-facing claims about their contributions to sustainable development in source communities through the implementation of the FS-ASM Standard (for example, in compliance with the SD VISTA standard2) or (c) to mitigate or remedy their Scope 3 carbon or biodiversity debts based on historic impacts
8. Any of the above working in other sensitive ecosystems, noting the general adaptability and applicability of the PCI/guidelines even outside of forests

It can be reasonably anticipated that such usage of the FS-ASM Standard will contribute to the project’s expected outcomes:

- **ASM standards/certification mechanisms include forest-smart principles** and open up opportunities for their application.
- **Governments** get the tools to strengthen the sustainability of their ASM sector while contributing to their climate commitments.
- **Targeted ASM communities** get access to technical advice to improve the quality of their activities, open up to new markets, and access innovative sources of funding.
- **Development partners** define a path to involve ASM sector in REDD+ development and have identified

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1 Examples of due diligence efforts include the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (2016), the OECD Due Diligence Guidance for Responsible Business Conduct (2018), and the OECD Guidelines for Multinational Enterprises (2011). Laws incorporating such due diligence efforts include the European Union’s Directive on Mandatory Human Rights, Environmental and Governance Due Diligence (also called the “horizontal due diligence law” (2021b) and its Battery Regulation (2021a).

sites/projects and developed specific road maps for concrete implementation of forest-smart artisanal and small-scale mining.

To validate the FS-ASM Standard, this first version of the PCI and guidelines must now be empirically tested in pilots. This will hopefully demonstrate their practical feasibility, utility, and thus value to nature and society, to governments, communities, and business, and will also identify their gaps and weaknesses such that they can go through a further process of improvement, public consultation, finalization, proclamation, and ultimately widespread dissemination and adoption.

1.2. Methodology

The methodology comprised three workstreams that fed into each other (Figure 1.1: Main Areas of Work Taken to Achieve the Project Objectives).

First, the bolt-on FS-ASM Standard was drafted, with the support of the Global Advisory Panel (GAP)\(^3\). Second, and in parallel, the strategies for uptake and adoption of the FS-ASM Standard into other existing standards were drafted, with the support of some standard setter members of the GAP. Third, to conceptually test the standard, feasibility assessments were done at pilot sites in Colombia, Peru, Ghana, and Liberia, including local stakeholder consultations and the design of workplans and budgets for future pilot implementation. The findings from these feasibility assessments were used to update and finalize this first version of the FS-ASM Standard.

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3 See Table 2.1 in chapter 2 for a list of GAP members.
1.2.1 Drafting the Bolt-On FS-ASM Standard

To draft the FS-ASM Standard, two things were done in parallel: (a) the drafting of a concept note setting the context, and principles for FS ASM, and (b) the establishment of the Global Advisory Panel. Feedback was sought from the GAP and the World Bank on the initial concept note and integrated into the outline of the FS-ASM Standard, which was also shared and agreed with the GAP. Then the standard drafting process began, and a first draft was sent to the GAP and the World Bank for review on the May 22, 2021. After several internal and external iterations, a “field-ready” version of the FS-ASM Standard was sent to local partners on the July 12, 2021, for piloting in Colombia, Peru, Ghana, and Liberia. Results from feasibility studies were used to update and finalize the FS-ASM Standard, which was sent to the GAP for final review on the November 5, 2021. The standard is described in chapter 1 and submitted along with this report as annex 1.

Research limitations

• The broad scope of the guidelines has been difficult to tackle; each section could be a very detailed and long guideline in itself.

• In some cases, it was difficult to reconcile different views on things to prioritize and how to address them in the FS-ASM Standard. All views have been integrated, and broad, balanced consensus was sought to the extent possible.

• Although GAP members have been quite responsive and engaged, not all members were always able to provide timely feedback because of their other commitments. That is relatively common when engaging high-profile and busy people in a process.

1.2.2 Strategies for Uptake of the Bolt-On FS-ASM Standard

To draft the strategies for FS-ASM Standard uptake and adoption into other existing standards, the project team sent an initial survey to eight standard setters. This consultation identified the standard setters with the greatest interest and potential for successful adoption and impact. Five to six standard setters were short-listed, for whom an adoption strategy would be developed: GemFair (diamonds), planetGOLD, LBMA, Fairtrade, CRAFT, and Fairmined (all gold). The results of the strategies can be found in chapter 3.

Four important aspects were considered in the standard’s design to further enhance the probability of the standard’s uptake.

1. The FS-ASM Standard was designed as a bolt-on standard, meaning that it is a flexible document that can be adapted into other standard setters’ procedures and normative documents. It is not designed to function as a stand-alone standard. There is no vision for developing a bespoke assurance framework or formal standard committee or board.

2. It was designed in close consultation with a multi-stakeholder committee—a Global Advisory Panel—which had an advisory rather than decision-making role and comprised the target standard setters. This not only increased the probability of producing a quality product that would be more practical and fit for purpose, but also increased the probability of adoption by these standard setters as they had been involved in its development, had read it closely, and had been engaged to consider under what circumstances they would be able to adopt it.

3. The guidelines section of the standard provides instruction to local organizations that can increase the likelihood of successful implementation of its PCI by providing support to the artisanal and small-scale miners, who typically have low capacity and literacy levels.

4. The field-testing of the draft standard generated attention and interest from local stakeholders and allowed the consultants to conceptually test it with artisanal and small-scale miners and their likely support organizations and stakeholders.

1.2.3 Feasibility Studies

The countries and sites where feasibility studies would be conducted were decided early on. A first short list of countries and sites was presented to the World Bank in the inception report. Once countries were agreed, greater detail was presented on sites and candidate local partners, and in a dedicated meeting the World Bank and project team agreed the final selection. Local teams were informed and mobilized. Levin Sources worked with Solidaridad in Ghana and with Diamonds for Peace in Liberia; the Alliance for Responsible Mining led the fieldwork with ASM entities in Colombia and Peru. Country regulatory reviews and stakeholder analyses were done from February to May 2021. The fieldwork, conducted from July until September 2021, provided a conceptual test of the FS-ASM Standard to gauge the feasibility of its adoption, a carbon feasibility analysis, a regulatory review, a local stakeholder consultation, and eventually the creation of a road map, workplan, and budget for implementation of future empirical testing. The results of the field studies are summarized in chapter 1; detailed results of the fieldwork in each country can be found in appendices 2 through 5 (separate documents).
### 1.2.4 Summary of Deliverables Submitted

The project team reported on its progress at various stages, submitting several deliverables (Table 1.2: Summary of Project Deliverables).

<table>
<thead>
<tr>
<th>Date</th>
<th>Document</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 17, 2020</td>
<td>Inception report</td>
<td>Including the action plan, a proposition of candidate sites, initial stakeholder map, stakeholder engagement strategy, sites selection criteria, proposed methodological approach, initial thoughts on marketing, and comms</td>
</tr>
<tr>
<td>February 27, 2021</td>
<td>Intermediate report</td>
<td>Including initial conceptualization of the FS-ASM Standard, principles, and initial strategies for uptake into existing standards</td>
</tr>
<tr>
<td>November 5, 2021</td>
<td>Interim report</td>
<td>The field-ready draft version of the FS-ASM Standard, to be used for the feasibility assessments in Colombia, Peru, Ghana, and Liberia</td>
</tr>
<tr>
<td>November 15, 2021</td>
<td>Draft final report</td>
<td>Including the description of the process to integrate the FS-ASM Standard in existing standards, and a summary of the feasibility studies of applying the standards to pilot ASM sites</td>
</tr>
<tr>
<td>December 3, 2021</td>
<td>Final report</td>
<td></td>
</tr>
<tr>
<td>December 3, 2021</td>
<td>Other</td>
<td>Field pictures, GIS data, and PowerPoint presentations</td>
</tr>
</tbody>
</table>
2. BOLT-ON FS-ASM STANDARD (PCI AND GUIDELINES)

Per the project’s terms of reference, the objective of the assignment is to assess and develop Forest Carbon guidance and tools for the artisanal and small-scale mining sector by including Forest-Smart Mining Principles, Criteria & Indicators (FSM PCI) into existing ASM standards and certification systems, and to support their implementation by identifying REDD+ and environmental/Climate funding opportunities and develop roadmaps for pilot sites (World Bank 2020).

Objective 1 is “to produce a set of detailed technical guidelines and PCI for FSM ASM.” This is reflected by the tasks to

- “Complete a desk review of various existing guidelines, principles, criteria and indicators linked to internationally recognized systems of norms, standards and certification systems in value chains (including agriculture and forestry) related to deforestation, forest degradation and restoration of forest ecosystems;
- “Complete a desk review to identify a set of best practices applicable to the ASM sector to avoid deforestation, forest degradation and to promote forest restoration;
- “Develop guidelines for the implementation of FS ASM based on best practices identified; and
- “Develop a set of PCI for FSM applicable to the ASM sector with different levels of requirements (World Bank 2020).”

2.1. Standard Development Process Applied

Process

The starting point for the development of guidelines, principles, criteria, and indicators for forest-smart mining was the review of a representative sample of mainstream artisanal and small-scale mining (ASM), mining, and forest-and carbon-related standards. All reviewed standards were considered as “source standards” (standards used to inform the drafting of the PCI), regardless of their scope. Hereby, ASM standards informed on what ASM standard setters consider practically feasible at the ASM level, and non-ASM standards informed about industry best practice, although often beyond the capacity of ASM. ASM standards were also reviewed for on being potential “target standards” (standards to which the FS-ASM Standard could be “bolted on”). Carbon- and forest-related standards were only reviewed with for being “source standards.”

Based on the standard review, further literature review, and the prior field experience of the drafting team, a concept paper was developed (contained in the intermediate report) for feedback from the client (World Bank) and the Global Advisory Panel (GAP) convened for this purpose. On the consultation process, see chapter .

The received feedback informed an updated concept paper (summarized in chapter ) and the subsequent standard drafting task, performed by the multidisciplinary drafting team of the consortium. The first draft of the FS-ASM Standard (contained in the interim report) underwent a similar feedback loop, involving the World Bank and the GAP.

The resulting updated second draft of the FS-ASM Standard was then field-tested with ASM entities and consulted with national stakeholders during the feasibility studies for pilot implementations in Colombia, Peru, Ghana, and Liberia, to produce the third draft.

The third draft of the FS-ASM Standard was circulated to the GAP for final comments, to be included in the final report and the final version of the FS-ASM Standard. Comments have been received from GemFair, Fairtrade International, and planetGOLD. Jara Bakx and Linda Carstens of Women’s Rights in Mining also reviewed the draft standard to ensure that it is adequately gender sensitive. These comments have been included in the draft standard submitted with this report (annex 1). Per

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earlier consultations with each organization, invitations were also sent to Transparency International (to do an anti-corruption check) and to the Amerindian Peoples Association (to do an Indigenous rights mainstreaming check), but neither organization was able to contribute.

Alignment with Commonly Accepted Standard Setting Procedures

Most voluntary sustainability standards are developed by ISEAL-affiliated standard setters, following the ISEAL Code of Good Practice (ISEAL 2014). However, given the timeline and resources of the assignment for developing the FS-ASM Standard, it wasn’t possible to follow an ISEAL-aligned (and even less an ISEAL-conformant) standard-setting process, which includes among other things a multistakeholder process and several rounds of public consultations.

Notwithstanding, considering the aspiration of creating a “bolt-on” standard for “including Forest-Smart Mining Principles, Criteria & Indicators (FSM PCI) into existing ASM standards and certification systems” (World Bank 2020), this is not seen as a barrier for adoption. In any case, when the FS-ASM Standard is incorporated into any ISEAL-aligned or -conformant target standard, that target standard will undergo a process aligned with the ISEAL Code of Practice.

In the meantime, the project’s methodology was designed to seek to uphold the ISEAL Credibility Principles to the extent possible (see appendix A).

2.2. Rationale and Conceptual Design of the Standard

2.2.1 General Considerations

Earlier PROFOR work (World Bank 2019a) researched a diverse sample of 21 ASM sites across 12 countries and four continents, with variation in geological, economic, environmental, social, and governance contexts, and developed a set of principles that incorporated actions to be taken by ASM operators, governments, civil society, downstream industries, and development organizations. It concluded that, for mining to be truly forest smart, all stakeholders must take certain actions, not just the miners.

A forest-smart ASM standard therefore needs to take a two-pronged approach:

- Principles, criteria, and indicators (PCI) shall guide ASM entities to conduct their mining activity in a forest-smart manner. This requires a very specific approach, focusing on forest-specific topics to be complied with by ASM entities to avoid, minimize, mitigate, or remediate the degradation and destruction of forest landscapes. These are presented as “requirements” that should be specifically applied and adapted to the ASM forest context under consideration. Specific indicators shall explain how to fulfill the criteria and how to monitor them.
- Guiding principles (guidelines) for governments, civil society, private sector, and development organizations shall support stakeholders to analyze the context for forest-smart ASM, identify bottlenecks, and develop a flexible and responsive action plan for facilitating its implementation. Such guiding principles can comprehensively cover all aspects that—although relevant to ASM performance—are not or only partially covered within the organizational scope of usual ASM standards2.

2.2.2 Characteristics and Scope of the FS-ASM Standard

According to the aspiration of future uptake by standard setters and incorporation into their ASM standards, the guidelines and PCI themselves need to have the characteristics of a standard as below.

To be fit for inclusion in existing standards as an adaptable bolt-on standard, the standard needs to avoid the extent possible duplication of standard requirements already typically provided by existing ASM standards.

ASM standards are typically voluntary sustainability standards in the category of performance standards regardless of occasionally specifying product standard requirements3. Consequently, to be “boltable” to any ASM standard, the FS-ASM Standard needs similar characteristics to a performance standard.

The organizational scope needs to be adaptable to ASM initiatives that might adopt the FS-ASM Standard. The standard therefore refers to “ASM entities” as a flexible placeholder for the organizational scope of the adopting standard or for the legal definition of ASM in any country.

The geographic scope of most ASM standards is predominantly agnostic to landscape types (except protected areas). To be applicable as bolt-on to these

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2 Usually, ASM standards do not set requirements to be complied with by governments or other non-ASM actors. For example, conformance with requirements for governments is beyond the direct control of ASM organizations and therefore not auditable in a meaningful way. That said, the development of accompanying guidance to governments with greater detail on how to incentivize and enable forest-smart ASM could draw upon the guidelines to facilitate this.
standards, the FS-ASM Standard needs to be applicable in any forest landscape, independent of the existence of carbon finance programs (for example, REDD+, VCS). The geographic scope shall therefore be global in principle\(^4\).

The **ecological scope** of the standard includes the range of boreal, temperate, subtropical, and tropical forests as well as wet and dry savanna woodlands, montane and tropical cloud forests, and forest scrub communities.

The standard applies to the ASM of any mineral, including but not limited to precious and platinum minerals/metals, precious stones, industrial minerals, industrial metals (ferrous and nonferrous), minor metals, and energy raw materials. By other classifications, this includes minerals traded into export markets (for example, technology critical elements, construction materials) as well as those traded in domestic markets (for example, development minerals, including sand) [OECD 2021].

In relation to **existing law**, requirements of national laws and regulations shall always prevail and supersede the PCI of the FS-ASM Standard, unless the latter are higher. This automatically prevents requirements of the standard from contravening or conflicting with national laws. This is different for the guidelines. The guiding principles may intentionally go beyond the existing legal and regulatory framework, as an inspiration to proactively and innovatively create an enabling context for forest-smart ASM.

### 2.2.3 Key Concepts for Principles, Criteria, Indicators, and Guidelines

The concept of forest-smart mining, defined simply, is mining that acknowledges the interlinkages between forests, their intrinsic values, and other land uses (including socioeconomic uses and ecosystem services), and that actively seeks to reduce loss or damage to those values and, where possible, achieves a net neutral (or even positive) outcome. While this may be appropriate for the large-scale mining sector, the ASM sector has resource and capacity challenges that need to be acknowledged and for which adjustments need to be made.

#### a). Principles

The realization of forest-smart mining for the ASM sector needs to be guided by three basic principles\(^5\), which will underpin and inform the development of criteria (or requirements) and associated indicators. Principles 1 (forest ecosystem safeguard and resilience) and 2 (human rights approaches) serve as key terms of reference informing and guiding the design and implementation of the PCI through Principle 3, the commitment to working through the mitigation hierarchy (Figure 2.1: Forest-Smart ASM: The Principle Triangle).

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3  For example, Fairtrade or Fairmined Gold.
4  This must not be interpreted as a blanket endorsement by the FS-ASM Standard of ASM in any region or landscape, especially not in IUCN Category I–IV protected areas.
5  “Principles” represent core values, and the less they are in number, the more importance each of them gains. This makes it less likely that one of them is dropped in the process of incorporating into other standards.
Principle 1: Forest ecosystem safeguard and resilience: Biodiversity, carbon, and ecosystem services

Mining can negatively impact forests both directly and indirectly. To avoid or mitigate these impacts, mining needs to be informed by the range of forest values that combine in complexity in the provision of habitat for species and of ecosystem services for people and planet. The identification and acknowledgement of these values provides a key term of reference in the development of forest-smart actions. If mining activities fail to recognize their impacts on forests, then they will not become forest smart. The range of forest values encompasses wildlife habitats and associated globally threatened or endemic species, and the very ecosystem services that forests provide by way of carbon storage and sequestration, climate regulation, water supply and purification, soils development, and the wide array of timber and non-timber products that local and global human communities depend upon. In forests everywhere, but particularly in ecologically intact forests, the carbon storage and sequestration functions provide an increasingly valued global ecosystem service.

Principle 2: Human rights approaches: Communities and livelihoods, both local and global

The crucially important forest values need to be balanced and assessed alongside human rights–based values that recognize that ASM communities have a right to life and livelihood. Furthermore, there will be wider forest-dependent stakeholder communities whose rights and need for livelihood will require recognition and consideration. Failure to acknowledge the needs of all forest-dependent human communities in the development of forest-smart mining practices will likely result in intercommunity/stakeholder discord, potential conflicts, and a rejection of and lack of respect for the very forest values that are being advocated. The role and significance of Indigenous communities dependent on intact forests is of key concern. Positive and inclusive approaches to engagement and participatory decision-making as to how natural resources are extracted and managed and benefits shared play an important role in ensuring sustainable outcomes for both forests and people. At both national and international levels, policies may be developed and implemented without meaningful participation by key stakeholders. The design and implementation of forest-smart practices need to take human rights–based approaches into account to ensure that all rights holders are acknowledged and meaningfully included. The development of forest-smart practices needs to be informed by this principle as a key term of reference.
**Principle 3: Commitment to the mitigation hierarchy: Practical approaches to forest-impact avoidance, minimization, and rehabilitation**

With reference to the two key principles above, the third principle—committing to the mitigation hierarchy—provides the means whereby we approach the systematic design of actions (requirements) that forest-smart ASM can adopt to practically and effectively reduce their impacts on forested ecosystems. The development of practical forest-smart PCI—while focusing on what ASM entities/communities can realistically achieve within their levels of capacity and resources—will also need to recognize that forest-smart mining is not the sole responsibility of the ASM sector. The mitigation hierarchy can inform how a systematic array of practices can be developed that enable ASM impacts on forests to be avoided (in part), reduced, and rehabilitated. However, ASM capacity constraints will limit the extent to which all forest impacts might be avoided and/or mitigated. Such limitations need to be identified, with suggested measures proposed that indicate how governments and the wider community of stakeholders might take on roles and responsibilities that enable a fuller realization of forest-smart ASM.

The proposed principles and rationale for their function as core values underpinning FSM PCI for ASM are discussed in more detail in appendix C of the FS-ASM Standard (annex 1).

**b). Criteria, that is, requirements**

Below the principles are the criteria. They describe/prescribe the concrete measures and actions ASM entities have to undertake, or avoid, to be in conformance with the standard. Terms such as “provision” and “requirement” are possibly easier to communicate to miners, as they indicate what an ASM entity must achieve to be deemed standard compliant, or in more simple terms, what is required to be done. The FS-ASM Standard uses the term “requirement.”

Progressivity is key at the requirement level. Some requirements are more critical than others, and it is unrealistic to expect that ASM entities will be able to comply with all requirements simultaneously and from the outset. Almost all ASM standards have some degree of progressivity built in. Recently, CRAFT took a new two-layered approach combining stepwise and continuous progressivity. A similar approach might make sense for the PCI for ASM entities: (a) for stepwise progressivity, grouping requirements into high, medium, and low risk/priority, and (b) establishing pass/progress/fail criteria as applicable, for continuous progress through improvement plans. Such a structural alignment with CRAFT might also make sense in view that some ASM standards (GemFair, planetGOLD, and in the future probably Fairmined) already build on elements of the Organisation for Economic Co-operation and Development Due Diligence Guidance (OECD DDG)-aligned CRAFT Code. Notwithstanding, for broader adoption as a bolt-on standard, the FS-ASM Standard refrains from prescribing a prioritization mechanism.

In general, attention must be paid that all requirements at the PCI level address issues that are entirely controllable by the ASM entities (for example, application for a certain permit). Requirements for which compliance depends on the actions of third parties (for example, being granted a certain permit) are programmed failures. Such requirements that relate to an enabling environment, and on which ASM entities cannot be audited because duty bearers and other stakeholders have a role to play, are therefore placed in the guidelines section of the standard.

**c). Indicators**

Regarding indicators, ASM standards apply different procedures for verification. For example, Fairmined engages various certification bodies that develop their own compliance criteria (that is, indicators); Fairtrade has its own exclusive certification body; CRAFT relies on first- and second-party assurance and due diligence; GemFair has De Beers’s proprietary assurance scheme; governments have mine or environment inspection protocols established by regulations, and so on.

To maintain flexibility so that the FS-ASM Standard’s PCI can be incorporated in all these contexts, indicators developed for the standard avoid being prescriptive; rather, they seek to provide guidance on how conformance of the ASM entity with the standard requirements could be verified. In other words, indicators are offered as options or inspiration to allow a standard setter to use the indicators that are most likely to work for their audit system.

**d). Guidelines, that is, guiding principles**

Mining within forested landscapes is seen with considerable concern in public and political opinion. Mining is a significant driver of deforestation and forest degradation, and this applies particularly to ASM, which is too often carried out in an uncontrolled manner and

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6 “the ASM entity shall …” or “the ASM entity must not …”
in the informal economy. Positive examples of forest stewardship by ASM exist (ELL and WWF 2012; World Bank 2019a); notwithstanding, such positive cases are the exception rather than the norm. The FS-ASM Standard’s requirements for miners (that is, the standard’s PCI), if adopted into ASM standards, have the potential to improve the performance of ASM.

However, poverty-related ASM cannot reasonably be expected to meet industry standards for large-scale mining companies in two main areas along the mitigation hierarchy. The first regards the need for a fully informed approach to biodiversity impact assessment and avoidance, and the second is in the offsetting of residual negative impacts in order to realize a net neutral—or indeed—a net positive impact on biodiversity. If ASM cannot be expected to meet these requirements, then significant impact avoidance needs to be realized through a guiding and enabling environment developed by government and facilitated by other stakeholders. Mining practices that fail to account for the values of forests as complex ecosystems, where biodiversity underpins important ecosystem services such as diverse forest products, regulated water supplies, and stored carbon, are unlikely to be authentically considered forest smart.

The project therefore envisages the need to outline a second and complementary approach through the provision of guidelines for governments, civil society, the private sector, and development organizations to help establish an enabling environment for forest-smart ASM. In steering ASM away from forests most highly prioritized for biodiversity, ecosystem services, and carbon sequestration, such as protected areas, Key Biodiversity Areas (KBAs), and other internationally recognized areas, then the complex responsibility for undertaking highly technical and sophisticated data gathering, analyses, and assessments will not fall to ASM entities. This avoidance can be best achieved by abiding to guidelines that promote impact avoidance safeguards within the planning, land access, and permitting roles of government, with support from civil society and other relevant stakeholders.

The FS-ASM Standard is conceptualized as a voluntary sustainability standard (like other ASM standards). Such standards do not have the purpose or the power to establish a full set of requirements/criteria and indicators to stakeholders such as governments, civil society, development organizations, and so on. The guidelines for institutional stakeholders should therefore be “guiding principles,” recommending actions to establish an enabling context for the ASM to comply with the FS-ASM Standard’s PCI.

Suggestions and recommendations for possible incentives for forest-smart ASM need to be a core element of these guidelines. The FS-ASM Standard can be expected to go beyond compliance with existing environmental regulations (similar to how Fairmined and Fairtrade go beyond legal ASM). Existing legal enforcement mechanisms are therefore not sufficient as drivers to promote the uptake of forest-smart ASM.

### 2.3. Consultation Process

The FS-ASM Standard has been consulted with international stakeholders—the Global Advisory Panel (see Figure 2.2: Consultation Points with the Global Advisory Panel) and certain issue experts—and national stakeholders in each pilot country.

#### Figure 2.2: Consultation Points with the Global Advisory Panel

<table>
<thead>
<tr>
<th>Meeting 1</th>
<th>Meeting 2</th>
<th>Meeting 3</th>
<th>Consultation 4</th>
<th>Consultation 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Intro to the project</td>
<td>• Introduction of the conceptual approach, principles, and criteria</td>
<td>• Intro to the content / first draft of the FS-ASM Standard and Guidelines</td>
<td>• Submission of the field-ready FS-ASM Standard to review and sign off</td>
<td>• Submission of the revised FS-ASM Standard after field studies to review and sign off</td>
</tr>
<tr>
<td>• Intro to the panel</td>
<td>• Feedback and next steps</td>
<td>• Feedback and next steps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Strategy discussion and next steps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

March 8, 2021 | April 19, 2021 | May 5, 2021 | May 27, 2021 | November 5, 2021 |
In addition to the engagement stated above, an initial individual meeting with each GAP member was done to seed their interest in the project and hear their early thoughts. Moreover, an optional workshop on REDD+ and financial carbon mechanisms was also offered to GAP members to enhance their understanding of the carbon sections of the FS-ASM Standard.

Stakeholders were offered four different levels of engagement in the conceptualization, design, drafting, and finalization of the standard, to fit their availability and level of interest vis-à-vis other present strategic priorities:

1) **FS ASM GAP members.** Actively involved in shaping the standard by discussing, reviewing, and providing feedback. Sit on the advisory panel.

2) **FS ASM implementers.** Stakeholders who want to act on what they learn from this project and use it in their programming, either nationally or internationally. May sit on the GAP.

3) **FS ASM amplifiers.** Stakeholders who are willing to learn and promote the project through social media (ultimately, this category became defunct because of the low-profile approach the project eventually followed).

4) **FS ASM learners.** Stakeholders who have an interest in the program but are unlikely to engage with it beyond learning.

A fifth category emerged organically: stakeholders who wished to participate on the GAP as observers because of high interest but who had either low capacity or political barriers to formal participation. Table 2.1: Global Advisory Panel Members and Observers includes a summary of GAP members and observers.

### Table 2.1: Global Advisory Panel Members and Observers

<table>
<thead>
<tr>
<th>Stakeholder type</th>
<th>Invite</th>
<th>Person invited to sit on the panel</th>
<th>Engagement type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard setters</strong></td>
<td>CCCMC Guidelines for Responsible Outbound Mining Investment</td>
<td>Director Lihui Sun, Rachel Zhong, June Xiang</td>
<td>Members</td>
</tr>
<tr>
<td></td>
<td>Fairtrade Gold and Associated Precious Metals</td>
<td>Anna Barker</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td>Code for Responsible Extraction (CORE) – from Solidaridad and Unilever</td>
<td>Beatrix Richards, Jan-Kees Vis</td>
<td>Members</td>
</tr>
<tr>
<td></td>
<td>GemFair – from De Beers</td>
<td>Ruby Stocklin-Weinberg</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td>International Tin Supply Chain Initiative (iTSCI) – from ITA</td>
<td>Roper Cleland</td>
<td>Observer</td>
</tr>
<tr>
<td></td>
<td>Responsible Gold Guidance – from LBMA</td>
<td>Alan Martin Neil Harby</td>
<td>Members</td>
</tr>
<tr>
<td><strong>Conservation NGOs/multilaterals</strong></td>
<td>KBA Partnership</td>
<td>Giulia Carbone, Andy Plumptre</td>
<td>Members</td>
</tr>
<tr>
<td></td>
<td>WWF Global Extractions lead</td>
<td>Tobias Kind</td>
<td>Member</td>
</tr>
<tr>
<td><strong>Indigenous Peoples</strong></td>
<td>Amerindian Peoples Association</td>
<td>Laura George</td>
<td>Observer</td>
</tr>
<tr>
<td><strong>Miners</strong></td>
<td>African Women in Mining Association (AWIMA)</td>
<td>Georgette Barnes</td>
<td>Member</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>Women’s Rights in Mining</td>
<td>Katrine Danielsen, KIT Royal Tropical Institute</td>
<td>Observer</td>
</tr>
<tr>
<td><strong>ASM technical partners (i.e., leading ASM or responsible sourcing projects)</strong></td>
<td>planetGOLD and planetGOLD II</td>
<td>Susan Keane, NRDC</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td>OECD Responsible Minerals Unit</td>
<td>Stephanie Venutti, Louis Marechal</td>
<td>Observers</td>
</tr>
</tbody>
</table>

**Note:** ASM = artisanal and small-scale mining; CCCMC = China Chamber of Commerce of Metals, Minerals & Chemicals Importers & Exporters; ITA = International Tin Association; NGO = nongovernmental organization; NRDC = National Resources Defense Council.
2.4. Forest-Smart ASM Standard (FS-ASM Standard)

The FS-ASM Standard, containing the PCI for ASM entities and guidelines for ASM stakeholders, is presented in annex 1 of this report, a stand-alone document. It is structured in three sections:

Section A: Introduction and General Principles
A.1 Introduction
   A.1.1 Background
   A.1.2 Type of Standard
      A.1.2.1 A Progressive, Risk-Based Approach
      A.1.2.2 A Collective Approach
   A.1.3 Structure of the Standard
A.2 Three Principles for Forest-Smart ASM
A.3 Application in Protected Areas, Key Biodiversity Areas, and High Conservation Value Areas
A.4 Linkage to REDD+ and Carbon Standards
A.5 Scope
   A.5.1 Organizational Scope
   A.5.2 Geographic Scope
   A.5.3 Legal Scope
A.6 Application
A.7 References

Section B: PCI for ASM Entities
B.1 Introduction
B.2 Scope
B.3 General Principles and Subsidiarity
B.4 Implementing the Requirements (Background and Significance of the Methodological Approach)
B.5 Requirements (Criteria and Indicators)
   B.5.1 Situation Assessment and Planning
      B.5.1.1 Stakeholder Identification and Engagement
   B.5.2 Direct Impacts – Mining
      B.5.2.1 Planning and Preparation of Mining Activities
      B.5.2.2 Forest and Vegetation Clearance Prior to Mining
      B.5.2.3 Technical Rehabilitation
      B.5.2.4 Topsoil Management
      B.5.2.5 Biological Rehabilitation
      B.5.2.6 Site Closure and Handover
   B.5.3 Direct Impacts – Nonmining
   B.5.4 Indirect Impacts
   B.5.5 Carbon Finance Requirements (Criteria)
      B.5.5.1 Stakeholder Engagement
      B.5.5.2 Setting Out the Baseline Case, Additionality, and the Forest Carbon Reference Level
      B.5.5.3 Accounting For and Monitoring the Project Case—Minimizing Deforestation and Degradation and Forest Restoration—and Certifying the Project
      B.5.5.4 Capacity Building, Handover, and Site Closure
Section C: Guidelines to Support the Achievement of Forest-Smart ASM

C.1 Introduction

C.2 Scope

C.2.1 Who Should Use the Guidelines
C.2.2 Where to Use the Guidelines
C.2.3 How to Use the Guidelines
C.2.4 Circumstances in Which the PCI and Guidelines Should Not Be Used

C.3 Conditions for an Enabling Context

C.3.1 Government Prioritizes Forest Protection and Recognizes the Legitimacy of ASM as a Source of Livelihood
C.3.2 There Is Good Governance and an Enabling Policy Environment
  C.3.2.1 Policies for Land Use Allocation and Ownership Are Clear and Fair
  C.3.2.2 Laws and Regulations Provide the Right Incentives for Forest-Smart Mining
  C.3.2.3 Laws and Regulations That Take Special Consideration to Safeguard Comparatively Weaker Individuals and Communities and Those with Special Rights
C.3.3 There Is Peace, Justice, and Strong Institutions
  C.3.3.1 Law Enforcement
  C.3.3.2 Transparency and Accountability
  C.3.3.3 Anti-corruption
C.3.4 Miners Are Organized, Settled, and Engaged in a Process of Formalization

C.4 Process-Related Guidelines to Set the Miners Up for Success

C.4.1 Cooperation, Partnership, and Multistakeholder Approaches (SDG 17)
  C.4.1.1 Capacity Gaps and Actions to Be Considered by Diverse Stakeholders in Developing an Enabling Environment for the PCI
  C.4.1.2 Partnership Approaches and the Role of Civil Society Organizations
  C.4.1.3 Interrelationships between LSM and ASM
  C.4.1.4 Interrelationships between ASM and Downstream Businesses
C.4.2 A Human Rights–Based Approach Is Taken
  C.4.2.1 Free, Prior, and Informed Consent
C.4.3 A Risk-Based Approach Is Taken to Environmental Management Planning
C.4.4 A Landscape-Level Approach Is Taken
  C.4.4.1 Develop and Use Global, National, and Local information on Forests and Geology to Inform Landscape-Level Planning
  C.4.4.2 Develop Equitable Access to Formal Mining Rights for Environmentally Responsible ASM within Context of Other Competing Land Uses That Impact Forests
  C.4.4.3 Develop Public Finance Mechanisms That Support FS-ASM Adoption and Planning at the Local Level through Stakeholder-Inclusive Local Environmental Management Plans
C.4.5 The Route to Forest-Smart ASM Is Evidence-Based
  C.4.5.1 The Forest’s Values Are Profiled
  C.4.5.2 ASM Miners, Entities, and Communities Are Profiled
  C.4.5.3 Nature of Mining Impacts on People and Forest Ecosystems Is Understood and Used to Prioritize Actions in the Approach to Forest-Smart ASM
C.4.6 The Process Is Pragmatic and Realistic to the Miners’ Situations
  C.4.6.1 Miners and Their Communities Are Incentivized to Pursue FSM
  C.4.6.2 Implementation of the PCI Is Affordable but Balanced with the Needs to Address Social Acceptability and Ecological Viability, as Defined by the FRM
C.4.6.3  Pursuit of Compliance with the FSM PCI Is Well Planned, Implementation Is Monitored, and Success Is Rewarded

C.4.6.4  Roles and Responsibilities of Stakeholders Are Clearly Defined and Understood by All

C.4.7  Capacity of Miners and Other Stakeholders Is Built to Support the Design and Implementation of a Route to Forest-Smart ASM

C.4.7.1  Capacity Limitations of the Miners and of Other Stakeholders Are Well Understood and Accommodated in the Plan

C.4.7.2  There Is Appropriate Training Across Stakeholder Categories

C.4.7.3  There Is Appropriate Sensitization of Stakeholders as Part of a Broader Communications Plan to Support Implementation of the Road Map

C.5  Financing Support Programs for Forest-Smart Mining

C.5.1  Development Finance

C.5.2  Corporate Social Responsibility and Impact Finance

C.5.2.1  Supply Chains – Downstream Finance

C.5.2.2  Sustainable Finance

C.5.3  Carbon Finance

C.5.3.1  Carbon Finance Principles

C.5.3.2  Carbon Offsetting versus Insetting

C.5.4  Public-Private Partnerships

Appendix A: Glossary

Appendix B: Capacity Gaps, Risks, and Actions for Stakeholders to Consider in Developing an Enabling Environment for the PCI

Appendix C: The Three Principles for Forest-Smart ASM: Rationale
3. FEASIBILITY OF ADOPTION OF THE BOLT-ON FS-ASM STANDARD IN GLOBAL PROCESSES

The assignment's terms of reference indicate that “the objective of the assignment is to assess and develop Forest Carbon guidance and tools for the ASM sector by including Forest-Smart Mining Principles, Criteria & Indicators (FSM PCI) into existing ASM standards and certification systems, and to support their implementation by identifying REDD+ and environmental/Climate funding opportunities and develop roadmaps for pilot sites” (World Bank 2020).

Objective 2 is “to design a process to include FSM guidelines and PCI in existing ASM standards and certification systems, as well as targeted government policies and legislation.” This is reflected by the tasks to

- Identify existing standards and certification systems for responsible ASM and carry out a detailed analysis of their contents, especially environmental requirements and issues related to deforestation, forest degradation, and ecosystems rehabilitation;
- “Develop a strategy for integration of FSM concept in existing ASM standards and certification systems, including
  - Concrete technical proposals for the integration of previously defined FSM PCI in each of the pre-identified ASM standards and certification systems; and
  - Practical proposals related to methodology, agenda and processes to include FSM PCI in existing standards and certification systems;
- “Conduct a review of ASM regulation in pilot studies’ targeted countries focused on environmental and forest compliance; and
- “Develop proposition for ASM regulatory reforms in pilot studies’ targeted countries to facilitate the implementation of FSM guidelines” (World Bank 2020).

3.1. Strategies for Standard Setters

This chapter analyzes the readiness of ASM-related standards owned and/or maintained by Global Advisory Panel (GAP) members to integrate the requirements of the Forest-Smart Artisanal and Small-Scale Mining (FS ASM) Standard. Strategies have been developed based on assessments of the standard setters' websites and normative documents and informed by interviews with Ruby Stocklin-Weinberg (GemFair), Anna Barker (Fairtrade), Alan Martin and Neil Harby (LBMA), Susan Keane (planetGOLD), and Marcin Piersiak (Fairmined and CRAFT) on various dates throughout the process; responses to the FS-ASM Standard's research team's questionnaires in January and September; and reviews of the draft strategies in November.

A summary table indicating key next steps and the appetite of standards or initiatives to integrate or pilot FSM can be found in appendix B.

3.1.1 GemFair

a). Where is the standard now?

GemFair is a program of De Beers Group, currently in operation in Sierra Leone (Kono District), that aims to create a sustainable route to market for ethically sourced ASM diamonds. In 2019, the program released its first standard for ASM (GemFair 2019a) and an accompanying manual (GemFair 2019b). The standard is based on the Organisation for Economic Co-operation and Development Due Diligence Guideline (OECD DDG) (2016), De Beers’s Best Practice Principles Assurance Programme, and the CRAFT Code (ARM 2018). It is tailored to the requirements of national law in Sierra Leone, but it can be applied to other geographies by adapting some sections (Legitimacy Requirements and Aspirational Criteria).
The standard is split into four sections:

- **A: Legitimacy Requirements**
- **B: Core Requirements**
- **C: General Requirements**
- **D: Aspirational Criteria**

Environmental requirements feature in sections C and D. The standard does not currently mention forests, but many of the environmental requirements would help minimize forest degradation. Carbon stocks are beyond the current scope of the standard.

GemFair currently works with over 216 artisanal diamond mine sites in the Kono District. Depending on the season, between 10 and 25 people work at each site. There are approximately 3,240 direct beneficiaries of the program (the mine site workers) and 19,440 indirect beneficiaries (their families). Some impacts of GemFair to highlight include the following:

**ASM Assurance Programme**

- To date, GemFair has trained 1,461 individuals (cumulatively since 2018) on fair labor standards and safer and environmentally responsible working practices and equipped more than 200 miners with the skills they need to respond to accidents and emergencies at the site.
- GemFair will continue to provide training to artisanal miners on ASM standards and mine site first aid in 2022.
- In addition to classroom training, GemFair field staff are dispatched to participating mine sites on a regular basis to assess the miners’ compliance with the GemFair ASM Standard. Where they identify gaps, GemFair staff provide on the spot mentoring to the miners. If the noncompliances cannot be tackled during the site visit, GemFair develops a corrective action plan for the miner, which may include specific time-bound deliverables or remedial training or other capacity development support—such as introducing personal protective equipment to a mine site—to the miner and his or her workers.

**Reclamation and Cultivation Program**

In late 2020, GemFair decided to implement a program that would support artisanal miners to reclaim their mining areas and leave the land in a state for future productive use, like cultivation. Working closely with the local community and authorities, GemFair selected several legacy mining areas to be backfilled. GemFair worked with a team leader—a miner from the community—who hired local farmers and miners to backfill the land and prepare it for cultivation. Then GemFair worked with members of the neighboring villages—80 percent of whom are women—to cultivate the land.

Although in early stages, the sites have already seen four harvests of vegetable crops and rice. By running this program, GemFair is tackling one of the most critical environmental impacts of artisanal diamond mining—the lack of reclamation once the mining activities have ceased—while also supporting income generation and food security in the region. Here are some results of the project thus far:

- 130 direct beneficiaries
- 910 indirect beneficiaries
- 42 pits backfilled
- 3 acres reclaimed
- 420 kilograms of crop seedlings donated
- 4 harvests completed
- 25 plant types harvested

GemFair has rolled out further training for the farmers on how to cultivate the land more sustainably and also increase their yield. It is also exploring fish farming in former mining areas.

**b). Where is the standard going next?**

GemFair is interested in exploring the FS-ASM Standard’s criteria and indicators and plans to keep abreast of developments to the standard to see where the GemFair ASM Standard could benefit from a bolt-on in this topic area.

**c). How to get there?**

The authors advise GemFair to keep up to date with the developments of the FS-ASM Standard, to raise awareness with GemFair’s internal management team and miners. GemFair has been engaged as a member of the GAP in the review of the FS-ASM Standard and has proactively been engaged in all the consultation periods. GemFair is carrying out a review of the FS-ASM Standard requirements to determine which PCI are relevant for inclusion in GemFair’s miner training curriculum as part of their road map currently under development. GemFair is advised to share their road map with the World Bank once it is finalized.

Moreover, GemFair is recommended to engage with the World Bank in Sierra Leone. If the World Bank is involved in regulatory reform in Sierra Leone, it is worth speaking...
with the consultants who are carrying out that work to address the barriers to reclamation that presently disincentivize miners and communities from restoring mined-out land.

The World Bank could also carry out a regulatory assessment of Sierra Leone’s readiness for FS ASM, following the methodology used for this project.

3.1.2 Fairtrade

a). Where is the standard now?

Fairtrade International has been issuing standards for ASM since 2009, when its small Producer Organizations Standard was merged with the Alliance for Responsible Mining’s Standard Zero for gold from ASM to create the joint Fairtrade and Fairmined Standard. After this three-year partnership ended in 2012, version 1.1 of the Fairtrade Standard for Gold and Associated Precious Metals (Silver and Platinum) for ASM was released, with the objective of “empowering producers and local communities through trade and delivering economic, social and environmental transformation and restoration.” An updated version 1.2 of the standard was released in 2015, following earlier updates of the version in 2013 and 2014 (Fairtrade 2015b). The updates relevant to our project include measures on mercury usage and Indigenous Peoples’ rights. The standard is currently under revision again, and the new update is expected to be published in the first quarter of 2022.

The standard applies to gold supply chain actors, including import and export depending on the role the business plays. There are currently 15 Fairtrade-certified ASM sites in Peru, with more than 1,500 artisanal and small-scale miners, and additional mines in East Africa are working to achieve the standard. Certification is achieved following a successful third-party audit by FLOCERT.

The Fairtrade standard covers all stages of the mining life cycle and contains four chapters: General, Trade, Production, and Business and Development. Each chapter includes the following:

1. The intent
   a). Objectives and scope of application of the chapter
2. The requirements, which can be regarded as equivalent to “principles”
   a). Higher-level requirement topics (for example, 3.2 Environmental Protection)
   b). Second level of subrequirement topics (for example, Management of Toxic Substances)
   c). Third level of criteria (for example, 3.2.1 Gold Recovery without Mercury)
3. Guidance
   a). Brief guidance at the level of criteria to support interpretation of the requirements, best practices, suggestions, and examples of how to comply with the requirement
   b). Guidance absent for the majority of requirements

The standard incorporates the mitigation hierarchy through its intent to “progressively minimize” the negative environmental impacts of ASM, structuring the requirements by those most realistically achievable in the short to medium term.

The Fairtrade standards work with farms and mines that are on a journey toward sustainability and are designed to ensure continuous improvement. Fairtrade has core requirements that must be met from day 1 of certification and development requirements that the mine must gradually meet in a stepwise fashion over six years; the longer a mine is certified as Fairtrade, the higher the standards they have to meet. This pragmatic approach recognizes that improvements require investments, so certified mines can benefit from the additional funds generated through higher prices (due to price guarantees) and higher income (due to Fairtrade sales with the Premium), which thus provide the capital needed to make these necessary improvements.

Fairtrade advocates for “environmental stewardship,” understood as “Responsible ASM that actively encourages better preventive and restorative environmental practices and the application of responsible methods of production. Responsible miners abide by the environmental laws in their countries, contribute to environmental protection, human health and ecological restoration in its operations and communities, and mitigate negative impacts. Respecting protected areas, avoiding damaging important biodiversity, minimizing the ecological footprint of mining, and where possible, restoring or replacing biodiversity, and where this is

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1 Anna Barker, Senior Supply Chain and Program Manager, personal communication to Estelle Levin-Nally, November 6, 2020.
2 Anna Barker, Senior Supply Chain and Program Manager, personal communication to Blanca Racionero-Gomez, January 29, 2021.
not possible, compensating for that residual loss, are principles for environmental protection (Fairtrade 2015b, annex 2).

The existing principles and requirements cover three of four forest values—ecosystem services, biodiversity, and respect for the human rights of forest peoples. Most stages of the mining life cycle are considered, but the core criteria prioritize the production stage.

The requirements of the Fairtrade Gold Standard (Fairtrade 2015b) focus on the direct environmental impacts of mining, with limited recognition of the indirect impacts. Carbon stocks are not referenced, but Fairtrade does have a climate standard assessed by FLOCERT and a new scheme for farmers, workers, and miners to receive carbon credits. The Fairtrade Climate Standard (Fairtrade 2015a) was produced in collaboration and will be implemented with the Fairtrade Gold Standard, an internationally recognized standard setter for climate and development interventions. The Fairtrade Climate Standard aims to enable smallholders to gain access to the carbon market by producing Fairtrade Carbon Credits, facilitating training to smallholders, and generating climate finance. While the Fairtrade Carbon Credits already on the market are not yet generated by gold mines, there is scope and the possibility of establishing carbon credits from Fairtrade ASM sites if funding was identified. Gold is unique in comparison to the other Fairtrade projects, which focus on agriculture (that is, growth of shade trees or use of crop waste to generate biofuel gas cookers). We would need to scope and identify how Fairtrade Carbon Credits could work effectively in Fairtrade’s gold mines. Growing the climate offer for Fairtrade supply chain actors is a critical part of Fairtrade’s strategy going forward.

Fairtrade International also uses their supply chain requirements for selling Fairtrade gold to support environmentally friendly practices by supply chain participants, through the supply chain requirements for selling Fairtrade gold: The Premium is used to support whatever projects the miners choose to pursue, such as the introduction of cleaner technologies, the optimization of water usage, and to minimize the environmental footprint of Fairtrade artisanal and small-scale mining organizations; the license fee (Fairtrade mark) is used to fund capacity building of the organizations so they can meet the standard’s environmental requirements. Capacity building is done by the Latin American and Caribbean Network of Fair Trade Small Producers and Workers (CLAC), whose role is to bring the standards to life and run training with the ASM sites. There is opportunity for the local team to be trained in FS ASM if funding is available.

In sum, the Fairtrade Gold Standard has extensive environmental requirements, with some of them specific to forest protection, but these are mostly development requirements. There is guidance on the standard and new guidance will be included in the new revised standard.

There is also little consideration of the indirect impacts of mining on the environment, let alone forests.

b). Where is the standard going next?

There is high interest from Fairtrade to incorporate the FS-ASM Standard’s PCI into their standard, as Fairtrade is committed to a social justice agenda, of which climate justice is a core part. Moreover, deforestation and the environment are top of the agenda for consumers and companies, and Fairtrade wishes to understand how they can work further in this space.

Fairtrade is open to exploring the possibility of piloting FSM in some of their sites, but it sees funding as a big constraint. It is unlikely and very challenging for Fairtrade to implement a pilot if the market is not able to absorb the extra cost and invest in the journey to compliance.

c). How to get there?

The authors advise Fairtrade to follow these recommended steps to achieve its desired vision with regards to forest-smart ASM.

Pilot the FS-ASM Standard in a Fairtrade site or sites.

1. *Internal workshop.* Plan an internal workshop with the gold team to determine a more concrete pathway and timelines to pilot FS-ASM in a Fairtrade site.

2. *Get everyone on board.* Raise awareness of the FS-ASM Standard with Fairtrade leadership (including the CEO, CTO, legal counsel, the Board, and head of responsible sourcing), market stakeholders (gold importers, refiners, jewelry manufacturers, designers, brands, and so on),
country-level stakeholders (including miners), and other relevant stakeholders, to buy them into the process.

3. **Assess internal resources.** Assess internal capacity and funding available to implement a pilot of the FS-ASM Standard. Fairtrade is concerned with their capacity and resources to implement new programs.

4. **Plan.** Draft a plan to pilot the FS-ASM Standard or some of its requirements. A pre-feasibility assessment and funding assessment for the piloting of FS-ASM has been done in Peru; given that Peru is the country with most Fairtrade-certified sites, it is logical to trial a pilot there.

5. **Funding.** Seek funding to fill the capacity gaps encountered in step 1 to be able to implement step 2.

6. **Road map.** With the funding received, agree on a timeline and pathway for piloting.

7. **Implement and report.** Coordinate implementation of the road map with the World Bank or any other party tasked with coordinating the other pilots and gathering lessons learned with the purpose of finalizing, demonstrating, and supporting uptake of the FS-ASM Standard.

### Integrate the FS-ASM Standard and Guidelines requirements into the Fairtrade Gold Standard.

1. **Internal workshop.** Once a pilot has been implemented, plan an internal workshop with the gold team to determine a more concrete pathway and timelines to the below steps.

2. **Gap assess Fairtrade against the FS-ASM Standard to decide the process and progressivity for uptake of the standard’s PCI and guidelines, and also to further develop and improve the guidance that supports the implementation of the Fairtrade standard.**

3. **Feasibility assessment.** Assess results from the pilot study, and in parallel to the gap assessment, assess (a) the feasibility of non-piloted ASM organizations to implement the standard’s PCI with or without support from Fairtrade and (b) how much support they would need at what cost.

4. **Road map.** Decide the timeline and pathway to integrate requirements, taking into account the results from the pilot study and steps above. The next revision cycle of Fairtrade should happen in 2025. It is not possible to amend the standard between the cycles of consultation.

The biggest barrier to progressing this agenda is funding and certainty of sales for Fairtrade producers. Besides peer reviewing and guiding the above process (in alignment with the implementation and coordination of the other pilots planned as part of this project), Fairtrade would benefit from a markets study to explore market interest in FS-ASM–compliant material, and a benefits study to ascertain the added value that FS-ASM can bring participating miners and mining communities.

### 3.1.3 Fairmined

**a). Where is the standard now?**

The Fairmined Standard for Gold from Artisanal and Small-scale Mining, Including Associated Precious Metals, version 2.0 ([ARM 2014](https://www.responsiblemines.org/en/history-2/)) was created by the Alliance for Responsible Mining (ARM), with the support of international supply chain actors and experts participating in the Standard Committee and following two rounds of public consultations. The Fairmined Standard was developed to support the sustainable development of ASM communities consistent with ARM’s vision of a “legitimate, responsible and profitable ASM sector which promotes inclusive and sustainable development.” The standard has been under revision since 2019 with the objective of making it more inclusive of different ASM stakeholder groups while maintaining its status as best-practice ‘gold to be proud of.’ More details of the revision process are available on the Fairmined website.

The most important milestones reached in the last six years include the following:

- Twenty-five mining organizations in four countries obtained Fairmined Certification for at least one year, with more than 4,133 direct beneficiaries.
- More than $6 million in Fairmined Premium have been paid to certified mining organizations by the market.
- Five certified mining organizations are currently certified in two countries and nine more ASM organizations are looking forward to certification in three countries.
- More than 377 businesses from 33 countries are working with Fairmined gold.

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• More than 1.6 tons of Fairmined gold have been sold.

The standard includes requirements to achieve the highest responsible ASM practices: formal and legal mining operations, environmental protection, fair labor, social and trading conditions, traceability of Fairmined minerals from the extraction point to the point of sale, and socioeconomic development through the Fairmined Premium. It also includes flexible market models to fit different business strategies of clients and requirements for Fairmined suppliers and licensees.

In terms of relevance to the FS-ASM Standard, Fairmined already covers 16 environmental and ecosystems protection requirements: compliance with environmental regulations; management of toxic substances such as mercury and cyanide, in line with the Minamata Convention; and water management and protection (water bodies must be protected from the discharge of tailings, residues, and acid mine drainage). In addition, mined areas must be restored and rehabilitated and any technological change must have from the outset an environmental mitigation plan (that is, concept of prevention in the mitigation hierarchy), and there are additional requirements for “ecological gold” regarding nonuse of toxic substances and stricter restoration and rehabilitation commitments. For example, Fairmined-certified organizations in Colombia and Peru manage waste and hazardous substances, recycle water, and carry out revegetation and restoration pilots. ARM’s website provides more details on the environment and responsible mining8.

Building on the lessons from the application of the open source CRAFT Code over the last three years, the Fairmined Standard revision has taken a fresh direction, and between 2020 and 2021 ARM developed “the Sustainable Mines Program,” which aims to streamline the progressive improvement approach promoted by ARM, offering a continuous road from mitigation of the most severe risks using the CRAFT Code all the way to best-practice sustainable development through mining offered with Fairmined. The next iteration of the Fairmined Standard system will go beyond just certifying best practice, proposing a framework for sourcing from ASM with a wide scope of performance levels. This new proposal will integrate stepwise compliance, assurance, and incentives while maintaining the Fairmined best-practice ASM brand for high achievers (both miners and market) to differentiate themselves as sustainability leaders. This model will also provide even more flexible solutions for the market to engage with the sector.

b). Where is the standard going next?

The following actions are planned for 2022 within the timeline of the Fairmined Standard revision:

• Validation and discussion of the Fairmined Standard 3.0 proposal with the Fairmined Standard Committee. ARM will propose exploring the inclusion of the FS-ASM criteria in the future version of the standard, including the recommendations derived from the feasibility exercise for forest-smart mining in the field-testing for this project. Considering the envisaged progressive nature of the Fairmined system and the integration of the CRAFT Code, it will be important to ensure that the integration of FS-ASM criteria is also aligned with the step-by-step high-to-low risk mitigation approach that takes into account the priorities and capacities of diverse ASM groups (March–June 2022).

• Planning and launch of the international Fairmined Standard 3.0 public consultation to collect comments and recommendations from current and potential users of Fairmined Certification, Fairmined supply chain, and other stakeholders (July–September 2022).

• Piloting the new version of the standard with small-scale mining organizations and the proposal of transition for already certified organizations (October–December 2022).

• Approval of changes by the Fairmined Standard Committee after the consultation (October–December 2022).

• Publication of Fairmined Standard 3.0 and a transition period for mining organizations already certified with the standard (December 2022).

Considering the severity of the global climate change and biodiversity crises, ARM recognizes the necessity of strengthening the environmental protection section of the Fairmined Standard, especially for ASM located in Key Biodiversity Areas, including forest landscapes. The FS-ASM criteria are uniquely positioned to fill this gap. Environmental due diligence and compliance will increasingly become one of the key criteria of legitimacy for ASM operations present in areas with critical natural habitat. While many miners develop their operations in forest locations where ASM is a traditional activity and an important part of their livelihoods, they are also increasingly aware that reaching very high environmental standards is the only way for their activity to be viable in the long term, because of increasing pressure from

their buyers, their governments, and other local and international stakeholders. At the same time, there is little guidance available to facilitate environmental management in forest areas that is tailored to the specific impacts and capacities of the ASM sector. FS ASM is an important step to providing such high-level principles, and ARM is committed in supporting miners to implement these principles.

c). How to get there?

The current Fairmined Standard revision is a perfect opportunity to test the bolt-on approach of the FS-ASM Standard, especially considering the high expectations of performance related with Fairmined being a best-practice standard for ASM.

At the level of mining organizations, the full FS-ASM Standard adoption requires internal capacities, resources, and a more advanced level of formalization. For ASM miners at the level of CRAFT (see chapter ), it is important to have the possibility to implement priority actions recommended by FS-ASM in a progressive approach that is aligned with the approach of CRAFT Module 5, which already includes basic environmental management. Therefore, in the progressive sustainable mines approach that ARM is taking (CRAFT toward Fairmined), the FS-ASM Standard’s PCI would also be integrated progressively, prioritizing some criteria for ASM with lower capacity and sustainability performance, while its fuller scope would be applied in mines closer to achieving the sustainability leaders status, that is, compliance with the Fairmined Standard with a strengthened environmental aspect.

At the same time, ARM is interested in incorporating the FSM PCI in its current work with miners in environmentally rich and fragile areas. While mercury continues to be an important challenge that is already the focus of countless projects and interventions, the FSM framework offers an opportunity to go beyond mercury and apply a practical environmental management approach in important forest areas such as the Amazon region, the Congo basin, the biogeographical Chocó region along the northwest Pacific coast of South America, and the forests of Central America. Following the first promising experiences field-testing the draft standard, ARM is keen to include the concept of forest-smart mining and FS ASM pilots in future funding applications and will attempt to include some actions recommended in the FS-ASM criteria assessment carried out in Chocó in other interventions in this territory.

In considering the inclusion of the FS-ASM criteria in the Fairmined Standard, for the successful implementation of the “bolt-on” standard, it is necessary to consider the enabling conditions of the guidelines part of the FS-ASM Standard (section C).

• Policy advocacy at international and national levels to get ASM on the climate change, biodiversity, environmental sustainability, human rights, and Indigenous rights agendas. It will help to include FS ASM practices in formalization programs led by governments.

• The ASM sector needs to be incorporated into REDD+ programs as a community actor and economic sector. Some countries will need to make additional efforts because there are considerable differences between countries’ implementation of REDD+ strategies.

• The industry needs to be willing to support with economic incentives/other kinds of support or buy minerals from artisanal and small-scale miners who implement more advanced environmental due diligence practices such as the ones in the FS-ASM Standard. Miners need market incentives because they may perceive extra efforts to adopt additional FSM environmental requirements, especially the new elements related to carbon management that regulations are not requesting.

• Support and funding from private, public, or cooperation sectors are needed for the implementation of the improvement plans to close the gaps to fulfill FS-ASM requirements in the pilot sites. Results of piloting the FS-ASM Standard will be valuable for encouraging and drawing lessons learned for inclusion of the standard’s PCI into voluntary sustainability standards for the ASM sector.

3.1.4 CRAFT

a). Where is the standard now?

The CRAFT Code 2.0 (ARM 2020a) was launched one year ago after a second round of public consultation (ARM 2020b) following the ISEAL Code for the development of standards. The CRAFT Code version 1.0 (2018) and version 2.0 (2020) were developed under a Creative Commons license by ARM and RESOLVE, with funding support from the European Partnership for Responsible Minerals (EPRM) and the contribution of two governance bodies: a strategy-level advisory group and a technical standard committee, composed of key stakeholders in the ASM sector and the industry.

The CRAFT Code is a voluntary progressive performance standard and a market entry-level standard. It offers a practical framework to identify and manage the highest
risks related to ASM, integrating the five-step framework of the OECD DDG and the list of risks described in its second annex. It also proposes a consensus regarding “high” risks, to promote progress on a variety of important sustainability issues, once the critical OECD DDG risks have been mitigated.

The overall intent of the CRAFT Code is to promote the sustainable social, environmental, and economic development of the ASM sector by leveraging the process of due diligence, an obligatory step that buyers must take when engaging with upstream producers, including ASM. The code aims to empower the miners in understanding and facilitating the due diligence process. It gives supply chain actors a tool to make the due diligence efficient and cost-effective while focusing on support to the ASM to reduce the risks and advance their performance. The fact that the code was developed in participation with the key players in the responsible minerals space, including the OECD as an observer, generates confidence in its legitimacy and encourages the industry to make a step to constructively engage with the ASM.

These are the main changes in CRAFT 2.0:

- **New structure:** Now CRAFT is composed of three volumes to meet the needs of specific public, with a fourth volume on guidance.
  - Volume 1: CRAFT – Introduction and general characteristics
  - Volume 2: CRAFT requirements for ASM mineral producers
    - 2A: Commodity-independent requirements
    - 2B: Commodity-specific requirements
  - Volume 2’s five modules reflect the sequence that ASM mineral producers are expected to follow to conform to the requirements.
  - Volume 3: CRAFT for users or schemes
  - Volume 4: CRAFT Guidance book
- **New CRAFT scope for more minerals:** gold, 3T, cobalt, and colored gemstones.
- **Clarifications were made on some criteria.**
- **Clarifications were added to the criteria related to public and private security, child labor, complaints mechanism, and relationship with the community.**
- **More guidance for communication was added.**
- **Further guidance was added for CRAFT schemes, users, and supply chains that want to use the CRAFT standard.**
- **New criteria were written for the other 3T and cobalt products.**

Volume 2A of the code has specific environmental and forest criteria for all ASM operations and all commodities captured in Module 5 (High risks requiring improvement: coordination with protected areas authorities; coordination of the use of mining land with local inhabitants who require the same resource; water protection and biodiversity). Carbon stocks are beyond the current scope. In terms of priority high (severe) risks relating to specific commodities, mercury is highlighted for gold ASM as are radioactive emissions from tantalum ore (coltan) concentrates.

Based on feedback from other allies, CRAFT is used by ARM; the planetGOLD program in all countries where it intervenes; and in various public or private ASM initiatives for gold mines in Colombia, Democratic Republic of Congo, Honduras, and Mauritania, for gemstone mines in Kenya, Malawi, Sierra Leone, and Zambia, and for diamond mines in Liberia.

**b). Where is the standard going next?**

According to the Creative Commons open source license terms of the CRAFT Code, ARM as the code maintainer has very limited control over who uses the code, for which purpose, and under which conditions. However, to ensure consistency in the CRAFT application, version 2.0 introduces a new chapter (Volume 3) on guiding principles for CRAFT schemes, on how schemes are expected to interact with ASM producers, and what claims may be made related to the usage of CRAFT. At this level, there could be an opportunity to add FS ASM criteria to the CRAFT Code for specific applications, or in other words, to “branch” the main code.

For a future revision of the core CRAFT Code open source standard, the standard-setting organizations ARM and RESOLVE must convene the CRAFT Standard Committee and the CRAFT Advisory Group and propose including those FS-ASM Standard requirements that could be deemed as representing the most severe high risks in Module 5. Per the ISEAL Code, ARM must review its standards at least every five years to ensure continued relevance and effectiveness in meeting its stated objectives. However, given the relatively recent date of the latest CRAFT Code revision (2020), with it still being in the early days of implementation, and given the considerable effort in time, resources, and engagement, it does not appear viable to consider the integration of the FS-ASM Standard into the main version of the CRAFT.
On the other hand, ARM is actively applying the CRAFT Code within its CRAFT scheme called the Sustainable Mines Program, which aims to facilitate connecting CRAFT implementing ASM entities with formal markets and to bring partners to invest in the CRAFT mines’ progressive improvement through Mines Sustainability Plans. Considering that some of the projects are located in forested areas, ARM is eager to pilot FS-ASM Standard elements in Colombia, Guyana, Honduras, Peru, and Suriname. All the mining sites mentioned are gold ASM. There is especially strong momentum in good mining practices in forests in the Amazon region, where many projects and initiatives (for example, Conservation X Lab challenges, or Amazon Aid’s campaign) are looking at innovative solutions for reducing deforestation and improving environmental protection beyond mercury reduction or elimination. In Africa, the concept could be especially interesting for countries in the Congo basin; for example, the Ministry of Environment in Gabon has recently expressed interest to ARM in receiving guidance on the environmental management of mining in tropical forest.

### c). How to get there?

The CRAFT Code indicates “depending on demand, additional Modules on Medium- and Low Risks may be developed in future versions of the CRAFT.” As the current standard review cycle was just finalized in October 2020, a new review cycle for a version 3.0 may not commence in the short term unless strong demand is signaled from miners or the market. But as CRAFT is open source under Creative Commons License CC-BY-SA 4.0, branching is allowed. This opens up the possibility of creating an “FSM branch version of CRAFT” that, if taken up by implementers, may later be merged into the core version of CRAFT during future revision. Since the CRAFT Code is an open source document, any institution that saw value to this approach could create the FSM branch version of CRAFT and publish it under a Creative Commons license.

The following should be considered regarding the future inclusion of FS ASM principles or the high-risk requirements in the next version of the CRAFT Code:

- Use lessons learned from pilot applications and study the incentives for the miners to apply the PCI for ASM entities, particularly for ARM’s Sustainable Mines Program.
- Evaluate the relevance, interest, and opportunities for funding an “FS ASM branch version of CRAFT.”
- In Standard Committees for future CRAFT Code revision cycles, invite additional new members who can contribute with FS ASM–relevant experience and open discussion for the amendment in the standard. Additionally, incorporate lessons learned from the CRAFT branches and implementation.

### 3.1.5  planetGOLD Phase 2 (GOLD+)

#### a). Where is the standard now?

The planetGOLD program seeks to significantly reduce mercury use and otherwise improve the production practices and work environment of artisanal and small-scale gold mining (ASGM) in order to support implementation of the Minamata Convention. The program comprises eight projects: seven country-based projects and one global knowledge management and communications project that facilitates the dissemination of information from planetGOLD. The global project is executed by the Natural Resources Defense Council (NRDC) with technical assistance from the United Nations Environment Programme (UNEP) and the United Nations Industrial Development Organization (UNIDO). The planetGOLD program implementation period is 2019–2024; it has a funding package of $45 million from the Global Environment Facility (GEF), with an estimated $135 million in cofinancing from partners.

PlanetGOLD is funded by the Chemicals and Waste division of the Global Environment Facility (GEF), is led by UNEP, and is implemented in partnership with UNIDO, the United Nations Development Programme (UNDP), and Conservation International.

Phase 2 of planetGOLD is funded by GEF, is executed by Conservation International with technical assistance from the NRDC, UNIDO, and UNDP, with an implementation period of 2022–2028, and has a funding package of $342 million (coming from GEF and estimated cofinancing).

GOLD+ will expand the scope of planetGOLD by adding new country projects and will focus on integrated jurisdictional management approaches that will consider a wider range of environmental impacts, including the prevention and mitigation of forest impacts as well as mercury contamination from small-scale gold mining.

In 2021, planetGOLD formally released its own environmental and social standards, the planetGOLD Criteria for Environmentally and Socially Responsible Operations. These specific criteria govern ASGM operations in order to help planetGOLD participants meet responsible sourcing requirements, as well as social and environmental safeguards required of GEF-funded projects.
The planetGOLD Criteria incorporates Modules 1–4 from the CRAFT Code, which are aligned with the OECD DDG, and also includes three specific planetGOLD criteria:

- **Criteria Module 1**: Adopting a Management System (from CRAFT)
- **Criteria Module 2**: Legitimacy of the ASM Mineral Producer (from CRAFT)
- **Criteria Module 3**: “Annex II Risks” Requiring Immediate Disengagement (from CRAFT)
- **Criteria Module 4**: “Annex II Risks’ Requiring Disengagement after Unsuccessful Mitigation (from CRAFT)
- **Criteria A**: Mercury-Free Processing and Management of Chemicals and Wastes (planetGOLD-specific criteria)
- **Criteria B**: Respect Rights and Lives of Indigenous Peoples (planetGOLD-specific criteria)
- **Criteria C**: Environment Protection (planetGOLD-specific criteria)

The protection of ecosystem services, forests, and minimization of biodiversity and deforestation appear under Criteria C. Carbon stocks are beyond the current scope of the standard.

**b). Where is the standard going next?**

With regards to the incorporation of FS-ASM principles, there is high appetite from stakeholders and planetGOLD. The leadership (GEF, UNDP, and UNEP) are very interested in coupling protection of biodiversity and forested areas with their mercury efforts. Country-level teams and artisanal and small-scale miners are interested, but they are also very focused on immediate priorities for completing their projects. Many stakeholders (including potential downstream buyers) are very interested as part of the overall story of responsible gold production. As such, planetGOLD is interested in potentially updating the planetGOLD Criteria to include FS-ASM Standard requirements. The ultimate decision, however, is up to the Project Steering Committee and each individual country project.

Moreover, planetGOLD (phase 1) is presently being executed in Colombia, Ecuador, Guyana, Indonesia, Kenya, Mongolia, Peru, and the Philippines. PlanetGOLD will expand implementation in 2022 (planetGOLD phase 2) in Bolivia, Republic of Congo, Ghana, Honduras, Madagascar, Nigeria, Suriname, and Uganda, and in 2023 in Côte d'Ivoire, Guinea, Mali, Nicaragua, Sierra Leone, and Zambia. Ecuador, which is informally affiliated with the program now, will be formally added in 2023. The program is interested in exploring piloting the FS-ASM Standard in some of the planetGOLD countries. The ultimate decision, however, is up to the Project Steering Committee and each individual country project.

Deforestation from ASGM is certainly a huge concern of international stakeholders. PlanetGOLD feels that there is substantial need to give practical guidance to ASGM operations on how to prevent/mitigate forest impacts of small-scale gold mining while also addressing the main mission of preventing mercury contamination; addressing broader environmental impacts is a focus of phase 2. Incorporating the FS-ASM Standard and piloting it in some countries would align the program-wide operational criteria with this strong interest in protecting forests.

**c). How to get there?**

The authors advise planetGOLD to follow these recommended steps to achieve planetGOLD’s desired vision with regards to FS ASM.

**Integrate FS-ASM Standard and Guidelines requirements into the planetGOLD Criteria.**

1. **Get everyone on board**. Raise awareness of the FS-ASM Standard with GEF planetGOLD implementing agencies (Conservation International, UNIDO, UNEP, and UNDP), the Program Steering Committee, the Project Advisory Group (PAG), and country-level stakeholders (including the country project executing teams and ASGM beneficiaries, as well as local governments), to buy them into the process. This may involve training sessions with these various stakeholders, sharing documentation through email, and having an FS ASM expert on hand to respond to queries/questions from planetGOLD organizations to support strategic inclusion and programmatic implementation. It is particularly significant to convince the steering committee about how important the uptake of the FS-ASM Standard is for attracting potential gold buyers, since they are concerned about delaying the uptake of existing criteria.

2. **Market analysis.** Assess the interest from external stakeholders, particularly gold buyers, in incorporating the FS-ASM Standard requirements in their sourcing. The results of this analysis would help convince the steering committee and other relevant stakeholders.
3. **Gap assess planetGOLD** criteria against the FS-ASM Standard to decide the process for uptake of the standard’s PCI and guidelines.

4. **Feasibility assessment.** In parallel to the gap assessment, assess (a) the feasibility of implementation of the standard’s PCI by planetGOLD beneficiaries with or without support from planetGOLD, and (b) how much support they would need at what cost. The feasibility assessment would help engage Conservation International and the midterm review team to consider the incorporation of FS-ASM in future phases of planetGOLD.

5. **Engage with Conservation International.** Discuss internally with Conservation International the best strategy to follow in order to proceed with agreements with GEF and other planetGOLD implementing agencies.

6. **Engage with the midterm review team of the global project.** Discuss with the team to evaluate the advisability of updating the planetGOLD Criteria to include FSM PCI. The midterm review will provide an opportunity to revisit the criteria, their usefulness to the program and its stakeholders, the country experiences with applying the criteria, and so on. If the review recommends incorporating the FS-ASM Standard, the planetGOLD global project can work on its incorporation in 2022, but a road map will need to be crafted to plan exactly how and when revisions will be made.

7. **Road map.** Decide the timeline and pathway to integrate requirements taking into account the results from steps 2–5. The planetGOLD Criteria has no specific formal revision cycle. If the midterm review, Program Steering Committee, Program Advisory Group, and the country projects think that the adoption of the FS-ASM Standard demands immediate attention, the global project could be directed to work on its incorporation, really at any time during the project.

The World Bank could work closely with the planetGOLD global project to peer review and guide this process, in alignment with the implementation and coordination of the other pilots planned as part of this project. More concretely, if the standard’s requirements are to be integrated in the planetGOLD Criteria, planetGOLD would need external support to support the process: (a) concrete guidance on how to execute each criterion, with case studies and examples of how to conform; and (b) training on forest-smart mining (background, sustainability case, the standard) and the PCI.

**Pilot the FS-ASM Standard in planetGOLD countries.**

1. Plan with Conservation International as a first step, since they are the implementing agency of phase 2, which has a focus on broader environmental impacts such as the prevention and mitigation of forest impacts.

2. Decide which countries to focus on. The current set of planetGOLD countries are likely too far into their programs of work to easily accommodate piloting the FS-ASM Standard’s PCI. It would be more fruitful to explore the phase 2 countries to see where there may be an appetite for such pilots, and the funds for conducting the pilots could be programmed into the projects from the start. The selection of countries should be assessed based on interest, capacity, and alignment with the project’s mission. Three planetGOLD phase 2 country projects would be interesting to explore in particular:
   a. Ghana, since an existing feasibility, workplan, road map, and budget has been designed for the implementation of FS-ASM Standard requirements, which could be used to program the Ghanaian projects
   b. Republic of Congo, since the project concept already aims to complement the Congo Basin Sustainable Landscapes Impact Program, so the FS-ASM Standard requirements would be a natural fit.
   c. Côte d’Ivoire, since the country has made significant progress in REDD+ and ASM operations in the Tai NP area of the country are eligible for carbon benefits.

3. Assess internal resources. Assess internal capacity and funding available to implement a pilot of the FS-ASM Standard in selected planetGOLD countries.

4. Plan. Draft a plan to pilot the FS-ASM Standard or some of its requirements.

5. Funding. Integrate FS-ASM requirements into the funds of selected phase 2 countries that address the gaps encountered in step 3 and align with the plan drafted in step 4.

6. Road map. With the funding received, agree on a timeline and pathway for piloting.

7. Implement and report. Coordinate implementation of the road map with the World Bank or any other party tasked with coordinating the other pilots.
and gathering lessons learned with the purpose of finalizing, demonstrating, and supporting uptake of the FS-ASM Standard.

3.1.6 LBMA

a). Where is the standard now?

LBMA (formerly known as the London Bullion Market Association) is an independent precious metals authority and standard setter. LBMA’s “responsible sourcing programme is mandatory for all Good Delivery refiners wishing to trade with the London Bullion Market.” It includes an independent audit program for gold and silver, which is supported by the Responsible Gold Guidance (RGG), the Responsible Silver Guidance, and the toolkit for refiners. The current version 8 of the RGG (LBMA 2018) is applicable worldwide and refiners are assured annually. The refiner’s toolkit provides useful checklists, forms, and questionnaires to assist them in sourcing gold or silver responsibly.

The RGG provides guidance to assist gold refiners with responsible sourcing, as well as requirements of responsible sourcing that refiners should commit. Version 8 of the RGG introduced environmental, social, and governance (ESG) issues for the first time. In its present revision cycle to produce version 9, LBMA has recognized that ESG issues and sourcing from artisanal and small-scale mines require dedicated attention in 2022;10 this aligns well with the possibility of integrating the FS-ASM Standard into a future version of the RGG.

The RGG's structure is based on the OECD's five-step due diligence framework for sourcing minerals from conflict-affected and high-risk countries and its Gold Supplement, and it includes some ESG issues that go beyond those captured in Annex II. In sum, RGG broad requirements are as follows:

- **Step 1.** Establish strong company management systems.
- **Step 2.** Identify and assess supply chain risks.
- **Step 3.** Design and implement a management strategy to respond to identified risks.
- **Step 4.** Obtain independent third-party assurance on supply chain due diligence practices.
- **Step 5.** Report annually on supply chain due diligence.

The RGG states that environmental impacts are to be managed through appropriate due diligence policies and governance structures designed as part of step 1. Actual or potential adverse environmental impacts in the gold supply chain are to be identified in step 2. And the design and implementation of a management strategy to address identified environmental risks is explained in step 3.

There is room to improve the RGG to ensure more robust environmental risk management by LBMA refiners. Besides the fact that the protection of ecosystem services and the minimization of biodiversity impacts and deforestation do not appear in any specific section of the standard, forests are not mentioned in any step or anywhere in the RGG. The RGG does not provide enough guidance on the type of environmental issues to identify and manage; however, version 9 of the RGG, which will be applicable from January 1, 2022 (LBMA 2021a), does recognize the World Gold Council’s Responsible Gold Mining Principles (RGMP), affording greater ESG coverage from industrial producers. Carbon stocks are beyond the current scope.

b). Where is the standard going next?

Version 9 of the RGG was launched in November 2021. Version 10 will begin development in 2023.

LBMA is keen to incorporate the FS-ASM Standard’s PCI into the Responsible Sourcing Programme as part of the next standard revision, in order to help de-risk ESG concerns in ASGM and provide traceability and legality to ASM material for refiners. LBMA is revising a toolkit for refiners that are sourcing from ASM and would like to include FS ASM as part of it. LBMA would require consultation with and agreement by its members and other relevant stakeholders on the incorporation of the FS-ASM Standard’s PCI. They also anticipate that the main barrier would be convincing refiners of the PCI’s utility and winning their support for inclusion of the PCI into the RGG and toolkits. ESG requirements are a relatively new concept in LBMA’s audit system, and implementation of all the PCI at once might present too sudden a change. Phased-in and incremental adoption is more likely.

Moreover, LBMA is looking to convene and connect refiners that are members of their Responsible Sourcing Programme with ASGM operations that are looking to pilot the FS-ASM Standard. Increasing direct sourcing

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10 Artisanal mining accounts for 20 percent of annual mined production but less than 1 percent of the throughput of LBMA Good Delivery List refiners (LBMA 2021b).
of ASM material by Good Delivery List (GDL) refiners is a current strategic objective of LBMA and will be the focus of extensive consultations with key stakeholders in the value chain to find practical ways to remove current barriers to such sourcing. One option being considered are initiatives, such as the FS-ASM Standard, which can de-risk ASM material and act as a bridge between mining communities and GDL refiners. LBMA also intends to open its ASM Working Group (currently a closed forum for GDL refiners) to outside organizations that have demonstrated technical expertise and a field presence in ASM communities, such as Levin Sources and ARM.

c). How to get there?

The authors advise LBMA to follow these recommended steps to achieve its desired vision with regards to FS ASM.

Integrate FS-ASM Standard requirements into the RGG and the Refiners Toolkit

1. Get everyone on board. Raise awareness of the FS-ASM Standard with LBMA leadership (including the CEO, CTO, legal counsel, the Board, and head of responsible sourcing), LBMA’s members, and other relevant stakeholders, to buy them into the process. This is also an opportunity to engage the banking community on forest-smart mining.

2. Benefits study. To convince LBMA members, who may be reticent to include more requirements, it is important to analyze the possible advantages (on finances, reputation, and so on) of taking up the FS-ASM Standard requirements. Consider benefits not just to LBMA and its members but also to the achievement of more sustainable mining generally as a means to protect and enhance the gold brand, on the one hand, and the provenance of mined gold on the other.

3. Gap assess LBMA’s RGG against the FS-ASM Standard to decide the process and progressivity for uptake of the standard’s PCI and guidelines.

4. Feasibility assessment. In parallel to the gap assessment, assess (a) the feasibility of LBMA’s members to implement the standard’s PCI with or without support from LBMA and (b) how much support they would need at what cost.

5. Clarify intellectual property. LBMA supports open source initiatives like the CRAFT Code but adopts an ad hoc policy not to endorse proprietary systems or initiatives that have a commercial application (unless there is a commercial agreement between LBMA and a particular service provider). Ownership of the FS-ASM Standard’s intellectual property would have to be clarified before LBMA could make a full public endorsement.

6. Agreement. Present results from steps 2–5 and seek agreement within LBMA’s members on the incorporation of all (or some) FS-ASM requirements into the RGG and toolkits planned for late 2022 or early 2023.

Convene LBMA members with ASGM entities willing to pilot FS ASM.

Additional opportunities for piloting the FS-ASM Standard, beyond the sites covered by the feasibility assessments in this report, might exist in some of the ASGM sites of planetGOLD, Fairtrade, Fairmined, or other responsible sourcing initiatives in which LBMA is participating already, such as the Zahabu Safi program in the Democratic Republic of Congo or the Swiss Better Gold Initiative. LBMA is aware of these programs and can play a facilitating role to connect them to LBMA members who might be interested in buying their gold.

3.2. Other Standard-Setter Processes

Other standard setters can offer opportunities for engagement to accelerate the adoption of the FS-ASM Standard and to seed exploration of additional pilots in different sites and countries. The project team has received expressions of interest from the China Chamber of Commerce of Metals, Minerals & Chemical Importers & Exporters (CCCMC), with respect to its Guidelines for Social Responsibility in Outbound Mining Investments (CCCMC 2014), and from CORE, with respect to the CORE Standard (CORE 2019).
4. FOREST FEASIBILITY OF ADOPTION OF THE BOLT-ON FS-ASM STANDARD IN LOCAL PROCESSES

The terms of reference of the assignment indicate that "the objective of the assignment is to assess and develop Forest Carbon guidance and tools for the ASM sector by including Forest-Smart Mining Principles, Criteria & Indicators (FSM PCI) into existing ASM standards and certification systems, and to support their implementation by identifying REDD+ and environmental/Climate funding opportunities and develop roadmaps for pilot sites" (World Bank 2020).

Objective 3 is “Processes to apply Forest-Smart ASM standards and certification systems are developed in selected pilot sites. Feasibility studies are conducted and detailed roadmaps and budgeted workplans are developed.” This is reflected by the tasks to

- Identify and select pilot ASM operations/sites for the application of ASM’s FSM PCI Standards. Two types of sites will be selected:
  - Sites with an history of implementation of ASM standards and certification systems to demonstrate best-practice examples and motivate stakeholders to pursue their application; and
  - Sites with significant potential for funding to support the application of standards through environmental and carbon finance, especially linked to REDD+ and World Bank programs.

- Analyze the feasibility of applying standards or certification systems for FSM PCI to those pilot ASM operations and assess the gaps to comply with standards.

- Develop detailed road maps and budgeted workplans for the implementation of FSM standards in selected pilot ASM operations, taking into consideration timelines and availability of environmental or carbon funding (World Bank 2020).

4.1 Selection of Pilot Countries and Pilot Sites

Artisanal and small-scale mining (ASM) takes place in more than 80 countries for a variety of minerals. For this project, the client set Latin America and West Africa as the scope and flagged Guinea and Côte d’Ivoire as two possible priority countries for the design of pilots for testing the FS-ASM Standard. The consultants additionally proposed Colombia, Ghana, Liberia, and Peru as candidate countries.

The six countries (Figure 4.1: Forest Cover of Candidate Countries) were assessed against a set of criteria such as (a) REDD+ relevance (with 13 subcriteria), (b) situation of ASM (with 7 subcriteria), and (c) potential for uptake and implementation (with 7 subcriteria), intended to ascertain the impact proposition (considering carbon finance and ASM factors), feasibility, and likely sustainability of pursuing pilots in each country.
The assessment resulted in the selection of Colombia, Peru, Ghana, and Liberia in which to conduct the feasibility studies for piloting the Forest-Smart Artisanal and Small-Scale Mining (FS ASM) Standard (Table 4.1) Three of the countries count on experience with the application of ASM standards and certification (Colombia, Peru, Ghana); Liberia and Ghana have advanced REDD+ readiness; and Colombia and Peru are making good progress toward REDD+ readiness.

**Table 4.1: Pilot Country Selection**

<table>
<thead>
<tr>
<th>Country</th>
<th>REDD+</th>
<th>ASM</th>
<th>Uptake potential</th>
<th>Consortium experience</th>
<th>Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colombia</td>
<td>Good Strat., FREL, NFMS</td>
<td>Context: conducive</td>
<td>ARM, WWF, IIAP</td>
<td>In-country: ARM (HQ), FFI Cert. ASM</td>
<td>Short list</td>
</tr>
<tr>
<td>Peru</td>
<td>Good Strat., NFMS</td>
<td>Context: conducive</td>
<td>ARM, PureEarth,  CINCIA</td>
<td>In-country: ARM (team), FFI Cert. ASM</td>
<td>Short list</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>Advanced Strat., FREL, NFMS, SIS</td>
<td>Context: public and polit. opinion inconducive</td>
<td>Impact</td>
<td>Limited potential partner</td>
<td>Optional, if any short-listed unfeasible</td>
</tr>
<tr>
<td>Guinea</td>
<td>Poor</td>
<td>None</td>
<td>WB, EU, CEPF</td>
<td>Weak potential partners</td>
<td>Eliminate</td>
</tr>
<tr>
<td>Liberia</td>
<td>Advanced Strat., FREL, NFMS, SIS</td>
<td>Context: conducive</td>
<td>RSPB (Gola), FIP, GIZ</td>
<td>In-country: FFI (office)</td>
<td>Short list</td>
</tr>
<tr>
<td>Ghana</td>
<td>Advanced Strat., FREL, NFMS, SIS</td>
<td>Context: conducive</td>
<td>WB: FCPF and MMIP</td>
<td>Strong partners near-Cert.</td>
<td>Short list</td>
</tr>
</tbody>
</table>

*Note: ARM = Alliance for Responsible Mining; ASM = artisanal and small-scale mining; CINCIA = Centro de Innovación Científica Amazónica; EU = European Union; FCPF = Forest Carbon Partnership Facility; FFI = Fauna & Flora International; FREL = forest reference emission level; IIAP = Pacific Environmental Research Institute; MMIP = Multi-Sectorial Mining Integrated Project; NFMS = national forest monitoring system; SIS = safeguard information system; WB = World Bank.*
Each country’s pilot site was selected from a portfolio of between two and five potential pilot sites per country (Table 4.2).

### Table 4.2: Pilot Site Selection

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Proposed partner</th>
<th>Environment</th>
<th>REDD+</th>
<th>Piloting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colombia</td>
<td>Gold ARM working with Afro-descendent groups of miners</td>
<td>Biodiversity hotspot</td>
<td>Carbon-dense forest</td>
<td>Testing PCI in community-managed forests</td>
</tr>
<tr>
<td>Chocó (Site 3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peru</td>
<td>Gold ARM working with Indigenous communities</td>
<td>Proximity to Bahuja Sonene National Park</td>
<td>Uncertainty regarding the availability of REDD+</td>
<td>Testing ground for the prevention PCI principle</td>
</tr>
<tr>
<td>Puno (Site 2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ghana</td>
<td>Solidaridad, NGO working with formally mechanized ASMO with experience with Fairmined</td>
<td>Proximity to Atewa Range Forest Reserve</td>
<td>Located in a hotspot intervention area for REDD+</td>
<td>Testing improved environmental management in mechanized operations using mercury, and restoration</td>
</tr>
<tr>
<td>Gold Empire Resources (Site 4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liberia</td>
<td>Diamonds for Peace, NGO working with pre-formalized ASMO</td>
<td>Biodiversity hotspot</td>
<td>Falls under priority Landscape 1 REDD+ jurisdiction</td>
<td>Testing deforestation and degradation avoidance and restoration aspects</td>
</tr>
<tr>
<td>Weasua (Site 5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: ARM = Alliance for Responsible Mining; ASMO = artisanal and small-scale mining organizations; NGO = nongovernmental organization; PCI = principles, criteria, and indicators.

### 4.2 Feasibility Studies for Piloting the FS-ASM Standard

#### 4.2.1 Methodology

As outlined in chapter 1.2, the methodology for conducting the feasibility studies in each pilot country and site consisted of the following:

- **Stakeholder mapping and engagement** to map and describe the relevance of all local and national stakeholders, including those relevant to the implementation of REDD+ and climate financing generally that could be instrumental in the implementation of (a) the feasibility study and (b) the subsequent potential pilot and scaling of FSM.

- **Review of ASM and REDD+ regulation**, conducted as a desk review of regulations related to ASM and REDD+ and a light-touch desk review of natural resource and land use policies and processes, focusing on environmental and forest compliance and key factors that determine the success of forest-smart mining governance (for example, mainstreaming, anti-corruption, community-based natural resource management).

- **Baseline and gap assessment** of the mine site and its already preexisting conformance with the FS-ASM Standard’s requirements (PCI for ASM entities) and national environmental regulations, including the collection of miners and other national stakeholders’ feedback on the assessment’s findings and on incentives and desirable activities that would make forest-smart ASM more feasible.

- **Forest carbon assessment**, summarizing the REDD+ status of the country; identifying ongoing forest carbon, climate, and biodiversity initiatives; and conducting a preliminary qualitative assessment of the forest resources currently affected by the ASM mine site, estimating the additionality that could be achieved by implementing the FS-ASM Standard in the pilot site. Carbon feasibility assessment centers around a reasonability assessment as to whether the recent history and extent of forest loss lends itself to the development of a carbon-financed forest conservation initiative.

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1. See the country feasibility assessments in the annexes.
• **Stakeholder consultation**, collecting feedback on the appropriateness of the FS-ASM Standard (the draft PCI for ASM entities and guidelines) to the local reality and the national context and assessing to what extent the standard corresponds with the necessities, priorities, and capacities (both know-how and financial) of the miners.

• **Producing recommendations on ASM and REDD+ regulations**, based on the findings from the baseline and gap assessment, a strengths, weaknesses, opportunities, threats (SWOT) analysis, and stakeholder consultations.

• **Producing a road map and budgeted workplan** for piloting and integrating the standard's PCI into the selected site and the guidelines into relevant local and national institutions, including climate finance mechanisms.

• **Identifying funding opportunities** for each pilot country and site.

For "bolting on" the FS-ASM Standard, the CRAFT Code was used for various reasons:

• The CRAFT Code is open source under Creative Commons License CC-BY-SA 4.0, which explicitly allows any adaptation under the condition that the adapted version contains a reference to the source (which is herewith done: ARM 2020a) and that the adapted version is published under the same Creative Commons license terms (this does not apply because no amended CRAFT version is published). Therefore, testing the FS-ASM Standard in combination with CRAFT does not infringe any intellectual property rights of standard setters.

• Modules 1–4 of the CRAFT Code represent the supply chain risks addressed by the Organisation for Economic Co-operation and Development Due Diligence Guidance, which is considered the minimum benchmark for engagement with an ASM entity.

• The Alliance for Responsible Mining (ARM), as the maintainer of the CRAFT Code, has vast experience in applying the CRAFT Code for gap analyses to which—for the feasibility assessment—the FS-ASM Standard was bolted on.

### 4.2.2 Colombia

The full Colombia Feasibility Assessment (partly in English, partly in Spanish) is contained in the separate Annex 2: *Feasibility Assessment of Piloting FS ASM in Colombia*.

#### Pilot Site

The pilot site selected for Colombia corresponds to a Special Reserve Area (ARE) located in the municipality of Tadó, in the eastern part of the department of Chocó, within the collective territory of the community council ASOCASAN, an ethnic-territorial organization that manages the resources of the area for around 5,000 people, grouped into approximately 1,500 families. Community members are dedicated to traditional alluvial gold mining, currently at 52 artisanal mine sites, distributed in the seven land plots of the area. ASOCASAN is familiar with the concept of ASM standards and certification schemes; the council was formerly certified by the Oro Verde Program, is currently using CRAFT, and aspires toward Fairmined certification.
According to its role as a community council, ASOCASAN has already developed a Territorial Management Plan, which links community needs, resources management, and ecosystem services, integrating a traditional multi-optional community production system, based on the combination of agriculture, fishing, mining, forestry, animal husbandry, hunting, and artisanal work in accordance with the natural conditions of the landscape.

For the above reasons, ASOCASAN’s Board of Directors declared from the outset their interest in forest-smart mining as a pathway toward potential future carbon financing projects.

**Gap Assessment**

Due to time and resource constraints for assessing the pilot site feasibility, the gap assessment was carried out on a sample of two visited mine sites out of the existing 52 mine sites, using a translated version of the second draft version of the FS-ASM Standard (see chapter 2.1). Figure 4.3: Summary of Gap Assessment Results of FS-ASM Requirement Sections B.5.1–B.5.4 in Colombia summarizes the findings.
It is notable that all requirements of section B.5.1 of the standard are already either met or ongoing. Regarding direct impacts from mining (section B.5.2), approximately a quarter of the requirements were assessed as fulfilled or in progress. Two-thirds of the requirements of sections B.5.3 and B.5.4 together (direct non-mining and indirect impacts) are met or ongoing.

The gap analysis confirms the following:

- The FS ASM preparedness of the ASM entity. Even prior to the existence of the standard, efforts were already being undertaken that were aligned with the requirements of the standard (that is, relatively high number of requirements assessed as already fulfilled or ongoing).
- By implementing the FS-ASM standard, a significant number of direct impacts from mining will be addressed, which—without the standard—might remain unaddressed (that is, all requirements assessed as “no progress”).

Some requirements were assessed as “not applicable.” In some cases, this relates to requirements that really address non-applicable site conditions; in some cases, it relates to the wording of the draft standard (or the translation into Spanish), which was subsequently improved; and in some cases, the requirements address topics that miners are not yet familiar with and on which they would need training before application.

Only two requirements were identified by the miners as encompassing a gap that cannot be closed. These need to be reassessed during the implementation of the pilot project. If necessary, the flexibility of the Frugal Rehabilitation Methodology (FRM) will allow implementers to identify an alternative approach for fulfilling the requirements. In any case, during implementation of the pilot project, a gap analysis needs to be conducted on all mine sites and using the final version of the FS-ASM Standard.

In conclusion, piloting the FS-ASM Standard is considered feasible at the mining sites of ASOCASAN.

**Forest Carbon Assessment**

Colombia has made significant progress in its REDD+ readiness: it has a REDD+ strategy, a forest reference emission level (FREL), and a national forest monitoring system (NFMS) (with a forest definition). However, although summaries of safeguard information have been submitted to the United Nations Framework Convention on Climate Change (UNFCCC), it appears the safeguards information system (SIS) is not finalized and the nature of safeguards against the conversion of natural forest to plantation forest and specific protections for biodiversity in the REDD+ system were unclear.

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level of measurement, reporting, and verification (MRV) institutions and capacities in the country is good, and Colombia has set clear country targets under the Paris Agreement (World Bank 2019d). It is unclear on first review whether the country has finalized a benefit-sharing system for REDD+ and rules on nesting and the international sale of emission reductionssit e nossum ad ut everum ullam ea prore odis am volorero A GIS analysis (Figure 4.4) was performed by combining data on tree cover, forest loss, and intact landscapes from the Global Forest Watch, data on protected areas from the World Database on Protected Areas, and selected geographic features (water bodies, roads, populated sites) from Open Street Map with the pilot site location. For the pilot site location, 2-kilometer and 5-kilometer buffer areas are indicated. The site is located near intact forest landscapes and the Tatama Protected Area.

The assessment shows that deforestation patterns do not correlate clearly with the locations of mine sites along the river. Therefore, direct impacts of mining at the ASM scale do not seem to be a main driver of deforestation in the wider proximity of the pilot site. This matches the fact that mineral extraction is done in a very artisanal manner, mostly manual, with a very low footprint. There is, however, fairly significant deforestation in the area generally. This suggests that a quite substantial carbon benefit could be generated through project activities, but it appears that this would be in the broader landscape through limiting other impacts as well as mining impacts and through restoration of cleared areas.

Local experience with carbon finance exists. Fondo Acción, a nongovernmental organization (NGO) that has implemented REDD+ projects in the region (GoCO-Minambiente 2017), indicates that a REDD+ project in the area would need to be implemented at scale, addressing deforestation/degradation in the landscape generally, to be viable on a cost-benefit basis. The NGO notes that the national market for credits has a ceiling for credit prices, while the international market does not. However, it is still significant that the national market exists.

The development of a project would need to consider in detail the circumstances of the ASM in the area (for example, the legal circumstances) and the extent of the carbon benefit that could be created. The miners’ capacity to engage on carbon will need to be built. Furthermore, the community councils whose territories are composed of geographic areas of high biodiversity must reach internal cooperation agreements that allow the delimitation of a larger area (potentially exceeding the size of the mining area), since small areas of land would not provide a balance between the cost of implementing the REDD+ project and the economic benefits that are perceived from it. It was reported that a proposal for the development of a carbon initiative was discussed (and under development for some time now) by the community councils of the municipalities of Unión Panamericana and Tadó.

Also, it would need to be confirmed that a suitable methodology for a project where mining is a driver is available under the Verified Carbon Standard (VCS) (or one would need to be developed, which is very time-consuming). It would be theoretically possible for miners to obtain benefits through a benefit-sharing mechanism for a jurisdictional initiative. However, there is no indication that a suitable initiative exists.

**Outcome of Stakeholder Consultations**

Stakeholder consultation involved the Ministry of Mines and Energy, Regional Autonomous Corporation for the Sustainable Development of Chocó (CODECHOCÓ), Mayor’s Office of Tadó, Technological University of Chocó (UTC), planetGOLD, WWF, Fondo Acción, Pacific Environmental Research Institute (IIAP), and the Colombian Institute of Technical Standards and Certification (ICONTEC).

When consulted on the FS-ASM Standard, stakeholders expressed concerns regarding the capacity of artisanal miners to conform with all requirements without external support. This highlights and strengthens the points made in the standard’s guidelines on the need for enabling engagement and resources to assist in capacity building and implementation. On the other hand, it was also mentioned that due to their ethnocultural traditions as afro-descendant communities recognized by Law 70 of 1993, miners have a degree of environmental sensitivity that has not been lost and it is easy for people who carry out mining on a traditional scale to implement action on revegetation, activities that are done as part of their native tasks. This is seen as a favorable condition for piloting the standard at this site.

Some stakeholders suggested that the thematic scope of the standard could be expanded to health and safety and other environmental topics such as water resource management. These suggestions were noted by the standard team but not addressed in order to maintain the thematic focus of a bolt-on standard. Concerns about the verbatim applicability of certain standard requirements in the specific context of the Chocó were addressed during the standard development (see chapter 2.1), clarifying the flexibility of the FRM.

National and regional government officials referred to the technical and financial shortcomings of the ASM
Figure 4.4: GIS Analysis of Forest Resources and Deforestation in the Proximity of the Colombian FS-ASM Pilot Site and Its Buffer Areas (2 km, 5 km)

sector, highlighted the difficulties of ASM formalization in Colombia, and responded positively to the standard. They consider that projects for implementing the standard would generate local capacity of good mining practices and contribute to compliance with often ignored obligations, such as site rehabilitation during mine closure. The standard is seen as a contribution to the implementation of environmental instruments that are mandatory for miners to develop their mining activity. Additionally, they positively recognized the potential to generate additional income for miners in the long term.

**Recommendations on ASM and REDD+ Regulations**

During the consultations, stakeholders made various recommendations that reflect starting points for identifying potential incentives to promote adoption and implementation of the FS-ASM Standard:

- Assistance from state institutions, which have the appropriate human and financial resources to support ASM entities with geological research, exploration, and planning.

- Regulations that apply differentiated technical and environmental instruments for ASM, in accordance with its economic capacity.

- Regulations that allow the use of motor pumps appropriate to the scale of operations (for example, no more than 6 horsepower) and establish the environmental conditions under which their use would be possible, as technical aids for artisanal mining, to improve work conditions and contribute to its profitability.

- Harmonize the environmental instruments of community associations in exercise of the provisions of Law 70 of 1993 with the requirements for environmental management plans. Validating the instruments of the Law 70 of 1993, which have strong ancestral connotations, for the purpose of being presented in the scope of mining and environmental legislation (for which they are not valid), would be considered a major incentive.

- Conduct training and education processes that strengthen the knowledge of the ecosystems inhabited by artisanal and small-scale miners, and the importance they have not only for their environment but for life in general.

- Conduct training and education programs on organizational issues and associativity, as the main axis for the development of organized miners and community councils.

- Establish public policies that have an impact on attracting financial resources required to improve ASM technology.

- Recognize the ASM sector as a legitimate mineral producer and connect it to responsible supply chains.

- Develop a methodology that allows to account for and claim forest carbon credits by ASM operators, as an incentive to conform with the FS-ASM Standard and for good environmental performance in general.

**Road Map, Budgeted Workplan, and Funding Opportunities**

A road map (summarized in Figure 4.5), a budgeted workplan, and an exploratory analysis of potential funding opportunities for piloting the FS-ASM Standard in Colombia is contained in the separate Annex 2: Feasibility Assessment of Piloting FS ASM in Colombia.

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3 * The list of recommendations reflects the views stakeholders expressed when consulted on the feasibility of implementing the FS-ASM Standard. The list is therefore not to be understood as a comprehensive portfolio of recommendations to improve ASM and REDD+ regulations in general, which is beyond the scope of this assignment.
The CMO mining claim covers approximately 300 hectares in the catchment area of the Pallecapampa stream, which is the main water source for the district capital. Within this area, hard-rock gold ore is extracted by underground mining, accessing the vein type deposit by multiple access tunnels of varying size and depth according to the terrain conditions. Gangue mineral is dumped on waste rock dumps (Figure 4.6) and the ore is processed by amalgamation.

4.2.3 Peru

The full Peru Feasibility Assessment (partly in English, partly in Spanish) is contained in the separate Annex 3: Feasibility Assessment of Piloting FS ASM in Peru.

Pilot Site

The Comunidad Minera de Ollachea (CMO) is a legally established ASM entity owned by the Ollachea Peasant Community⁴, located in the Ollachea district at 2,800 meters altitude, province of Carabaya, department of Puno in southeastern Peru. The CMO is duly constituted with 78 members (61 males and 17 females) and provides employment opportunities to approximately 760 men and women.

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⁴ Peasant communities are organizations of public interest, with legal existence and legal personality made up of families that inhabit and control certain territories, linked by ancestral, social, economic, and cultural ties, expressed in communal ownership of land, communal work, mutual aid, democratic government, and the development of multisectoral activities, whose aims are oriented to the full realization of its members and the country (Article 2, General Law of Peasant Communities. Law no. 24656).
The CMO Board of Directors expressed a keenness to participate in initiatives that help improve its mining operations by adapting and/or improving them with a focus on sustainable management of the Ollachea Peasant Community’s natural resources; the board also expressed an interest in carbon finance projects and REDD+ mechanisms.

**Gap Assessment**

The gap assessment was carried out using a translated version of the second draft version of the FS-ASM Standard (see chapter 2.1). Figure 4.7 summarizes the findings; standard requirements that cover issues not present in the area (that is, alluvial mining–related issues) as well as standard requirements that exceed Peruvian regulations were classified as “not applicable.” An additional gap analysis of the Peruvian legislation versus FS-ASM Standard requirements (Figure 4.9) clarified this misunderstanding. Hence, most “not applicable” requirements need to be interpreted as “no progress.”
It is notable that the level of preexisting conformance (requirements assessed as finished and ongoing) is much lower than in Colombia (compare with Figure 4.3). A gap closure analysis carried out jointly with the miners, however, confirmed that all gaps can be closed⁵, although it will require external support and guidance. Thirteen requirements, mostly related to section B.5.2 of the standard (roughly 20 percent of the requirements to reduce direct mining impacts), exceed the technical and financial capacity of the CMO and therefore will depend on the availability of third-party support and investment.

The CMO’s Environmental Management Plan (EMP), submitted to the Regional Directorate of Energy and Mines (DREM), details its environmental commitments. The considerable number of issues identified during the gap analysis therefore confirms that by implementing the FS-ASM Standard, a significant number of direct and indirect impacts from mining will be additionally addressed, which—without the standard—might remain unaddressed.

In conclusion, piloting the FS-ASM Standard is considered feasible at the mining sites of the CMO.

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5 One gap was identified as technically impossible to close. In response, the final version of the FS-ASM Standard was amended, further clarifying the concept of the FRM as a nature-based solution that needs to be adapted to local site conditions.

Figure 4.8: GIS Analysis of Forest Resources and Deforestation in the Proximity of the Peruvian FS ASM Pilot Site and Its Buffer Areas (2 km, 5 km)

site location, 2-kilometer and 5-kilometer buffer areas are indicated. Additionally, the GIS analysis contains current mining cadastre data⁷.

The pilot site is located in the upstream section of a tributary of the Inambari River, with intact forest located about 20 kilometers downstream. No protected area exists near the pilot site. Tree coverage within the buffer areas appears to be low in the GFW database, mainly because the site is located at the timberline between tropical mountain forest and tropical cloud forest⁸. Tree height in such forests is limited (see Figure 4.6) and therefore apparently not fully reflected as “forest” in the GFW data set. That notwithstanding, it is a very fragile ecosystem, similar to the protected páramo in Colombia.

The assessment of the area of study reveals that deforestation patterns along the river do not correlate clearly with the locations of mining licenses. Therefore, direct impacts of mining do not seem to be a main driver of deforestation in the wider proximity of the pilot site. This matches the fact that mineral extraction is mainly done by underground mining, whereby surface areas are only occupied by mine entrances and waste rock dumps (see Figure 4.6).

The importance of forest-smart mining at the pilot site relates less to massive carbon storage potential (which is low in tropical cloud forest compared with tropical rainforest) but to the protection of the highly fragile ecosystem services of the cloud forest. The national Peruvian vegetation map indicates that “the ecological and strategic conditions of this coverage represent a reason for them to be conserved and protected as centers of biodiversity and as excellent providers of environmental services (water regulation, soil conservation, carbon storage, visual richness, etc.)” (GoPE-MINAM 2015, 50).

The site assessment suggests that despite the site’s potential for carbon storage, it might not be feasible to fund FS ASM in the area through carbon finance, particularly not as a stand-alone project under a voluntary standard. The avoidance of small mining impacts might be able to be integrated into the country’s REDD+ benefit-sharing system, which could distribute payments for results in the broader landscape. However, it is understood that Peru has not finalized its benefit-sharing system for REDD+.

Further research could ascertain whether the project sits within a broader jurisdiction that is successfully attracting carbon finance; perhaps a future benefit-sharing system could distribute funding for FS ASM. This would need to be developed in collaboration with the government.

Outcome of Stakeholder Consultations

Stakeholder consultation on the FS-ASM Standard involved the Servicio Nacional Forestal (SERFOR), Organismo de Supervisión de los Recursos Forestales y de Fauna Silvestre (OSINFOR), Regional Directorate of Energy and Mines (DREM), Wildlife Conservation Society (WCS), the NGO Pure Earth, and the miners’ federation Sociedad Nacional de Minería de Pequeña Escala (SONAMIPE).

The stakeholder responses were rather mixed, somewhat ad hoc, and led by nonspecific perspectives on ASM in general and not always specific to the PCI and their application. Feedback on the completeness of the standard produced some rewording proposals (in the Spanish translation), but no factual gaps were identified that would have required a substantial amendment of the draft version. The consulted stakeholders—including three environmental organizations—raised no objections on how the FS-ASM Standard approaches the topic of Key Biodiversity Areas and High Conservation Value Areas. In the main, stakeholders received the standard positively.

Stakeholders also suggested further environment-related topics, such as mercury use, to be included in the standard. These suggestions were noted by the standard team but not addressed in order to maintain the thematic focus of a bolt-on standard.

Government entities consulted, such as SERFOR, OSINFOR, and DREM, considered the structure of the standard, its organizational and geographic scope, and its PCI requirements. The FS-ASM Standard was seen as supporting many of the policies established by the Peruvian government that—due to budget constraints—are not implemented. The officials proposed to pilot and implement the standard also in other regions and ASM contexts (for example, alluvial mining).

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⁸ Classified as Bosque de montaña montano (Bm-mo) and Bosque de montaña altimontano (Bm-al), according to the Mapa nacional de cobertura vegetal (GoPE-MINAM 2015).
The gap analysis of the Peruvian legislation versus FS-ASM Standard requirements illustrates the extent to which the standard exceeds legal requirements (Figure 4.9). On a positive note, this proves the additionality the standard could provide, but it raises concerns about environmental regulations—even more so since the vast majority of ASM operations, still stuck in the process of formalization, are not even compliant with all legal requirements.

Therefore, advancing the ASM formalization process is seen as a priority in general but specifically as a starting point for implementing the FS-ASM Standard. To support this process, the following actions are recommended⁹:

- **Strengthening an enabling legal and regulatory framework** for the ASM sector is a precondition for a successful formalization process. This requires the following:

  - Implement the support measures for artisanal mining stipulated in the current Regulations of Law No. 27651 – Law for the Formalization and Promotion of Small-Scale Mining and Artisanal Mining and in all current and complementary legislation on this issue.
  
  - Adapt sectoral regulations to the reality and conditions of artisanal mining producers so that the cost of formality does not become a barrier.

With a legal framework in place or under improvement, **outreach and engagement with artisanal and small-scale miners** in the informal sector needs to touch ground. For that purpose, Peru already has the REINFO in place, which is the registry of informal miners in the process of formalization. These individuals, natural or legal, can legitimately develop mining activities, provided they commit to completing the Comprehensive Mining Formalization Process. Such outreach and engagement need to do the following:

  - Establish more detailed information on the characteristics of mining projects registered in REINFO, a bank of projects according to the mining activity carried out, as well as their location.
  
  - Identify informal mining settlements that are occupying the mining rights of third parties and assume an active role as facilitators to provide channels for resolving these conflicts through a policy of dialogue and consensus building to make viable the option of signing “exploitation contracts or agreements” or other contractual forms that lead to formalization.
  
  - Provide training and technical and environmental assistance to miners registered in REINFO.

**Continued support to legal ASM operations**, however, is as important as the initial outreach to the informal sector. Therefore, the following is needed:

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⁹ See footnote 5 in chapter 2.
• Disseminate the progress made by mining owners and/or operators that meet the operational, environmental, labor, social, and organizational standards required by law; promote internships to draw on the lessons learned.

• Conduct a detailed analysis and seek solutions to the issues presented by the Corrective Environmental Management Instrument (IGAC)/Environmental Management Instrument for the Formalization of Small-Scale Mining and Artisanal Mining Activities (IGAFOM) that are observed or in the process of evaluation so that they do not become abandoned.

• Seek national and international funding to support mining owners and operators who are formalized, to make this process sustainable over time.

Last but not least, permanent capacity building and training is essential:

• Promote participatory workshops in situ with the presence of mine owners and mine operators and all personnel working in different areas of mine operation, plant, and administration in order to do the following:
  » Improve occupational health and safety standards, environmental management standards, organizational standards, and others imposed by the Peruvian legislation.
  » Transmit knowledge about new operational technologies and handling of toxic substances, as well as the treatment of acidic water prior to its discharge.
  » Involve universities in the field of research and technical training to implement improvements in systems or methods of exploitation, metallurgical recovery.

In support of implementation of the FS-ASM Standard, the following is further recommended:

• Create a space for multisectoral discussion on the relationship between forestry and ASM issues.

• Design a national forest-smart mining plan that incorporates forest management and REDD+ issues into the environmental management instruments that guide small-scale miners.

• Implement REDD+ mechanisms articulated to forest management in ASM concessions.

• Promote awareness plans on different environmental issues, for compliance with current legislation at the organizational level.

• Implement topsoil management plans and procedures in a structured manner to optimize the recovery of degraded areas or intervened zones.

**Road Map, Budgeted Workplan, and Funding Opportunities**

A road map, a budgeted workplan, and an exploratory analysis of potential funding opportunities for piloting the FS-ASM Standard in Peru is contained in the separate Annex 3: Feasibility Assessment of Piloting FS ASM in Peru. Such a project should have a minimum duration of 2–3 years, covering various annual vegetation cycles and thus allowing validation of the expected forest outcomes.

### 4.2.4 Ghana

The full Ghana Feasibility Assessment is contained in the separate Annex 4: Feasibility Assessment of Piloting FS ASM in Ghana.

**Pilot Site**

The pilot site selected for Ghana is the small-scale mine of Key Empire Resources Ltd., a privately owned mining company, operating on a small-scale mining lease of 25 acres, located near the village Akyem Ekorso, Atiwa West municipality, Eastern Region. The concession area falls within a rural setting, with subsistence farming, transport business, petty trading, and mining the main economic activities. The mine currently employs 17 employees (all male).

A few years ago, and with support from Solidaridad, Key Empire Resources had been working toward Fairmined certification. This exercise stalled when the government of Ghana imposed a temporary ban on all small-scale mining and operations were suspended. In 2019, the mine was allowed to resume operations. Activities to resume work toward certification have not yet commenced.

The deposit being exploited is alluvial, with the ground excavated to the gold-bearing gravels and stockpiled for subsequent processing. The mining method includes excavating the gold-bearing coarse materials and transporting them to the plant for processing in a trommel with a capacity of 100 tons of gravel per hour. The pilot site is surrounded by technically similar mining operations on both riversides (see inset in Figure 4.10).
Gap Assessment

The gap analysis was undertaken relative to the five thematic areas of the FS-ASM Standard.

1. Situation assessment and planning requirements.
   Key Empire Resources proactively prioritizes engagements with relevant stakeholders such as government agencies (Forestry Commission of Ghana, the Environmental Protection Agency, Minerals Commission), civil society organizations, experts, and the local community. However, the mine has yet to use the information from the various engagements to develop appropriate impact mitigation and control measures and plans that will guide their operations throughout the life of the mine.

2. Direct mining impacts
   » Planning and preparation of mining activities.

While the priority level for this subtheme is generally high, the gap identified was the lack of documentation, particularly records on baseline, monitoring, and progress reports. However, as the complexity level for the gap is low, the mine is likely to close these gaps with the necessary awareness raising, guidance, and technical support.

» Forest and vegetation clearance prior to mining. No documented records of harvested timber exist. Suitable sites within the immediate vicinity of the operating pits have been designated for stockpiling topsoil material to be used for land reclamation after mining ore from the pit. However, there was no inventory of the amount of topsoil stored and volumes used on the mine.
> Technical rehabilitation. The ASM entity has yet to meet a number of the requirements under technical rehabilitation, particularly waste and water management plans/records, and standard operating procedures for the safe handling and storage of chemicals including hydrocarbons such as oils, diesel, and so on.

> Topsoil management. Generally, the topsoil management strategy was compliant with the requirements except for the lack of a documented soil management plan as well as records/inventory on soil organic material.

> Biological rehabilitation. The mine partners with the Forestry Commission of Ghana for their seedlings needs and therefore does not necessarily prioritize the establishment of a nursery on site. However, the mine must develop an environmental management policy and a mine rehabilitation plan to fully comply with the requirements, which are also in accordance with ASM regulatory requirements in Ghana.

> Site closure and handover. Based on the geological/soil characteristics, acid mine drainage is unlikely at the site. The mine, in accordance with ASM regulations, has indicated that they will, under the supervision of the Environmental Protection Agency and with the involvement of the local and traditional authorities, sign off and hand over the rehabilitated concession to the community upon mine closure.

3. Direct nonmining impacts. Even though the ASM entity has no inventory/records of the local wildlife globally recognized as endangered species, they indicated this information can be obtained from the Forestry Commission or Wildlife Society. Miners would need to be educated on wildlife conservation and the prohibition of hunting and consumption of wild/bushmeat. The mine must develop a written policy on wildlife conservation.

4. Indirect mining impacts. Risk assessments on forest impacts as well as mitigation measures have not been documented even though management indicates they are aware of the necessary measures to be put in place. These measures should however be outlined in an environmental management plan for the mine. This plan should be developed after a comprehensive environmental and social impact assessment has been conducted. Key Empire must engage with key stakeholders as well as with the local community on the potential risks of its mining operations and the control measures to be instituted to eliminate or control these potential risks.

5. Carbon finance. Some miners and management members are aware of some existing emission reductions programs (ERPs); however, the ASM entity is unable to take advantage of these programs since they target the cocoa and shea sectors, which are prioritized under Ghana’s REDD+ program. Key Empire is willing to engage with the relevant stakeholders for the development of ERPs for the ASM sector and indicated the need for their capacity to be built on various emission reduction strategies as well as the provision of technical support for the development and implementation of these strategies in their mine value chain. The ASM entity indicates their willingness to adopt international ERP guidelines/voluntary standards as long as these guidelines/standards fit into the local ASM mining context.

It was realized that all the gaps can be closed with the necessary support. The level of complexity in addressing most of the issues was low by the miners, making them relatively easy to address, particularly as they are well established in the ASM regularly frameworks in Ghana.

In conclusion, piloting the FS-ASM Standard is considered feasible at the mining site of Key Empire Resources Ltd.

Forest Carbon Assessment

REDD+ Readiness in Ghana is at an advanced stage. The Ghana REDD+ Strategy/Action Plan, which was established and launched in 2016, is well aligned with key national developmental strategies and policies, including the National Climate Change Policy, Forest and Wildlife Policy, Ghana’s Shared Growth and Development Agenda GSGDA, and Ghana’s Nationally Determined Contribution (NDC) to UNFCCC (GoGH-GFC, GhREDD+, and FCPF 2016; Graham 2016). The assessment of land use and land use change drivers was undertaken and adequately informed the process and development of the Ghana National REDD+ Strategy. The strategy options were selected through a participatory and inclusive process including the use of a Strategic Environmental and Social Assessment process.

The FREL was established in 2017 and there are structures in place for MRV (GoGH-GFC 2016; Graham 2016). Ghana has developed NFMS protocols and its structures are in place, including institutional arrangements for an NFMS (IKI and BMU 2019). Good progress has been made in influencing key national policy development processes, but these are yet to be translated into legally binding laws.

FOREST-SMART MINING - ASM
Ghana has submitted its first summary of information on Reducing Emissions from Deforestation and forest Degradation (REDD+) safeguards to the UNFCCC, providing a comprehensive demonstration of how the country is addressing the Cancun Safeguards and how it intends to respect and report on REDD+ safeguards using its functional institutional framework (IKI and BMU 2019). A framework has also been established for REDD+ safeguards implementation and monitoring, including the development of a safeguards information system Web platform and a feedback and grievance redress mechanism. Because the REDD+ Strategy and Ghana’s NDC are closely linked, the ERP for the cocoa-forest landscape has been featured as one of the interventions that will enable Ghana to meet its NDC target of reducing current national emissions by up to 45 percent by 2030.

The capacity of the national REDD+ secretariat has been enhanced through several training and capacity-building activities to ensure sustainability of the outcomes, including the implementation of the benefit-sharing plan, safeguards, and the feedback and grievance redress mechanism (GoGH-GFC 2016; Graham 2016). An advanced benefit-sharing plan was developed for the first ERP, and there is significant progress in resolving issues relating to tree tenure with the support from other programs, including the Ghana Forest Investment Program (G-FIP). For example, a law has been promulgated regarding tree tenure. Multiple stakeholder REDD+ management arrangements were established, including engagement, stakeholder consultation, and communication platforms (Graham 2016). Ghana has signed an Emission Reductions Payment Agreement with the Forest Carbon Partnership Facility (FCPF) Carbon Fund (FCPF 2019a).

A GIS analysis (Figure 4.11) was performed by combining data on tree cover, forest loss, and intact landscapes from the Global Forest Watch, data on protected areas from the World Database on Protected Areas, and selected geographic features (water bodies, roads, populated sites) from Open Street Map with the pilot site location. The pilot site is located close to the protected areas Atewa Range and Esukawkaw. No areas identified as intact forest landscapes exist near the pilot site.

The assessment of the area of study reveals extensive deforestation has occurred over the last 20 years. Forest loss in the vicinity of the mine site (along the river), as visible in Figure 4.11, can be mainly attributed to active or abandoned mine sites (see inset in Figure 4.10 for ground truthing). In non-mineralized areas, deforestation is supposedly related mainly to agriculture and wood removal. There appears to be no significant difference in the intensity of forest loss between mining and nonmining economic activities.

The analysis suggests that a significant carbon benefit could be generated through project activities avoiding deforestation/degradation and undertaking restoration. It is not clear the extent to which the evident clearance is due to mining as opposed to agriculture. This area is in a hotspot intervention area (HIA) for the Ghana Cocoa REDD+ Forest Program (GCRFP), which is an ERP. The HIA is a focus area for intervention within a subnational REDD+ program and it is understood that this area benefits from the payment agreement signed with the FCPF Carbon Fund. The baseline for the GCRFP is for the entire program area and carbon will only be transacted on at the program level (GoGH-GFC 2020). Therefore, it would not be feasible to develop a voluntary project under a voluntary standard (for example, the Verified Carbon Standard), as this would require the development of a project-specific baseline. However, it appears there is the possibility of the avoidance of mining impacts being integrated into the GCRFP’s benefit-sharing plan, which exists and provides for the distribution of benefits to farmer groups, traditional authorities, and HIA communities at this point (GoGH-GFC 2020).

The circumstances of the ASM activities in the area would need to be considered (for example, the legal circumstances) along with the extent that the carbon benefit that could create. With Ghana experiencing artisanal mining in some of its forested areas, REDD+ has to consider how this driver of deforestation and forest degradation can be addressed. The miners’ capacity to engage on carbon will need to be built.

In this case, as the pilot site—the Key Empire Resources site—is only 25 acres, the initiative to integrate FS ASM into the ERP would need to involve the collective engagement of the miners in the area.
Figure 4.11: GIS Analysis of Forest Resources and Deforestation in the Proximity of the Ghanaian FS ASM Pilot Site and Its Buffer Areas (2 km, 5 km)

Outcome of Stakeholder Consultations

Stakeholder consultation reached out to the Minerals Commission, Water Resources Commission, Obeng Mining Group, and Ghana Women in Mining.

The outcome of the consultations indicates that the consulted draft version of the standard fits into the local ASM context and the compliance criteria are feasible.

While the stakeholder feedback did suggest any major revisions to the draft standards, the various stakeholders unanimously highlighted that consistent stakeholder engagement throughout the pilot, education, training of regulatory bodies, advocacy, sensitization on the standard and guidance, and support to mines will be imperative for the overall success of the pilot and beyond.

Generally, stakeholders are of the view that the draft standard and its requirement are feasible and with relatively low complexity levels for compliance in comparison to other ASM standards.

Stakeholders are looking forward to the final version of the standard and active participation in the implementation of the pilot and subsequent upscale nationwide.

Recommendations on ASM and REDD+ Regulations

The country’s national regulations and institutions present a good framework to plan and implement FSM. These are robust enough to incentivize FSM. However, enforcement of the laws has always been challenging. In the wake of increasing youth unemployment and access to Chinese technology that facilitates mining at scales that go beyond known traditional practices for small-scale mining, the context of any responsible mining would have to be based on very innovative project phase interventions that seek to address the major underlying drivers of irresponsible mining.

The youth in most rural landscapes are abandoning agriculture. Institutional failure and political will to enforce laws and avoid political interference in mining-related law enforcement will be among the major governance issues to address. Invariably, the most critical component to promote FSM will be not technology or capacity but an elaborate discussion and implementation of governance-related issues that will compel miners to stick to best practices. The mining sector has been heavily militarized in response to persistent violations of forestry and mining laws. The uncoordinated nature of militarization meant that legal mines were also targeted at first. Although legal mines are no longer targeted, this militarization generates a culture that does not align with the conditions necessary for forest-smartness (e.g. participation, inclusion, respect for human rights, etc.), and could pose a barrier to the implementation of forest-smart mining in the sector. FSM implementation will need to demonstrate how it can work as a strong innovation tool in achieving better governance and ensure the collaboration between traditional authorities, alternative job creation, innovative law enforcement that will address issues of corruption, and political interference.

With an estimated 85 percent of artisanal and small-scale miners in Ghana operating in the informal sector, measures should be put in place to promote formalization of the sector. It has been revealed that to address the environmental challenges of ASM, the activities of the sector must be regulated. Although the law provides for the regularization of the sector in Ghana, ASM activities largely remain outside the law. Improvements in the regulation of the ASM sector and mainstreaming of activities within it are therefore required.

The absence of regularization in Ghana’s ASM sector is the main cause of the environmental challenges since regulators have little ability to influence environmental performance, leading to proliferation of abandoned pits and pollution of water bodies, among others (Aubynn et al. 2010; ACET 2015). Regularization of ASM activities will start, however, with their formalization. The issue of legalization or regularization and its attendant change in the ASM setting brings into critical focus the need for government to pay attention to formalization as a first step to legalization and regularization.

Measures such as decentralizing ASM licensing to the district level and educating mining communities on the ASM licensing procedure should also be undertaken. There should also be more effort from government to promote the sector. The Minerals and Mining Policy for instance has strategies to promote responsible and sustainable ASM mining; however, the challenge is government’s commitment to implement such policies.

The current REDD+ strategy identifies mining as a major driver of deforestation, but it has not come out with a deliberate strategy to address it. The REDD+ interventions are in cocoa, shea, and mangroves landscapes. The piloting of FS ASM by this project will help propose intervention strategies to be explored under REDD+ in to address ASM landscape challenges.
Road Map, Budgeted Workplan, and Funding Opportunities

A road map, budgeted workplan, and an exploratory analysis of potential funding opportunities for piloting the FS-ASM Standard in Ghana is contained in the separate Annex 4: Feasibility Assessment of Piloting FS ASM in Ghana. Such a project should have a minimum duration of 2–3 years, covering various annual vegetation cycles and thus allowing validation of the expected forest outcomes.

While a number of activities are required for the implementation of the pilot, the sequence and timely implementation of some activities are critical to the overall success of the pilot (Figure 4.12).

Figure 4.12: Sequence of Major Activities, Ghana

![Sequence of Major Activities Diagram](attachment:image.png)

Note: ASM = artisanal and small-scale mining; ERP = emission reductions program; FS = forest-smart; MOU = memorandum of understanding.

The gap assessment conducted at the Key Empire site shows that it is feasible to implement the FS-ASM Standard there, but the ASM entity does not have the capacity to implement it without external support. In this regard, the miners will be trained and provided with the necessary tools for them to be able to meet the requirements of the FS-ASM Standard. The training will involve training of trainers for lead miners, who will then also train the workers of adjacent mines, taking a landscape approach with outreach beyond the 25 acres of the Key Empire mining lease.

4.2.5 Liberia

The full Liberia Feasibility Assessment is contained in the separate Annex 5: Feasibility Assessment of Piloting FS ASM in Liberia.

Pilot Site

The pilot site selected for Liberia is the Weasua Community in the Gbarma District, Gbarpolu County. The Weasua Community consists of Weasua Town and 16 satellite villages (the majority are camps) where people
do mining. Ten of the satellite villages are not accessible by car or motorbike. It is an 80-minute motorbike drive to the farthest satellite village, called “City in the Forest,” from Weasua Town.

Miners are organized in the Weasua Clan Mining & Agricultural Cooperative Society (WECMACOS). WECMACOS is the only mining cooperative in Liberia that was organized and received the full-fledged status (in August 2021) after the Ministry of Mines and Energy developed the road map to formalize the ASM sector. WECMACOS is not operating mines as an entity; miners who are the members of the cooperative work individually on their mines. They have the knowledge and experience to operate diamond mines.

It is estimated that diamond mines exist along the trails and along the Lofa River within an area about 15 kilometers by 15 kilometers in the Weasua Community. Reportedly, there are more than 20 existing pits, including the illicit ones.

Diamond mining is done manually, in open pits, with stone washing carried out on site, inside the pit. Miners usually start digging at the center of a mine using shovels and then expand the digging area. Organic materials are left or piled up at mine sites. Rain or groundwater accumulates in the pit and forms a manmade pond. Small motor pumps are used to keep the pits dry, and the miners do not care where the water goes so long as it is outside the pit. As Figure 4.13 indicates, after they pile up enough gravel, miners wash it in the manmade pond using a sieve to find diamonds. Once a mine is considered mined out, the miners go farther along the trail or off the trail to find a new mine site. Miners say that there are more than 50 abandoned mines in the Weasua Community land.

Figure 4.13: Diamond Mine Pits in the Weasua Community Area, Liberia

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10 Some mining cooperatives were formed before the road map was developed, but they do not function properly as cooperatives. Some work like a private company and others are dormant according to the Cooperative Development Agency. Therefore, WECMACOS is the only diamond ASM mineral producer in Liberia currently working in line with the Ministry of Mines and Energy’s policy.
Gap Assessment

Although Weasua is one of the oldest diamond mining communities in Liberia and surrounded by forests, WECMACOS’s knowledge on environmental protection or the importance and benefits of protecting the forests was found to be minimal.

However, community miners, probably due to the diversified rural economy—WECMACOS is a mixed mining and agricultural cooperative—enthusiastically expressed their willingness to learn and implement the standard’s PCI. In the gap analysis, miners attributed a high priority to all topics of the standard but assessed the complexity of their implementation on average as low to medium. This is in stark contrast to the fact that all criteria except two were marked as “no progress.”

The miners are considered to be in conformance with requirement B.5.2.1.8 on unnecessary extension of the mining activities into forest habitats because they mine manually without use of heavy earthmoving equipment. However, that fact is a result not of their efforts to avoid environmental degradation but of the lack of funds to obtain equipment. Requirement B.5.2.5.6 (nursery for target seedling production) was also considered in progress.

Most likely the miners underestimate the complexity of implementing the FS-ASM Standard—even more so since the standard is intended to be implemented as a bolt-on standard in combination with other applicable ASM standards, which adds complexity.

The following steps to close the gaps were identified and proposed by the local support organization, Diamonds for Peace:

1. Raising awareness about FSM PCI among national-level stakeholders. It is necessary to provide them with information on FSM PCI and some major international guidelines/schemes/certification systems to be used and benefits and incentives to implement the pilot in the country so that the national-level stakeholders have shared knowledge and avoid future confusion.
2. **Raising awareness about FSM PCI targeting the ASM entity and local stakeholders.** It is necessary to raise the ASM entity’s and local stakeholders’ awareness before starting important components of the pilot so that everyone has a basic idea of what will be done in the pilot site and avoid future big confusion.

3. **Stakeholder engagement.** Once the ASM mineral producer and the local stakeholders have the basic idea, they are ready to have more detailed discussions and engage themselves.

4. **Developing and convening technical trainings.** Technical training needs to include components on diamond and gold mining and action plan development (planning of the ASM mineral producer’s mining activities with the knowledge and skills miners gain). Such training material should be developed by the standard setter, to be used in multiple countries. It can then be adjusted to the local context, if necessary, before convening the training in Liberia.

5. **Monitoring the activities.** The ASM entity needs more detailed planning and preparation before starting a new mining project. This needs to be monitored during its planning, preparation, and implementation.

6. **Improving/taking necessary measures based on monitoring results.** Based on the monitoring results, the local support organization will give encouragement and technical advice to the ASM entity. The local support organization may also need to convene another training or workshop if the ASM entity is weak in a particular area.

7. **Feedback to national-level stakeholders.** After implementing all the above, the local support organization will compile the results and give feedback to the national-level stakeholders and discuss the way forward.

In conclusion, conditions for piloting the FS-ASM Standard at the mining sites of WECMACOS are favorable and feasible thanks to the enthusiasm of the miners and the local support organization. However, different to the proposed pilot implementations in Colombia, Peru, Ghana, this pilot would be implemented from scratch, as no in-country experience with the implementation of ASM standards exists. This means that greater support would be necessary from the coordinator of the pilots.

### Forest Carbon Assessment

Liberia has made significant progress in REDD+ readiness given it is a poor country with minimal resources. It has a REDD+ strategy and has submitted an FREL to the UNFCCC, and the NFMS is complete (Liberia has a forest definition). It also has an operational safeguard information system.\(^\text{11}\)

MRV sits within the REDD+ Implementation Unit (RIU), which is part of the Forest Development Authority, which also contains the Liberia Institute of Statistics and Geoinformation (LISGIS). Therefore, Liberia has institutions for MRV, but capacity in the country is limited.

Liberia has a National Response Strategy on Climate Change and a REDD+ action plan. The Environmental Protection Agency is the national designated authority on climate change matters, while the Forest Development Authority is responsible for all forest-related matters.

The Land Rights Act provides a good basis for understanding land ownership and tenure in Liberia. However, certain aspects of ownership are still unclear; for example, the act is not clear on who owns proposed protected areas. A current survey of customary rights is under way. Furthermore, ownership of carbon is unclear, but it is likely to sit with landowners. Liberia does not have a finalized benefit-sharing system for REDD+ or rules on nesting or the international sale of emission reductions. Liberia’s REDD+ strategy notes that Liberia is “taking a ‘nested’ approach to REDD+, meaning that interventions are taken at a sub-national level and are fitted within a national framework for enabling and monitoring REDD+ results” (GoLB-FDA 2016). Protection for forests and biodiversity within Liberian REDD+ exists but does not appear definitive, although this would depend on the project developer.

The FCPF website does not indicate whether Liberia is receiving funds from the World Bank’s Carbon Fund. Opportunity exists to inform the country REDD+ system of forest-smart mining as a REDD+ activity, with a priority in Liberia’s REDD+ strategy being to “Prevent or offset clearance of high carbon stock and high conservation value forest in agricultural and mining concessions” (GoLB-FDA 2016).

A GIS analysis (Figure 4.13) was performed by combining data on tree cover, forest loss, and intact landscapes from

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\(^{11}\) Liberia REDD+ Safeguards Information System (website), accessed October 1, 2020, [https://liberia-redd-sis.info](https://liberia-redd-sis.info).
the Global Forest Watch, data on protected areas from the World Database on Protected Areas, and selected geographic features (water bodies, populated sites) from Open Street Map with the pilot site location. The pilot site location was plotted based on location data of visited pits and further clearly identifiable pits on satellite images publicly available from Google and ESRI. For the pilot site location, 2-kilometer and 5-kilometer buffer areas are indicated. The pilot site is located near intact forest landscapes and close to the Gola Forest National Park.

Figure 4.14: GIS Analysis of Forest Resources and Deforestation in the Proximity of the Liberian FS ASM Pilot Site and Its Buffer Areas (2 km, 5 km)

The assessment of the area of study reveals that extensive deforestation has occurred over the last 20 years. Forest loss visible in Figure 4.14 can be partly attributed to active or abandoned mine sites, but larger areas of loss appear to be related to agriculture. This suggests that a significant carbon benefit could be generated through project activities, but it appears that this would be in the broader landscape through limiting the impacts of agriculture as well as mining and through the restoration of cleared areas. The REDD+ voluntary activity causing the emission reductions/removals could be the implementation of an FS-environmental management plan in the landscape encompassing direct and indirect nonmining impacts as well as mining impacts.

A more in-depth feasibility study could assess whether this would be viable as part of a voluntary project under a voluntary standard (for example, the Verified Carbon Standard). Any planned initiative would need to consider customary and statutory land rights in the area, and capacity building and technical support would be required to implement an initiative. Also, it would need to be confirmed that a suitable methodology for a project where mining is a driver is available under a voluntary standard such as the VCS (or one would need to be developed, which is very time-consuming).

Otherwise, the avoidance of smaller mining impacts might be able to be integrated into the country’s REDD+ benefit-sharing system that could distribute payments for results in the broader landscape. However, as this type of system does not yet exist in Liberia, and as the site does not sit within an initiative or jurisdiction that is successfully attracting carbon finance, it is suggested that this would only be a possibility in the somewhat distant future.

**Outcome of Stakeholder Consultations**


Feedback from the stakeholder consultation on intent and scope of the draft version of the standard was not unanimous, with replies reflecting different perspectives and interpretations, but in the majority, feedback was positive except on aspects related to the rights of Indigenous Peoples within protected areas in the geographic scope. Suggestions to limit Indigenous Peoples’ rights have not been adopted by the authors, as this is not aligned with principle 2 of the standard, which takes a human rights–based approach. The intent of the comment is however now addressed in the final version of the standard, by a revised wording that closes potential loopholes for ASM in protected areas.

The partly different perspectives and interpretations highlight the need to create a common understanding, as suggested above on gaps to be closed.

Feedback on the PCI for ASM entities was almost unanimously positive, assessing all requirements as feasible and in line with Liberian regulation. Generally, stakeholders are of the view that the draft standard and its requirement are feasible.

**Recommendations on ASM and REDD+ Regulations**

The in-country assessment has two general recommendations:

- **Early start of awareness messaging and engagement.** There is currently a very polarized view of forestry and artisanal mining activities in Liberia. In forestry, it is large-scale commercial logging versus conservation and protected areas. This has led to most thoughts of commercial logging as a deforestation driver (replanting is rarely done); therefore, having artisanal mining also under way in forests already being “degraded” by commercial logging will be a difficult public perception to overcome. Similarly, as a significant amount of ongoing artisanal mining in rural, forested areas is unlicensed with little to no regulatory monitoring, it may be difficult to convince regulators and the public to accept the environmental degradation associated with artisanal mining activity. It is therefore imperative to ensure the messaging is clear that forest-smart mining is not promoting ASM in protected areas, because the government has had a difficult experience removing illicit artisanal miners who have previously been pervasive in several key protected national parks across Liberia.

- **Strengthened ASM licensing and monitoring.** While key regulators may be accepting the FSM concept, no published and established guidelines currently exist on how ASM is expected to be conducted for regulatory compliance. Having clearly established regulatory expectations for compliance will provide much needed guidance on how ASM activities can realistically be developed within forests and alongside forest resources in a responsible manner.

Specific recommendations include the following:

- **Develop mining regulations.** None currently exist, so this will require detailing regulations for all sizes of operations, including ASM.
• Any ASM regulations to be developed should offer **pathways for safe and efficient mineral recovery** and enable some level of equipment use and mechanization.

• Develop **guidance notes** for how licensed artisanal mining can be conducted in forested areas, providing clarity on all authorizations required from community to regulatory levels and considering the various forms of legality of forests, such as authorized community forests, forested communally owned lands, and so on.

• Ensure inspection procedures that are responsive to access in difficult terrain in remote forested areas where artisanal mining activity is also undertaken. The lack of convenient road networks in many areas where natural resources are located is often the leading challenge regulators mention regarding their ability to maintain routine monitoring schedules for such sites.

• Good practices of voluntary carbon financing projects in Liberia and in other mineral-producing countries need to be collected. Given that no methodology exists for incorporating ASM into carbon finance, it needs to be explored if possibilities exist under voluntary carbon standards such as VCS, or whether avoidance of impacts by ASM could be integrated into the country’s REDD+ benefit-sharing system. This can draw on lessons learned from other sectors, such as smallholder farmers.

**Road Map, Budgeted Workplan, and Funding Opportunities**

A road map (summarized in Figure 4.15), a budgeted workplan, and an exploratory analysis of potential funding opportunities for piloting the FS-ASM Standard in Liberia is contained in the separate Annex 5: Feasibility Assessment of Piloting FS ASM in Liberia.

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**Figure 4.15: Sequence of Major Activities, Liberia**

<table>
<thead>
<tr>
<th>National-level stakeholders’ awareness raised</th>
<th>Developing technical training</th>
</tr>
</thead>
<tbody>
<tr>
<td>The AMP and local stakeholders’ awareness raised</td>
<td>The AMP receives technical training</td>
</tr>
<tr>
<td>Stakeholder engagement</td>
<td>The AMP’s knowledge &amp; skills on FSM improved</td>
</tr>
<tr>
<td></td>
<td>The AMP plans and implement mining and associated FSM activities using the obtained skills</td>
</tr>
<tr>
<td></td>
<td>The AMP satisfies the minimal criteria of FSM PCIs</td>
</tr>
<tr>
<td></td>
<td>The AMP &amp; local stakeholders are aware of the results</td>
</tr>
<tr>
<td></td>
<td>Monitoring, technical assistance to the AMP for improvement and continuous practice</td>
</tr>
<tr>
<td></td>
<td>National-level stakeholders are aware of the results</td>
</tr>
</tbody>
</table>

**Note:** AMP = artisanal and small-scale mining mineral producer; FSM = forest-smart mining; PCI = principles, criteria, and indicators.

Such a project should have a minimum duration of 2–3 years, covering various annual vegetation cycles and thus allowing validation of the expected forest outcomes.
5. PARTNERSHIP, LEVERAGE, AND FUNDING OPPORTUNITIES

A number of potential entry points exist for partnership and collaboration to influence on forest-smart mining (FSM) in artisanal and small-scale mining (ASM) supply chains, through the implementation of the Forest-Smart Artisanal and Small-Scale Mining (FS ASM) Standard and beyond. Decisions about which stakeholders are more appropriate to engage with and at what stage will depend on strategic priorities, budget availability, and policy choices. Annex 1 section C.5 outlines concrete financing support systems for FSM.

5.1 Partnership and Leverages

Some global processes offer opportunities for engagement to accelerate the adoption of the FS-ASM Standard and to seed exploration of additional pilots in different sites and countries. These opportunities include the following:

- The New York Declaration on Forests (NYDF) Progress Assessment Click or tap here to enter text.completed its review of goals 3 and 4 in 2020, and goal 7 in 2021. These goals seek to reduce deforestation from infrastructure and extractive industries, support alternative livelihoods (which includes ASM), and reduce emissions from deforestation and forest degradation in accordance with global climate agreements. From 2022, the NYDF assessments will be fully integrated within the NYDF Global Platform, with the initiatives’ combined efforts focused clearly on implementation and recognizing the importance of accountability, especially as the number of countries committing to ending deforestation drastically increased with the recent (2021) Glasgow Leaders’ Declaration on Forests and Land Use. They will also be taking a regional approach to future assessments, including building regional networks of endorsers to advance achievement of the goals.

- With funding from the German government, the Organisation for Economic Co-operation and Development (OECD) has commissioned Levin Sources to design a Practical Actions for Environmental Due Diligence Tool that will support businesses along minerals value chains to source responsibly in ways that mitigate environmental risks. There is scope to ensure that this tool aligns with and references the FS-ASM Standard, to raise awareness among downstream actors of the standard and how its deployment in their supply chains could support achievement of their responsible sourcing and decarbonization strategies.

- The Environmental Governance Programme (EGP) and Forest Team of the United Nations Development Programme (UNDP) are convening a series of dialogues on mining and forests to design and implement a program of work during 2022–2023 that will assist EGP countries (Argentina, Colombia, Ecuador, Kenya, Kyrgyz Republic, Liberia, Mongolia, Namibia, Peru, and Zambia) to improve governance of mining/forest interactions. This is being done in partnership with the New York Declaration on Forests and the Wildlife Conservation Society. There is opportunity for the World Bank to coordinate with the UNDP to ascertain the following:

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2 Text verified by Erin Matson and Madeline Craig, November 16, 2021.
3 Text verified by Sophia Gnych, OECD, November 15, 2021.
If/how the UNDP country offices could engage in and support implementation of the FS ASM pilots.

If/how UNDP may want to ultimately convene or manage the coordination of the various FS ASM pilots (including outside of EGP countries) in partnership with or on behalf of the World Bank.

If/how UNDP might help the World Bank raise funds for the pilots designed by this project.

Whether the program of work that emerges from the UNDP dialogues would include additional pilots of FS ASM in new sites and new countries. Furthermore, the World Bank could participate in the dialogue series as a stakeholder to build a strategic understanding of what opportunities for partnership exist.

Verra is a standard-setting body that helps channel finance toward some of the world’s most pressing environmental challenges. Verra has expressed an interest in being engaged by the World Bank once the standard is developed to pursue a couple of opportunities that could help make their own standards more applicable to ASM.

There is opportunity to integrate the FS-ASM Standard into two Verra standards: SD VISta, which certifies at the project level, and LandScale, which verifies the assessment of a landscape at the landscape level.

- Under SD VISta, it is not possible to produce a tradable carbon asset, but it is possible to produce a measurable carbon claim (for example, the ASM entity has contributed toward the host country’s net zero targets) or a measurable sustainable development or human rights claim (for example, the ASM entity or its funder can make a quantifiable claim about how it has reduced human rights impacts or biodiversity impacts, or is supporting achievement of the United Nations Sustainable Development Goals through application of the FS-ASM Standard), and have it assured.

- LandScale allows users to measure progress in the overall sustainability of a landscape over time. It includes indicators to measure deforestation, soil health, labor rights, governance, water, and more, and it is possible to add additional indicators (such as those in the FS-ASM Standard). No carbon asset or claim arises from using this standard. LandScale can be combined with a jurisdictional REDD+ scheme. An FS ASM initiative could sit within the landscape or LandScale/jurisdictional REDD+ framework.

There may also be an opportunity to design a carbon accounting methodology for FS-ASM’s impacts in terms of avoiding deforestation, forest degradation, and perhaps for integrating restoration into an FS ASM carbon project and have this approved by Verra. Conceivably, an existing methodology could be adapted for FS ASM. It would be important to understand what existing Verified Carbon Standard (VCS) project methodologies (the basis of the carbon accounting for projects implemented) are applicable to FS ASM and what methodologies might need to be developed to implement such projects. Then methodology development could be undertaken if required. If adapting a methodology, the methodology designer would submit a concept note to Verra for review of the proposed revisions to the existing Verra methodology. Verra would give acceptance or not, then the designer would make the revisions before further review and external validation/verification.

Verra is considering developing a supply chain intervention program (often referred to as insetting). This program could use and adapt the carbon accounting methodologies that already exist as part of the VCS to quantify interventions. Verra sees benefit in engaging with FS ASM. It is possible that the standard’s principles, criteria, and indicators (PCI) could be used as the basis for the development of a carbon accounting methodology for FS-ASM’s impacts in terms of avoiding deforestation, forest degradation, and restoration (see the previous bullet point). An FS ASM initiative could be a working case study.

Text verified by Ann Cathrin Pedersen, UNDP, November 6, 2021.


for a possible insetting pilot, with Verra aiming to build the program on the basis of rigorous carbon accounting and evidence-led design\(^9\).

- The United States Agency for International Development (USAID) Zahabu Safi (Clean Gold) Project is a five-year program to build commercially viable responsible gold supply chains from the eastern Democratic Republic of Congo. The project currently works with four cooperatives in the provinces of Ituri, Maniema, and South Kivu, where existing forest is under threat. It is helping the cooperatives to mitigate human rights risks and build viable cooperative businesses, in line with the OECD Due Diligence Guidance (DDG), in order to access responsible downstream markets. The Zahabu Safi (Clean Gold) Project conducted market assessments in 2019, 2020, and 2021 to understand the sourcing needs and priorities of refiners and jewelers and is working with communities in each sector to facilitate relationships that result in self-sustaining responsible supply chains. Addressing environmental risk is becoming more of a necessity for buyers because legislation (especially in Europe) and their customers are increasingly demanding greater environmental responsibility in supply chains. So, there is a confluence of opportunity: The Zahabu Safi (Clean Gold) Project has entered its fourth year and is now close to supporting the ongoing export of gold mined in one of the world’s most important forest biomes. Relationships with downstream partners are deepening, leading to greater understanding of their needs. The project could use its existing relationships and understanding to scope whether it could finance the design of a road map, budget, and workplan for a pilot in eastern Democratic Republic of Congo. The objective would be to allow others to build on the project’s learning and its progress in establishing enduring supply chains by raising funds to implement such FS ASM pilots with interested cooperatives\(^10\).

- Regeneration, a RESOLVE initiative with first funder Rio Tinto, was established to finance ecological and economic regeneration through remining legacy tailings and waste rock and processing water. While the priority for this initiative is regeneration at legacy large-scale mines, there will also be attention to ASM, building on the work already initiated by RESOLVE through Salmon Gold (in Alaska, the Yukon, and British Columbia) and its land reclamation program in Sierra Leone. This includes a program of work that scopes, identifies, prioritizes, and develops projects either restoring legacy ASM sites or restoring legacy large-scale mining sites with ASM labor\(^11\).

5.2 Funding

5.2.1 Philanthropic Foundations

Philanthropic foundations can act as amplifiers and provide financial resources to enhance the uptake of the FS-ASM Standard. There are three key foundations to engage: The Ford Foundation, the Forest Conservation Fund, and the Climate and Land Use Alliance.

The Ford Foundation seeks to reduce poverty and injustice, promote international cooperation, advance human achievement, and strengthen democratic values. In 2020, the Ford Foundation commissioned a study to analyze the institutional landscape of international initiatives working to address the negative impacts of mining in forests. This study informed the development of a new program. Given the foundation’s historic interest in FSM, it would be sensitive and prudent to share the FS-ASM Standard and engage them in conversations on how to build a program to facilitate the uptake of the standard.

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\(^10\) Text verified by Nikki Duncan, Global Communities, November 24, 2021.


\(^12\) Text verified by Stephen D’Esposito, Regeneration, November 12, 2021.
The Forest Conservation Fund aims at decentralizing conservation by empowering local communities and private sector actors to protect forest under their control. There is the potential for the fund to run conservation projects in mining concessions and ASM sites; thus, they could support piloting FS ASM.

The Climate and Land Use Alliance (CLUA) seeks to realize the potential of forests and land use to mitigate climate change and protect the environment. The alliance financially supports efforts in Brazil, Indonesia, Mexico, and Central America, and at the global level it supports international public and private sector policies, programs, and finance that help conserve forests and land. The uptake and support for FSM could be enhanced with the alliance’s funding.

Other funds and foundations to engage with include the following:

- The Cartier Foundation, and more concretely Cartier for Nature, which focuses on forests’ preservation, the restoration of ecosystems, solutions for the preservation of natural resources and decreased carbon emissions, and relief for environmental emergencies.

- The Lion’s Share Fund strives to halt biodiversity loss and protect natural forests.

- The Tany Meva Foundation— and more concretely its conservation and climate change themes—seeks to manage and restore existing protected areas, Key Biodiversity Areas, and other territories, as well as support innovations and applied research for climate change mitigation and adaptation.

- The Good Energies Foundation seeks to reverse climate change and mitigate poverty.

- The Sigrid Rausing Trust promotes human rights and the preservation of nature from further degradation.

- The David and Lucile Packard Foundation, and more concretely their climate change theme.

- The George & Betty Moore Foundation seeks to create positive outcomes for future generations, focusing on four themes, one of which includes environmental conservation.

- The Soros Open Society Foundation, and more concretely the Soros Economic Development Fund, which has recently developed a Climate Justice strategy and is now looking to deploy its impact investment capital in service of regional and global climate goals.

5.2.2 Public Funders

Public funders can act as amplifiers, provide human or financial capital, and engage relevant actors to enhance the uptake of the FS-ASM Standard. Some key public funders to engage include the following:

The Global Environment Facility (GEF) through planetGOLD seeks to improve environmental management of artisanal and small-scale gold mining operations. Although it currently focuses on mercury and waste management, the program has developed criteria to include environmental commitments. The uptake and support for FSM could be enhanced with GEF funding.

The United Nations Development Programme is currently leading a forests and mining dialogues series that will lead to a program of work on the interactions between mining and forests in up to nine countries involved in their Extractives and Governance Programme. There is the potential to enhance FSM with the program of work currently being developed.

The Organisation for Economic Co-operation and Development has significant influence over the international policy arena for minerals. The recent launch of the OECD Tool on Environmental Due Diligence in Mineral Supply Chains presents an opportunity for amplifying FSM.

The Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) is committed to leveraging mining for sustainable development while ensuring that the environmental and social impacts are managed. It is interested in supporting with human resources the uptake of FSM by creating a guideline to manage ASM occurring in Key Biodiversity Areas.

It is crucial to further engage the China Chamber of Commerce of Metals Minerals & Chemicals Importers & Exporters (CCCMC) because China plays a key role in consumer, manufacturing, and midpoint of global mineral supply chains. The CCCMC is interested in enhancing FSM, and the FS-ASM Standard could be included in their existing guidance documents.

Other public funders to potentially engage include the German Agency for International Cooperation (GIZ), UN Decade of Ecosystem Restoration, Inter-American...
Moreover, an FS ASM green bond or climate-smart mining green bond could be also considered for financing FS ASM projects. Multilateral issuers like the Asian Development Bank, the World Bank, and the International Finance Corporation could issue bonds to raise debt finance from a diverse set of investors with a priority to protect forests, empower vulnerable groups, and advance climate change mitigation and adaptation—for example, institutional investors, foundations, religious organizations, asset managers, downstream companies, and so on. Forest-smart ASM projects for implementation by regional, national, provincial, or local governments, responsible mining and sourcing programs (including ASM entities that are part of existing certification schemes), public-private partnerships, or REDD+ or VCS programs could be candidates to receive this funding (World Bank 2015).

5.2.3 Industry and Multistakeholder Initiatives

Industry and multistakeholder initiatives are key targets for the integration of FSM standards, but they may also be able to support access to funding and piloting of FS ASM in their sites and can also act as amplifiers and communicators of FSM to their stakeholders and members.

The most important industry-led multistakeholder initiatives to engage include the International Tin Association, LBMA, Responsible Minerals Initiative, Cobalt Institute, Tantalum-Niobium International Study Center (TIC), International Tin Supply Chain Initiative (ITSCI), Responsible Jewellery Council (RJC), Impact Facility, Drive Sustainability, Global Battery Alliance, Responsible Mineral Development Initiative (RMDI), Responsible Mica Initiative, Moyo Gems, European Partnership for Responsible Minerals, RE-SOURCE project, and Public Private Alliance for Responsible Minerals Trade, among many others.

Some of these initiatives have already been engaged as part of the Global Advisory Panel and strategy drafting. Ensuring that they stay committed to FSM in the long term will require further engagement once the project finalizes.

Furthermore, in light of momentum post-CoP26, large corporations will be augmenting their climate and biodiversity ambitions. Many downstream companies will start to more seriously consider how to handle Scope 3 emissions and impacts and explore insetting as an opportunity. Some may even start to explore remediying past impacts in their supply chains by supporting restoration projects in damaged landscapes. Key sectors to target in this respect include jewelry, electronics and ICT, construction, and automotive companies. Equally, large-scale mining companies facing threats to the social license to operate because of the cumulative impacts of multiple miners in a landscape may seek to engage with and support the mitigation of environmental risk by artisanal and small-scale miners operating in or around their concessions or within their area of interest (from an impact mitigation point of view). There is a strong business case for them to minimize the sector’s impacts overall since the larger mines tend to be more visible, higher profile, and exposed to significant political risk should the public or politicians look for a fall guy in the face of acute or chronic severe environmental impacts.

5.2.4 Civil Society

Civil society has the power to report, monitor, advocate, and hold governments and companies to account. As such, civil society has a large role to play in pushing the agenda of FSM. We recommend engaging civil society to amplify and raise awareness about the FS-ASM Standard. This is crucial to buy in the acceptance of civil society members who will ultimately demand products compliant with the standard’s requirements. Some standard setters have already pointed out that the FS-ASM Standard will only be able to be implemented if buyers demand it and are willing to pay the extra cost for compliance.

Examples of international NGOs to engage include IISD Forests and Climate Change, International Union for Conservation of Nature (IUCN), WWF International, BirdLife International and other members of the KBA Partnership, planetGOLD, Indigenous Peoples’ Advisory Forum (IPAF), Women’s Rights in Mining, CDP, Delve, Leaf Initiative, Responsible Sourcing Network, African Investing in Mining, Association of Women in Mining Africa (AWIMA), European Forest Institute, Terre des Hommes, Earthworm, Solidaridad, Pact, and Impact, as well as report authors Alliance for Responsible Mining and Fauna & Flora International.

National and local civil society organizations have crucial roles to play, coming to the fore in the design and delivery of the pilots and strategizing how to scale within target countries.
5.2.5 Carbon Finance

The most likely ways that FS ASM will obtain carbon finance will be for the ASM entity to integrate its FS ASM project into an existing landscape-scale carbon initiative or to develop a voluntary project within the landscape that could then attract voluntary funding, in certain instances compliance funding, and perhaps a share of results-based payments made to the broader jurisdiction for reducing emissions. Such voluntary projects would likely need to aim toward limiting mining and other impacts within the landscape broadly to be viable. They could nest with government jurisdictional programs or stand alone.

Both the voluntary market and REDD+ country systems can provide finance to initiatives that reduce emissions. Projects can be developed for the voluntary carbon market using voluntary standards, for example, the VCS. Emissions reductions are quantified and certified under such standards and can be sold on the voluntary market. Country REDD+ programs develop their own rules within the United Nations framework but can allow the development of projects that can attract their own finance under voluntary standards to nest within their jurisdictions. Also, countries can provide for a share of the payments they receive for emissions reductions achieved within their program areas to go to stakeholders/project developers contributing to emission reductions within those landscapes under benefit-sharing schemes.

Certain compliance markets will also accept the emission reductions developed under voluntary certifications. For example, the international Civil Aviation’s Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) accepts “Verified Carbon Units (VCUs)” issued to project-level activities under a jurisdictional programme following Scenario 2 of the VCS Jurisdictional and Nested REDD+ framework” (ICAO 2021). Also, it is understood that credits from VCS-certified projects that comply with national requirements can be purchased in order to comply with national carbon tax requirements.

It should be emphasized that the development of voluntary projects can be pursued with specialist project developers that can also provide links to offset buyers, and private, public, or philanthropic finance.

Different tracks should be pursued in different countries dependent on the circumstance of FS ASM. A summary of the recommended track in each case study carried out under this project is as follows:

- Colombia. Develop a stand-alone/nested project under a suitable voluntary standard (for example, the VCS/Climate, Community, and Biodiversity Standards (CCBS)), complying with national requirements in the broader landscape through limiting other impacts as well as mining impacts and through restoration of cleared areas. Look to finance initially through grant funders/specialist developers seeking a return or to make a specific impact; market credits in national compliance market/the international voluntary market.

- Peru. Investigate whether FS ASM activities could be integrated into the country’s REDD+ benefit-sharing system; further research could ascertain whether the project sits within a broader jurisdiction that is successfully attracting carbon finance.

- Liberia. Develop a stand-alone/nested project under a suitable voluntary standard (for example, the VCS/CCBS) in the broader landscape through limiting other impacts as well as mining impacts and through restoration of cleared areas. Look to finance initially through grant funders/specialist developers seeking a return or to make a specific impact; market credits in the international voluntary market.

- Ghana. Integrate FS ASM activities into an existing government emission reductions program; it appears there is the possibility of the avoidance of mining impacts being integrated into the Ghana Cocoa REDD+ Forest Program’s benefit-sharing plan that exists and provides for the distribution of benefits to farmer groups, traditional authorities, and hotspot intervention area communities (GoGH-GFC 2020). It is understood that the program benefits from an Emission Reductions Payment Agreement signed with the Forest Carbon Partnership Facility’s Carbon Fund.

Therefore, the general recommendations are as follows:

- Together with an organization supporting the miners on the ground, work with government in certain instances to integrate into an existing government emission reductions program/benefit-sharing scheme; initially, funding could come from grant funders (public, philanthropic) with an interest in FS ASM, but the aim would be to generate a sustainable source of carbon finance for FS ASM through country programs (Ghana, Peru).

- Together with an organization supporting the miners on the ground, work to develop a stand-alone/nested voluntary project under a voluntary standard (for example, VCS/CCBS); initially, funding could come from grant funders with an interest in FS ASM or specialist providers looking for a return or to make
a specific impact; the support organizations and specialist developers should engage government to nest the project as far as possible; the aim would be to generate a sustainable source of carbon finance for FS ASM through the voluntary carbon market, or perhaps compliance markets (Colombia) or from payments made to the jurisdiction for reducing emissions (Colombia, Liberia). In both countries, there could be the possibility of private finance from downstream buyers of gold or diamonds with a sourcing relationship to the site, region, or country where the FS ASM project would operate.

- Development funding, perhaps from a grant, would initially be needed in Ghana, but it could then come from the Forest Carbon Partnership Facility Carbon Fund and, more generally, results-based payments for jurisdictional performance (for example, through Emergent in their role as the broker of sales for jurisdictions for the LEAF collation). However, in the other instances, grant funders/conservation & development funds/specialist project developers, perhaps with a particular interest in mining impacts, could provide initial funding for development, with a sustainable source of carbon finance for FS ASM being generated through future credit sales. Credit sales would likely be through the voluntary carbon market at this stage, but they could perhaps be through compliance markets (Colombia) or from results-based payments made to the broader jurisdiction for reducing emissions. Examples of project developers are Vertree, South Pole, Everland, Fauna & Flora International, and Conservation International. Corporations/funds often sit behind such organizations.

A more in-depth feasibility study could assess in each instance the viability of suggested initiatives, for example, the development of voluntary projects under a voluntary standard like the VCS.

5.2.6 Potential Funding Packaging for Strategic Collaborative Development of FS ASM at Scale

The complexity and diversity of attempting to bring about and scale up behavior change toward FS ASM may merit a cross-sectoral, partnership-based, and multilayered approach to funding and designing programs. Such programs need to be designed to help upgrade national legislative frameworks, design appropriate incentives, and deliver training programs for achieving forest-smart best practices at scale. Such an effort would require sufficient resources to design, develop, and implement a coordinated program of targeted outputs to achieve scaled-up adoption of the standard and its supporting capacities. Achieving forest-smart best practices is particularly relevant for technology critical elements such as cobalt or tin, which are often extracted in forest landscapes and essential for the transition to the green economy.

The institutional sectors for potential funding outlined in chapters 5.2.1 through 5.2.5 represent opportunities that can be regarded singularly as specific opportunities, or they can be considered as potential partners in a strategic composite program of collaborative engagements where key sectors are identified to work together at both the national and local levels to bring about FSM.

A project successfully implemented at national scale in Mongolia during 2013–2017 exemplifies this collaborative cross-sectoral approach: Funded by the Swiss Agency for Development and Cooperation (SDC) and The Asia Foundation, the ESEC II Project saw the development and demonstration of the Frugal Rehabilitation Methodology (FRM) as a key tool for ASM formalization through a participative process that engaged government, civil society, and the ASM sector at all levels (Stacey 2016a, 2016b; Stacey et al. 2018). At the end of this period, through the cooperation of key government ministries, the FRM was incorporated into ASM legislation within the country’s Minerals Law. The FRM arising from that process is adaptive and foundational and sits at the core of the FS-ASM Standard developed and adapted to ASM in forested landscapes, through this World Bank FS ASM project.

Relevant sectors and organizations indicated in chapters 5.2.1 through 5.2.5 could take the lead in initiating and developing a more broadly funded program that would address capacity building on key fronts while helping ASM entities take on the FS-ASM Standard within an improved, receptive, and supportive legislative environment.
6. GENERAL CONCLUSIONS & RECOMMENDATIONS

6.1 Adoption of FS ASM in Global Processes

A number of concrete entry points are available to the World Bank and other influencers to support and inspire the adoption of the Forest-Smart Artisanal and Small-Scale Mining Standard (FS-ASM Standard) in global processes. The key recommendations are summarized below.

Take an intentional curated approach to seeding and scaling adoption of the FS-ASM Standard beyond engaged standard setters and pilots (2023/4)

Having a convenor who could curate, support, and build economies of scale across the community of standards, initiatives, and pilots working to adapt and adopt the standard would enhance the likelihood of its adoption. This convenor could

- Be responsible for building the FS ASM training program, guidance, and market and benefits studies (see below);
- Build an inventory of and develop relationships with existing and prospective pilots of the standard in the case study countries and elsewhere, as the basis for a strategy for seeding and scaling FS ASM into diverse processes;
- Curate, support, and integrate the existing pilots with these other opportunities;
- Centrally steer and support country collaboration on forest-smart mining (FSM) seeding and scaling akin to the planetGOLD model;
- Lead engagement with national ministries interested in adopting or integrating the standard into existing regulations, as well as with ASM associations and responsible mining/sourcing initiatives;
- Support scaling within the selected pilot countries and seed the development of pilots in new countries through interested partners (for example, Global Advisory Panel members and other global standard-setter processes, noting existing possibilities in Côte d’Ivoire, Democratic Republic of Congo, Guyana, and Sierra Leone);
- Coordinate the sharing of lessons between the FS ASM pilots and their stakeholders;
- Lead the integration of lessons learned from the pilots into the FS-ASM Standard by 2024; and
- Design and implement a communications plan to expedite the seeding, scaling, and impact of the standard, including publishing the standard and promoting it to relevant audiences.

Support integration of the bolt-on FS-ASM Standard into processes of other standard setters and initiatives working in responsible mining and sourcing

Standard setters and other initiatives need guidance on how to integrate the bolt-on standard into their processes. They would be assisted by efforts to make the business case and facilitate the adoption process.

For making the business case, two major actions are financing a market study and a benefits study. The market study would explore the interest from different stakeholders to obtain FS-ASM conformant material. Understanding the extent of and basis for interest from mineral buyers and their willingness to support the implementation of the standard by ASM would help miners and standard setters make an internal case to adopt the FS-ASM Standard. A benefits study could be carried out alongside the implementation of the pilots to ascertain the added value (financial, reputational, and so on) that FS ASM brings the ASM entities, their stakeholders, and any frontier standards incorporating the requirements. This will support standard setters and
other initiatives to make the business and impact case for adoption of the FS-ASM Standard into their own systems. It would also enhance understanding of incentives for miners to pursue FS ASM.

FS ASM would be expedited if the adoption process was facilitated by an overall convenor, who would ensure success and glean lessons learned to evolve the bolt-on standard and inform the development of additional supporting documents that will fast-track seeding and scaling. This would involve (a) working closely with standard setters engaged as part of this project to peer review and guide the process of integrating FS ASM into their standard, in alignment with the implementation and coordination of the other pilots planned as part of this project; and (b) carrying out regulatory assessments of FS ASM readiness of key jurisdictions where standard setters or other responsible sourcing would like to pilot FS ASM, following the methodology used for this project (as compared to GemFair, United Nations Development Programme, Zahabu Safi, and so on).

Address programmatic gaps to facilitate adoption of FS ASM practices by ASM in line with the bolt-on standard

Standard setters have identified several areas where they would need external support. These include concrete guidance and support with training.

The provision of concrete guidance for miners on how to execute each criterion of the FS-ASM Standard could include developing case studies and examples of how to conform. For example, the standard says what needs to be achieved but does not guide miners on the how. A handbook akin to how the Organisation for Economic Co-operation and Development’s Tool on Environmental Due Diligence in Mineral Supply Chains supports implementation of the OECD Due Diligence Guidance for Responsible Business Conduct could work—for example, directing miners to publicly available guidance and case studies that already exist to illustrate what a requirement could involve in practice. This would be supported by developing a catalogue or inventory of best-practice FSM ASM case studies and tools, and potentially also stand-alone guidance on (a) how to be circular in artisanal and small-scale mining and (b) restoration and rehabilitation, perhaps in partnership with United Nations agencies under the banner of the UN Decade of Restoration and building on the Frugal Rehabilitation Methodology (FRM) and the wide set of ASM restoration projects and programs blossoming around the world just now.

The provision of training to ASM entities, nongovernmental organizations (NGOs), and governments on (a) what is the carbon and biodiversity finance opportunity for ASM, and how it works, and (b) how to conform to the FS-ASM Standard. This could involve delivery of trainings either in person through practical implementation and demonstration with selected ASM groups and sites or remotely via an online digital platform or a software app. At the outset, physical face-to-face training on site is likely to be far more powerful, effective, and convincing than online digital approaches, which could be regarded as an effective arena for scaling up.

The resources required for producing an effective, meaningful app for principles, criteria, and indicators (PCI) would not be insignificant, and it would be a challenge to ensure the app would deliver sustainable, viable outcomes. Therefore, it would be good for the app to be based on a seeding effort of practical demonstration of forest-smart best practices.

Efficiencies could be gained by planning this into the pilots. For example, there could be a central program for designing the overall FS ASM training program, and each of the pilots could have a media workstream integrated into their existing workplans. The global program could support each pilot with their own training through centralizing development of some of the materials, and it could gather the additional materials each pilot would generate to create a body of open source training materials for publication and redeployment elsewhere. In addition, it would plan and use the pilots to gather multimedia to use in future trainings—for example, to demonstrate implementation of the PCI and progress in protecting forest values. These videos and training materials could be made available through the DELVE Exchange in the first instance, “a knowledge exchange network by artisanal and small-scale miners for artisanal and small-scale miners.”

There is also a growing opportunity to circumvent the issue of illiteracy among many ASM groups and sites and take advantage of growing smartphone ownership among ASM owners, operators, and workers through the transfer of some good-practice guidance and years of distilled experience from a written format and into an augmented reality/mixed reality setting and literally show management and workers what needs to be done.

1 Daniel Franks, email to Estelle Levin-Nally, October 6, 2021. “The network enables sharing and peer support through WhatsApp groups, online discussions and selected training opportunities. Recognized ASM leaders from six global regions facilitate the network with an international support team.”
supplemented by verbal instructions in an appropriate local language. This could in effect create a smartphone app that could deliver site-specific technical and environmental guidance in a visual form. This app would show in a visual form the steps necessary to improve performance. This approach is not necessarily about developing new content; rather, it is about finding a new way to augment and supplement the existing training pathways. Green Horizon Environmental Consulting has been exploring a partnership with a major tech firm to match fund the development of such an augmented reality/mixed reality setting.

Furthermore, a human rights–based approach would support targeting vulnerable groups in this training. For example, the Association of Women in Mining Africa could be capacitated to train women miners in why and how to do FS ASM and environmental monitoring, and the Amerindian Peoples Association could train Indigenous miners in the same.

A suite of supporting tools and methodologies, if developed, could expedite the adoption and impact of the standard. For example, it would be helpful to be able to do the following:

- Convert the feasibility study methodology designed as part of this project into a publishable blueprint to empower other organizations to scope possible FS ASM pilots and programs and encourage/enable adoption of the PCI, so seeding and scaling of FSM.

- Understand what existing Verified Carbon Standard (VCS) project methodologies (the basis of the carbon accounting for projects implemented) are applicable to FS ASM and what methodologies might need to be developed to implement such projects; undertake methodology development if required.

- Capacitate, motivate, and enfranchise governments into bringing about FSM by developing a human rights–based approach to managing ASM in Key Biodiversity Areas or crafting a brief on if/how the protection of forests can help with the fulfillment of human rights in the ASM sector and communities.

### 6.2 Adoption of FS ASM in National Processes

The feasibility assessments for piloting the FS-ASM Standard in the four target countries of Colombia, Peru, Ghana, and Liberia reveal certain commonalities as well as differences.

### Preparedness of ASM Entities for FS ASM Implementation

While piloting the standard in all four countries is considered feasible and recommendable, it is notable that the ASM entities that already had exposure to ASM standards in the past are better prepared to understand and implement additional topics and requirements (that is, bolting on the FS-ASM Standard) than miners for whom even the concept of a standard itself is something new. The ASM entities in Colombia and Ghana, which had already undergone training toward conformance with the top-level Fairmined Standard, present the highest readiness for adoption of the FS-ASM Standard. The ASM entity in Peru demonstrated a good understanding of standard concepts because several other ASM operations in the department of Puno are already certified by Fairmined or Fairtrade and share their experience with their peers. The ASM entity in Liberia, where no ASM standard initiatives have been working, is the least prepared. The analysis of their gap assessment even suggests an underestimation of efforts required to achieve conformance with ASM standards in general.

### Possible Linkages to REDD+ and Voluntary Carbon Standards

Carbon feasibility assessment for the ASM entities in all four countries centered around a reasonability assessment as to whether the recent history and extent of forest loss lends itself to the development of a carbon-financed forest conservation initiative.

The assessment suggested for all four pilot sites that the typical size of ASM operations and licenses is a possible barrier. In Ghana, for example, the size of a license area for small-scale mining cannot exceed 25 acres. For such small areas, the cost-benefit relation of engaging with a forest carbon initiative is unfavorable. Peru, which allows for ASM licenses up to 1,000 hectares, is better positioned. Even there, most ASM operations are smaller, such as the pilot site, which owns mining rights of 300 hectares. The pilot site of Colombia is probably the only one better positioned; it belongs to a peasant community that owns larger, multipurpose community land and so is able to manage its natural resources, including carbon assets, at the landscape level. However, even there, Fondo Acción, an NGO that has implemented REDD+ projects in the region, raised concerns that a REDD+ project would need to be implemented at scale. The site assessments suggest that it might not be feasible to fund FS ASM through carbon finance as a stand-alone project at small mining sites despite their potential for carbon storage, and without addressing other impacts on the forests. Probably to be economically viable, any initiative
to integrate FS ASM into an emission reductions program would need to involve the collective engagement of the miners in the area, which will require investment in convening, coordination, and relationship management.

Furthermore, for all pilot sites and countries it would need to be confirmed that a suitable carbon methodology for a project where mining is a driver is available under any voluntary carbon standard operating in the area. If no such methodology exists, it needs to be developed.\(^2\)

**Linkages to National Legislation**

Stakeholder consultations in all four countries resulted in positive feedback with regard to alignment of the FS-ASM Standard with national legislation. In all cases, the standard appears to go beyond legal requirements and therefore finds good acceptance.

The FS-ASM Standard will certainly serve as a source of inspiration for regulators. The extent to which it can and should be incorporated into national legislation, however, needs to be assessed more deeply on a country-by-country basis. In a first approximation, the country studies revealed the following:

- **Colombia** has already made significant progress in its REDD+ readiness (see the forest carbon assessment in chapter 4.2.2). Completion of the benefit-sharing system for REDD+ and rules on nesting, together with methodologies that allow to account for and claim forest carbon credits by forest-smart ASM operators, are seen as important enabling factors for facilitating the implementation of the FS-ASM Standard. Technical and environmental regulatory instruments that do not differentiate by the economic capacity of mining operations (ASM, large-scale mining) are one of the causes that exclude 85 percent of ASM from the formal sector. Adoption of the standard’s approach, based on the FRM as an affordable, socially acceptable, and ecologically viable nature-based solution for ASM, is seen as an opportunity to overcome this barrier.

- **Peru.** Peru has already made good progress in REDD+ readiness, but the forest reference emission level (FREL), safeguards information system, and in particular the benefit-sharing system are not yet finalized (see the forest carbon assessment in chapter 4.2.3). This provides an opportunity to integrate the avoidance of ASM impacts into the country’s REDD+

benefit-sharing system so that payments for results in the broader landscape can be used as incentive. Similar to Colombia, informality is a key issue, but a clear stratification of the mining sector by scale is in place. Affordable nature-based solutions such as FRM, as proposed in the FS-ASM Standard, might similarly help lower the entry barrier into the formal sector.

- **Ghana.** The country has a well-developed REDD+ strategy led by the Forestry Commission. It recognizes ASM and large-scale mining in forest reserves as drivers of deforestation and identifies the improvement of mining regulations as a strategic response option as well as a potential source of funding (GoGH-GFC, GhREDD+, and FCPF 2016), but has not come out with a deliberate strategy to address it (see the forest carbon assessment in chapter 4.2.4). Results of the Country Regulations Analysis give credence to the fact that most of the existing legislations within the ASM mining subsector encourage forest-smart mining practices and no significant modifications are required for the implementation of the standard in Ghana. The main issues are monitoring and compliance.

- **Liberia.** Liberia is a highly forested country with low levels of ASM development and formalization, but it also has good REDD+ readiness (see the forest carbon assessment in chapter 4.2.5). While government capacity may be limited, there is political will to support the formalization of the ASM sector and the advancement of community forests. As such, Liberia makes a strong candidate for uptake of the FS-ASM Standard, especially with a focus on avoiding ASM development in forests of high conservation value.

All of the gap analyses revealed a considerable need for training and capacity building, to enable miners to conform to the standard. Therefore, the potential for adoption of the FS-ASM Standard into national legal frameworks depends on the capacity of national and local authorities (a) to procure or provide extension services for training of miners in the application of the standard and (b) to monitor and enforce compliance with the requirements.

As long as these capacities appear not to exist—given the prevalence of informality in the ASM sector—it is **recommendable to not push for verbatim incorporation**, which would most likely result in “dead”

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2 The task of this assignment was to develop an instrument to integrate forest-smart mining into ASM standards. The task for such an assignment would most likely be to integrate, vice versa, ASM into forest carbon standards.

3 The FS-ASM Standard was designed under the premise it would be bolted on to ASM standards. Such voluntary sustainability standards take a very different approach than lawmaking.
law. More recommendable would be to promote the principles, such as the FRM, as a framework for design, planning, and physical actions that an ASM entity can undertake to maximize impact avoidance within the scope of its ability, minimize operational impacts, and maximize rehabilitation effectiveness. The actions need to be designed to be economically affordable, socially acceptable, and ecologically viable. Uptake and adoption of the standard is unlikely to be achieved through incorporation into legislation alone. The development of various capacities—institutional as well as technical—is needed too. Critically, policy developments need to be encouraged through the presentation of effective and ASM-targeted incentives to bring about behavior change. Each legislative and policy context will require the identification of such incentives that are appropriate to situation.

**Linkages to International Law**

Although sovereign states have the rights and responsibilities to legislate and regulate activities within their borders, international law has implications for how natural resources and human rights are governed at the national level. Forest-smart mining will be more achievable where local and national policies and regulations align with international law. Key international instruments to align with include international investment treaties, international human rights law, and environmental conventions and treaties.

**Capacity Building and Training Needs**

All four feasibility assessments concurred in the appreciation that implementation of the standard’s requirements is feasible under the condition that miners receive support, training, and capacity building. This confirms the two-pronged approach taken during standard drafting, to develop PCI for ASM entities (section B of the standard) and guidelines for ASM stakeholders (section C) and closely link them by specifying for each PCI requirement for miners the enabling responsibilities of stakeholders.

That notwithstanding, during stakeholder engagement it became clear that not only miners but also their stakeholders require support, training, and capacity building. It is recommended that an authoritative blueprint of training materials and training methodologies be developed that can then be adapted to the different country contexts. Leaving the responsibility to develop such training materials and handbooks to each of the more than 80 ASM countries—or even worse, to each implementing stakeholder—not only will cause enormous confusion through widely varying interpretations but also will represent an enormous duplication of efforts. See chapter 6.1 for greater guidance on this point.

It is further recommended that a cross-sectoral collaborative approach is considered in designing and developing any national or regional FS ASM program. Training and other capacity-building investments are likely to be more cost-effective if delivered at scale across a given forested landscape.

**Tailored Messages and Briefs for Different Audiences in Selected Countries**

The development of a global communications strategy with tailored messages and briefs for different audiences in selected countries is recommended to increase uptake of the FS-ASM Standard. Briefs could serve the purpose of capacity building and training for miners or enabling stakeholders to implement FS ASM. The communications strategy could be coordinated globally and be localized in partnership with local implementing partners, such as Solidaridad in Ghana or Diamonds for Peace in Liberia.
REFERENCES


Appendix A: ISEAL Credibility Principles versus FS-ASM Standard Development Methodology

In 2013, ISEAL launched the Principles for Credible and Effective Sustainability Standards Systems (Credibility Principles) following extensive global stakeholder consultation. The principles, recently updated in 2021 (ISEAL 2021), provide an international reference for defining the credibility of sustainability standards. They are a tool for assessing the impact potential of standards and communicating the core values that lie beneath them. The methodology for developing the Forest-Smart Artisanal and Small-Scale Mining Standard (FS-ASM Standard) was designed to align as close as possible with the ISEAL Credibility Principles.

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<tr>
<th>ISEAL Credibility Principle</th>
<th>How our methodology supports this</th>
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<td><strong>Sustainability impacts</strong></td>
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<td>A credible sustainability system has a clear purpose to drive positive social, environmental, and economic impacts and to eliminate or remediate negative impacts. It defines and clearly communicates its scope, its specific sustainability objectives, and its strategies for achieving these objectives (its theory of change). The system focuses on the significant sustainability impacts in its scope. It seeks to address the root causes of sustainability issues and deliver wider or systemic impacts. It reflects current scientific evidence and international norms when relevant. It is adapted to local or sector-specific conditions where this helps improve impact.</td>
<td>The FS-ASM Standard has a clear purpose to drive positive social, environmental, and economic impacts. It clearly defines and communicates its sustainability objectives and approach to achieving them. The standard focuses on a significant sustainability impact, deforestation, forest degradation, and climate change. It seeks to address root causes of sustainability issues and deliver wider systemic impacts. Moreover, the standard has been derived from the FSM study researched and written for PROFOR in 2017–19, the Frugal Rehabilitation Methodology, and additional research carried out throughout this project. As such, it reflects best scientific understanding and relevant international norms.</td>
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<td><strong>Collaboration</strong></td>
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<td>A credible sustainability system identifies governments, businesses, and civil society organizations, including other sustainability systems, that are working toward shared sustainability objectives. It actively seeks alignment and respectfully pursues collaboration with others. It establishes partnerships and shares learnings to improve its efficiency and its direct or systemic impacts.</td>
<td>The FS-ASM Standard has been designed and consulted with the Global Advisory Panel as well as local experts in selected countries. It has been designed toward shared sustainability objectives and alignment with other national, private, or international processes, with a vision of publishing under a Creative Commons license, which would permit diverse standard setters and sustainability initiatives to adapt and adopt it into their own collaborative processes.</td>
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<td><strong>Value creation</strong></td>
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<td>A credible sustainability system strives to create value that fairly rewards the effort and resources that it takes for users to participate in the system. It has a viable business model, and it operates efficiently, minimizing costs for users and reaching more users by reducing other barriers to access. It supports users to implement its tools, and it</td>
<td>The criteria are as specific as possible while being flexibly written to enable easy adoption and/or adaptation to the diverse standards that are relevant in the minerals world.</td>
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empowers users by demonstrating a clear business case for participating in its system.

The FS-ASM Standard has been ground-truthed as part of the site visits for four case studies, thereby checking the adaptability of its criteria and indicators to different local conditions. To ensure that the guidelines are realistic and achievable for ASM entities, the team has performed a “reality check” through consultations with miners and local stakeholders, which have been further validated in site visits.

### Measurable progress

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<td>A credible sustainability system has tools that are relevant to achieving its sustainability objectives, and these tools allow progress toward objectives to be measured over time. It collects and analyzes the data it needs to measure, understand, and demonstrate the progress its users are making toward these objectives.</td>
<td>Rigor has been ensured through each standard setter’s own governance process. We will consider whether the “bolt-on” FS-ASM Standard should offer three or so measurable performance levels to allow schemes to adopt the low, middle, or high bar requirement(s) according to their own objectives and market position, and measure progress.</td>
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### Stakeholder engagement

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<td>A credible sustainability system is inclusive and nondiscriminatory. It empowers stakeholders to participate in decisions and hold the system to account. It involves a balanced and diverse group of stakeholders in decisions that will affect them. It strives to understand the context and perspectives of stakeholders who have been underengaged or underrepresented, and it creates opportunities to ensure their participation in decision-making. It provides clear and transparent feedback on stakeholder input and concerns. It has fair, impartial, and accessible mechanisms for resolving complaints and conflicts.</td>
<td>The development of the FS-ASM Standard has been led by experts, as envisaged by the terms of reference. A Global Advisory Panel comprising people with diverse mineral, geographical, and human rights interests and diverse expertise as well as diverse local stakeholders representing miners, governments, and civil society organizations was involved and consulted on the approach and content of the standard. This will increase the credibility of the bolt-on standard and increase the likelihood of its adoption as standard setters have had had a role in its design.</td>
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### Impartiality

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
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<tr>
<td>A credible sustainability system identifies and avoids or mitigates conflicts of interest throughout its governance and operations, particularly when it comes to assessing its users’ performance. Transparency and stakeholder engagement help ensure the system’s integrity can be trusted.</td>
<td>The consortium was organized with Levin Sources, which is not a standard-setting organization, as the lead partner to avoid potential conflicts of interest between the Alliance for Responsible Mining (ARM) and other standard setters. Furthermore, the team leaders have distinct responsibilities to help manage any potential conflicts of interest; Estelle Levin-Nally of Levin Sources has managed external relations for the project and relations between the partners, while Felix Hruschka of ARM has overseen project management and internal operations. Levin Sources has a Conflict of Interest Policy, which also applies to the project.</td>
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<tr>
<td>ISEAL Credibility Principle</td>
<td>How our methodology supports this</td>
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<td><strong>Transparency</strong></td>
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<td>A credible sustainability system makes important information publicly available and easily accessible while protecting confidential and private information. It enables stakeholders to understand and evaluate the system’s processes, decision-making, results, and impacts. Stakeholders have the information they need to actively participate in decisions or raise concerns.</td>
<td>After the inception workshop in September 2019, the project team had multiple bilateral calls on the project and what it intends to do with interested organizations, such as standard setters and responsible sourcing initiatives.</td>
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<td><strong>Reliability</strong></td>
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<td>A credible sustainability system designs its tools so that these can be consistently implemented and assessed. It ensures assessments of users’ sustainability performance are competent and accurate, and that these assessments support any claims it allows users to make.</td>
<td>The open nature of the principles, criteria, and indicators (PCI) resulting from the project provides a ready-made bolt-on FS ASM—specific standard that standards bodies can consider including and applying. The project will save time and effort for other actors (not only standard setters) to use it when sourcing or engaging with ASM in forest conditions.</td>
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<td><strong>Truthfulness</strong></td>
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<td>A credible sustainability system substantiates its claims. Any claims the system or its users make are clear, relevant, and can be checked. They enable customers and other stakeholders to make informed choices. The scope and design of the system is accurately reflected in any claims, ensuring these are not misleading. Claims about sustainability impacts are backed up with data and evidence that are publicly available.</td>
<td>The PCI include examples of claims that can be made at different levels of compliance to promote truthful communication about the application of the forest-smart mining criteria.</td>
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<td><strong>Continual improvement</strong></td>
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<td>A credible sustainability system regularly reviews its objectives, its strategies, and the performance of its tools and system. It evaluates the impacts and outcomes of its activities. It applies the lessons learned to improve. It responds to new evidence, stakeholder input, and external changes, adapting its strategies to improve its impacts and remain fit for purpose.</td>
<td>The indicators provide a framework for understanding the impacts of the criteria and measuring and demonstrating progress toward their intended outcomes. The indicators are tied to the sustainability objectives.</td>
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## Appendix B: Summary of Standard Strategies

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<th>FSM gaps in the standard/initiative</th>
<th>Appetite and pathway for incorporation of FSM</th>
<th>Initiative appetite to pilot FSM PCI</th>
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<td><strong>GemFair</strong></td>
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<td>The extensive business-as-usual expectations set on miners (e.g., paying their workers, obtaining financing, paying their licensing fees, adhering to our minimum standards, etc.) means forest protection is not yet a priority for participating ASMOs. Deforestation and afforestation are not currently explicitly covered by the GemFair ASM Standard, but many of the environmental requirements that are covered by the standard would help minimize forest degradation. Carbon stocks are beyond the current scope of the GemFair ASM Standard.</td>
<td>GemFair is interested in exploring this topic further.</td>
<td>Yes. GemFair is presently carrying out a restoration and reclamation pilot. Opportunity for regulatory reform to create greater incentive for all ASM license holders to carry out reclamation.</td>
<td>Not yet decided.</td>
<td>If the World Bank is involved in regulatory reform in Sierra Leone, the consultants who are carrying that out should speak with GemFair to address the reclamation disincentive issue.</td>
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<td><strong>Fairtrade</strong></td>
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<td>The Fairtrade Gold Standard has extensive environmental requirements, covering three of the four forest values. However, these are mostly development requirements, and no guidance is given in the standard or auditing criteria on how to meet them. There is also little consideration of the indirect impacts of mining on the environment, let alone forests...</td>
<td>Deforestation and the environment are top of the agenda for consumers and companies. Fairtrade is committed to a social justice agenda, of which climate justice is a core part. Fairtrade is therefore very interested in how they can work in this space.</td>
<td>Potentially, but funding is a challenge. The market needs to be willing to absorb the extra cost and invest in the journey; otherwise, it is very challenging for Fairtrade as a small player.</td>
<td>Currently under revision until 2021 – next review cycle in 2025.</td>
<td>Live pilot the FS-ASM Standard in a Fairtrade site (if funding available). Integrate forest-smart PCI and considerations of the indirect impacts of mining into the Fairtrade standard.</td>
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<td>FSM gaps in the standard/initiative</td>
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<td>Fairtrade (continued)</td>
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<td>...Carbon stocks are not referenced in the standard. However, Fairtrade does have a climate standard assessed by FLOCERT and a new scheme for farmers, workers, and miners to receive carbon credits. Fairtrade does not have carbon credits available for their mine sites yet, but they have the capacity to comply, assess, and receive the credits.</td>
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<td>Fairmined</td>
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<td>The Fairmined Standard has 16 extensive environmental requirements and there are already some requirements specific to forest protection. However, these are mostly development requirements, and no guidance is given in the standard on how to meet them. Particularly, there are opportunities to enhance some of the environmental requirements and for ecologic certification to leave room to make them more forest smart. ARM has the progressive Sustainable Mines approach that ARM is taking (CRAFT toward Fairmined), the FS-ASM would also be integrated progressively, with its basic elements (highest risks) applicable for ASM with lower capacity and sustainability performance, while its fuller scope being applied with mines closer to achieving</td>
<td>ARM is highly interested in exploring the possibility to propose the inclusion of FS-ASM criteria in the Fairmined Standard 3.0. The current Fairmined Standard revision is a perfect opportunity to test the &quot;bolt-on&quot; approach of the FSM criteria, especially considering the high expectations of performance related with Fairmined being a best-practice standard for ASM. ARM is now drafting the Fairmined Standard 3.0 to present it to the Standard Committee, ensuring alignment of the process with the ISEAL Code. ARM is interested in incorporating the FSM PCI in the current work with miners in environmentally rich and fragile areas. While mercury continues to be an important challenge that already is the focus of countless projects and interventions, the forest-smart mining framework offers an opportunity to go beyond mercury and apply a practical environmental management approach in forest areas such as the Amazon region, the Congo basin, the biogeographical Chocó region along the northwest Pacific coast of South America, and the forests of Central America. Following the first promising experiences, ARM is keen to include the concept of forest-smart mining and FS-ASM criteria pilots in future funding applications and will try to include some actions recommended in the FS-</td>
<td>It started in 2019 and it continues next year.</td>
<td>Validation and discussion of the Fairmined Standard 3.0 proposal with the Fairmined Standard Committee. Planning and launching the international Fairmined Standard 3.0 public consultation. Pilot tests of the new standard version with small-scale mining organizations and the proposal of transition for already certified organizations.</td>
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<td><strong>planetGOLD</strong></td>
<td><strong>High appetite from stakeholders and the program.</strong></td>
<td><strong>Maybe 2022 onward.</strong></td>
<td><strong>Midterm review next year due to begin at the end of 2021.</strong></td>
<td><strong>Engage with the UNEP Midterm Review (MTR) of planetGOLD global project to consider including forest-smart PCI in the planetGOLD midterm review. Continue engagement with Conservation International, the lead for planetGOLD phase 2, which will have a stronger emphasis on biodiversity. We should do this once the first public draft of the PCI is released and ready for piloting (i.e., start of 2022).</strong></td>
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<td>The program has developed a set of criteria that include elements on environmental commitments. Carbon stocks are beyond the current scope.</td>
<td>The leadership (GEF, UN agencies) are very interested in coupling protection of biodiversity, addressing deforestation, etc. with their mercury efforts. Country-level teams and artisanal and small-scale miners are interested, but they are also very focused on the immediate job at hand, the immediate priorities of completing their projects. Many stakeholders (e.g., potential downstream buyers) are very interested as part of the overall story of responsible gold production.</td>
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...Continue engagement with individual country projects that are taking the lead and controlling all activities at the country level. There may be appetite among them—including countries for which we have no developed workplan, road maps, and budgets—to consider how to include FSM in their existing activities or to engage with the planned pilots in countries that overlap. A published blueprint on how to scope for an FS ASM project based on the methodology followed for this World Bank FS-ASM Standard project would facilitate this type of seeding. The planetGOLD global project can facilitate contacts with each country project.
### LBMA

The latest version of the LBMA Responsible Gold Guidance (RGG) (version 9) introduced environmental and social criteria in refiners’ primary supply chain for the first time. It now includes the boycott of material from World Heritage Sites.

Carbon stocks are beyond its current scope.

LBMA is refreshing a toolkit for refiners that are sourcing from ASM and would like to include FSM PCI as part of the toolkit. In addition to this, LBMA plans to undertake extensive consultations in 2022 with stakeholders (including Levin Sources) to examine ways to increase direct sourcing by LBMA refiners of ASM material.

In the short term, LBMA could play the role of convenor, connecting GDL refiners with forest-smart members looking to pilot the PCI.

In the longer term, LBMA is open to considering inclusion or recognition of the PCI into its responsible sourcing framework.

RGG version 9 to be released in November 2021.

Next revision is first half of 2023.

FSM could be considered for inclusion in the next iteration as it is a clear material risk to companies.

### CRAFT

The CRAFT Code has eight requirements relevant for the FS-ASM Standard in the Module 5 requirements, which are intentionally broad and generic in their wording. However, they can become very site specific with the required risk assessment. They have therefore a high potential to accommodate the identification of forest-related risks and therefore to implement forest-smart measures as part of the Improvement Plans.

According to the Creative Commons open source license terms of the CRAFT Code, ARM as the code maintainer has very limited control over who uses the code, for which purpose, and under which conditions. However, to ensure consistency in the CRAFT application, version 2.0 introduces a new chapter (Volume 3) on guiding principles for CRAFT Schemes, on how schemes are expected to interact with ASM producers and what claims may be made related to the usage of CRAFT. At this level, there could be an opportunity to add FS-ASM criteria to the Craft Code for specific applications, or in other words to “branch” the main code.

ARM is actively applying the CRAFT Code within its Sustainable Mines Program, which aims to facilitate the connection with formal markets and bring partners to invest in mines’ progressive improvement through Mines Sustainability Plans.

Considering that some of the projects are in forested areas, ARM is eager to pilot the FSM PCI elements (in Colombia, Peru, Guyana, Suriname, Honduras). All the mining sites mentioned are gold ASM.

The CRAFT Code 2.0 was launched one year ago after the second round of public consultation (October 2020), which is very close to the start of a new revision cycle. ISEAL recommends a standard-setting organization shall review a standard at least every five years for continued...

Use lessons learned from pilot application on the ground and study the incentives for the miners to apply the FSM criteria, particularly for schemes, such as the ARM’s Sustainable Mines Program.

Evaluating relevance, interest, and exploring opportunities and funding for “FSM branch version of CRAFT.”

In the future open source CRAFT Code revision, convening the Standard Committee, ...
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<td>expanding the scope for new members with relevant FS ASM experience, and opening the discussions for the amendment in the standard. Additionally, incorporating lessons learned from the CRAFT branches and implementation.</td>
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relevance and for effectiveness in meeting its stated objectives.