Part I: Project Information

Name of Parent Program
Global Opportunities for Long-term Development of artisanal and small-scale gold mining ASGM) Sector Plus - GEF GOLD +

GEF ID
10837

Project Type
FSP

Type of Trust Fund
GET

CBIT/NGI
CBIT **No**
NGI **No**

Project Title
Global Opportunities for Long-term Development of ASGM in Zambia

Countries
Zambia

Agency(ies)
UNEP

Other Executing Partner(s)
Artisanal Gold Council (AGC)

Executing Partner Type
CSO

GEF Focal Area
Chemicals and Waste

Sector

Mixed & Others

Taxonomy

Focal Areas, Chemicals and Waste, Mercury, Artisanal and Scale Gold Mining, Protected Areas and Landscapes, Biodiversity, Community Based Natural Resource Mngt, Productive Landscapes, Influencing models, Strengthen institutional capacity and decision-making, Transform policy and regulatory environments, Convene multi-stakeholder alliances, Demonstrate innovative approache, Deploy innovative financial instruments, Stakeholders, Communications, Behavior change, Public Campaigns, Awareness Raising, Strategic Communications, Education, Private Sector, SMEs, Large corporations, Individuals/Entrepreneurs, Capital providers, Financial intermediaries and market facilitators, Type of Engagement, Information Dissemination, Partnership, Participation, Consultation, Civil Society, Community Based Organization, Non-Governmental Organization, Academia, Trade Unions and Workers Unions, Beneficiaries, Gender Equality, Gender Mainstreaming, Sex-disaggregated indicators, Women groups, Gender-sensitive indicators, Gender results areas, Capacity Development, Access and control over natural resources, Participation and leadership, Knowledge Generation and Exchange, Access to benefits and services, Capacity, Knowledge and Research, Knowledge Generation, Training, Course, Professional Development, Workshop, Knowledge Exchange, Field Visit, Conference, Peer-to-Peer, Innovation

Rio Markers

Climate Change Mitigation

No Contribution 0

Climate Change Adaptation

No Contribution 0

Biodiversity

No Contribution 0

Land Degradation

No Contribution 0

Submission Date

9/14/2023

Expected Implementation Start

1/1/2024

Expected Completion Date

12/31/2028

Duration

60In Months

Agency Fee($)
243,338.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CW-1-1	Strengthen the sound management of industrial chemicals and their waste through better control, and reduction and/or elimination	GET	2,703,750.00	22,356,864.00
		Total Project Cost($)	**2,703,750.00**	**22,356,864.00**

B. Project description summary

Project Objective

To reduce the use of mercury in the ASGM sector in Zambia through a holistic, multisectoral integrated formalization approach and increased access to finance leading to the adoption of sustainable mercury-free technologies and access to traceable gold supply chains.

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 1: Enhancing formalization in the ASGM sector	Technical Assistance	Outcome 1: Enhanced formalization in the ASGM sector through multisectoral, integrated approaches and capacity building	Output 1.1: Legislative, regulatory and policy frameworks for formalizing the ASGM sector are adopted by the government Output 1.2: Support provided to and accessed by ASGM cooperatives in selected ASGM communities to improve formalization in the sector	GET	532,718.00	3,683,098.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 2: Access to finance enhanced by financial inclusion and responsible supply chains	Technical Assistance	Outcome 2: Enhanced access to Finance by the promotion of Financial Inclusion and Responsible Supply Chains	Output 2.1: A financial support mechanism is developed for and accessible for the ASGM sector Output 2.2: Capacities of ASGM actors on due diligence and transparent and traceable supply chains are built	GET	662,210.00	8,291,372.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 3: Enhanced uptake of mercury-free technologies	Technical Assistance	Outcome 3: Reduced mercury use in ASGM enabled by the increased uptake of mercury-free technologies & techniques by ASGM miners	Output 3.1: Improved gold mining practices and mercury-free technologies addressing gender-differentiated needs introduced in selected sites Output 3.2: Improved waste and tailings management implemented in selected sites	GET	662,180.00	4,320,510.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 4: Knowledge sharing, communication and local capacity building support	Technical Assistance	Outcome 4: Information and knowledge shared lead to improvement in the management of the ASGM sector in Zambia	Output 4.1: Knowledge products and tools developed through the project are made available nationally to all planet GOLD project stakeholders in Zambia Output 4.2: Knowledge products and tools developed through the project are available globally through the planet GOLD programme	GET	657,892.00	4,491,372.00
Monitoring and Evaluation	Technical Assistance	Project achieves objective on time through effective monitoring and evaluation	Project monitored and evaluated.	GET	60,000.00	500,000.00
				Sub Total ($)	**2,575,000.00**	**21,286,352.00**

Project Management Cost (PMC)		
GET	128,750.00	1,070,512.00
Sub Total($)	**128,750.00**	**1,070,512.00**
Total Project Cost($)	**2,703,750.00**	**22,356,864.00**

Please provide justification

C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	Zambia Environmental Management Agency (ZEMA)	In-kind	Recurrent expenditures	15,000,000.00
Private Sector	Kian Smith Refiners	In-kind	Recurrent expenditures	5,000,000.00
Other	Copperbelt University (CBU)	In-kind	Recurrent expenditures	900,000.00
Civil Society Organization	Artisanal Gold Council (AGC)	In-kind	Recurrent expenditures	1,456,864.00
			Total Co-Financing($)	**22,356,864.00**

Describe how any "Investment Mobilized" was identified

Not applicable.

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
UNEP	GET	Zambia	Chemicals and Waste	Mercury	2,703,750	243,338	2,947,088.00
			Total Grant Resources($)		**2,703,750.00**	**243,338.00**	**2,947,088.00**

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount ($)

100,000

PPG Agency Fee ($)

9,000

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
CI	GET	Zambia	Chemicals and Waste	Mercury	100,000	9,000	**109,000.00**
				Total Project Costs($)	**100,000.00**	**9,000.00**	**109,000.00**

Core Indicators

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0.00	243880.00	0.00	0.00

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.2 Area of landscapes under third-party certification incorporating biodiversity considerations

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
	243,880.00		

Indicator 4.4 Area of High Conservation Value or other forest loss avoided

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.5 Terrestrial OECMs supported

Name of the OECMs	WDPA-ID	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)

Documents (Please upload document(s) that justifies the HCVF)

Title	Submitted

Indicator 9 Chemicals of global concern and their waste reduced

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
0.00	1.14	0.00	0.00

Indicator 9.1 Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)

POPs type	Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.2 Quantity of mercury reduced (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
1.14			

Indicator 9.3 Hydrochloroflurocarbons (HCFC) Reduced/Phased out (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.4 Number of countries with legislation and policy implemented to control chemicals and waste (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.5 Number of low-chemical/non-chemical systems implemented, particularly in food production, manufacturing and cities (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.6 POPs/Mercury containing materials and products directly avoided

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.7 Highly Hazardous Pesticides eliminated

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.8 Avoided residual plastic waste

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female		4,417		
Male		6,844		
Total	0	11261	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

Core Indicator 4: Areas of landscapes under improved practices (hectares): Under the assumption that the pilot of the Jurisdictional Approach will take place in Chongwe, the totality of its surface area (243,880 hectares) is considered to be under improved practices due to the development of a Landscape Action Plan. This target might be reassessed as the selection of the jurisdiction to be covered by the Landscape Action Plan is confirmed during the inception phase of the project. Core indicator 9: Reduction, disposal/destruction, phase out, elimination, and avoidance of chemicals of global concern and their waste in the environment and in processes, materials, and products (metric tons of toxic chemicals reduced): The mercury use in the ASGM sector estimated in the NAP is not very high, 0.286 MT of mercury to produce 0.142 MT of gold per year, representing a 2:1 mercury to gold ratio due to the use of Whole Ore Amalgamation (WOA). This number is likely an underestimation of the current mercury use, as it is considering data from a single mining site and applying it to the national level. Indeed, Zambia has an emerging ASGM sector that urgently needs policy guidance and sound management to minimize and eliminate mercury use. Assuming the project manages to successfully introduce cleaner technologies reducing the use of mercury at the intervention sites (e.g., concentrate amalgamation has a Hg:Au ratio of 1:1), the project aims to reduce mercury use in 0.286 metric tons during the implementation and using a replication factor of 3 for the reduction achieved after project completion, the total mercury use reduction achieve will reach 1.14 metric tons of mercury.

Core Indicator 11: Number of direct beneficiaries disaggregated by gender: Based on the available data, it is estimated that the districts targeted comprise approximately 4,341 ASGM miners in total, of which about 18% are women. Out of these, the project intends to directly benefit all, as well as an additional 6,920 of the local population (of which 43% women) through awareness raising campaigns reaching a total of 11,261 individuals (of which 4,417 women).

Part II. Project Justification

1a. Project Description

DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF

The Project Preparation Grant (PPG) Phase allowed the project to define its approach to tackling mercury use in the Artisanal and Small-Scale Gold Mining (ASGM) sector.

The most significant changes since the PIF are related to the Implementing Agency (IA) and Executing Agency (EA). The initial PIF was submitted by Conservation International foreseeing execution arrangements involving the Zambian Environmental Management Authority (ZEMA). At the end of the project preparatory phase, CI requested the UNEP to take over the project. After consultation with ZEMA, UNEP is committed to finalizing the project submission with AGC as the Executing Agency (EA).

The main changes from the concept stage are summarized below per component:

- ? Component 1: The PPG phase allowed to identify the specific intervention areas in relation to formalization. The consultations conducted revealed a need to focus on setting in place and strengthening the coordination mechanisms at the national level as well as capacitating local actors including ASGM cooperatives. The focus on managing illegal mercury flows through regional collaboration was removed from the initial proposal.
- ? Component 2: A process to develop a Landscape Finance Plan and exploring certification schemes within that framework was added to the activities foreseen under this component.

The following changes were done in relation to the GEF Core Indicators:

- ? Core Indicator 4: The initial indicator was increased to 243,880 hectares to reflect the plans to develop Landscape Action Plans for the Chongwe District.
- ? Core Indicator 11: Based on the sites pre-selected for the project intervention, available demographic data on the areas and the alignment with the National Action Plan (NAP) on ASGM targets, the number of direct beneficiaries has remained at 11,261 individuals (of which **4,417** women)

a) Global environmental and/or adaptation problems, root causes and barriers that need to be addressed

Global environmental and/or adaptation problems

The main environmental problems associated with ASGM are listed below:

Environmental pollution: At the global scale, Artisanal and Small-scale Gold Mining (ASGM) is commonly associated with mercury release in the air, water, and soils[1] as mercury is used to help separate gold from sediments or ore using rudimentary processing methods[2]. It is estimated that nearly 100% of all mercury used in ASGM is released into the environment without any recycling or chemical waste treatment[3]. As part of the development of Zambia?s NAP baseline, samples were analysed in the Rufunsa and Chongwe Districts. Both revealed that mercury was used in the ASGM sector. These results were supported by the presence of tools such as melting pans, retorts, and other rudimentary equipment for gold recovery using mercury in both sites[4].

Mercury released in the environment from ASGM activities directly affects natural ecosystems and species. Mercury, when vaporized in the air during the gold extraction process, can travel long distances around the globe[5], settling in soils and sediments in lakes, wetlands, rivers, groundwater, bays, and oceans. Anaerobic organisms then transform it into methylmercury which is absorbed by phytoplankton and ingested by zooplankton and fish thereby leading to bioaccumulation contaminating the whole food chain[6].

While the health impacts of mercury use in ASGM have not been thoroughly studied, it is estimated that 3.3 to 6.5M ASGM miners suffer from moderate chronic metallic mercury vapor intoxication (CMMVI) worldwide[7]. Indeed, mercury has dramatic impacts on ASGM workers but also on communities surrounding the processing centers. A recent screening study performed in Kafue River showed the presence of mercury in water, fish, and sediment. The situation is highly problematic as (i) the river provides domestic water supply to over 40 percent of Zambians; (ii) fish generally constitute the main diet of rural and urban populations; and (iii) the river is being used as a source of water for agriculture[8]. Consequently, Zambians and particularly ASGM communities are typically exposed at the same time to mercury-contaminated water, methylmercury-contaminated fish, and/or the mercury vapor produced near ASGM extraction sites.

Elemental and methylmercury are toxic to the central and peripheral nervous systems. The inhalation of mercury vapor can produce harmful effects on the nervous, digestive, and immune systems, lungs, and kidneys, and may be fatal. Neurological symptoms include mental retardation, seizures, vision and hearing loss, delayed development, language disorders, and memory loss. In children, a syndrome characterized by red and painful extremities called acrodynia results from chronic mercury exposure[9]. In addition, methylmercury has a significant impact on women of childbearing age due to the risk of passing it on to their fetuses which can result in congenital defects[10]. These impacts are even more dramatic as they concern approximately 12-15 million people currently involved in the sector, of which 4.5 million are women and 600,000 are children at a global scale[11]. The last assessment performed in Zambia estimated that 5,400 women and 1,500 children were involved in ASGM respectively[12].

One of the main outcomes of the PPG consultations revealed that a group of gold miners using mercury in Eastern Zambia has been experiencing unexplained chest pains and body sores. While the direct link between the use of mercury without any Personal Protective Equipment (PPE) and those symptoms have not been confirmed by health experts, miners were, during the meeting, collectively blaming the adverse impacts of mercury use on their health. However, the current level of knowledge, at the national and local scales, about the health and environmental dangers related to the handling of mercury is low.

On a global scale, it has been estimated that ASGM introduced about 1,220 tons of mercury into the terrestrial and freshwater environments in 2015[13]. However, mercury releases associated with the ASGM sector remain a ?special? sector in the global inventory, due to large uncertainties in how mercury is released and whether those releases are to land or water[14]. In Zambia, mercury use in the informal sector is largely undocumented. An inventory of mercury releases has been conducted in 2012 identifying the main sources of mercury emissions in air, water, land, by-products, and waste. According to the study, ASGM is one of the sources of mercury emissions, but at that time there was no official estimate of the related amount[15]. A more recent assessment was performed within the context of the development of the Zambian National Action Plan. While there are still no exact data estimating mercury emissions from ASGM at the national level, the yearly use of mercury in a formal ASGM sector mine has been estimated using the UNEP AGC Toolkit (2017) for mercury inventories to be approximately 285 kg to recover about 140 kg of gold[16], representing a 2:1 mercury to gold ratio. These amounts are difficult to evaluate for the informal sector, as many of the ASGM miners are unlicensed, and due to the secretive nature of the mercury use and trade in the informal sector[17].

ASGM operations in informal camps are also linked to water and soil contamination from waste and sewage due to the lack or limited availability of basic infrastructures for the provision of sanitation and potable water in bush camps[18]. ASGM activity is also associated with dust and noise pollution.

Miners and related communities consulted during the PPG also complained about the high incidence of accidents due to: (i) mining without PPE; and (ii) abandonment of pits without site restoration. Finally, they also recognized the high prevalence of communicable diseases in the confined spaces of mining pits.

Deforestation: As mining activities often occur in forested areas, deforestation is one of the main collateral damages linked to the sector[19]. At the global scale, mining activity is thus considered the fourth largest driver for forest loss due to forest clearance at exploitation sites, to make room for the mine footprint itself (including waste deposits) and associated infrastructure[20]. One of the challenges arising from ASGM in Zambia is thus the indiscriminate cutting down of trees to clear the potential mine sites where small gold deposits are suspected to occur. Indiscriminate cutting down of trees leads to uncontrolled deforestation thereby resulting in the loss of rare fauna and flora which further causes the imbalance of forest ecosystems. Under existing laws, indiscriminate tree felling is illegal (Forests Act no.4 of 2015). However, enforcement is weak, and the practice remains uncontrolled. The situation is worsened by the fact that ASGM miners in Zambia are neither required to undertake an Environmental Impact Assessment (EIA) before starting exploitation nor compelled to reclaim or rehabilitate the land once mining is completed[21].

In Zambia, it has also been reported that ASGM is responsible for land use change from arable land or forest to mining operations and mine waste disposal. Recent discoveries of gold deposits have caused major internal and international movements of opportunity-seeking migrants. The influx resulted in rapid, illegal, and uncontrolled construction of exploitation pits and associated nearby living camps[22].

Land degradation: ASGM activities often are associated with land and water degradation associated with a number of factors. Indeed, the 2020 NAP Baseline study[23] found that degraded lands from mining activity were almost never restored after completion of activities, and that environmental management planning prior to mining in the informal ASGM sector was not being undertaken. Abandoned pits, siltation, and sedimentation of streams were prominent. The study further revealed that abandoned pits eventually became traps for animals and breeding grounds for mosquitoes. Another effect observed was reduced flow of water near mining sites. Finally, arable land was often taken over by mining operations and mine waste disposal, without proper mitigation and pollution control measures in place.

Biodiversity loss: The result of poor mining practices including mercury release and land degradation is the destruction and modification of the original landscape, adversely affecting the overall functions of ecosystems and leading to the loss of habitats and related biodiversity. Additionally, it has been observed that ASGM activities negatively impact wildlife populations due to migrants? settlements, poaching, and bushmeat hunting[24].

Moreover, abandoned mine pits after exploitation are highly problematic as they eventually become traps for domestic and wild animals which may injure themselves or die[25]. Finally, the overall degradation of ecosystems and the loss of biodiversity including wildlife, associated with irresponsible mining activities, may also reduce nature-based tourism potential and associated revenues for local populations and the national government.

As ASGM activities are normally conducted along perennial streams and seasonal water bodies, the sector is also known to have a major negative impact on both surface and groundwater and surrounding terrestrial ecosystems. Major impacts include among others (i) water pollution (discharge of effluent with a high concentration of mercury, other heavy metals, and silt) which sips into land and is toxic to both terrestrial and aquatic life forms, and (ii) disruption of the natural flow regime[26]. Additionally, abandoned pits create water stagnation which are breeding grounds for mosquitoes and lead to high incidences of malaria. These elements are all the more important since health services in ASGM areas are generally limited.

Impacts of climate change and variability: Climate projections in Zambia suggest a warming in average annual temperature and a decrease of annual and seasonal precipitation by 2050, independently of the scenario used, in comparison to the reference period 1971-2000[27]. An increase in the frequency and intensity of climate shocks and hazards is also projected[28]. The overall degradation of the socio-economic and ecological environment of ASGM miners associated with unsustainable ASGM practices is projected to further compound the effect of climate change, increasing the vulnerability of mining communities as income from nature-based economic activities are reduced, social inequity is exacerbated, and conflicts over natural resources arise, constraining the ability to adapt. Indeed, land degradation, soil and water pollution, forest clearance, and land-use change associated with ASGM practices are likely to diminish communities? adaptative capacities which will exacerbate the negative impacts of climate change and variability.

Root causes

The section describes the root causes that have contributed to the increase of unsustainable ASGM activities and continuous environmental degradation.

Widespread poverty: Despite the significant increase in Zambian economic performance observed during the last two decades, Zambia still ranks among the poorest countries in the world. Indeed, in 2021, partly due to the impacts of the COVID-19 pandemic, it was expected that 60.3% of the population would live below the poverty line in 2021[29]. Serious inequalities are observed across the country as rural populations in particular live in poverty, while the middle class in the few major cities has been able to take advantage of the last decade?s economic performances[30].

While the expected years of schooling have been constantly increasing since 1990, the current corresponding figure is still low, having reached 11.5 in 2020[31]. According to the United Nations, poverty is highest amongst households in which the head of the household has no formal education or only primary education (around 80% of the entire population). In addition, according to the latest UNDP Human Development Report for Zambia, people generally lack access to basic needs and infrastructures including potable water and sanitation.

Deprived of other economic opportunities, most poor people in Zambia generate their incomes from low productivity subsistence farming, heavily relying on climate-sensitive productive systems. In addition, income inequalities are also observed to be gender-sensitive as women have generally higher illiteracy rates and often incomplete secondary education leading to fewer options for income-generating activities and fewer resources[32].

Regarding child poverty, the Ministry of National Development Planning conducted in 2018 a study aiming at assessing ?Child Poverty in Zambia?. The analysis assessed child multidimensional poverty analyzing the following dimensions: nutrition, health, information, child protection, education,

housing, sanitation, and access to water. Child poverty was defined as the deprivation of at least three of them. Overall, the analysis revealed that child deprivation is high and severe as 41% of children aged 0-17 years in Zambia suffer from at least three deprivations at a time, experiencing four deprivations on average. However, inequalities in deprivation rates across areas of residence are significant as well as 60% of children living in rural areas are deprived in three or more simultaneous dimensions, while this magnitude represents only 10% in urban areas. On the other hand, children's monetary poverty follows the same trends then observed on the national scale as 60% of children were living below the poverty line in 2018[33].

The populations living within the geographical scope of the project are mainly local or displaced rural communities living in extremely basic living conditions. Indeed, the remoteness of the location and the deep-rooted poverty of these communities leave populations with limited access to secondary and tertiary education. This structurally hinders the youngest generations to get decent jobs thereby preventing them to take part in the economic development happening in Zambian cities. Income-generating opportunities are therefore limited within the intervention sites as people mainly rely on natural resources and subsistence farming for their livelihoods. Agriculture in Zambia is mainly characterized by small-scale production[34] and low productivity associated with climate vulnerability. Indeed, the drought observed in 2017 and 2018 has left rural people in severe poverty conditions.

These factors combined with the recent discovery of gold deposits throughout Zambia have pushed people to take increasingly part in artisanal and small-scale gold mining. However, due to the low level of literacy among those populations and the predominant informality of the sector, technologies used for gold extraction are based on mercury use as people have limited knowledge about the related dangers, formal value chains, and know-how on alternative technologies.

Demographic growth and lack of economic opportunities: Over the last decades, Zambia experienced a large demographic shift with its population growing from 10 million people in 2000 to 18 million people in 2020[35]. The population is therefore one of the youngest in the world by median age, with half of the population currently younger than 18 years old[36]. The total population is still growing rapidly since the latest rate was estimated at 2.8% in 2020[37]. In 2013, the average number of births per woman was 5.3. As the young population will gradually reach reproductive age, the Zambian population is expected to further grow.

Projections show that if the fertility rate does not go down, the population could reach 44 million by 2050. This growing population is putting more pressure on the demand for infrastructures, food, natural resources, health care, and other already weak basic social services[38]. As a corollary, unemployment has been constantly increasing since 2012 and was representing 13% of the total labor force in 2019[39]. Demographic growth is thus simultaneously increasing the working population seeking jobs and economic opportunities, including in the ASGM sector. As these rural populations have limited access to education and limited economic opportunities, villages and communities are more and more densely populated with people looking for income-generating activities. This has led to the rapid and informal development of the ASGM sector as the sector is more and more popular and is recognized as a remunerative job opportunity, especially for young unemployed men and single women.

Barriers

The PPG consultations and review of national policies and strategies relating to the ASGM sector contributed to the identification of key barriers to reducing and eliminating mercury use and releases into the environment, which the project will address to implement the preferred solutions.

Barrier 1: Weak multistakeholder coordination and planning for the ASGM sector and management of mercury.

At the national level there is no coordination mechanism explicitly supporting the formalization of the ASGM sector and management of mercury in Zambia, bringing together all the relevant stakeholders needed to achieve the ASGM NAP objectives. Coordination mechanisms have multiple benefits by (i) leveraging political will; (ii) enhancing national and local ownership; (iii) ensuring accountability and (iv) improving consistency in the overall development and implementation of the formalization strategy and related policies. Indeed, institutional coordination is acknowledged to contribute to creating an enabling environment for the formalization of the sector[40].

From 2016-2018, Zambia implemented the GEF-project *?Regional Project on the Development of National Action Plans for the Artisanal and Small-Scale Gold Mining in Africa?*. Its second component was dedicated to the establishment of coordination structures and the strengthening of synergies between line ministries and stakeholders in the implementation of ASGM-related activities. According to the NAP on ASGM[41], the coordination of ASGM-related activities had to be ensured by two structures: (i) the Advisory Council and (ii) the Technical Committee which both were to be led by the Ministry of Mines and Mineral Development under the stewardship of ZEMA.

According to the consultations during the PPG phase, these two coordination mechanisms have yet to be established. The current coordination on ASGM formalization is mainly ensured through independent miner associations such as the Association of Zambian Women in Mining (AZWIM) and the Federation of Small-Scale Miners Associations in Zambia (FSSMAZ). Thus, there is an urgent need to support the creation of those two national coordination bodies.

The NAP also recognizes the necessity for strengthening the capacities of the members of the Advisory Council and other stakeholders regarding formalization as they will be in charge of leading this process. For this purpose, the NAP underlined the need to design and implement ??Training of Trainers (ToT)?? workshops that will provide national and local governments with the necessary knowledge and skills. Guidelines and training manuals to be used in the trainings are also missing and need to be developed within the framework of this project[42].

Barrier 2: Weak policy and regulatory frameworks for the ASGM sector and management of mercury.

In addition, the PPG consultations revealed that government and decentralized state services in charge of gold mining in Zambia have limited knowledge about (i) the formalization process; (ii) the gaps related to the associated legal frameworks; (iii) the enforcement of mining law; and (iv) the dangers of mercury use, emissions and releases to the environment and human health.

A preliminary study on the policy and regulatory framework of the ASGM sector in Zambia revealed an unclear and weak legal environment that does not provide for an efficient formalization of the sector. In fact, the ASGM sector is mainly catered for under the existing Mines and Minerals Development Act (MMDA) No. 11 of 2015. However, the baseline study performed during the NAP revealed that the ?existing regulatory framework, even though adequate to address ASGM, does not provide for the formalization or specifically regulate ASGM as a sector?[43]. In other words, although the legal framework specifically provides the framework for the recognition and regulation of the artisanal and small-scale mining sector, it does not properly establish an enabling environment where ?small-scale exploration, mining, and value addition industries operate efficiently and profitably to ensure effective contribution to economic development and wealth creation?. In addition, awareness of this legislation amongst ASGM miners appears to be very low[44].

In particular, the miners interviewed during the PPG consultations were unanimously requesting the Zambian state to revise the Mines and Minerals Development Act relating to ASGM to decentralize and facilitate the licensing process. Currently, licensing facilities are centralized in the capital Lusaka. ASGM miners? access to mining licenses is therefore limited as the responsible administration is far away from where they practice ASGM,

making the process long and costly. Traditional leaders are also claiming to be more involved in the licensing process and consulted on the decision of whether mining activities should be authorized within the boundaries of their customary land.

In 2021, the national state gold buyer Zambian Consolidated Copper Mines ? Investment Holdings (ZCCM-IH) was assigned by the government to oversee investments and developments in the gold sector including the buying of the gold from the ASGM sector[45]. Despite the fact that the government expressed its interest in supporting the sector by developing a dedicated policy in partnership with the state gold buyer ZCCM-IH, the process has been discontinuous, and the related initiatives have been sporadic.

In this context, the institution published a formalization policy: the National Strategic Plan for Mining Investment. Within this framework, the institution commits to accelerating the formalization of the sector through the implementation of local gold buying centres across the country. This is aimed at facilitating the access of ASGM miners to formal gold value chains. Observers however identified some grey areas as, for instance, the document is unclear about whether the institution would buy gold from both illegal and legal miners using a ?no questions asked? policy[46]. Moreover, it has been reported that the gold price proposed by the official Zambian national gold buyer was lower than what is available on the black market, which encourages artisanal miners to opt for the most lucrative and convenient alternative[47].

ASGM and mercury legal frameworks are therefore inadequate to tackle properly the ASGM-related problems. Indeed, regulating large-scale mining development has been a higher government priority for the last decades. The regulatory frameworks for ASGM have thus often been downscaled from the Large-Scale Gold Mining (LSGM) legislation but insufficiently adapted to the artisanal part of the sector. For instance, mining-related codes in Zambia do not differentiate tax rates between large and small-scale players. Hence, it is often perceived at the local level that the government only delivers licenses to operate, and full exploitation rights, to large-scale companies, at the expense of local communities. This drives mistrust from communities towards representatives of the government and the law[48], creating conflicts with law enforcement.

Barrier 3: Limited organization of artisanal gold miners.

Mining cooperatives are recognized by the Zambian State as associations focused on supporting the exploitation, industrialization, and commercialization of mining products. In practice, they represent a powerful voice used to improve the socio-economic welfare of communities and further enhance their access to legal gold markets. Organizing ASGM actors through cooperatives has been demonstrated to have multiple benefits and address a number of sub-barriers to engaging in formal markets (i.e., increased access to licensing).

However, the baseline study performed during the NAP revealed that 98% of ASGM miners perform ASGM activities unlicensed[49] and that only a handful of legal and declared ASGM cooperatives are recognized across Zambia[50]. In fact, currently, the Zambian ASGM sector is largely flooded with informal mining groups that are not legally registered and have no robust governance structure[51]. The organization and professionalization of these structures are therefore limited as ASGM miners generally have limited understanding, skills, and resources to implement such a legal structure and apply for a mining licence.

A recent study analysing the ASGM sector in the North-western Province of Zambia attributed low licensing levels to the lengthy, tedious, and costly procedures associated with the acquisition of such a license[52]. Indeed, through the licensing process, ASGM miners are asked to provide environmental plans and pay fees to the provincial headquarter of the Ministry of Mines and Mineral Development[53].

Additionally, the cost of a small-scale mining license is US$225, and US$45 for artisanal miners. This upfront investment cannot necessarily be assumed by all ASGM miners[54]. In addition, there are other application costs that the ASGM miners may need to assume, related to the necessity to

conduct environmental impact assessments or specific services to get land coordinates[55]. The obtention of licenses is also restricted by the fact that ASGM miners should present for application a Tax-Payer Identification Number (TPIN). This entails that ASGM miners need to own a bank account, which is generally not the case.

Moreover, local communities located in remote areas frequently have to travel long distances to apply for licensing. This is not only time-consuming, but also costly, as the application takes more than a day to process, and ASGM miners sometimes need to be housed when they are away[56].

Finally, the consultations conducted during the PPG phase confirmed the competition relationship between LGSM and ASGM as it also revealed that ASGM miners don?t want to get licenses as the process could bring to light the commercial interest of the area in which they are operating and expose it to be hijacked by other interests.

From a government perspective, the ZCCM-IH which is the official state gold buyer recently developed a formalization action plan promoting the creation of mining cooperatives. However, the observers noted that the national action plan provided by the state gold buyer ZCCM-IH does not comprehensively speak about how cooperatives could be organized, managed, and supported to attain formalization, macroeconomic stability, and alleviation of poverty[57]. Within the scope of its strategic plan, the ZCCM-IH also proposed some incentives, providing material and financing support in exchange of creating formal cooperatives. The PPG consultation revealed that the strategy has poorly been implemented, for unknown reasons. However, according to interviews conducted during the field mission, miners are prone to build their capacities on mining rights, licensing processes and are willing to legally develop the sector in partnership with state?s authorities.

Barrier 4: Limited information on gold extractive potential in the country.

In Zambia, there is currently a lack of actionable information on mineral resources and reserves available and key historical data which can be used, for instance, to evaluate the viability of the sector on the financial markets or to inform ASGM miners on the ground.

In Zambia, the Geological Survey Department (GSD) from the Ministry of Mines is the public responsible body for providing geological data to the government and potential private investors. However, the institution has lagged for several decades in meeting the needs of exploration interests in the country.

In fact, contrary to LSGM, small-scale deposits have highly variable and discontinuous mineralization, which makes the generation of resource or reserve statements difficult. Nevertheless, as this information is supposed to be the basis of bankable documentation to secure financing, the shortcomings of the GSD often put the government in a weak position while negotiating financial concessions, as private sector stakeholders have to take over most of what the institution should do. In addition, when data have been harvested and are available at the cabinet level, those are not widely disseminated. In fact, there is no current initiative from the government to provide the data to ASGM operators in mining communities[58].

During the PPG consultation, ASGM miners regretted their low level of knowledge about gold mineralization and their limited capacity to determine the appropriate treatment to develop an optimized ore process. They were also asking to have access to the national GSD database as well as being supported to buy equipment for gold detection, at the local scale.

Barrier 5: Limited access to capital to finance ASGM activities and mercury management.

The ASGM sector is an undercapitalized sector, in particular in comparison with LSGM. This implies that artisanal miners have limited access to initial capital to develop their activity, including investing in cleaner, safer, and environmentally friendly equipment.

The limited access to finance is indeed problematic as it implies that ASGM operators rely on informal arrangements to get rapid money, for instance to launch their activity or financial investment. In particular, ASGM miners often trade with informal gold buyers who take advantage of the situation and remote location of mining sites buying the gold at lower prices[59], and/or sometimes providing them with mercury[60].

ASGM miners have limited access to finance at two levels: (i) the institutional level and (ii) the individual level.

First, most financial institutions perceive the ASGM sector as a risky investment since the business potential of artisanal and small-scale mining sites is commonly difficult to demonstrate. As a result, financial institutions which agree to deal with ASGM miners tend to disproportionately charge them with high-interest rates. Moreover, like the public, the ASGM sector also carries out a highly negative image with financial institutions as they generally lack understanding of the ASGM sector, its dynamics, and its potential since it is recent in Zambia[61]. Finally, small-scale miners are viewed as unable to meet over-demanding financial institutions? requirements for business investment. This is indeed often the case especially when it comes to providing costly technical information and study to support ASGM miners? investment project[62]. Insiders from lending institutions point to the fact that basic record-keeping appears to be problematic as well for ASGM operators, which is also a basis for decisions on whether to finance a project or not.

Second, from the individual perspective, ASGM actors generally have limited financial literacy[63] and formal business skills. This makes a potential loan perceived as a higher risk. Mistrust in formal and informal financial services is also typically widespread, partially due to the inability or unwillingness of financial institutions to deliver appropriate services to low-income communities.

In addition, the baseline performed within the context of the ASGM National Action Plan indicates that women have limited access to credit to boost their businesses due to low literacy levels, limited information on financial tools, and insufficient funds to open accounts[64].

Barrier 6: Limited knowledge of health and environmental impacts of mercury, and limited access and availability of responsible gold mining technology.

Actors of the ASGM sector have limited knowledge on two key levels which is preventing them from adopting safer mining practices: first, they are largely unaware of the significant adverse health and environmental impacts of the use of mercury; and second, they have limited knowledge of alternative gold extraction technology. Low literacy rates are further compounding the issue. While some organizations of miners declared, during the PPG consultation, that they were suspecting mercury to be at the origin of unexplained chest pain of ASGM miners in Eastern Zambia, no scientific study linking the symptoms to the concentration of mercury in miners? bodies has been conducted so far. The level of knowledge about the dangers related to the handling of mercury by miners and the contamination of the environment for the surrounding communities is therefore low. In addition, besides the concerns related to the dangers of mercury, miners' communities were asking, in general, to have better access to occupational health services in order to benefit from more regular health checks.

The Initial Assessment Report for Zambia performed under the Minamata Convention indicates that awareness levels on chemicals management in Zambia are generally low across sectors. In particular, there is no specific organization working on chemicals management in general or more specifically on mercury and mercury compounds. It may thus be inferred that the dangers related to mercury are not yet well-known and communicated across the country[65]. A recent technical report published on the management of mercury in Zambia in fact indicated that nationwide, there is no

educational programme on the effects of mercury on human health and the environment among the small-scale miners and communities surrounding the ASGM sites[66]. Without a basic understanding of the risks associated with mercury use, ASGM miners cannot make an informed decision on its use in ASGM, and behavioural change towards the adoption of alternative technologies is unlikely. This highlights the need for awareness raising activities tailored to the needs of local communities and vulnerable groups, including women and illiterate individuals.

Secondly, knowledge about mercury-free technologies and techniques is very limited at all governance and operational levels of ASGM. Indeed, because academics and government technical bodies responsible for ASGM are not aware of mercury-free technologies and techniques, there is limited transfer of technologies to ASGM miners on the ground. When asked about gold processing during the PPG consultation, some miners declared that mercury amalgamation was the only technique they knew of to process gold and had no knowledge of Mercury-Free Technology (MFT). However, when MFTs were mentioned during the interviews, miners were willing to learn more about it as long as the production yield of the proposed solution would be at least equivalent to what they get from their current gold processing. ASGM miners who were aware of MFT also expressed worry about the prohibitive costs involved in acquiring such facilities. Additionally, the level of development of the MFT market in Zambia and the associated availability for ASGM miners are currently unknown. Hence, combining the introduction of mercury-free technologies through facilitated supply chains alongside awareness-raising on the dangers associated with mercury use may be necessary to increase adoption rates.

Finally, the current level of availability of such technologies in Zambia is unknown. The implantation of suppliers and their degree of reachability by ASGM miners is uncertain. Moreover, although some universities (e.g., Copperbelt University) are known to work on innovation related to mercury-free technologies, the transfer of technologies to ASGM miners is almost inexistent and has been focusing mainly on gemstones in the past.

b) Baseline scenario and any associated baseline projects

Artisanal and Small-scale Gold Mining in Zambia

Artisanal and Small-scale Gold Mining (ASGM) is the primary livelihood of about 30,000 miners in Zambia. This activity has gained popularity as it provides supplementary cash flow among agricultural communities, especially in rural areas where few alternative livelihoods exist that offer similar levels of compensation. However, the ASGM sector is the largest user and emitter of mercury to the environment equivalent to 37% of total annual anthropogenic mercury emissions to air (UNEP Global Mercury Assessment, 2018). The mercury used in the ASGM sector has severe impacts on the miners? health, contaminating water, soil, and air. Mercury accumulates in the food chain and threatens the wider communities. Unfortunately, limited awareness among miners about the risks associated with mercury, and the absence of facilitated access to finance and markets, have hampered the efforts to switch to cleaner and mercury-free technologies. This sector is also associated with high levels of informality and illegality and is often linked to illicit trade and gold smuggling by illegal traders, preventing the optimal benefits for the mining communities and the promotion of responsible mining practices.

Reducing mercury use in the ASGM sector will lead to the reduction of the related environmental pollution affecting the quality of ASGM communities? air, water, and soil. It will avoid mercury-related health problems amongst ASGM miners? communities and reduce the negative impacts of bush camps associated with gold rush migrations. Furthermore, improving mining practices will lead to reduced land degradation as a result of mitigating the impacts of chemical waste, deforestation, land-use change, and disruption of natural water flow regimes that will benefit wider ecosystems. The use of mercury-free technology is also expected to provide better incomes and sustainable livelihood for mining communities, which combined with the improved management of natural resources will contribute to improving the adaptive capacity of vulnerable communities to the impacts of climate change.

Geographic scope

Zambia (Latitude: -13? 08' 25.26 S and Longitude: 27? 50? 57.50? E) covers an area of 752,614.0 km?, is a landlocked Least Developed Country (LDC)[67] located in Southern Africa and is bordered by Angola, Botswana, the Democratic Republic of Congo, Malawi, Mozambique, Namibia, Tanzania, and Zimbabwe. In 2021, the total population was estimated to have reached 18M people with a population density of 25.5 persons per square km[68], with most living in poverty[69]. The capital Lusaka is located in the central part of Zambia and hosts 2.9M people[70]. The country was ranked, as of 2021, as the 146th country out of 189 in terms of its Human Development Index (HDI). In recent years, improvements in inequality reduction have been stagnating and expected years of schooling remain low[71].

Over the past years, the Zambian population has been growing fast. Between 2010 and 2015, the Zambian population rose by 18.3 percent[72]; partly because of high fertility and is projected to reach 26.9 million by 2035. The population of Zambia is predominately young, with 45% aged below 15, and 45% aged between 15 and 35[73]. While the urban population is increasing, most of the Zambian population still lives in rural areas with basic living conditions (60.5% of the total population). Data from 2015 indicate that only 31% of Zambian households had access to electricity[74].

Mineral production in Zambia has been traditionally dominated by copper, coal, cobalt, and gemstone production and exports[75]. Zambia?s mining sector is dominated by large-scale copper mining firms and controlled by large Multinational organizations, in contrast with the Artisanal and Small-scale Mining (ASM) sector which is mainly performed by Zambian citizens[76] of which 98% practice the activity informally[77]. ASM has experienced explosive growth in recent years due to the rising value of mineral prices and the increasing difficulty of earning a living from agriculture and other rural activities. The sector is generally pursued as a route out of poverty or as an activity to complement insufficient income, especially in communities where alternative employment is hard to come by[78]. Although ASM (including metals, minerals, and gemstones) is known to be one of the main economic activities in rural areas in Zambia, the exact number of ASM operators is uncertain due to the large proportion of informal operators[79]. The last estimation of the African Minerals Development Center dated 2017 approximated in Zambia more than 400 licensed small-scale miners and more than 500,000 unlicensed workers[80].

In recent years, gold exploitation expanded throughout Zambia due to the discovery of numerous gold deposits all over the country. According to the PPG consultations, while the activity was in the past traditionally practiced by small foreign companies, Artisanal and Small-Scale Mining?s (ASGM) popularity among Zambian citizens since 2018 has been growing fast. This has led to major internal and international migrations of both miners and traders, called ?gold rushes?. Recent assessments carried out by the Ministry of Mines and Minerals Development confirmed that high-grade gold deposits were found in several areas in the country. Gold mining is thus increasingly considered a viable and remunerative activity, especially for a rural population with few economic opportunities. However, as observed on a global scale, the ASGM sector is associated with high levels of informality and illegality. Indeed, the development of the sector is linked to illicit trade and smuggling of gold out of the country by illegal traders most of whom are not Zambian citizens[81]. Amongst the nationalities mentioned by the miners consulted within the PPG consultation process, foreign illegal gold traders are majority Indians, Chinese, Congolese, or Tanzanians.

According to the baseline analysis performed within the scope of the development of the National Action Plan (NAP) for Artisanal and Small-scale Gold Mining in Zambia [82], ASGM activities occur primarily in the Mwembeshi Shear Zone (MSZ) which spreads across Central, Eastern, Lusaka, and North-Western Provinces of Zambia (represented with the light-yellow area on Figure 1). Overall, there are 21 districts with gold mining activities distributed across those Provinces[83], with other less significant ASGM areas including Chisamba, Kabwe, Mkushi, and Serenje (in the Central Province); Chadiza, Chipata, Lumezi, and Lusangazi (in the Eastern Province); Chirundu, Chilanga and Kafue (in the Lusaka Province); Mpika (in Muchinga Province); Kasempa, Mwinilunga, and Solwezi (in the Northwestern Province); Senga (in the Northern Province); and Kazungula (in the Southern Province).

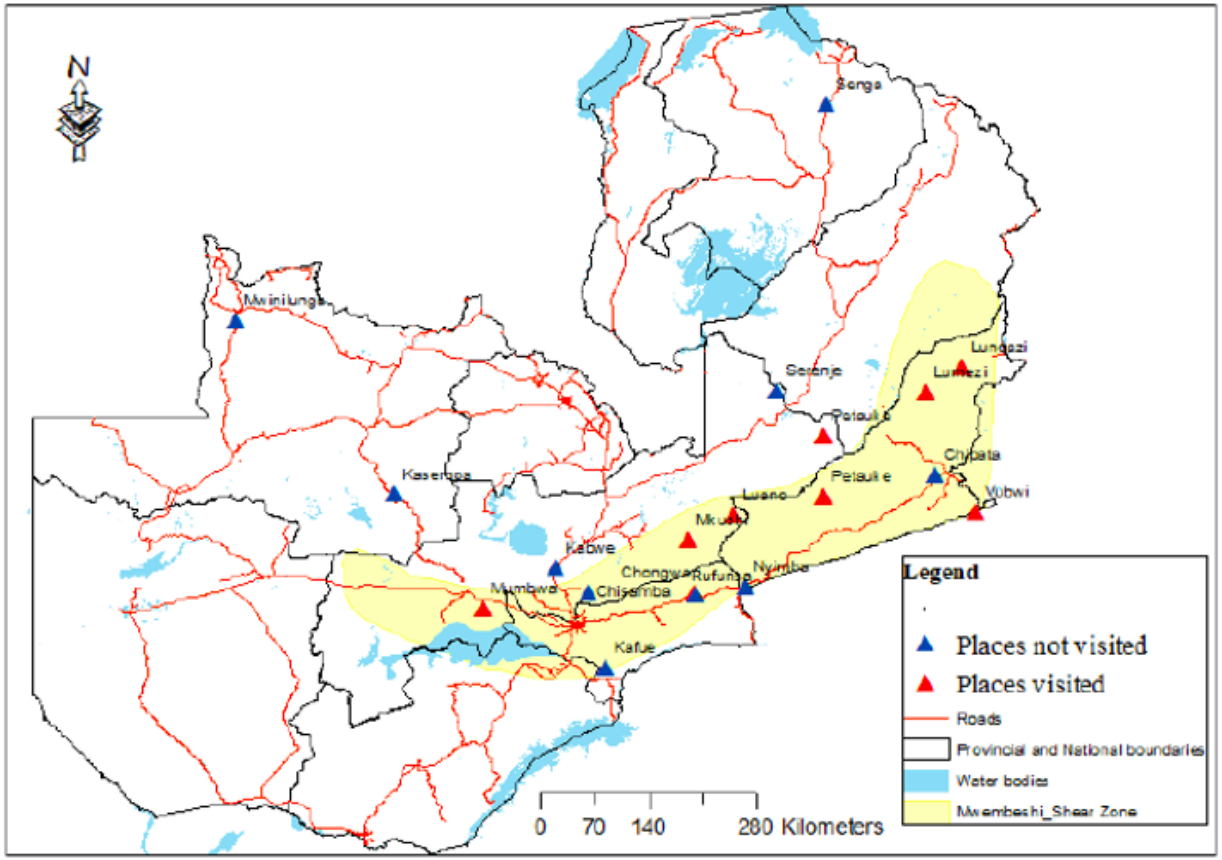


FIGURE 1: LOCATIONS OF ASGM ACTIVITIES IN ZAMBIA. SOURCE: ZEMA (2021): NAP ON ASGM

During the PPG Phase, and with advice from the Zambia Environment Management Agency (ZEMA), Chibombo, Mkushi, and Mumbwa were visited for data collection. The mission excluded the implementation sites in Rufunsa and Chongwe because of several reasons.

? There is extensive information existing on the proposed sites of Rufunsa and Chongwe, this data is a result of the NAP development process from 2017 to 2021, environmental impact assessment undertaken for the sites, and compliance monitoring reports by ZEMA. Visiting these sites again would have duplicated the efforts to have wide data on ASGM in Zambia.

? To complement and be able to compare/validate the existing information from the implementation sites of Rufunsa and Chongwe, different sites were chosen to collect data. This provides an opportunity for validation and comparison of existing data and informs interventions at the national level hence contributing to the sustainability and scale-up of the interventions under planetGOLD.

The sites selected have extensive ASGM activity and provide an opportunity for piloting jurisdictional approaches and elimination of mercury use. The selection of Rufunsa and Chongwe Districts was based on existing data and expert advice from ZEMA, including the fact that mercury use was detected in these areas during the NAP baseline study and that they are very active mining districts[84]. The selection of these sites will be validated by the PSC at its first meeting during project implementation.

Rufunsa District (Geo code: 10815855[85])

Rufunsa District (S 15?08?56? E 29?31?28?) is located in Lusaka Province and lies about 170 km east of Lusaka town. It is considered a rural setting with an estimated population of 73,736 people of which 37,424 (51%), are male and 36,311 (49%) are female. The landscape where most of the ASGM sites are located is generally hilly and rocky with an average altitude of 1,200m above sea level. Rufunsa people highly depend on natural resources and ecosystem services for subsistence, practicing traditional farming, harvesting of forest products, fishing, charcoal production, poaching, and to a lesser extent artisanal mining.

Within the context of the establishment of the ASGM baseline situation, prior to the development of the ASGM NAP, Rufunsa District has been visited several times. In fact, the Jessie mine is considered one of the country?s largest historical-producing sites of gold[86]. It is comprised of Chomwa, Kabombo, Chibombe, and Pokela areas, identified in yellow in Figure 2. Rufunsa District is indeed currently considered one of the most active mining districts in the country and according to the ASGM baseline study dated 2020, it hosts approximately 4,241 miners[87].

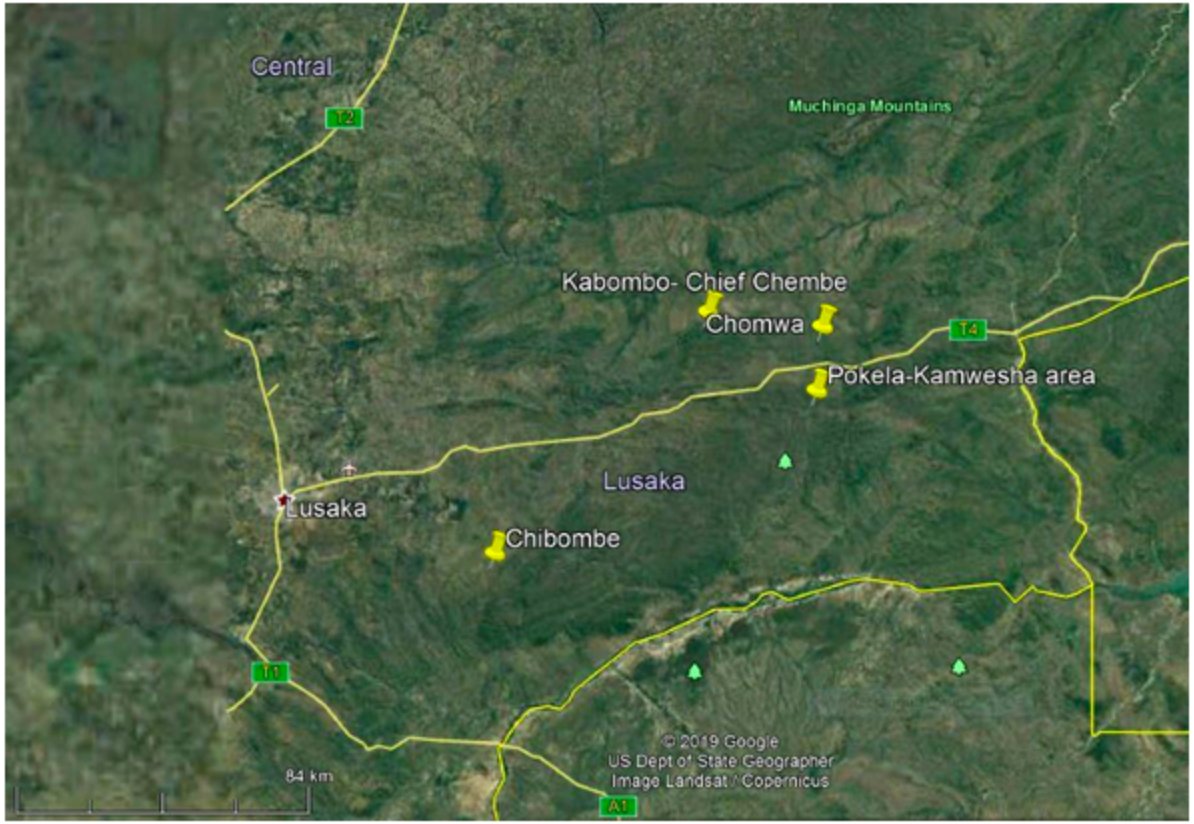


FIGURE 2: ACTIVE MINING SITES IN RUFUNSA DISTRICT

Chongwe District (Geo code: 7910080[88])

Chongwe District 15?35?46Lat., 28?49?8Lon) is also located in Lusaka province, about 50 km from the capital Lusaka. In 2012, the population was estimated to reach 192,303 people of which 98,268 are males and 94,035 are females[89]. The physiography of Chongwe District is divided into three parts. The first region consists of a series of east-west hill ranges at 1,200 ? 1,500 m above sea level to the north. The second region is a plateau area in the middle at an altitude of 910 - 1,200 m above sea level. The third region is a hilly escarpment to the south that merges into the Zambezi Valleys or troughs[90]. Located close to the capital, the district is a host for Lusaka international airport and some military bases which employ some of the district?s inhabitants in surrounding areas. Chongwe?s local economy is based on subsistence farming, artisanal mining, mineral processing, and transport services[91].

Chongwe was visited during the baseline study performed within the framework of the ASGM NAP and is currently considered one of the most active mined Districts of Zambia. Contrary to the mining activity performed in Rufunsa District, mining activities in Chongwe are largely practiced under a small-scale mining license. While the license holder is a Zambian citizen, the exploitation site is managed by Chinese investors employing about 50 to 100 Zambian miners. This formal site is one of the most mechanized in the country.

Details in the following table present a summary of information on the selected intervention sites:

TABLE 1: DETAILS ON PROJECT BENEFICIARIES PER AREA

Province	**District**	**Area (hectares)**	**Total population (disaggregated by sex)**	**Estimated number of beneficiaries[92] (disaggregated by sex)**
Lusaka	Rufunsa	950,454	73,735 (of which 36,311 women)	4,241, ASGM miners, of which 763 women + 5,536 community members, of which 2,909women
	Chongwe	243,880	204,279 (of which 101,374 women)	100 ASGM miners, of which 18 women + 1,384 community members, of which 727women
TOTAL				**11,261, of which 4,417women**

Environmental context

Zambia has a total land area of 752,614 km? with a subtropical climate. The country typically experiences three seasons: (i) a cool dry season from May to August, (ii) a hot and dry season from August to October, and (iii) a warm wet season from November to April. Annual temperatures average between 18?C and 20?C. The maximum annual average temperatures are 32?C in October/November and a minimum of about 4?C in June/July. The highest rainfall is received in the northern half of the country with an annual range of 1,100mm to over 1,400mm. The southern half receives annual precipitation ranging from 600mm to 1,100mm in the valley areas of the Zambezi and Luangwa Rivers, and the plateau areas, respectively[93].

Zambia is endowed with rich biodiversity distributed across a diversity of ecosystems, including a network of wetlands; a large river system hosting a vast range of aquatic life; and considerable forest resources. Indeed, the country is host to 8,017 species, of which 316 species are endemic, 174 are rare and 31 are endangered/vulnerable according to the IUCN Red List. Wildlife richness is therefore one of the main features of Zambia?s biodiversity; as the country is home to 224 species of mammals, 757 species of birds, 74 species of amphibians, and over 490 fish species[94].

As of 2020, the country represented approximately 7% of Africa's total forest cover[95]; and natural forests and plantation forests represented approximately 60.3% of the total land coverage in 2020[96]. The country, therefore, has a wide variety of forest ecosystems such as dry evergreen, dry deciduous, montane, swamp, and riparian forests that provide valuable environmental and economic resources and host a great diversity of plants and animals[97].

Zambia?s two major river systems are formed by (i) the Zambezi River and its tributaries, which occupy most of the country; and (ii) the Congo River watershed located in the north-eastern part of Zambia. Figure 3 shows seven major drainage basins in Zambia, namely (1) Lufubu River, (2) Kalungwishi River, (3) Luapula River, (4) Chambeshi River, (5) Luangwa River, (6) Kafue River, and (7) Zambezi River basins. Natural lakes are Tanganyika, Mweru, Mweru Wantipa and Bangweulu. In addition, the country has man-made lakes including two significant ones the Kariba and Itezhi tezhi. Zambia also counts a lot of wetlands including swamps, floodplains, and dambos. Besides the surface water bodies, the country has substantial groundwater resources which account for 45 percent of the country?s total renewable water resources[98].

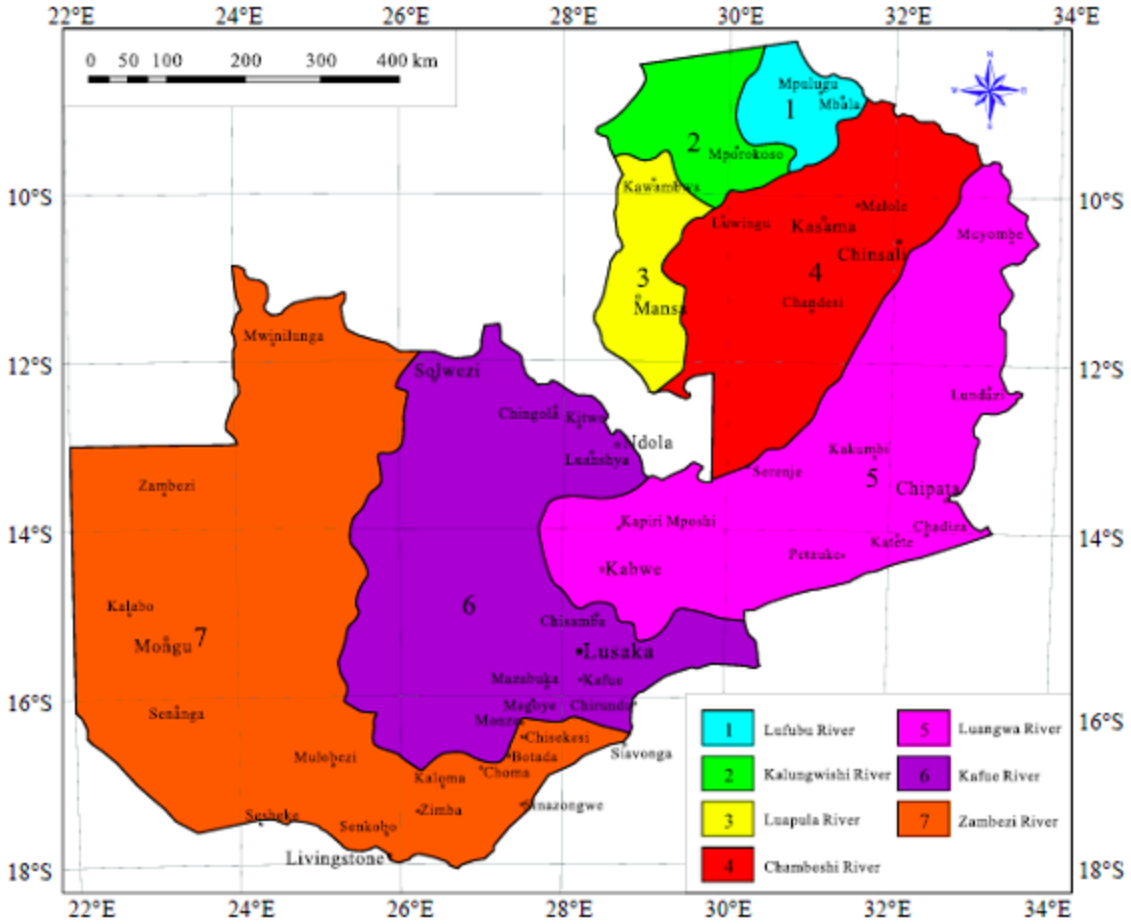


FIGURE 3: MAJOR RIVER BASIS OF ZAMBIA. SOURCE: REN ET AL. (2022) ?GOLD ENRICHMENT CHARACTERISTICS AND EXPLORATION PROSPECTS IN ZAMBIA: BASED ON 1?1000000 GEOCHEMICAL MAPPING?.

To preserve its valuable natural assets, Zambia has a large network of protected areas. According to ProtectedPlanet, more than 41% of the land area is under protected status in 2022[99], corresponding to 641 protected areas distributed across the country, some of which are transboundary. Among Zambia?s protected areas, some have international designations. Indeed, the country has eight wetlands of international importance protected under the RAMSAR convention including the Kafue Flats, Bangweulu Swamps, Lukanga Swamps, Busanga, Mweru wa Ntipa, Lake Tanganyika, Luangwa, and Baroste flood plains. Since 1989, the country designated a World Heritage Site, the Victoria Falls of the Zambezi River which are among the most

spectacular falls in the world and are protected under the United Nations Educational, Scientific and Cultural Organization (UNESCO) recognition as being of outstanding universal value[100].

However, threats to biodiversity and ecosystems are increasing and can be attributed to various direct or indirect anthropogenic origins such as population growth, encroachment on protected areas, climatic hazards (drought and floods), agricultural development, demand for construction activities and urban development, charcoal production, invasive alien species, and exploitation of mineral resources [101].

Mineral-rich Zambian soils have made the country internationally recognized as a major producer of minerals, including copper and cobalt; precious metals such as gold and silver; gemstones (amethyst, aquamarine, emerald, and tourmaline); coal; and other industrial minerals[102].

Figure 4[103] illustrates the proportion of large-scale mining activities occurring in forests in Zambia, reaching a staggering 100%. The maps show the extent of forest cover in Zambia (in green), the right blue bar represents the proportion of mining occurring in forests which is almost a hundred percent.

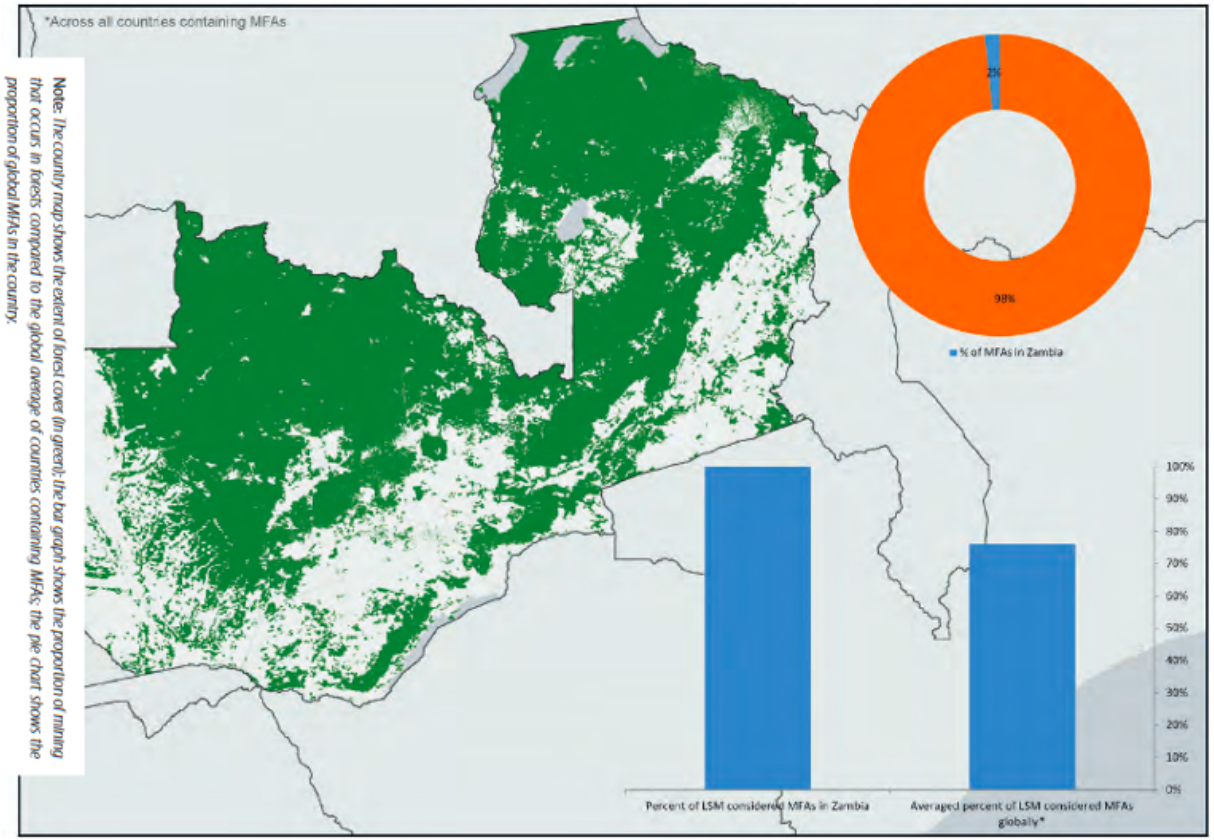


FIGURE 4: FOREST COVER IN ZAMBIA AND PROPORTION OF MINING OCCURRING IN FORESTS

Regarding gold ore, a recent gold geochemical mapping operated in diverse terrain including plateaus, basins, and valley terrain of Zambia revealed that gold concentrations analyzed in catchment sediment samples are relatively low in comparison with crust concentrations, and locally unevenly distributed. The national spatial distribution of gold is presented in Figure 5. The figure indicates that higher concentrations were encountered between Lusaka and Kasempa, and between Ndola and Solwezi. More moderate but still significant concentrations were identified in Mansa, Muyombe, Chipata, and Livingstone. Those are consistent with the Lufilian Arc Cu (Co) Metallogenic Belt which is recognized as a world-class copper-cobalt deposit. The sites are indeed mainly related to copper-bearing metamorphic sandstone or shale of Katanga Supergroup[104]. High gold concentrations (0.53 ? 0.65%, yellow-red colors) are linked with lithologies, such as granitoid in Mansa and Chipata, basalt of the Karoo in Livingstone, and sandstone or shale of Katanga Supergroup from Lusaka to Kasempa, and from Ndola to Solwezi. In line with the geological distribution, gold concentrations obtained in the river are higher in the Kafue River basin, numbered 6 in Figure 5[105].

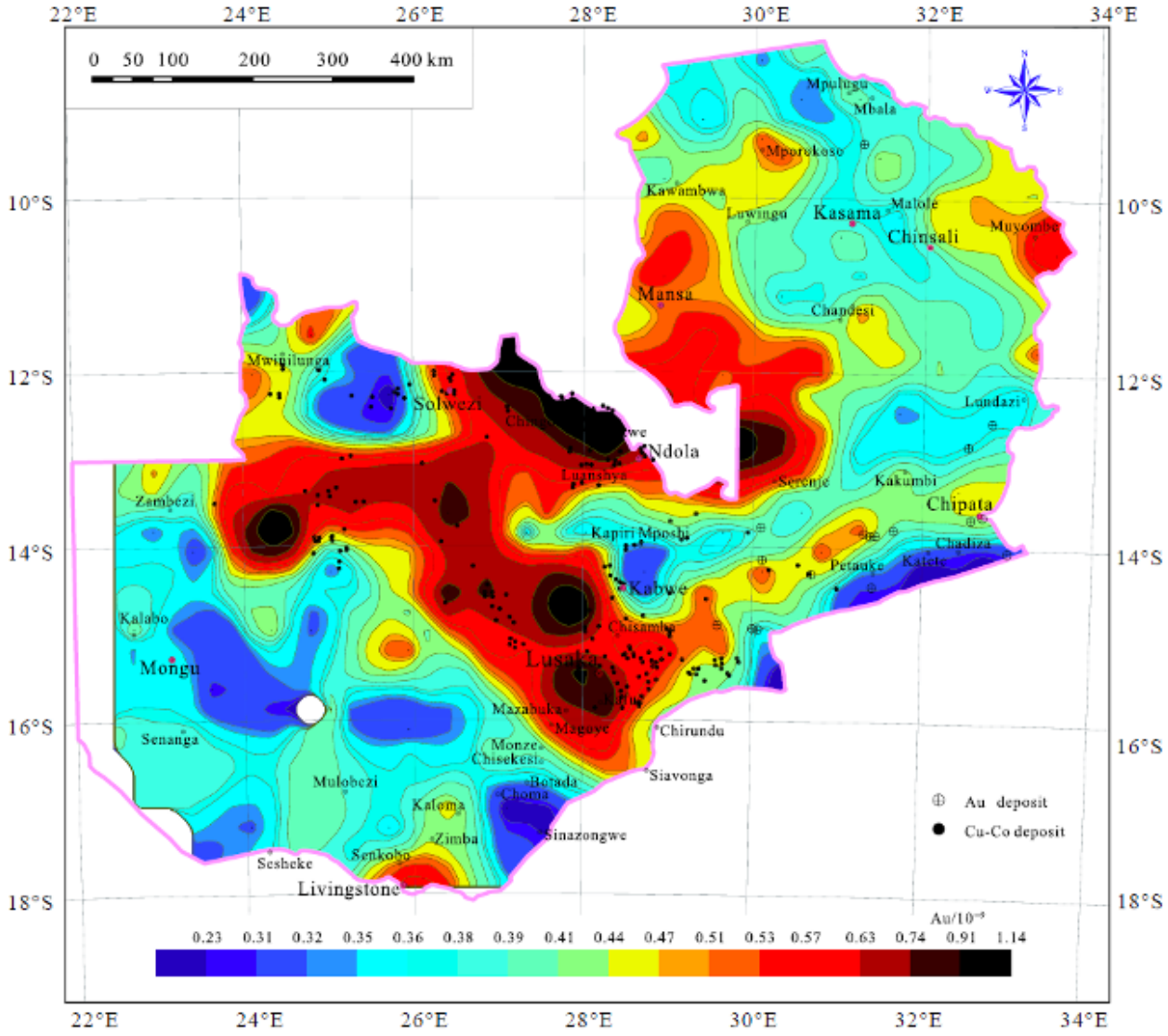


FIGURE 5: SPATIAL DISTRIBUTION OF GOLD IN ZAMBIA

Gold concentration in catchment sediment samples is presented in the legend below the map, very high concentrations (0.74 ? 1.14 Au/10?9) are represented in dark brown and black colors, and high concentrations (0.53 ? 0.74 Au/10?9) are represented in red to brown colors, moderate concentrations (0.44 ? 0.53 Au/10?9) are represented in yellow to orange colors.

Rufunsa District

The landscape where most of the ASGM sites are located in Rufunsa District is generally hilly and rocky with an average altitude of 1,200m above sea level. The climate can be described as cool dry months from April to July with hot temperatures and dry seasons from August to October. The November to March period is hot and wet. Throughout the year moderate easterly winds are experienced. The terrestrial and wildlife fauna of the district mainly comprises monkeys and warthogs, fish, snakes, bees, and insects. Regarding the flora, the district is characterized by weedy ground cover and few scattered trees.

Geologically, the district is underlain by Chunga Formation rocks which comprise limestones (carbonates) and quartz-mica-garnet schists. In some parts of the district, the limestones have been weathered giving rise to flat areas. This in turn has given rise to the predominant characteristic loam topsoil covers with sandy-loam and sandy-clay soils being in the intermediate and bottom/of the first 0.20m of soil profile respectively. According to Figure 5, the area is located in a high to moderate gold concentration zone. In this region, most mining takes place within the stream beds due to the high relief and steep hills. While water is important for panning, most pits are located in semi-dry land near the Rufunsa and Chumya Rivers and their tributaries[106]. As these streams are not perennial all year long, gold panning activities take place during the rainy season.

Chongwe District

The landscape in the Chongwe district is characterized by three main types of natural vegetation: dry miombo woodland, mopane woodland, and munga woodlands. However, these woodlands are increasingly receding due to growing settlements and increasing use of wood for charcoal production and conversion of land for agriculture[107]. Chongwe?s climate is arid, and it is nestled in the valley region surrounded by numerous hills. The region has three main seasons, namely cool and dry from May to August, hot and dry from September to October, and warm and wet seasons from November to April[108].

Near the capital Lusaka, Chongwe District is located in an area with a very high concentration of gold according to Figure 5.

Socio-Economic and Cultural Context

Overall, poverty rates in Zambia are estimated to have consistently increased since 2015. This same year, 25 percent of the Zambian urban population was living below the international poverty line, while this value was estimated to reach 81 percent in rural areas. This rise may mainly be attributed to back-to-back droughts in 2017 and 2018 that affected rural populations which are largely relying on agriculture and natural resources for their livelihoods due to few economic opportunities. Reflecting the combined effects of the recent contraction of the economy and the COVID-19 impacts, poverty is expected to reach 60.3 percent in 2021.

Regarding economic performance: Between 2000 and 2014, Zambia achieved impressive real economic growth. The Gross Domestic Product (GDP) averaged +6.8% per year which allowed the country to be ranked in Middle-Income Status in 2011. Since 2014, Zambia?s economic performance has stalled. Between 2015 and 2019, the GDP growth rate slowed to 3.1% per annum, mainly attributed to falling copper prices (see paragraph below the share of GDP by sector) and declines in agricultural output and hydro-electric power generation due to insufficient rain, and the insufficient policy

adjustment to these exogenous shocks. In addition, like the rest of the world, the COVID-19 pandemic has adversely affected the Zambian economy - economic growth has thus been estimated at 1.4% in 2019. The country went into a recession in 2020 with inflation reaching a historical rate of 15.7%.

In 2020, the share of GDP by sector was divided between 1) the service sector (contributing up to 58% of GDP share); 2) the industrial sector, mostly relying on (i) mining sector activities (21% of GDP) predominantly operated by large scale international copper companies and (ii) the manufacturing sector (7% of GDP). Construction, utilities, and other industrially linked activities contributed to about 11.1% of the GDP. On the other hand, the share of the agricultural sector has been constantly decreasing since 2000, shrinking from 20% to approximately 3% in 2020 despite still employing 54% of the country?s total labor force. The sector is predominantly subsistence-based with low productivity and a limited shift to value addition. It also remains highly vulnerable to climate shocks.

Outside of agricultural activities, Artisanal Small-Scale Mining (ASM) is currently the most important rural activity for non-urban Africans. It is estimated to employ 13 million people and provide livelihoods for over 100 million people in sub-Saharan Africa[109]. Overall, the activity has become increasingly popular as it is considered as having a high-income generation potential providing off-season supplementary cash flow for agricultural communities or provisioning start-up capital for other activities such as small start-ups and businesses[110].

In Zambia, ASGM is the primary livelihood of about 30,000 ASGM miners of which 77% are male, 18% female, and 5% are children[111].

As a starting point, before describing miners? livelihoods and practices on the ground, it is important to note that miners who were interviewed during the PPG consultation were not comfortable with sharing information with any official representation of the State. This explains some information gaps regarding exact figures, or precise practices and livelihoods descriptions. This is critical to understand and later on transcribe into the stakeholder engagement process associated with the project.

Miners? communities selected for the implementation of the project are rural[112]. Their livelihoods therefore highly depend on natural resources for income, food, and energy[113]. They live in a traditional thatched hut. They use firewood, which is mostly self-collected, and charcoal as a predominant source of energy for heating and cooking. They get water from streams and sunk wells or boreholes. Domestic waste disposal is via the use of pits and latrines. In addition, remote rural areas where ASGM occurs have no access to grid electricity. Kerosene, open fires, wax candles, and battery-operated torches are commonly used for lighting.

As observed at the national scale[114], miners' communities are young (below 25 years old) and live mainly from subsistence agriculture associated with other activities: harvesting of forestry products, fishing, and to a lesser extent mining.

According to the national statistics, 75% of more than 5 years old children can read and write. However, economic opportunities and access to secondary and tertiary education is limited in rural areas of Zambia. As a result of the lack of other alternatives, as well as news of recent gold discoveries in Zambia, ?gold rushes? are taking place leading to major internal and transboundary migratory movements coming from DRC or Tanzania[115]. Currently, at the national scale, approximately 88% of ASGM miners are Zambian while the remaining 12% are Tanzanians, Malawians, Rwandese, and Chinese[116]. Consequently, makeshift gold extraction sites and temporary living camps have popped up all over the country resulting in overpopulation in some areas[117], where ASGM miners are living in inadequate housing with very limited access to health and education services, sanitation, and potable water. Indeed, the scarce availability of clean drinking water in ASGM sites is a major concern as it contributes to the increased incidence of water-borne diseases. A recent study performed in the North-western province of Zambia revealed that these camps also adversely impact surrounding communities by threatening food security, as agricultural fields near gold extraction areas are being contaminated by wastewater and

sewerage[118]. Those types of temporary bush camps can be found in Rufunsa District while the communities of Chongwe are better settled and live in more stable conditions.

In addition, divorces and break-ups of families have been collectively appointed by miners as one of the most destructive socio-economic impacts of the migrations related to the ASGM activity. Indeed, males looking for economic opportunities, have to leave their families for significant durations leading to female and family abandonment and hence, the increase of their vulnerabilities. ASGM miners living in Rufunsa and Chongwe Districts are both locals and migrants from other locations in Zambia but also from neighbouring countries.

According to the interviews performed during the PPG phase, ASGM miners practice artisanal gold mining because it is considered supplementary to agriculture, a lucrative activity that provides households with higher incomes than other sectors of employment. On the national scale, Zamstats estimates that incomes from mining are usually three times higher than what can be earned in other sectors and estimated at a monthly rate of USD312 in comparison with USD114 for other sectors. A miner interviewed declared that ASGM was bringing to his family 18$/day while the same job was paid 1.5$ in the mining industry. Overall, the miners also recognized the beneficial trickle-down effects of the ASGM activity on the whole community. Finally, the activity is commonly considered by miners as a promising sector because contrary to the other minerals exploited in the country, gold extraction is currently mainly performed unlicensed. Their potential licensing therefore represents a great opportunity to be better considered by the government and obtain legal rights of exploiting the land where gold is present while preventing third parties from usurping their rights on it.

Within the selected project sites in Rufunsa District, ASGM miners practice gold mining for at least part of the year during the rainy season. In Chongwe, as the activity is more professionalized and water is made available through underground drilling, ASGM activities are practiced year-round.

Traditionally in Zambia, women practice ASM for manganese and quartz, and only a small proportion practices gold mining. Depending on the site visited, women are directly involved in the gold mining process (10% to 30% of miners are women, with an average of 18% nationally) or indirectly helping miners through the provision of goods or food. Women are also engaged in the governance of miners? associations when existing. Gender-based violence and prostitution have been identified in the ASGM national-related literature[119],[120].

A recent report ?State of the Artisanal and Small-Scale Mining Sector? published by the World Bank[121] indicated that, at the global scale, ASGM activities often involve child labor. Indeed, children can participate directly in the extraction process as well as provide food and refreshments to miners. Oftentimes, the tasks allocated to children are different between boys and girls. The report alerts to the fact that ASGM activities are considered by experts as the worst form of child labor due to the harsh working conditions, handling and exposure to toxic chemicals like mercury, and the vulnerability of young women and girls to sexual and gender-based violence[122].

According to the baseline study performed during the development of the National Action Plan, ASGM activities in Zambia involve 5% of children, corresponding to at least 1,500 school-aged children supporting mining activities by supplying goods and services. The study further confirmed that due to the limited social services related to child protection and well-being, children were subjected to gender-based violence in the sites visited[123].

With respect to the sites visited during the PPG consultation, children were never observed to be directly involved in mining operations. However, some of them, depending on the location, sell food to the miners or retrieve the animals used in mining activities to the village.

Associated baseline projects

The project will be supported in its activities and objectives through a set of baseline initiatives, such as government strategies and policies, legislative frameworks, and other investments, as described below.

Government-endorsed strategies and policies

The *Vision 2030* is the first long-term plan published by the government of Zambia in 2006. It has been developed through a participatory process and describes the country?s vision by the year 2030: to become ?A Prosperous Middle-Income Nation by 2030?. The Vision 2030 provides that ?Zambians, by 2030, aspire to live in a strong and dynamic middle-income industrial nation that provides opportunities for improving the well-being of all, embodying values of socio-economic justice, underpinned by the principles of: (i) gender responsive sustainable development; (ii) democracy; (iii) respect for human rights; (iv) good traditional and family values; (v) positive attitude towards work; (vi) peaceful coexistence and; (vii) private-public partnerships?. Regarding the mining sector, the documents states that efforts should be made on the improvement of the regulation, supervision and enforcement of statutory commitments in the mining sector to strengthen tracking of potential investors and improve the efficiency of the system of logging, dissemination of information on available plots for mining and recording of commercial mining activities.

The *7th National development plan 2017-2021* published by the Ministry of National Development Planning is aimed at providing a road map for attaining the long-term objectives as outlined in the Vision 2030 through an integrated multi-sectoral development approach. To reach the objective, the plan is based on ten development outcomes. Outcome 2 is specifically dedicated to the development of a ?diversified and export-oriented mining sector?. Gold mining is defined as a non-traditional ore which must be considered as an opportunity to broaden the country?s range of exploited minerals.

The *Mineral Resources Development Policy* came into effect in 2013 and was published by the Ministry of Mines, Energy and Water Development. Aligned with the long-term plan Vision 2030, the policy is organized around seven objectives. The fourth objective deals with small-scale mining as it promotes ?encourage and facilitate orderly and sustainable development of small-scale mining sub-sector in order to enable it to contribute to economic development and wealth creation?. Objective 5 aims at achieving a ?socially and internationally acceptable balance between mining and bio-physical environment and to ensure that acceptable standards of health, safety and environmental protection are observed by all participants in the mining sector?.

Zambia has assigned the State-owned Zambia Consolidated Copper Mines-Investment Holdings (ZCCM-IH) to oversee investments and developments in the gold sector including the buying of the gold from the ASGM sector[124]. For this purpose, the institution developed the *ZCCM-IH Strategic Plan (2020-2026)* which vision is: ?To be a world class investment holding company with a focus on mining?. The strategic plan is structured around four objectives: 1- Extract, and where possible, to add value to the company?s current portfolio; 2- Investment in greenfield and brownfield mining, and mining related ventures across a diverse range of minerals; 3- Achieve operational and financial excellence; 4- Generate greater shareholder value by ensuring price discovery on our stock exchange listings. Goal 2 is mentioning gold as a strategic mineral that would allow for the commodity diversification of the country. However, the document doesn?t specifically define a strategy for artisanal and small-scale mining.

The *National Policy for the Environment* has been developed by the Government of Zambia to avoid conflict of interest, harmonise sectoral strategies, and rationalise legislation that concern the use and management of the environment in order to attain an integrated approach to development through a national cross-cutting consensus. The document dedicates a paragraph highlighting the environmental degradation and pollution related to the mining sector. A series of measures are overseen in the main economic sectors including the mining sector. The policy therefore provides a solid framework aiming at greening and improving mining practices across Zambian territory.

The draft *National Action Plan for ASGM* in Zambia has been developed in 2021 according to the requirement of the Minamata Convention. This document presents a comprehensive framework aiming at reducing, and where feasible, eliminate the use of mercury and mercury compounds in the ASGM sector in Zambia. For this purpose, the national objective is sub-divided into 4 sub-objectives: (i) To facilitate the gradual phase out of mercury-based gold processing techniques by ASGM miners by 25%% by 2030; (ii) To increase the percentage of formalised group of ASGM miners in all gold mineralised areas from the current 2% to 50% by 2030; (iii) To establish a coordination mechanism and strengthen synergies between line ministries and stakeholders in the implementation of the ASGM related activities by 2030; and (iv) To achieve 40% provision of health care services to ASGM players by implementing public health and Social Protection strategies aimed at improving health by 2030.

A strategy is also developed to achieve these objectives, through 27 phased actions, including but not limited to: 1. Phased reduction and subsequent elimination of whole ore amalgamation practices; 2. Sensitization programmes for key stakeholders on the environmental and health implications of burning of the amalgam in open-air environment as well as in residential settings; 3. Undertake a follow-up detailed study to determine the quantities of mercury used and gold produced in all ASGM active sites; 4. Promote use of equipment that captures mercury for reuse; 5. Prohibit any mercury or cyanide-based gold processing techniques within 100 meters of a natural water body including rivers, streams and lakes; 6. Promote mercury free alternative methods in gold processing; 7. Alternative methods of gold extraction using mercury amalgamation and remedies to mercury nuisance; 8. Management of ASGM Gold ore Processing Tailings/Waste; 9. Delineate Land for ASGM; 10. Facilitate Formation of ASGM Miners? Organizations; 11. License and Regulate ASGM; 12. Organize the Supply Chain; 13. Facilitate access to Finance, Markets, and Services; 14. Monitor, Evaluate and Enforce ASGM Regulations; 14. Manage Mercury Trade and Mercury Compounds; 15. Create coordinating structures for the implementation of the ASGM activities; 16. Develop and implement awareness strategies on the dangers of mercury use, emerging good practices and formalisation in order to provide a balanced narrative on ASGMs potential contribution to national development; 17. Institutional Strengthening and Systems Building (ISSB) for regulators, line ministries and all key stakeholders in addressing impacts of mercury and its compounds; 18. Promote occupational health and safety in ASGM sites.

The National Health Policy (2012) outlines a statement by the Zambian Government to set clear directions for the development of the Health Sector in Zambia. The document aims at harmonizing emphasizes on Zambian policies and strategies of Zambian government to mitigate the related challenges and improve health care services. One of the objectives is to strengthen policy and legislation to address occupational hazards in the mining sector as well as putting attention on exposure to pesticides in agriculture and industrial waste from industries, including mercury.

National Health Strategic Plan (2017-2021) envisions all Zambian to have access to quality health services by expanding the coverage and improving the quality of health services. This entails promotive, preventive, curative, rehabilitative and palliative care. Water-borne diseases, such as malaria and diarrhea have high prevalence in Zambia that could be exacerbated by the presence of open mining pit. Targeting responsible ASGM management will strengthen the strategy to achieve the target of this National Health Strategic Plan.

Legislative frameworks

As explained in the draft National Action Plan for ASGM sector, the overarching objective of the existing regulatory framework is to promote all initiatives that could specifically create an enabling environment in which small-scale exploration, mining and value addition industries operate efficiently and profitably to ensure effective contribution to economic development and wealth creation. The regulatory framework further seeks to develop the small-scale mining sector, encourage the use of appropriate, affordable, and safe technologies as well as build capacities in regional mining offices to enhance their service delivery[125].

The Mines and Minerals Development Act No. 11 of 2015 (MMDA) is the main text law providing the framework for the regulation of the activity. Regarding mining rights, the law distinguishes artisanal mining from small-scale mining. Artisanal mining is defined as ?artisan?s mining operation undertaken by a citizen or a cooperative of citizens pursuant to a mining license for operations in a minimum of one cadastre unit and not exceeding two cadastre units[126]?. Artisanal mining licenses are valid for 2 years. Small-scale mining means ?mining over an area covering a minimum of three cadastre units and not exceeding one hundred and twenty cadastre units?. Small-scale mining licenses are valid for 10 years. In this case, it should be issued to a citizen-owned or citizen empowered, or citizen influenced company (5% shareholding must belong to a Zambian citizen). The law also frames the collection of alluvial gold in streams and river by the acquisition of Gold Panning Certificate? valid for two years, which can only be delivered to indigenous Zambians and cooperatives consisting entirely of Zambian citizens. They give the holder a right to extract gold from a placer deposit in a specified area along a water body but don?t allow excavation.

The law governs Zambia?s gold mining fiscal regime as well. The current fiscality of Zambia does not differentiate between large-scale and ASGM operators which leads to the imposition of a high tax burden on the latter[127]. The MMDA is also related to a series of statutory instruments regulating specifically ASGM.

The *Mines and Minerals Development Regulations (Statutory Instrument No. 7 of 2016)* implement provisions of the Mines and Minerals Development Act with respect to a wide variety of matters such as application for a mining right or non-mining right; renewal of mining right and mineral processing license; alteration of exploration or mining area; transfer or assignment of mining right or mineral processing license; abandonment of mining right area; electronic submission of an application; and reports by mining rights and mineral processing license holders[128].

The *Environmental Management Act No. 12 of 2011 (EMA)* is the principal legislation in Zambia on environmental management and pollution control. The text makes provision for integrated environmental management, the protection and conservation of the environment, the sustainable management and use of natural resources, and related matters. While EMA does not directly cover mercury, it does provide a comprehensive framework for the sound management of chemicals throughout their life cycle. The law defines ZEMA?s mandate for chemical management supervision. The NPE was designed to create a comprehensive framework for the welfare of the nation's environment so that socio-economic development would be achieved effectively without damaging the integrity of the environment or its resources[129]. The EMA makes provision that where there is any inconsistency between the provisions of the EMA and the provisions of any other written law, except the Constitution of Zambia, relating to environmental protection and management, the provisions of the EMA shall prevail to the extent of the inconsistency[130].

Furthermore, *the Environmental Management (Licensing) Regulations No. 112 of 2013*, have a direct relevance to the management of mercury, mercury compounds and waste containing or contaminated with mercury or mercury compounds. The text defines mercury and mercury compounds as toxic substances which are provided under the Licensing Regulations.

International funding from bilateral and multilateral agencies

In the baseline, there are also a number of initiatives contributing to addressing different aspects of the Global Environmental Problems that the planetGOLD project seeks to address. As such, baseline projects include those that focus on a wide range of issues, including the fight against land degradation; human health problems associated with environmental pollution; biodiversity loss; and climate change impacts in relation to their role as drivers of loss of livelihoods. For instance, poor agricultural productivity can lead to increasing numbers of individuals to engage in ASGM, driving increasing mercury use and environmental degradation. Conversely, ASGM can assist rural households in building more dynamic and resilient livelihood strategies portfolios (e.g., an invest in agricultural development), and the livelihood linkages and labour dynamics between the two sectors are significant, although they can vary by region[131].

Agriculture-related initiatives

Name of Projects	Timeline	Funding	Objective	Contribution to the Baseline
Emerging Farmers Partnership (EFP) Donor: USAID	October 2020 - October 2023	USD 3 million	EFP aims to increase productivity in the agricultural sector, contribute to income generation, and promote sustainable farming practices for 10,000 emerging Zambian farmers. It will provide $2.2 million in input finance and $35 million in equipment financing to emerging farmers by targeting 1,000 emerging farmers to receive financing to invest in productive assets, including warehouses, tractors, irrigation and other equipment and additional 8,000 emerging farmers will receive training support through the partnership.[132]	The project will benefit communities around the mining areas where many depend on subsistence farming. This project is expected to increase the crop production that will lead to income generation and to prevent the communities from unsustainable livelihoods that degrade natural resources to supplement their incomes. In addition, it will be important to address the nutrition issue among the children. In other hand, the planetGOLD project will ensure that responsible gold mining practice will be beneficial to prevent land degradation as a result of mining activity.

Zambia - Combined Country Strategy Paper 2017-2021 extension 2023 Funding: AfDB IA: Gov of Zambia	2017-2023	loans and grants amounted to UA 1.8 billion	The objective of the CSP is to alleviate poverty and vulnerability through a dynamic and sustainable private sector that creates jobs. This project includes: sustainable livestock infrastructure management project, capacity enhancement for public finance, climate resilient livestock management, feasibility studies and designs for integrated and sustainable urban sanitation for provincial towns, mitigating the impacts of covid 19 on household food security, Zambia wind feasibility study 40MW, Zambia renewable energy financing framework TA, project preparation facility for agricultural transformation and climate resilience project and the PPCR grant expanded response to climate resilience in development project.[133]	This initiative aims to create more jobs for the communities. By supporting the communities to engage in diversified jobs, it will contribute to sustainable livelihoods and provide alternative income. Thus, it will reduce the independence of communities, including youth in ASGM sector.

The Agriculture Productivity and Market Enhancement Project (APAMEP) in Sinazongwe, Gwembe, Chongwe, **Rufunsa**, Serenje and Chitambo Districts. Funding: Global Agriculture and Food Security Program IA: Ministry of Agriculture and Livestock (MAL)	2014-2023	Aid Grant USD 34.87 million	It aims to support the government efforts to increase crop diversification, productivity, processing and improving market linkages by supporting the infrastructure development, such as irrigation and aquaculture, promotion of crop and livestock production and productivity, agro-processing and value addition, market linkages; promote proper governance, and accountability in its implementation; enhance participation among women and youth; enhance on household income, food and nutrition security. The Project components: (1) Agriculture Production and Productivity; (2) Value Chain Development and Market Linkages; and (3) Institutional Strengthening. [134]	It will support the communities by improving their livelihood in the agricultural sector, including market linkages improvement. It also enhances household income, food, and nutrition security to improve the living standards of communities.

Strengthening climate resilience of agricultural livelihoods in Agro-Ecological Regions I and II in Zambia (SCRALA) IA: National Governments, United Nations Development Programme (UNDP) Project partners: Government of Zambia; Green Climate Fund; FAO; and World Food Programme (WFP)	2018 to 2025	USD 137 million total, including USD 32 million from GCF USD 103.5 million (Ministry of Agriculture), USD 369,000 (WARMA), USD 1.4 million (UNDP)	Supports the Government of Zambia to strengthen the capacity of farmers to plan for climate risks, promote climate resilient agricultural production and diversification practices to improve food security and income generation, improve access to markets, and foster the commercialization of climate-resilient agricultural commodities that will contribute to SDGs targets, especially in SDG#1 for No Poverty and SDG#2 for No Hunger. [135] This is implemented in 16 districts within the Agro-Economical Regions, namely Mambwe, Nyimba, Chongwe, Luangwa, Chirundu, **Rufunsa**, Chama, Mafinga, Kazungula, Siavonga, Gwembe, Namwala, Shangombo, Senanga, Sesheke and Mulobezi. Output 1: Smallholder farmers are able to plan for and manage water resources to support resilient agricultural production; Output 2: Resilient agricultural livelihoods in the face of changing rainfall, increasing drought and occasional floods; Output 3: Increasing farmers' access to markets and commercialization of resilient agricultural products.	This project focuses on enhancing climate resilience of farmers, where most of them depend on rain-fed agricultural practices. One of the pilot sites for this project is Rufunsa District. It will be well-aligned with the planetGOLD project in terms of sustaining the livelihoods of communities in agricultural sector. It will help mining communities to diversify their income and reduce their dependence on gold mining. This project also introduces alternative livelihoods to strengthen resilience in target communities and increase access to finance and insurance products, especially for smallholder farmers by engaging with potential financing sources including public, private, bilateral and multilateral sources. This initiative will reduce the vulnerability of communities with the external shocks.

Climate-related initiatives

Name of Projects	Timeline	funding	Objective	Contribution to the Baseline
Expanded Response to Climate Resilience in Development (ERCRID) IA: AfDB EA: Ministry of National Development Planning National Project Coordinating Unit	2022-2023	USD 930,000	It aims to foster sustained economic development, mainstream gender, reduce poverty and enhance food security through strengthening the adaptive capacity of vulnerable communities in rural and urban areas to better respond to climate change. It includes gender-responsive climate smart urbanization programs in the Copperbelt, North-Western and parts of Central regions that are major industrialized towns, and mining industry hub.[136] Component 1: Climate information, experiences and Framework for future intervention Component 2: Capacity Development for Stakeholders	Zambia has very high vulnerability to climate change. Climate-related disasters also threaten the mining sector, for example the floods will limit the mining communities to undertake their activities, exacerbate the mining pits, and lead to more water-borne disease. This project will develop the resilience among communities to better adapt with the climate change. It conducts a gender-responsive assessment of the provinces? mining, forestry, and agricultural sectors and develop the climate resilience strategy. [137]

Landscape-scale REDD+ (Reduced Emissions from Deforestation and Forest Degradation) in Game Management Areas and Private Game Reserves along the South Luangwa valley, and on privately owned land in the Rufunsa Conservancy IA:Bio-Carbon Partners (BCP)	July 2020 - July 2023	N/A	It aims to protect Zambia?s forests and iconic wildlife by prioritizing community engagement and creating incentives to conserve forest through long term performance-based habitat protection agreements. They develop an Environmental and Social Management System (ESMS) to identify, assess and manage all impacts from the project. It also supports the development of protocols for the implementation of the ESMS, such as a Free, Prior and Informed Consent (FPIC) and a Social Monitoring Protocol. [138]	It contributes to forest conservation, reduce emission, and protect biodiversity. Rufunsa District where the planetGOLD pilot project will be located is important ecosystem for wildlife such as elephants, lion, sable and roan antelope. The community engagement that is encouraged by the project will ensure the involvement of communities for sustainable management of natural resources will increase their knowledge in sustainable land-use and ASGM good practices that do not cause immense harm to natural ecosystem.

The Lower Zambezi REDD+ Project (Project) ?Rufunsa Conservancy? is owned by a Zambian company, Sable Transport Limited. IA: Bio-Carbon Partners (BCP)	2009-2039	USD 1 million	The Lower Zambezi REDD+ Project targets reducing emissions from deforestation and land degradation (REDD+) on 40,126 ha of privately-owned land in Rufunsa District, Zambia.[139] The community development activities, including conservation farming, sustainable honey production, eco-charcoal production, and establish Community Scouts to do patrol in the project area.	This project attempts to increase the capacity of local communities around the forests in alternative livelihood, such as honey production, organic farming, and eco-charcoal production to generate additional income for communities. Diversifying job for communities will ensure that they have other source of income to support their life and reduce the over-exploitation activity, including unresponsible mining practices. Community Scouts patrols will ensure compliance with environmental law.

Biodiversity-related initiatives

Name of Projects	Timeline	Funding	Objective	Contribution to the Baseline

Enhancing governance of Community-based natural resource management (CBNRM) for better conservation and social outcomes in Zambia (EGC) IA: International Institute for Environment and Development (IIED); Zambia Community-Based Natural Resource Management Forum	2020 - 2023	EUR 399,674.55	Objectives: - Enhance the management and governance of priority protected areas by addressing existing limitations (strengthening on-site infrastructure/equipment for patrolling, poaching control, developing capacity of staff). - Support local communities? initiatives aiming to enhance the livelihoods of local people whilst effectively contributing to protected areas management. Pilot project is in 6 Protected and conserved areas, namely Mumbwa, Namwala, Mafunta, Chiawa, **Rufunsa**, and Luano.	Community-based natural resource management (CBNRM) governance will be strengthened and lesson-learnt will be shared within Zambia, particularly on substantial capacity building in governance assessment.[140] This could have benefits for the planetGOLD project, in terms of limiting encroachment of ASGM into protected areas.

The Rufunsa Conservation Project IA: Game Rangers International (GRI), the Department of National Parks and Wildlife (DNPW), the Mburuma Community Resource Board (CRB), the Mphuka CRB, the Mpanshya CRB, Conservation Lower Zambezi (CLZ) Donors: Endangered Species Fund	2019-		It aims to reinforce the sustainable resource management and community development through the engagement, training and operational support of 20 new Community Scouts to conduct the patrol to prevent the encroachment and illegal activities inside the forest. Rufunsa Game Management Area (RGMA) is an area of 300,000 hectares on the eastern boundary of the Lower Zambezi National Park (LZNP) that provides an important ?buffer? for the LZNP and as essential corridor between the Luangwa and Zambezi ecosystems. [141]	The project support enforcement of environmental law at the local level through community scouts to protect the areas from wildlife degradation and deforestation and will contribute to limiting ASGM encroachment in protected areas. The project also assists with social improvements, such as schools and clinics, and promote sustainable commercial projects that provide long term alternative livelihoods to communities. For instance, a Commercial Pond-based Integrated Fish Farm that will collaborate with private sector.[142]

c) Proposed alternative scenario with a description of outcomes and components of the project

The Project GEF planetGOLD Zambia: Global Opportunities for Long-term Development of ASGM in Zambia? is a crucial opportunity to contribute to the transition of the Zambian ASGM sector towards a more responsible sector. The following diagram (Figure 6) illustrates the Theory of Change (ToC) developed for the project. It graphically explains how the project will lead to a transformational change from the baseline situation experienced by the sector at the national level. For this purpose, the project?s strategy is formulated by showing how the combination of outputs will lead to the desired outcomes, which combined will lead to the achievement of the main project?s objective. The logic of the proposed strategy is further explained in subsequent paragraphs.

The proposed Theory of Change (ToC) of the project highlights the relationships between activities, outputs, and outcomes (within the project?s Sphere of Control), medium-term outcomes (within the project?s Sphere of Influence), and transformational impacts (beyond the project?s Sphere of Influence) that the project seeks to contribute to.

The problem that the project is aiming to address is stated at the bottom of the diagram. It represents the main environmental problem associated with the use of mercury in ASGM, its consequences, and the related underlying root causes of the main environmental problem.

To solve the stated problem, several barriers have been identified and need to be addressed:

- Barrier 1: Weak multistakeholder coordination and planning for the ASGM sector and management of mercury.
- Barrier 2: Weak policy enforcement and regulatory frameworks for the ASGM sector and management of mercury.
- Barrier 3: Limited organization of artisanal gold miners.
- Barrier 4: Limited information on gold extractive potential and scale of Hg use/release in the country.
- Barrier 5: Limited access to capital to finance ASGM activities and mercury management.
- Barrier 6: Limited knowledge of health and environmental impacts of mercury, and limited access and availability of sustainable gold mining technology.

The project objective is intended to be achieved through the first four components (see Project Strategy for further details), complemented by a Component dedicated to Monitoring and Evaluation. Within these components, a range of activities are supporting outputs and project-level outcomes.

- Outcome 1: Enhanced formalization in the ASGM sector through multisectoral, integrated approaches and capacity building.
- Outcome 2: Enhanced access to finance by financial inclusion and responsible supply chains.
- Outcome 3: Reduced mercury use in ASGM enabled by increased uptake of mercury-free technologies by ASGM miners.
- Outcome 4: Information and knowledge shared lead to improvement in the management of the ASGM sector in Zambia.

To achieve these outcomes, the project will follow several interlinked pathways, as illustrated in the diagram by the light grey arrows.

- Pathway 1: Through capacity-building and technical assistance to institutional stakeholders on administrative burdens, better coordination and education/sharing knowledge on responsible ASGM, governance bodies legislate, coordinate, and implement holistic formalization of the ASGM sector and mercury management.
- Pathway 2: Capacity-building and technical assistance to miners, gold buyers, and financial institutions leads to greater financial inclusion of miners, thereby giving them access to capital to finance sustainable ASGM activities.
- Pathway 3: Successful pilots lead to behavioural changes and wider participation in transparent and accountable gold value chains.
- Pathway 4: Successful pilots of mercury-free technologies and sustainable mining practices foster a broader behavioural change of local populations towards the widespread adoption of sustainable ASGM.
- Pathway 5: Capacity-building at the local level leads to increased uptake of formalization strategies and mercury-free technologies
- Pathway 6: Knowledge products developed and disseminated through the project, lead to responsible ASGM-related decision-making processes across scales.

Underlying the ToC are several assumptions (represented with dark green rectangles with A-labels), which must be fulfilled for the project to successfully achieve its objective. These are:

- ? Assumption 1: Key institutional stakeholders take charge and lead the improvement of the enabling environment for ASGM formalization.
- ? Assumption 2: The jurisdictional approach is supported by significant local buy-in from all local actors and leads to conclusive results.
- ? Assumption 3: The mobile phone application used to ensure gold traceability at the ASGM miners? scale is available and functional.
- ? Assumption 4: Formal gold market is stable and more profitable for ASGM actors than the informal/illegal market.
- ? Assumption 5: Financial institutions and ASGM sector stakeholders are willing to participate in the project.
- ? Assumption 6: Relevant tools and equipment are available locally/in a timely manner.

Consistent with the GEF Policy on Gender Mainstreaming, the proposed project recognizes the gender dimensions of mercury use and exposure risks in ASGM. The project will mainstream gender equality and women?s empowerment throughout its components by ensuring that formalization efforts, access to finance, responsible markets, and access to mercury-free technologies benefit equally both men and women.

In the medium-term and within the project?s Sphere of Influence, the interventions foreseen in this planetGOLD project will contribute to the establishment of an enabling environment for the formalization of the sector at a national scale, thereby achieving the ASGM NAP objectives. The enhanced formalization is expected to increase financial institutions? trust in artisanal and small-scale miners, therefore facilitating their access to financial services. Lessons learnt from the project will be used as models to develop scale-up initiatives aiming at establishing and standardizing: (i) transparent and accountable gold value chains; and (ii) mercury-free technologies and best mining practices. Finally, knowledge products developed throughout the project will allow for wider adoption of good mining practices eventually virtuously feeding back into all the previously mentioned outcomes.

These MTOs are enabled by several impact drivers, including but not limited to:

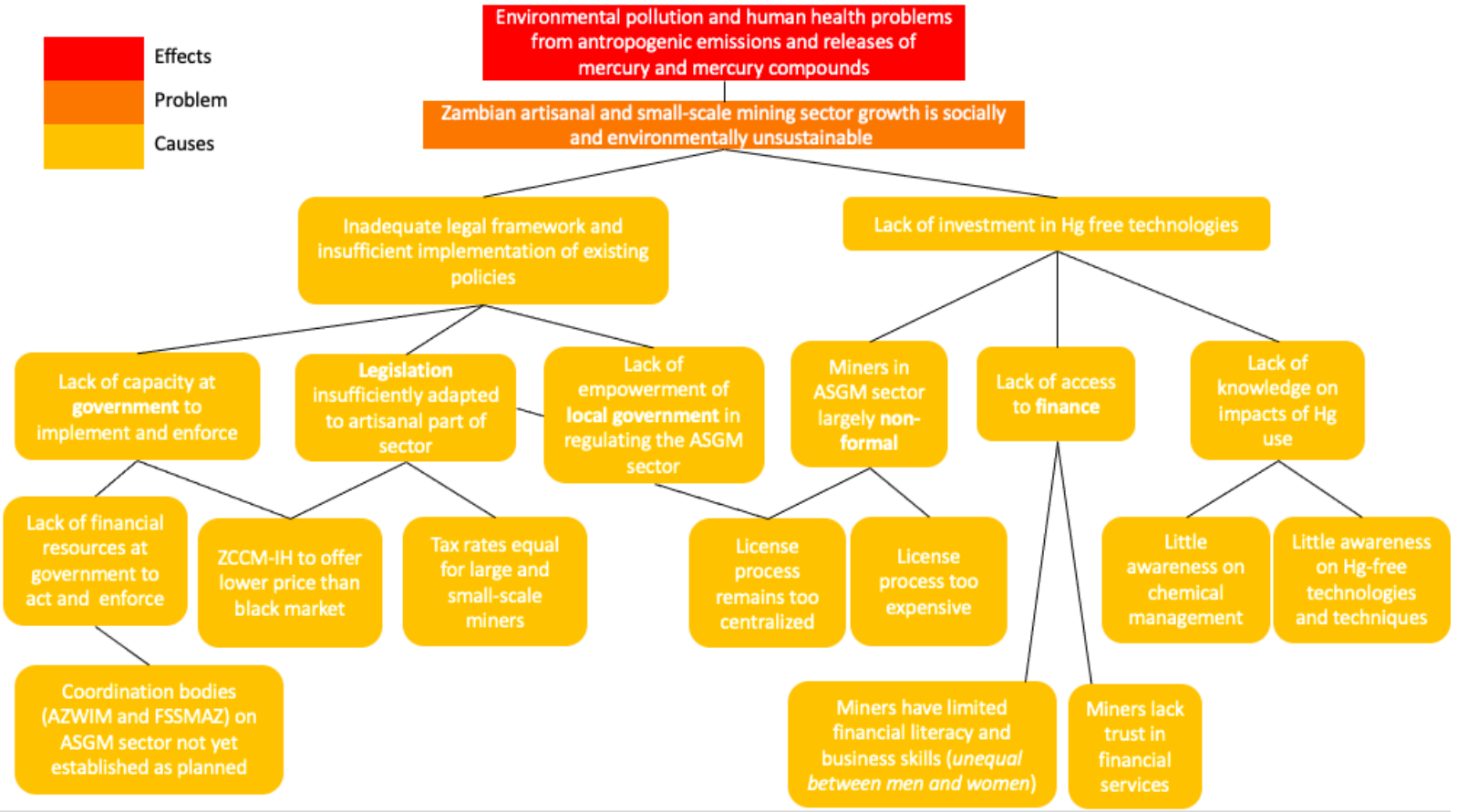
- ? Driver 1: International legal obligations, including SDGs (13;14; 15; 9) and the Minamata Convention.
- ? Driver 2: Benefits accompanying formalization.
- ? Driver 3: Providing access to sustainable investment, financial inclusion, and responsible supply chains.
- ? Driver 4: Participatory/community-based/gender-inclusive development.

Overall, the project contributes to achieving the objectives of the Minamata Convention and aims at attaining its vision: ?Human health and the environment protected from anthropogenic emissions and releases of mercury and mercury compounds?. At the same time, as the project has been developed through a holistic approach aiming at producing multiple co-benefits, all its components will significantly contribute to the achievement of the United Nations Sustainable Development Goals (SDG). The SDG contributions targeted by the project are:

- ? Healthy and Safe Living Conditions: through SDG 1 (No poverty), SDG 2 (No hunger) SDG 3 (Good Health and well-being), SDG 6 (Clean Water and Sanitation);
- ? Improved Labour Conditions: through SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure);

? Women Empowerment: through SDG 5 (Gender equality), SDG 10 (Reduced Inequalities;
? Eradication of Child Labour: through SDG 4 (Quality education);
? Fair Land-use and Profitable Gold Trade for All: through SDG 8 (Decent Work and Economic Growth), SDG 10 (Reduced inequalities), SDG 12 (Responsible consumption and production), SDG 15 (Life on land).

Problem tree



Solution tree

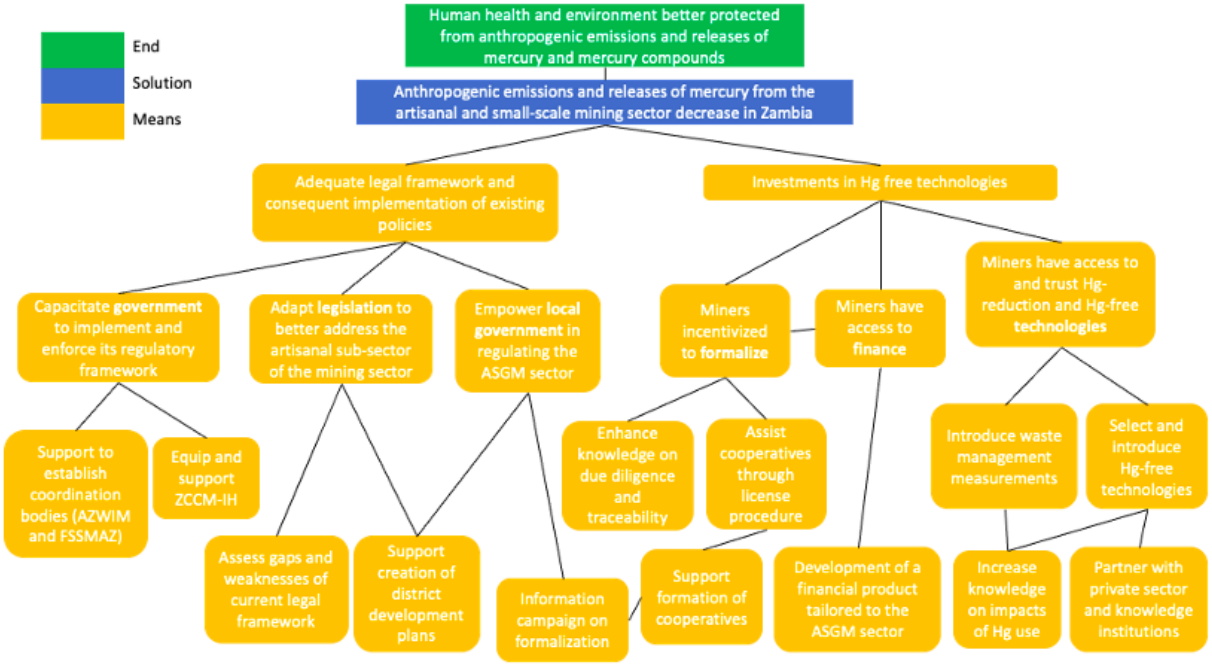
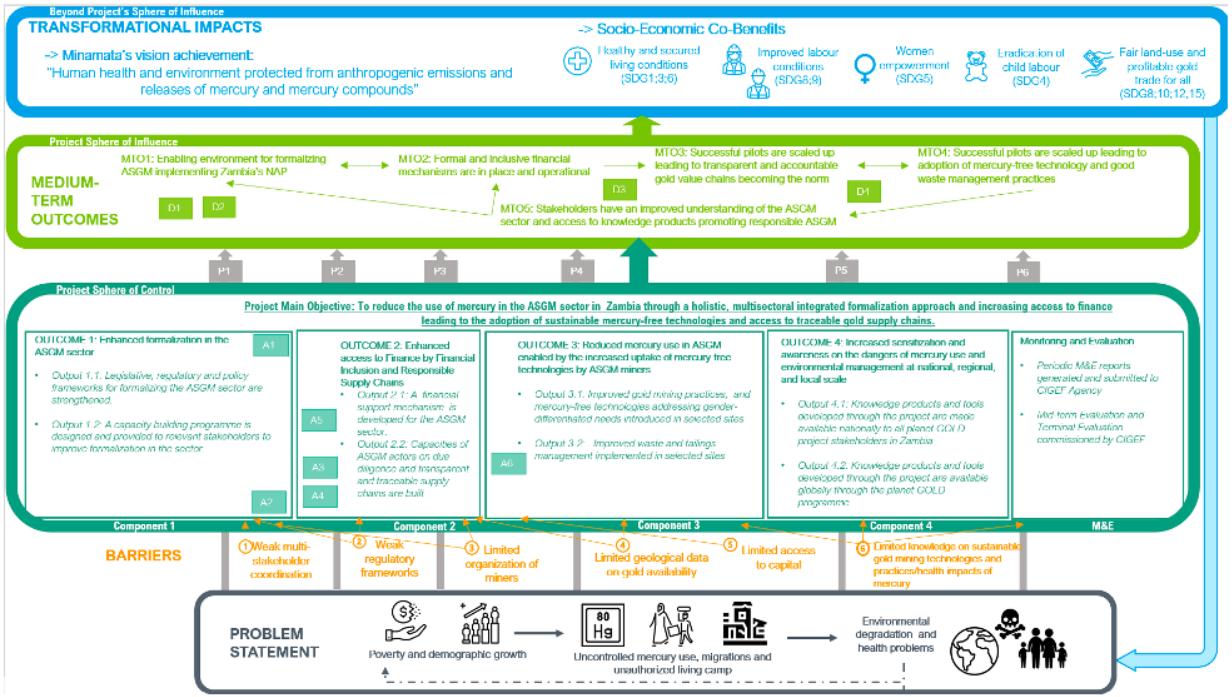


Figure 6: Proposed Theory of Change

Problem statement (in dark grey), barriers (in orange), components, outcomes and outputs and assumptions (= A) (in dark green), pathways (= P) (in light grey), medium-term outcomes and drivers (= D) (in light green), transformational impacts (in blue).



Project objective, outcomes and outputs

The project **objective** is to reduce the use of mercury in the ASGM sector in Zambia through a holistic, multisectoral integrated formalization approach, and increased access to finance leading to the adoption of sustainable mercury-free technologies and access to traceable gold supply chains.

Component 1 ? Enhancing formalization in the ASGM sector

According to the Handbook for Developing National ASGM Formalization Strategies within National Action Plans (NAPs) developed by UNEP (2018), formalization is ?a process that seeks to integrate the ASGM sector into the formal economy, society, and regulatory system?. This means that formalization is not just about regulating the ASGM sector and ensuring that ASGM miners perform their activities under license; the formalization process is broader and seeks to ensure that the activity is organized so that ASGM miners? interests and rights are recognized in dedicated and appropriate policies. The formalization process aims to support ASGM miners? organizations through technical, administrative, and financial support that empowers them to comply and engage with the requirements prescribed by national legislation[143].

Formalization is also considered by experts as a pre-condition to the effective reduction of mercury use as it allows for (i) the organization, education, and support of ASGM miners; and (ii) the regulation of the mercury and gold trade[144].

In Zambia, ASGM is considered to be 98% informal. The sector is currently in its infancy and is characterized by gold rushes and illegal mining. Under the Minamata Convention commitment [145], the country recently developed its National Action Plan to reduce the use of mercury in ASGM processing through the formalization of the sector. This project will thus support the implementation of the NAP.

Component 1 of this project will focus on creating national-scale conditions and systems that improve ASGM formalization. To this end, the project will support the creation and capacity building of proper coordination structures for the formalization of the sector. The strategy thereafter proposed is thoroughly based on the UNEP Formalization Handbook[146] and the Zambia ASGM National Action Plan[147].

In addition, the national legal framework will be reviewed to strengthen the basis of the regulatory environment for the formalization process. Indeed, the legal dimension of ASGM formalization is a key element as it will, among other things, strengthen the official recognition and clarification of the duties and rights of ASGM operators. Another important component of the formalization process is to facilitate the organization of ASGM miners into formal and legitimate structures. In Zambia, the aforesaid entities are cooperatives which are ASGM miners? organizations focusing on the exploitation, processing, and commercialization of mining products. Cooperatives are recognized to empower ASGM miners through uniting them on common interest and giving them official representations, including in the related coordination mechanisms, also strengthened under this component.

The formalization of the sector will be further fostered by the integration of the ASGM sector into broader dimensions of landscape management, such as local development plans and land-use planning. This integration will be done through the innovative jurisdictional approach. The Jurisdictional Approach (JA) is ?an integrated landscape approach which aims to reconcile competing for social, economic, and environmental objectives through participation by a full range of stakeholders across sectors, implemented within government administrative boundaries, and with a form of government involvement?[148]. In other words, it is an innovative implementation tool aiming at maximizing policy-based interventions? impact on the ground. In fact, the jurisdictional approach uses primarily subnational government administrative boundaries to define the scope of action and involvement of stakeholders, rather than social (e.g., indigenous community) or environmental (e.g., ecosystems, watershed) boundaries[149].

The Jurisdictional Approach (JA) includes encouraging governments, businesses, local communities, and NGOs to work together towards common goals, such as improving local livelihoods, eliminating mercury use, and maintaining natural ecosystems through coordinated strategies across the landscape. By involving and educating all the relevant actors across the landscape, the efforts to improve the perception of the ASGM sector, including raising awareness about the challenges and opportunities the ASGM miners are facing, can be magnified[150].

Outcome 1 - Enhanced formalization in the ASGM sector through multisectoral, integrated approaches and capacity building.

The overall outcome of this component will be to create an enabling institutional and governance environment, across scales, for the formalization of the ASGM sector. This implies fostering a multi-stakeholder commitment and ownership of the proposed strategy through innovative, consultative, and gender-inclusive approaches.

To achieve this Outcome, the project will rely on a set of interrelated Outputs supporting the formalization of the ASGM sector. As a first step, the project intends to improve the coordination of actions on ASGM at the national level. It will draw on existing efforts and carefully integrate the lessons learned from similar initiatives to set up the foreseen coordination mechanisms, including all relevant ministries and institutions to improve the broad-

based ownership of the formalization concept and related coordination structures[151]. The project will also review the legal frameworks in place and propose revisions to enhance ASGM formalization and reduce mercury use. The project will also pilot the Jurisdictional Approach as an innovative tool towards landscape management in support of ASGM formalization. Trainings and direct technical support will be provided to ASGM miners to increase their adoption of formalization models. Stakeholders? capacities will be assessed, and appropriate training materials will be developed for each category of stakeholders targeted.

Output 1.1*: Legislative, regulatory and policy frameworks for formalizing the ASGM sector are adopted by the government.*

Activity 1.1.1: Support the establishment and operationalization of the two coordination mechanisms (i.e., the Advisory Council and the Technical Committee) and provide training on formalization.

The project will support the government of Zambia in the development of the specific Terms of Reference and procedures for the two structures, defining for each structure the related objectives, decision-making process, stakeholders? roles and responsibilities, workplan, and key activities. According to the NAP, the Ministry of Mines and Natural Resources should be the lead line ministry under the stewardship of the Zambia Environmental Management Agency (ZEMA). Different models to ensure the long-term sustainability of the structures will be explored.

Once the coordination mechanisms are established, the project will provide training for their members. As members will be leading the ASGM NAP implementation within their respective jurisdictions, they need to master the formalization concept as well as take full ownership of the associated ASGM National Action Plan. For this purpose, the project will develop capacity-building activities including Training of Trainers workshops to provide members with the knowledge and skills necessary for the enforcement of the NAP. Guidelines and training tools used for the purpose of these workshops will also be developed within the scope of this project.

As recommended in the mid-term evaluation of the project ACP-EU Development Minerals Programme: Phase I[152] which aimed to build the Zambia mineral sector?s profile and improve its management, gender equality, and women?s empowerment will be promoted in the new coordination structures. Gender will thus be integrated into training materials and knowledge products, and quotas will be applied to promote equal representation of men and women.

Activity 1.1.2: Conduct a review of the legal and policy frameworks in place in relation to ASGM to identify strengths, gaps, barriers and inconsistencies in the current legal framework.

Building on the work undertaken during the NAP formulation, a complementary review of the legal and policy frameworks in place in relation to ASGM will be conducted to identify strengths, gaps, barriers, and inconsistencies. The aforesaid needs may not be necessarily directly related to the mining rights and permits but could also touch upon land tenure[153], environmental licenses, or pollution control[154]. The review will then be disseminated through a set of consultations with key stakeholders, in order to co-construct a set of key recommendations on the most relevant thematic and text laws, which revision would allow for the improvement of national legal consistency regarding the ASGM formalization while harmonizing interests related to the sector.

Activity 1.1.3: Support revisions to, and/or development, of the legal and policy frameworks related to ASGM and provide related trainings.

The two coordination mechanisms will be actively involved in the process of revising/ developing the legislative frameworks and are expected to have central roles in the development, revision, amendment as well as advocating for ascension of the revised or developed legislative frameworks, and

therefore should actively involve high-level policymakers to mitigate the risk that the revisions may not ultimately be adopted and become legally effective.

It is anticipated that the two coordination bodies would continue to support the implementation of the revised or developed legislative frameworks beyond the end of the project. Moreover, to ensure long-term sustainability of these bodies, revisions done to the legislative frameworks will explore how and if their functions can be ingrained in those legislative frameworks to be revised/developed.

Finally, the project will inform relevant national and local stakeholders and provide trainings regarding the concrete implications linked to the revisions to legal and policy frameworks. The project will identify the target audience; appropriate dissemination platforms; ways to package the information; how the revised/amended policies and legislative frameworks will be disseminated amongst the diverse ASGM actors; how the information will be disseminated to illiterate and semi illiterate ASGM actors; and define the role of actors such as policymakers; ASGM cooperatives; the two coordination mechanisms; and local and national government institutions in the dissemination of the law.

Activity 1.1.4: One multisectoral gender-inclusive pilot of the jurisdictional approach for ASGM sector at sub-national level

As a first step in the piloting process, the PMU will benefit from eight 90-minute sessions on the Jurisdictional Approach through the planet GOLD Global Project, on each of the following themes:

- ? Underlying Drivers Assessments (UDA): Analyses of policy and economics that identify the root causes and levers that must be changed to facilitate the systemic transformation to sustainability;
- ? Governance Assessments: Evaluation of how decisions are made and implemented so that improvements can be made to ensure full stakeholder participation, transparency, and accountability in the pursuit of a sustainability vision;
- ? Impact Assessments and Ecosystem Service Valuation: Understanding the dependencies between productive activities and the surrounding environment in order to fully cost, and in some cases, compensate for negative environmental impacts (Conservation Strategy Fund);
- ? Multistakeholder Coalition Creation and Function: Building an inclusive, well-informed, cooperative body of all relevant stakeholders to build a vision for sustainability and roadmap to pursue it;
- ? Negotiation Training: Empowering marginalized groups, often local communities, indigenous people, women, and youth to be able to play a proactive role in defining their future (Conservation International);
- ? Landscape Action Plans: Building out the specific interventions required to strike a balance between production and protection in a way that allows people to meet their needs without cashing out natural life support systems;
- ? Landscape Finance Plans: Identifying scalable revenue streams that can be knit together in a blended financial mechanism to bear the cost of transitioning to a sustainable system, and;
- ? Comprehensive Monitoring and Evaluation Frameworks: A system of tracking progress across the key dimensions of sustainability, including human wellbeing, ecosystem health, governance, and sustainable production.

During these sessions, global experts will provide 45-minute presentations on each theme and answer questions that help each country's team determine whether the additional expert support on each theme and associated tools will be relevant to their ASGM program of work and would be helpful in beginning to build the foundations for embedding their work in a jurisdictional approach.

Participants will subsequently be asked to pick and choose the most relevant topics to implement ASGM into district or sub-district development plans. The team will have the opportunity to take deep dives into the themes and tools of greatest interest to them. Tier 2 trainings will involve advanced interviews and surveys by global landscape experts to identify priority interests, needs, and opportunities so tailored curricula can be developed. Trainings will take place over 4-6 hours using virtual platforms.

Following these trainings, experts will prepare reports with recommendations regarding how to advance on the respective theme. Based on a set of political, technical, administrative, environmental, and social criteria, Mining Jurisdictional Landscapes (MJL) will be defined based on the national administrative division framework (likely District or sub-District level). Voluntary District Planning Units will be trained to experiment with the JA. In this respect, district and sub-districts development plans (DSDP) will be updated and reviewed to integrate the ASGM sector into the holistic development planning envisioned for the locality. Then, the JA involves the following steps: (i) Landscape characterization; (ii) Review of DSDP; (iii) Review of districts and sub-districts Finance Plan (DSFP); (iv) Implementation and Monitoring, and (v) Learning and Adaptive Management. Component 1 of this project will therefore take over parts (i), (ii), (iv) and (v) of the JA, through **the participatory development or review of the selected DSDP**[155] including the ASGM sector. Part (iii) of the JA (DSFP) will be supported under Component 2.

Output 1.2*: Support provided and accessed by ASGM cooperatives in selected ASGM communities to improve formalization in the sector.*

Activity 1.2.1: Prepare a public information campaign to get ASGM community buy-in on the formalization process.

As relationships between ASGM unlicensed miners and the government have been observed to be tense, one of the first steps is to support ASGM operators in creating formal cooperatives will be to consolidate their trust in official representations of the state[156]. This could be done by communicating to communities hosting gold resources about the challenges and benefits provided by formal cooperatives. The idea will be first to conduct a public information campaign, after which a call for expression of interest will be distributed in every village visited, thus ensuring to get ASGM miner's voluntary engagement in the process. Considering low literacy rates in the areas of intervention, calls for expression of interest will be presented in adapted formats such as through community meetings with local focal points who will relay information on interest expressed to project staff.

Activity 1.2.2: Support the creation of cooperatives (membership, status, by-laws, etc.) and assist them through the license application process.

Once voluntary groups will have been formed, the planetGOLD project will provide training sessions further deepening the understanding of the implications and principles behind such a formal structure that is the mining cooperative: membership; democratic governance and elections; profit sharing and expenses; licensing process; human resource management; etc.

The project will assist in the creation of cooperatives through the definition of membership, the cooperative status, and registration. Cooperatives will also be supported in the license application process, including obtaining the mining license, and environmental licenses if necessary. In complement to these activities, Component 2 of the project will seek to build ASGM miner's and cooperatives? capacities and work towards creating conditions for their integration into the gold formal economy.

Particular attention will be made to target women, youth, and other vulnerable or marginalized groups in the organization processes. Where relevant, trainings will occur in local languages, and adopt good practices for communication in such contexts, such as engaging people of trust to the beneficiaries, using demonstrations, avoiding jargon and using images to assist with meaning, create short engaging videos, etc. To complement the technical training modules, dedicated training will be implemented to reinforce communities? capacities in women's leadership, gender approach, and women?s rights. Women leaders will be identified to join the organizational arrangements of the newly created cooperatives.

Component 2 ?Access to Finance enhanced by Financial inclusion and Responsible Supply Chains.

ASGM miners often need start-up capital and cash flow to invest in equipment to perform their activities. As explained under Barrier 5, Zambian ASGM miners have limited access to financial services for these kinds of investments. Up until now, Financial Institutions (FI) have known very little about this sector and have mistrusted ASGM miners, which has led to a general unwillingness to provide ASGM operators with financial services[157]. In addition, in recent years, the development by the government of convenient procedures to foster ASGM miners? and cooperatives' access to legal value chains has been slow. As a result, ASGM miners often use illegal channels to (i) get start-up capital for their activities; (ii) sell their gold; (iii) get mercury; and (iv) maintain or bail out their cash flow.

The purpose of this component is therefore to enhance ASGM miners? access to transparent financial services while developing a responsible and formal gold value chain. Access to finance will allow for the improvement of ASGM miners? productivity through the purchase of equipment, enabling ASGM miners to move out of poverty and reduce environmental impacts. One of the goals underlying this component is also to reassure financial institutions that ASGM operators and related investments in the sector are viable.

Responsible gold value chains will be fostered under this component. To execute this objective, the project will explore the possibility of developing a partnership with Zambia Consolidated Copper Mines Limited-Investment Holdings (ZCCM-IH) which has devised a strategy to develop a gold purchasing programme through gold buying centers in some critical areas of interest. ZCCM-IH intends to buy gold from ASGM miners through ZCCM-IH-operated buying stations. This will also provide gold traders with more attractive alternatives to smuggling the gold to neighboring countries that maintain more attractive fiscal regimes.

Establishing a financial mechanism that values gold without mercury and ensures gold traceability will contribute to the control of gold smuggling and tax evasion. It is expected to reduce the illegality related to the sector and result in greater economic and social benefits for miners? communities on the local and national scale. This should, in turn, generate profits for the state through the collection of associated taxes as well as bolstering state gold and foreign currency reserves.

Finally, one of the indirect outcomes of the increase in the communities? standards of living is the shift away from mercury towards cleaner technologies and responsible mining practices (also supported under Component 3); this is due to their improved productivity[158] and the discontinuing of sales to illegal value chains involving mercury[159]. This component supports the Zambian Minerals Policy?s goal and the ASGM NAP objectives to increase access to finance to develop the ASGM sector. It also aligns with the International Conference on the Great Lakes Region (ICGLR)[160] Regional Certification Mechanism, with respect to responsible mineral supply chains, which applies to Zambia.

Outcome 2 ? Enhanced access to Finance by the promotion of Financial Inclusion and Responsible Supply Chains

Under this Outcome, the project will support the participatory development of District or sub-district Finance Plans aiming at enrolling the ASGM sector into a broader sustainable development perspective.

Furthermore, the PPG consultations revealed that the state gold buyer ZCCM-IH has a programme to assist registered cooperatives with financing and equipment. However, the footprint for this funding mechanism happens to be very limited at this stage. In this context, the project will assess the possibility of supporting the government initiative by contributing to the creation of a financial environment that fosters the access of ASGM operators to financial services. It will thus focus on building FIs? and related ministries? capacities on financial inclusion. Partnerships will be created, and consultation workshops will be organized in order to meet the needs of both ASGM operators (including the differentiated needs of women) and FIs, as well as dissipate the mistrust and misunderstanding between the two parties. Innovative financial schemes developed throughout the project will thereafter be tested on pilot sites.

In the meantime, ASGM miners? and cooperatives? financial capacities and entrepreneurship will be strengthened through training courses. In addition, ASGM miners will be supported in the process of accessing financial services. Special attention will be given to addressing the specific challenges affecting women miners. Indeed, many women-led, community-based enterprises are considered by FIs as low-profit investments. The overall lower level of education of women, combined with the negative attitude of bankers towards them, often makes it difficult to get financing[161]. The project, therefore, emphasizes the need to develop special content and training sessions aimed at building up women?s capacities as well as promoting their empowerment and financial autonomy across all layers of society.

Awareness raising campaigns will be developed to inform ASGM operators, financial institutions, and related ministries about the value, benefits, and implications associated with transparent and legal value chains. This aims to build mutual trust and to foster commitment in engaging all stakeholders in the formalization process, including financial inclusion.

As part of the DSFP?s implementation, the financial mechanism supporting a transparent, traceable, and responsible supply chain could take the form of a gold purchasing programme (GPP) through gold buying centers near an ASGM zone which buys, processes and valuates gold without mercury and sells it to the Central Bank of Zambia. If effective, the GPP could be scaled up with the establishment of other gold-buying stations in other areas. Establishing a responsible gold supply chain involves improved gold traceability and certification. For that purpose, the creation of a tracing system to trace gold trade from the mine to the point of export, in full compliance with the OECD Due Diligence Guidance standard will be investigated. This will once again rely on a highly participatory process and be supported by the improved traceability and certification systems piloted.

Finally, as access to finance is closely linked to transparent value chains, their simultaneous progress is a key priority that will be taken over throughout this Component 2. Focusing on educating financial institutions will support the development of the ASGM sector. Furthermore, improving the gold supply chain will help unlock new markets for ASGM miners, while driving the widespread adoption of responsible and mercury-free mining practices.

Output 2.1: *A financial support mechanism is developed for and accessible for the ASGM sector.*

Activity 2.1.1: Elaboration of District and Sub-district Finance Plans DSFPs

This output complements the districts and sub-district?s development plans developed under Component 1 helping in the identification of the financial requirements to implement the DSDP. This will be a building block to create enabling conditions for the future establishment of transparent and traceable value chains through the Jurisdictional Approach. The process will take place within the same district/sub-district level as the Component 1 pilot and be led by District Planning Units who will be supported in identifying scalable revenue streams. These can be knit together into blended financial mechanisms to bear the cost of transitioning to a sustainable system. DSFPs will be elaborated using a highly consultative process involving ASGM stakeholders, including ASGM miners and cooperatives formalized under Component 1 but also local gold buyers, equipment manufacturers,

ore-assaying labs, local technical schools[162] , and vulnerable groups such as women and youth. Once defined, the DSFP will be financed and implemented through the means identified in the plan.

Complimentary information on the current socio-economic situation of the ASGM sector in the country will be gathered to support the elaboration of the DSDP.

Activity 2.1.2: Support the development by financial institutions of financial products/mechanisms specifically addressing the needs of mining communities.

The first step in the development of improved financial products for the ASGM sector will be to conduct an assessment in order to capture mining communities? needs and current gaps in the financial offer proposed by Zambia?s FIs. The assessment will take into account the difference in access to finance between genders. It will also assess the feasibility of facilitating ASGM miners? access to financial services through mobile financial services in partnership with mobile money service providers and telecommunications companies. This could allow ASGM miners to manage and transfer money by simplified mobile app on their phones thereby facilitating savings and the transfer of money to their relatives who later on spend it in the real economy. A mobile app could also provide ASGM miners with information about the gold price at the time when they sell it thus strengthening their bargaining position[163]. The assessment will be conducted under the leadership of the Ministry of Finance which has been identified in the NAP as the key player in this part of the strategy.

The diagnostic study will be used to identify volunteer and most capable financial institutions, and the most relevant stakeholders to get involved in the delivery of financial products adapted to ASGM miners? and rural communities. Capacity-building events on improving access to finance to ASGM and proposed methodological and technological support will then be provided (see Output 2.2).

Afterwards, the project will support the development of financial products specifically addressing the needs of mining communities. According to the UNECA?s (2002?12) Compendium on Best Practices in Small-Scale Mining in Africa[164], examples of tools enabling increased access to credit and finance could be:

- ? Establishing loans targeted to specific needs of small-scale mining projects.
- ? Making the government a grantor so that small-scale miners do not have to have collateral when applying for loans.
- ? Making the amount of the loan based on actual requirements following the previously established assessment.
- ? Establishing equity-based financing to promote joint ventures.
- ? Establishing hire-purchase schemes that enable small-scale miners to access and acquire equipment through the payment of small affordable instalments.

Output 2.2: *Capacities of ASGM actors on due diligence and transparent and traceable supply chains are built.*

Activity 2.2.1: Support the operationalization of gold buying programme.

The project could build on the ZCCM-IH state gold buying initiative and support its personnel in further operationalizing accredited gold buying centers distributed in strategic locations near the project?s pilot sites in order to serve as many ASGM miners as possible. This will allow the

government to buy gold from primary and secondary producers as well as traders[165]. These centers will be directly linked to the Bank of Zambia and prices will be indexed on the international gold market in order to state competitive in comparison with illegal middlemen and smugglers.

This will be confirmed during the project inception phase. Alternatively, the project will work to improve the traceability and transparency of the gold supply chain in Zambia.

Activity 2.2.2: Provide training sessions for cooperatives: (a) mining rights and duties, (b) finance and accounting and business plans, and (c) the implementation of OECD DDG and planetGOLD responsible gold criteria.

Once in place, cooperatives will receive technical trainings in a number of important areas to enhance their capacity to access finance, such as trainings in mining rights and trade. Mining cooperatives supported under Component 1, as well as existing cooperatives if they exist in the areas of intervention, will also receive trainings in the areas of financial literacy, financial accounting, bookkeeping, and cost calculations through gender-sensitive training courses. The project will also work towards better traceability through support for the adoption of a user-friendly mobile application to report data on ASGM, to enable ASGM actors to make more informed decisions. Finally, cooperatives will then be supported in the development of sustainable business plans, to ensure the proper long-term management and sustainability of operations. Such business plans will use the existing OECD DDG and planetGOLD responsible gold criteria. This support will be integrated with the piloting of the Jurisdictional approach and directly linked with support for opening of bank accounts, preferably with bank partners providing mobile phone services to ease savings and transfers (Output 2.1). The project will work toward reaching the NAP objective of facilitating 40 ASGM cooperatives to open bank and/or mobile accounts. Cooperatives will be assisted in developing business plans while establishing savings and loan groups in ASGM communities.

Component 3 ? Enhanced uptake of Mercury-free technologies

Zambian ASGM miners use inefficient and irresponsible mining practices. Empirical exploration of exploitation sites, low gold recovery techniques and technologies (including the use of mercury), and uncontrolled settlements near extraction sites associated with deforestation, and abandoned mined pits; impact ASGM miners health, surrounding communities, and environment, and more broadly Zambian forested landscapes. This is mainly due to their lack of knowledge about (i) gold mineralization and (ii) alternative techniques and responsible mining practices. For those starting to work in the ASGM sector, rudimentary tools and techniques are indeed the most accessible and cheapest option. Due to ASGM miners? limited knowledge of mercury-free techniques and high reliance on the available equipment providers, a majority of ASGM miners do not have access to responsible mining techniques and tools.

Under this component, the project will conduct activities in pilot sites with the aim of reducing damaging mining practices and eliminating mercury use. Promoting and introducing alternative mercury-free technologies on the pilot sites is expected to contribute directly to reducing significantly mercury used at ASGM project sites within 5 years of the project implementation. This Component is related to a broader strategy aiming at reducing mercury use in the ASGM sector and mitigating wider impacts, in compliance with the Minamata Convention and the ASGM NAP. To date, only a few initiatives have been conducted to implement mercury-reduction activities in ASGM sites.

Adopting mercury-free techniques will provide economic, environmental, and health benefits to both women and men in pilot sites. First, once the techniques most relevant to ASGM miners? needs are taken up, there will be enhanced gold production, through an increased gold yield associated with more efficient processing equipment, which will thus generate additional revenues for ASGM miners. The reduction of mercury use in mining will also reduce the amount of mercury dispersed in the air, water, and soil, and reduce the exposure of humans and ecosystems to toxic mercury. At last, the awareness raising and trainings on better mining practices and the dangers related to the handling of mercury (supported under Component

4) will bring an enhanced knowledge and uptake of sustainable mining practices among ASGM miners, decrease dependence on mercury, and result in improved health and environment for ASGM miners and local communities living near ASGM sites.

Outcome 3 ? Reduced mercury use in ASGM enabled by the increased uptake of mercury-free technologies & techniques by ASGM miners.

Currently, baseline data on mercury use in ASGM, as well as data quantifying gold resources and production, is limited. One of the critical factors of productivity in the gold extraction process is the type of mineralization of the gold found in geological layers. Depending on the type and size of gold particles, different techniques can be used and optimized to get a good recovery. This kind of information is also important as the government of Zambia has declared gold as a strategic mineral and wants to increase the country?s production in the coming years. A geological assessment would allow for the quantification of gold resources both in tonnage and quality; information needed to inform high-level decision-making. In addition, geological data are basic information required by financial institutions to consider an investment. However, to date, there is no recent geological assessment of the gold resource available in Zambia neither at a national scale nor at a local scale. Considering these elements, the project will support the geological assessment in selected areas. The data produced will be used not only to choose the most relevant technologies and techniques but also to inform the DSDP and DSFP supported under Components 1 and 2 and to strengthen ASGM miner's financing application (also supported under Component 2).

Based on the geological data produced, the project will support the development and uptake of mercury reduction and/or mercury-free technologies. Partnerships will be built with relevant universities to develop the most appropriate equipment, techniques, and training materials. Equipment providers will also be solicited to suggest and/or lend innovative technologies or prototypes. This is thus aiming at tightening the linkages between the private sector and ASGM operators. Building on UNEP Practical Guide[166] recommendations and the lessons learnt from GEF interventions in the ASGM sector[167], the project will target ASGM miners? buy-in for the proposed practices and technologies by ensuring at least a maintained or in the best case, an increased related income. This can be achieved by proposing the most appropriate and profitable alternative lying under these three possibilities: cutting back on reagents, improving productivity, or getting better selling prices (supported under Component 2).

Finally, according to the baseline study performed within the framework of the ASGM NAP, there is no management system put in place to handle mercury-contaminated tailings arising from the processing of gold where large amounts of mercury are utilized. The project will therefore implement pilot wastes and tailings management systems that are accessible and affordable for ASGM communities as well as meet international standards. The implementation of these systems will further reduce the leakage of mercury into the environment while bringing added value to the raw material, further facilitating formalization (regarding the environmental requirement for license application) and eventually generating more wealth through higher selling prices inflated by responsible mining practices.

Output 3.1: *Improved gold mining practices and mercury-free technologies addressing gender-differentiated needs introduced in selected sites.*

Activity 3.1.1: Update baseline information on mercury use in ASGM and data on gold resources in selected Districts.

As a first step, an updated baseline assessment will be conducted on current mercury usage in ASGM, mining practices, the needs and challenges encountered regarding mercury-free technologies in each of the selected sites. This will allow the project to identify the most urgent ASGM miners? needs, tailor the content of the trainings to be provided, and prepare adequate equipment to be introduced on site. This assessment will include information on ASGM miners? expectations and availability for the program trainings and identify key ASGM actors playing an important role in providing the trainings and facilitating the provision of equipment and new technologies. For instance, the School of Mines at the University of Zambia

does run some short courses on mercury-free technologies ? though these kinds of partnership needs to be further investigated. Beyond collecting information, this participatory baseline assessment will allow the engagement of ASGM miners and stimulate their participation in the trainings.

As per the NAP ASGM recommendations, the baseline study will be supplemented by geological assessments conducted in both Rufunsa and Chongwe Districts. Indeed, the necessity to conduct geological assessments in strategic areas has been also recognized by the Ministry of Mines and Mineral Development, in 2018, by the application to the Ministry of Finance for funding of USD 500,000[168]. However, as of 2021, when the draft of the NAP has been finalized, those surveys haven?t been conducted yet. In line with the communication strategy developed under Component 4, the outcomes and conclusions of the geological assessment will be comprehensively presented and disseminated to ASGM miners? communities.

Activity 3.1.2: Support partnership with private sector and knowledge institutions to develop and implement mercury-reduction and mercury-free technologies.

Based on the information gathered through the geological assessment, partnerships with universities and equipment providers will be developed to undertake Research and Development (R&D) that aims at uncovering efficient mining and mineral processing techniques that lead to the economic exploitation of gold resources. The techniques to be applied in the ASGM sector should be locally available, exhibit high technical efficiency and must be environmentally benign[169].

Thus, a training program on better mining practices and cleaner technologies will be developed, with a focus on increased productivity but also land rehabilitation and forest-smart mining, highlighting the economic and environmental benefits that will derive from the adoption of such practices (in line with other aspects of the Jurisdictional Approach adopted by the project). To introduce better mining practices with the adjusted measures, the following parameters will be taken into consideration: costs and energy requirements; ease of use; relative amount of time used; effects on gold recovery; scalability; environmental and health impacts; suitability to the local ore geology; and local availability of tools and capacity for developing and introducing new tools. Moreover, the mercury-free processing techniques will be introduced in each of the pilot areas (two total) following two stages. Each of the interventions requires to be conducted according to the specific needs identified in the baseline assessment. First, one short-term intervention, aiming at improving the current methods and technology (e.g. sluices, use of sieves, and magnets) will be introduced and equipment provided. This will enable ASGM miners to work with appropriate tools, reducing occupational health risks and increasing the amount of gold extracted. As part of this approach, hands-on practical field trainings on short-term improvements to mining methods (e.g. sluices, use of sieves, and magnets) will be provided to ASGM miners, to reduce mercury use and mitigate worst practices. During this training, various practices will be tested and discussed with ASGM miners, to see which practices work the best and are the most preferred.

In the second phase, the introduction of new technologies (e.g. jaw crushers, ball mills) will be facilitated. These low-cost interventions are expected to improve gold production at minimal cost and to be accepted by ASGM miners as they allow them to augment their earnings.

The identified partners, such as NGOs and SMEs, will provide their expertise and operational support to facilitate the procurement of equipment in a timely and efficient manner. Finally, ASGM miners will be identified as mastering the new practices and showing a willingness to sustain their use in the long term and will be provided with maintenance and spare-parts training sessions[170].

Once the ASGM miners have adopted the mercury-free technologies, demonstration sessions involving professionals will be held to showcase the use of mercury-free technologies by ASGM miners more widely and explain the technologies used. This will be presented to key local stakeholders, and a professional video will be made to reach a wider audience amongst ASGM stakeholders and communities, as part of the scale-up and replication strategy of the project.

Output 3.2: *Improved waste and tailings management implemented in selected sites.*

Activity 3.2.1: Implement water recycling best practices at one pilot mining site, and any other measures deemed necessary to protect water resources from mining effluent.

Measures to protect water resources from the adverse impacts of mining activities, including water recycling, will be designed and implemented by the project, based on best practices and lessons learnt from other planetGOLD projects.

Activity 3.2.2: Implement a centralized waste management system.

As part of the baseline study performed within the context of the ASGM NAP development, mine wastes, including mercury and mercury-contaminated wastes, have been identified as a major source of land degradation and riverbed contamination. However, from the baseline study, it was noted that there was no management system put in place to handle any waste arising from the processing of gold where large amounts of mercury are utilized.

In this context, the project will address this issue by implementing a pilot waste management system in one selected intervention site. Building on experiences in other countries[171], the idea is to implement waste management systems that are accessible and affordable for ASGM communities while meeting international standards.

As recommended by the UNEP Practical Guide on Reducing mercury use in Artisanal and Small-scale Gold Mining, a general framework could be:

- ? Centralized waste management
- ? Train ASGM miners and develop a community governance structure
- ? Elimination of mercury from the waste stream
- ? Clean-up of contaminated sites - reprocess and dispose of existing poorly managed tailings
- ? Establish environmental monitoring system and measure improvements through environmental assessments

Activity 3.2.3: Organize demonstration sessions to showcase the system and communicate the results to inform decision making.

This model processing plant will, later on, be used as training center for other ASGM miners to demonstrate appropriate waste treatment practices. Lessons learnt from this pilot system will be communicated to the relevant senior management ministries and government representatives and across ASGM districts.

Component 4 ?Knowledge sharing, communication and local capacity building support.

Component 4 of this project will seek to ensure great communication and knowledge sharing about all the capacity-building contents and lessons learnt produced from the previously described components of this project, across scales and stakeholders. The purpose is to create a solid basis for the sustainability of the project outcomes. This communication strategy aims at maximizing its outreach by creating knowledge products targeting local, national, and international stakeholders including under the umbrella of the planetGOLD program.

In this respect, the project aims at achieving the planetGOLD program objectives on knowledge sharing thus contributing to collectively building an improved understanding of the ASGM sector amongst project-participating countries and the wider ASGM community, including governments, mining communities, and the general public[172]. Lessons learned from the interventions of this child project will be made available through the planetGOLD knowledge management platform. This will allow non-participating countries to identify the management and technical options that best fit their local conditions.

Building on the lessons learnt from past GEF projects, the planetGOLD project will ensure early and sustainable commitment of stakeholders throughout both: (i) an early starting of the communication with relevant stakeholders about the project and the activities proposed[173], including developing an awareness raising campaign about the dangers related to the use of mercury; (ii) the presentation and dissemination of results of the project (for instance baseline assessments or geological surveys) to the stakeholders involved after the completion of activities[174].

This component will focus on developing knowledge products that are relevant, adapted, and highly usable by the different groups of targeted stakeholders. Gender will be mainstreamed across these knowledge products, taking into account the differentiated needs of women. Moreover, the specific skills and capacities of women will be leveraged to ensure they can also be agents of change in decision-making processes and will be actively engaged as effective communicators. This approach will apply, amongst others, to training materials developed by the project, and will be used in the project?s capacity-building activities undertaken under all the three first components of this project.

Outcome 4 ? Information and knowledge shared lead to improvement in the management of the ASGM sector in Zambia.

Output 4.1: *Knowledge products and tools developed through the project are made available nationally to all planet GOLD project stakeholders in Zambia.*

Activity 4.1.1: Design and implement awareness raising campaigns
Limited knowledge and access to information about the dangers of mercury have been identified as a major barrier to the withdrawal of mercury in the gold process. The project will therefore develop an awareness-raising campaign, as well as finance a study in partnership with health research institutions, on the health impacts of mercury in the selected project sites.

To make sure to properly capture the level of knowledge and capacities regarding mercury management, a prior capacity assessment of the targeted stakeholders will be performed.

The campaign will then be developed and unfold towards government ministries and ASGM communities, the private sector, academia, CSOs, and the media.

A partnership with will be created to implement advocacy and public awareness programs in order to disseminate information and foster community participation in environmental management.

Activity 4.1.2: Localization and distribution of GEF planetGOLD programme EIC

The project will facilitate the localization and distribution of planetGOLD programme Education, Information and Communication (EIC) materials to local stakeholder in Zambia. This will be done by translating appropriate EIC materials into local languages, adapting or simplifying existing resources where necessary, and incorporating these into sensitization and training activities conducted in components 1,2 and 3.

Special attention will be given to building the capacity of stakeholders in understanding sound management of chemicals and the sources of mercury releases and their effects on human health and the environment in order to take necessary precautions and support the availability of mercury-free alternatives. Training programs for government ministries will be conducted with the expectation that some of the capacity building will be retained in institutions? corporate memory and reflected in policymaking.

Activity 4.1.3: Support participation in national and regional knowledge sharing opportunities and events

The project will support various stakeholders participating in the planetGOLD project in Zambia to attend knowledge sharing activities and events hosted in Uganda, as well as additional opportunities for sharing information with regional stakeholders in the Southern Africa region. This will allow these stakeholders to share lessons learned with their peers in Zambia and in other countries. Main events will include the following:

1. ICGLR Meetings related to Formalization of the Gold Sector
2. Mining Conventions in Zambia and regionally
3. Africa Union Mining Meetings
4. Workshops hosted by academic institutions, NGOs or professional associations in Zambia or regionally relating to formalization, access to finance and/or mercury-free technologies.

Output 4.2: *Knowledge products and tools developed through the project are available globally through the planet GOLD programme*

In order to provide input into the monitoring and evaluation of the planetGOLD programme as a whole, the project will provide regular reporting to the global project on key indicators, activities and areas of progress. Furthermore, the project will also actively participate in various internal programme-wide coordination events, to enhance ongoing communication and knowledge sharing among the projects of the planetGOLD programme.

Activity: 4.2.1: Participate in planetGOLD Knowledge sharing activities and events

The project will support various stakeholders participating in the planetGOLD project in Zambia to attend knowledge sharing activities and events hosted by the global component, both virtually and in-person (Covid-19 restrictions permitting). This will allow these stakeholders to share lessons learned with their peers in other countries, and create a community of practice upon which different stakeholders can rely on. This will include an Annual Programme Meeting (APM) and the planetGOLD Global Forum (GF), as well as one other international forum per year, depending on the particular focus and agenda (e.g. the OECD Forum for Responsible Mineral Supply Chains, the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development, etc.). In addition, the project?s Communication Manager will participate in a programme communications network that includes monthly calls, a digital communications platform, trainings and sharing of information of major country-level events and activities. The Communication Manager will also attend the GF and the communications network side meeting at the APM. Additional opportunities for sharing

lessons learned and experiences from the project will also be identified, such as by hosting, either independently or through the global programme, webinars and workshops on particular thematic issues to international stakeholders.

In sum, the project will:

- ? Participate in a virtual inception/ implementation orientation with global program staff
- ? Send two representatives to each Annual Programme Meeting
- ? Have project managers attend bimonthly programme coordination calls
- ? Have project managers participate in regular (~quarterly) Programme Advisory Group (PAG) calls, and attend or delegate attendance of relevant staff to ad hoc PAG subcommittee meetings;
- ? Adopt stakeholder engagement strategy consistent with program guidelines

Activity 4.2.2: Produce knowledge products (Components 1, 2 and 3)

The project will produce a series of knowledge products that document the approach taken in each of the first three components, as well as the successes, challenges and lessons learned throughout the implementation of the project. These may be adapted as other planetGOLD projects develop complementary knowledge products, in order to avoid duplication or redundancy. The following knowledge products are planned:

- ? Lessons in Applying the Jurisdictional and Landscape Approach in Zambia?s ASGM Sector (Publication): This publication will focus on sharing the lessons learned from applying the JA/LA, which is a new approach for the sector. The publication will share both the challenges that were encountered, opportunities for improvement or replication, as well as accomplishments and successes.
- ? Impact of Access to Finance for the ASGM Sector (Infographics/Case studies): Infographics documenting the impact of access to finance to artisanal miners and cooperatives, including finance model chosen, data submitted to financial entities, total amount of financing disbursed, repayment rates.
- ? Lessons learning in implementing mercury-free technology (Video): This video will seek to specifically document how the project?s technical assistance adapts to the realities of ASGM actors in Zambia ? namely the very small quantities produced by individual actors ? in order to identify the appropriate technologies and incentives for sustaining their use. On the narrative, the report should include the initial ore assessment, rationale and final design of the circuit, total throughput, gold recovery rates, uptake by miners, and associated costs.

Activity 4.2.3: Contribute to the planetGOLD knowledge platform and programme communication activities

The project will share information and learnings with the planetGOLD knowledge platform through various communications means, such as technical briefs, blogs, news articles, videos, or photographs. This will include publication of at least one original blog article per year on planetGOLD.org, notifying the global project for incorporation in global editorial calendar. These activities will be coordinated with the global programme to ensure maximum added value based on existing resources produced by the programme.

For reporting purposes, the project will submit data once per year to the global project on:

- ? The programme level indicators:
  - amount of mercury avoided
  - amount of finance mobilized (disaggregated by gender)
  - amount of?mercury free/ responsible gold sold to formal markets?
  - number of beneficiaries assisted in formalization by the project (disaggregated by gender)
- ? Additional global environmental co-benefits for which the project has set targets;
- ? Key achievements on project-specific outputs and activities, using template provided by global project, including reporting on efforts to ensure that all planetGOLD beneficiary mining entities conform with the planetGOLD Criteria for Environmentally and Socially Responsible Operations

The project will also provide **narrative reporting quarterly** to the global project on key activities and areas of progress toward achieving the program and project-specific indicators, using a template provided by global project.
Under this activity the project will:

- ? Participate in a virtual inception/ implementation orientation with global program staff
- ? Send at least two representatives to each Annual Programme Meeting
- ? Have project managers attend bimonthly programme coordination calls
- ? Have project managers participate in regular (~quarterly) Programme Advisory Group (PAG) calls, and attend or delegate attendance of relevant staff to ad hoc PAG subcommittee meetings;
- ? Adopt stakeholder engagement strategy consistent with program guidelines

The table below summarizes the interaction between the global and child project under the programme.

Table 2: planetGOLD Global and Country level activities

Country Project Activities	Global Project Activities
Coordination and Monitoring	
Include planetGOLD programmatic indicators in results framework and submit data once per year to the global project for these indicators as well as other information on project-level achievements per project-specific logframes	Produce annual progress report for programme that includes narrative as well as quantitative reporting from all projects on achievement of project level and programme-level indicators

Provide narrative reporting quarterly to the global project on key activities and areas of progress	Produce quarterly summaries of key activities and progress across programme for dissemination to PSC and Programme Advisory Group
Participate in inception/ implementation orientation with global program staff	Organize and facilitate inception/implementation orientation for country projects to provide clarification on cross-programmatic coordination and knowledge sharing activities
Project managers attend bimonthly programme coordination calls	Organize and facilitate bimonthly programme coordination calls
Project managers participate in quarterly Programme Advisory Group (PAG) calls, and attend or delegate attendance of relevant staff to PAG subcommittee meetings	Serve as secretariat to PAG, organize and facilitate quarterly PAG calls and subcommittee meetings
Ensure that all planetGOLD beneficiary mining entities conform with the planetGOLD Criteria for Environmentally and Socially Responsible Operations through review of the planetGOLD Environmental and Social Risk Assessment Report and the Mitigation Report	Further develop, disseminate, and socialize the planetGOLD Criteria for Environmentally and Socially Responsible Operations Assist country projects to access existing trainings and resources to implement these criteria
Adopt stakeholder engagement strategy consistent with program guidelines	Elaborate and disseminate overall stakeholder engagement guidelines for programme participants
Communications	
Develop project strategy for communications and stakeholder engagement in alignment with global communications strategy	Further refine and disseminate global programme communications strategy, including recommendations for approach and messaging
Utilize planetGOLD country logo and brand assets for all communication materials	Disseminate suite of planetGOLD country logos and brand assets (templates for fact sheets, reports, presentation slides, event banners, etc)
Adhere to planetGOLD style guide and messaging guide in production of external materials, adapting global messages to national context	Disseminate style guide and messaging guide documents to all child projects
Share and store both raw and edited photo files, video files, graphics, and other visual assets in a timely manner with the global project via a shared Google Drive for global promotion and dissemination	Create communications products to promote responsible ASGM at the international level and stories of success or lessons learned among country projects
Country project communications managers participate in programme communications network, including regular calls, digital communication platforms, trainings, and notification to the global project of significant comms-related activities or story leads at country level	Facilitate programme-wide communications network, tools for collaboration, and plans for cross-programmatic communications activities
In years when the APM is held in concert with the GF, also send the communications manager to attend the GF, and the communications network side meeting for the APM	Organize and facilitate the planetGOLD communications network side meeting for the APM
Publish at least one original blog article per year on planetgold.org, notifying global project for incorporation in global editorial calendar	Maintain global editorial calendar and support country projects in publishing original content on website and other planetGOLD communication channels
Knowledge Management	

Send 2 representatives to each planetGOLD Global Forum (GF)	Organize and facilitate the planetGOLD Global Forum every two years for exchange of lessons learned between child projects and other ASGM stakeholders
Send 2 representatives to each Annual Programme Meeting (APM)	Organize and facilitate the planetGOLD Annual Programme Meeting each year
Country project subject matter consultants (finance, gender, technology, etc) participate in regular (~quarterly) knowledge exchange meetings/networks	Organize and facilitate regular (~quarterly) knowledge exchange meetings/networks for subject matter experts
Share relevant (non-confidential) project materials, approaches and documents that may provide relevant information or serve as examples/models to other country projects. Examples of such material may include information on selection of Hg processing systems; due diligence pilot results; training materials of common interest (eg gender in ASGM).	Facilitate the sharing of relevant information and materials across all child projects, and develop original knowledge products or organize knowledge sharing opportunities on key gaps or areas of interest across the programme based on inputs received from country projects.
Ensure that all public facing documents produced by the country project are either uploaded to the planetGOLD website or link is provided if the document is housed elsewhere	Manage knowledge repository and broader knowledge sharing via the planetGOLD website, email listserv, and other dissemination channels.

d) Alignment with the GEF focal area and/or impact program strategies

The project primarily supports the GEF Chemicals and Waste Focal Area, with multiple co-benefits for the local ecosystems. Therefore, it is well aligned with the GEF focus on facilitating the reduction of the use of chemicals with a shift to sustainable production and consumption and through stronger private sector engagement, in particular through the piloting of jurisdictional approach and the work to be conducted under component 2. In particular, the project is aligned with the following priorities:

? Eliminate the emissions and releases of mercury in activities and processes listed in Annex C of the Minamata Convention, particularly those activities that emit or use the highest level of mercury as well as support the control of supply and trade, waste and sound management and storage of mercury and mercury-containing waste:
    - Reduction and elimination of mercury from the Artisanal and Small-Scale Gold Mining Sector.
? Support government efforts to develop and promote the best practices for the environmentally sound interim storage of mercury from the ASGM sector.

The project is further aligned with the Sustainable Forest Management Impact Program, with its focus on the formalization of the ASGM sector as well as the adoption of the Jurisdictional Approach. The Sustainable Forest Management Impact Program has a focus on drylands, where integrated landscape management and restoration are used to address the physical, biological and socio-economic aspects of the processes of land degradation, with specific attention to desertification and deforestation to maximize the delivery of multiple benefits in the context of food security and livelihoods of affected communities. The GEF focuses on supporting wide applications of innovative tools to prioritize policy reforms, investments, and other interventions to optimize the collective impact of all interventions across the landscape. The GEF also supports the development of adequate policies and financial mechanisms that aim to address the drivers of dryland degradation and promote the diffusion of land use practices, land and forest

conservation, restoration, and sustainable management at a scale consistent with the magnitude of these drivers. Hence, by addressing ASGM operations directly, and promoting good mining practices through a JA approach, the project addresses a key driver of dryland degradation.

e) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

Current Baseline (BAU Scenario) / Future Scenarios Without the Project

Under the Business-as-Usual scenario, the ASGM sector will remain poorly regulated, and formalization will lag; small-scale miners will continue to have limited knowledge and awareness of good mining practices, the impact of mercury on human and environmental health, and the skills and knowledge to switch to alternative livelihoods; and access to formal, transparent gold supply chains will remain difficult for small-scale and artisanal miners with little production of responsible gold. As a result, the current trend of an increase in ASGM will continue through ?gold rushes?, leading to devastating environmental and human health impacts, as ASGM miners will increase the use of mercury to extract gold, expand mining areas without consideration for sustainable forest, land and water management, ultimately causing more land degradation, deforestation, and adverse health and environmental impacts in Zambian communities. As such, efforts toward achieving the objectives of the National Action Plan for Artisanal and Small-Scale Gold Mining in Zambia will fail without GEF intervention.

Without the project intervention, governments formalization initiatives will continue to be uncoordinated based on an inappropriate legal and policy framework. ASGM will remain treated in isolation from the general sustainable development of the country. The low implementation of the ASGM NAP will in addition impede Zambia to comply with its obligations contained in the Minamata Convention.

Moreover, without strong institutions and effective governance mechanisms, the informality of the ASGM sector will continue. Gold trade in Zambia will carry on avoiding the state control and monitoring, thereby preventing the government from collecting taxes that could fund social services investments and programs. Indeed, without this project, the vast majority of ASGM workers will continue performing their activities unlicensed and therefore without official recognition and consideration of their rights by the state.

In addition, ASGM miners will continue to have limited financial, legal, or technical education preventing them from accessing financial services or adopting sustainable mining practices. The difficult access to financial services is further accentuated by the fact that current financial products and conditions are unsuitable for ASGM miners (heavy administrative process, demanding initial requirements). Without the project intervention, the ASGM sector will continue to grow in the described context of informality and insecurity fueled by ongoing land-right based conflicts with large-scale mining companies, amongst others. Mining workers will be further left out of the formal gold market, preventing them from accessing financial services and income from legitimate sources.

Without the project intervention, ASGM will also remain treated in isolation, preventing it to establish valuable synergies that a landscape approach enables, leading to duplication of efforts or leading to competition between sectors.

Without the project?s intervention, gold processing will stay inefficient and gold recovery will remain low, due to limited access to geological information on gold mineralization, pushing miners to perform empirical exploration. This will also continue to prevent ASGM miners from implementing or developing mining techniques and technologies adapted to the type of gold they effectively encounter. This is likely to extend the surface areas considered for gold exploration based on uncertain assumptions as well as keeping ASGM miners in financial precariousness due to the low yield of their activity.

Without GEF intervention, unsustainable practices associated with the gold mining process, such as illegal bush-camps, deforestation, and abandoned mines pits will further compound the negative effects of the mercury releases to the ecosystems, while putting further pressure on the ecosystem services they provide.

Small -scale and artisanal miners and surrounding communities are, and will continue to be, exposed to mercury, especially in amalgam burning sites where mercury concentration in vapors can be alarmingly high which risks the health of workers and related communities[175]. Without the project?s intervention, ongoing severe health problems in ASGM miners? communities associated with exposure to mercury will continue and deteriorate further. Mining communities will continue to be at risk of incurring nervous, digestive, immune, lung, and kidney problems, eventually leading to fatal outcomes. Their well-being will be impeded with indirect effects of poor mining practices such as the increased prevalence of malaria, or land and water contamination by wastewater from bush camps.

Cost Effectiveness Analysis of Chosen Scenario

The cost-effectiveness of the project will be ensured by building on other initiatives and bridging gaps identified. It will coordinate closely with other proposals on the ground to ensure the efficient use of financial resources, avoid duplication of efforts, and scale up impact.

First, the project will support the NAP implementation through the creation of a national coordination mechanism on formalization, which will contribute to the appropriate prioritization of formalization activities, and allocation of resources. As Zambia recently declared gold as a strategic mineral and published a national strategy for the formalization of the sector, ensuring cooperation, coordination, and dialogue on ASGM at the regional level will be crucial to support leveraging additional resources for formalization in line with national and local priorities.

Secondly, the formalization approach taken by the project is particularly cost-effective to reduce the use of mercury in the ASGM gold process, as illegal gold traders also provide ASGM miners with mercury. Indeed, the last UNITAR and UNEP Handbook ?Developing National ASGM Formalization Strategies within National Action Plans? used by all parties of the Minamata Convention states that: ?Formalization of the sector is seen by many as a pre-condition for the effective reduction and control of mercury use since it can facilitate organization, education, access to assistance, and the regulation of gold and mercury trade.?[176]

Recognizing that that mercury-free technologies adoption will only be possible if ASGM miners get tangible socio-economic benefits from the proposed alternative, improving their access to finance has also been identified as a cost-effective initiative. Building financial capacities and supporting ASGM miners in getting access to financial services will thus allow ASGM operators to invest in more efficient and responsible but also often costly equipment. This is expected to improve their productivity which will eventually enable them to move out of poverty as well as generate immediate environmental and health benefits.

The planetGOLD project in Zambia will also build capacity to improve mining practices and better manage natural resources, which will enable them to continue to provide valuable economic benefits in the long term. Negative impacts on nature will be reduced and adverse health problems prevented, reducing potential costs for environmental rehabilitation and healthcare. New revenue streams will be consolidated, formalized, or created through a value chain approach, and local entrepreneurs supported for instance in the implementation of mercury-free technologies. These measures will bring in additional income in a sustainable way to communities, and risks to livelihoods associated with mercury handling will be mitigated both through the project and other interventions it will partner with.

Finally, as part of the planetGOLD Programme, this project will contribute to resolving knowledge gaps on ASGM formalization and mercury-use reduction strategies on a global scale. The project will support the communication and knowledge-sharing strategy developed by the program to create an enabling environment for cross-learning and information sharing in order to build collectively a wider understanding of the issues related to ASGM. This implies organizing coordination events with other planetGOLD child projects as well as disseminating emerging good practices and the project?s lessons learned through knowledge products and communication events aiming at informing any relevant related initiative.

The size of the ASGM sector is estimated at 30,000 miners. Major environmental impacts of ASGM include mining along riverbeds and tributary systems, land degradation, mining in and around National Parks, and pollution from mercury use in gold amalgamation among others. In ASGM communities, social impacts such as poor working practices and conditions, gender-based violence, and child labour are reported.

Mercury use contributes to significant releases into soil and water. Exposure to inorganic mercury is reported to be high in ASGM communities. ASGM encroaches on natural forests and causes deforestation and land degradation.

The worst practices in the form of whole ore amalgamation and open burning of amalgam are reported and as such an ASGM intervention to introduce mercury-free processing is needed. Zambia?s creation of a Gold Strategy is a clear sign of the country?s interest in organizing the gold sector and formalization of the ASGM sub-sector. GRZ, through ZEMA, has since 2017 embarked on awareness campaigns on the effects of mercury on human health and the environment in ASGM areas. These on-going engagements are indicative of a conducive environment for eliminating mercury use in the ASGM sector. Zambia as a member of the regional bodies ICGLR and SADC can take a leadership role to provide lessons on ASGM formalization and mercury reduction. The emphasis on ASGM formalization in Zambia creates opportunities for the successful application of jurisdictional approaches to address mercury use, deforestation, and land degradation.

TABLE 3: SUMMARY OF INCREMENTAL BENEFITS OF THE PROJECT INTERVENTION

Business as Usual **(without project)**	**Incremental Benefits** **(With project ? contributions to the baseline)**
Continued mining along riverbeds and tributary systems, land degradation, mining in and around National Parks, and pollution from mercury use in gold amalgamation	The project will support the adoption of mercury-free technologies, hence reducing mercury contamination of the environment. In addition, the Jurisdictional Approach pilot will showcase the benefit of land-use planning and demarcation for ASGM.
Mercury use contributes to significant releases into soil and water. Exposure to inorganic mercury is reported to be high in ASGM communities. ASGM encroaches on natural forests and causes deforestation and land degradation.	Through the project, Zambia will have fewer mercury releases as a result of ASGM through the adoption of new technologies.

Lack of awareness of the impacts of mercury use in the ASGM sector will continue promoting the use of mercury	Through awareness raising, the project will ensure a more aware populace on the impacts/dangers of mercury use hence reducing the use of mercury and reporting any illegal smuggling of mercury into the mining zones.
The lack of finance for alternative mercury-free technologies continues to encourage the use of mercury in the ASGM sector in Zambia.	More access to knowledge of financing mechanisms available to the artisanal and small-scale miners will encourage the adoption of mercury-free technologies hence reducing the use of mercury in the ASGM sector in Zambia.

f) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

Environmental benefits

Land degradation: By creating an enabling environment for the adoption of responsible gold mining practices, the project will support the Global Environmental Benefits related to land degradation. In fact, beyond the reduction of mercury emissions, the project will contribute to the reduction of negative impacts associated with ASGM activities such as deforestation, abandoned pits and soil erosion. The formalization of ASGM operations through licensing will encourage miners to adopt better practices that comply with environmental protection such as conducting environmental impact assessments and land rehabilitation once mining is finalized. This will improve the forest ecosystems while promoting the conservation and sustainable use of biodiversity.

Sustainable Forest Management: Similarly, the introduction and adoption of Forest Smart Mining (FSM) practices will contribute to the Global Environmental Benefit related to sustainable forest management. These practices will reduce the forest loss and degradation associated with unsustainable mining practices while maintaining the range of environmental services and products derived from forest; and enhancing sustainable livelihoods for the local communities depending on these ecosystems.

Biodiversity: Adoption mercury-free technologies and better practices will enable ASGM miners to limit the release of mercury into the environment and reduce its negative impacts, contributing to the preservation of ecosystems, habitats and species.

Climate change mitigation: Reduced environmental degradation and better mining practices will increase the resilience of local communities to the impact of climate change. They will offer diversified livelihoods opportunities as well as the preservation of ecosystem services to the adverse impact of climate change and natural hazards.

Chemicals and Waste: In alignment with the Minamata Convention on mercury, the main purpose of the project is to eliminate the use of mercury in the ASGM sector. Therefore, the project will contribute to the Global Environmental Benefit related to the use of chemicals by contributing to the reduction and elimination of mercury use and preventing the anthropogenic emissions and releases of mercury and mercury compounds.

Core indicators

Core Indicator 4: Areas of landscapes under improved practices (hectares): Under the assumption that the pilot of the Jurisdictional Approach will take place in Chongwe, the totality of its surface area contained within the administrative borders of the district (243,880 hectares) is considered to be

under improved practices due to the development of a Landscape Action Plan. This target might be reassessed as the selection of the jurisdiction to be covered by the Landscape Action Plan is confirmed during the inception phase of the project.

Core indicator 9: Reduction, disposal/destruction, phase out, elimination, and avoidance of chemicals of global concern and their waste in the environment and in processes, materials, and products (metric tons of toxic chemicals reduced): The mercury use in the ASGM sector estimated in the NAP is not very high, 0.285 MT of mercury to produce 0.142 MT of gold per year, representing a 2:1 mercury to gold ratio. due to the use of Whole Ore Amalgamation (WOA). However, Zambia has an emerging ASGM sector that urgently needs policy guidance and sound management to minimize and eliminate mercury use. Assuming the project manages to successfully introduce cleaner technologies reducing the use of mercury at the intervention sites (e.g., concentrate amalgamation has a Hg:Au ration of 1:1[177]), the project aims to reduce mercury use in 0.286 metric tons during the implementation and using a replication factor of 3 for the reduction achieved after project completion, the total mercury use reduction achieve will reach 1.14 metric tons of mercury.

Core Indicator 11: Number of direct beneficiaries disaggregated by gender: Based on the available data, it is estimated that the districts targeted comprise approximately 4,341 ASGM miners in total, of which about 18% are women. Out of these, the project intends to directly benefit all, as well as an additional 6,920 individuals of the local populations through awareness raising campaigns reaching a total of 11,261 individuals (of which 4,417 women). For additional details on the calculation, please refer to the section on core indicators.

TABLE 4: TOTAL NUMBER OF BENEFICIARIES (DISAGGREGATED BY SEX)

Outcome	End of project target	Men	Women	Total beneficiaries
Outcome 1.: Enhanced formalization in the ASGM sector through multisectoral, integrated approaches and capacity building of actors	**Target 1.1.:** 40% ASGM miners in the project intervention areas are formalized by the end of the project, of which 30% are women (from a baseline of 2%)	1,216	520	1,736
Outcome 2.: Enhanced access to Finance by Financial Inclusion and Responsible Supply Chains	**Target 2.2.1.:** 300 (150 men and 150 women) ASGM miners using the mobile application to record ASGM data	150	150	300
	Target 2.2.4: 150 (of which 75 women) ASGM mining entities/miners trained on planetGOLD Environmentally and Socially responsible Criteria	75	75	150

Outcome 3.: Reduced mercury use in ASGM enabled by the increased uptake of mercury-free technologies by ASGM miners	**Target 3.1:** 650 miners, of which 325 women	325	325	650
Outcome 4.: Information and knowledge shared led to improvement in the management of the ASGM sector in Zambia	**Target 4.1.:** 8,425 (of which 3,636 women) beneficiaries changing their practices as a result of improved awareness	4,789	3,636	8,425
	TOTAL	**6,844**	**4,417**[178]	**11,261**

g) Innovativeness, sustainability and potential for scaling up

Innovativeness

There are several elements of the project which are innovative, starting with addressing the issues holistically associated with the ASGM sector, intending to ultimately eliminate mercury use in the sector. To achieve this, the project will work towards the formalization of the sector, including through the Jurisdictional Approach (JA). As such, the project will foster the integration of the ASGM sector into broader dimensions of landscape management. It will initially assess the context comprehensively and identify key entry points for JA in the ASGM context of the country. Then, it will work on developing Landscape Action Plans, which will, through a highly participatory approach, try to reconcile competing social, economic, and environmental objectives, with the government as a central stakeholder. It will encourage all stakeholders, from governments, ASGM actors across the gold value chain, businesses, local communities, and NGOs to work together towards the common objectives of eliminating mercury and securing natural capital through coordinated strategies across the sector. This will take place mainly under Component 1 of the project.

However, the JA approach will have implications for Component 2 of the project as well, in terms of the approach to financial inclusion and traceability of the gold supply chain. First, it will enable the sourcing of responsible gold from the areas where the JA is being piloted, as it will be inclusive of the ASGM sector, and create an incentive for ASGM actors to sell gold in the formal market where better prices may be obtained. This will be one of many aspects to be integrated into the Landscape Finance Plan for the pilot areas. Other opportunities will be sought, based on the priorities identified in the Finance Plan, to provide greater access to financing for ASGM actors. This will be key in enabling greater access to clean technologies and sustaining good practices in the long term.

Another key innovation will be the introduction of mobile data collection to enhance availability of, and access to, ASGM data.

The project will also introduce novel technology to the areas of intervention, which will be mercury-free, and more efficient than traditional mercury-based methods. It will partner with research institutions to ensure that the technologies are indeed well adapted to the local geological characteristics, as well as miners' personal preferences, while simultaneously improving productivity and protecting human and environmental health.

Sustainability

The project takes a multi-pronged approach to ensuring effective contributions to the intended project impacts beyond the timeframe of implementation. Through Component 1, the project will tackle the governance issues and the poor coordination at the institutional level to address ASGM formalization by building capacity for ASGM formalization in a number of ways. In terms of coordination mechanisms, as members will be leading the ASGM NAP implementation within their respective jurisdictions, their effective engagement from the onset will be adopted to ensure that they take full ownership of the process. These high-level policy makers? buy-in will enable the process of developing/revising/amending ASGM legislative frameworks to have a greater chance of success, and in turn these revisions will contribute to sustainability of formalization efforts in the ASGM sector. Also, the project will further develop capacity-building activities to provide stakeholders with knowledge and skills necessary for long-term implementation, and a Training of Trainers approach will ensure that capacity built can be scaled out and sustained over time. Guidelines and training tools used for the purpose of these workshops will also be developed within the scope of this project.

Component 1 will also support the organization of ASGM miners by supporting the creation of cooperatives, which will give multiple incentives (financial, legal, technical, knowledge sharing, etc.) to work in a formalized fashion in the long run.

The project will adopt the cross-cutting principle whereby a highly participatory approach to the process of reducing and eliminating mercury use in ASGM is necessary to ensure long-term sustainability. It will provide platforms for stakeholders to be engaged in meaningful ways, ensuring that all voices are heard (including the most vulnerable groups, such as women) and that project beneficiaries are driven to become agents of change. The participatory approach, through a strong awareness raising and communication strategy, will build ownership by the beneficiaries of the project results, and create an incentive to sustain behavioural change away from environmentally detrimental practices and towards the continued use and scale up of the adoption of the clean technologies and approaches promoted by the project (Component 3).

Also central to the sustainability of the interventions is the focus on creating the enabling environment for the implementation of the jurisdictional approach, which will ultimately ensure that not only ASGM has dedicated spaces to operate within the landscape (Component 1), but also promote the adoption of better mining practices by embedding the process into the development of transparent value chains that value sustainable exploitation of gold (Component 2), and lead to increased incomes for men and women, and improve overall environmental and human health. Component 2 will address some of the key financial barriers to the long-term sustainability of initiatives such as this project. It will both increase access to finance and create the framework for increased legal revenue streams from ASGM for miners and the State alike, through the development of Landscape Finance Plans. For instance, it could be expected that the financial sustainability of gold buying stations could take place through taxes collected in the formal gold market. Partnering with ZCCM-IH for Component 2 implementation is also a central part of the sustainability strategy of the project.

Potential for scaling up

The project interventions will contribute to the establishment of an enabling environment for the formalization of the sector at a national scale, setting the scene for the replication of activities further piloted through the project. Indeed, the project will take a pilot approach to its intervention on the Jurisdictional Approach and the introduction of innovative and mercury-free technologies for ASGM. Where immediately successful, the project will be able to adapt and replicate activities across the country and abroad. More importantly, however, lessons learnt from the project (successes and failures alike) will be used to inform the development of scale-up initiatives aiming at establishing and standardizing: (i) transparent and accountable gold value chains; and (ii) mercury-free technologies and best mining practices.

Training of trainers, awareness-raising campaigns, and effective communication of project results will all contribute to the replicability and scaling up strategy of the project. For instance, following the adoption of mercury-free technologies by ASGM miners at pilot sites, demonstration sessions will be held to showcase the use of mercury-free technologies by ASGM miners and explain the technologies used. Professionals will be on hand to

support the events, and a professional video in English and relevant local language (s) will be made to reach a wider audience amongst ASGM stakeholders and communities. Combined with other measures, awareness-raising campaigns on the impacts of mercury are expected to contribute to the broader adoption of mercury-free technologies, as long as it makes financial sense for ASGM miners. As such, supporting sustainable financing plans will also be key to adoption and scaling up.

The results of the mobile ASGM data collection and storage pilot will also enable the project to develop a scaling up strategy for that initiative, potentially replicating the approach in other planetGOLD Child Project locations and a national scale within Zambia.

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As a roadmap to ensure the compliance of Zambia with the Minamata Convention on Mercury, ZEMA has developed a draft National Action Plan (NAP) to transform the ASGM sector in a sustainable and an inclusive manner. After NAP submission, Zambia will have the obligation to report the progress on Minamata compliance under Article 7 every three years, according to the Minamata Convention. It is also required under Article 21 to include this progress review in the monitoring reports submitted to the secretariat.
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[160] The International Conference on the Great Lakes Region (ICGLR) is an inter-governmental organization of the countries in the African Great Lakes Region composed of Angola, Burundi, Central African Republic, Republic of Congo, Democratic Republic of Congo, Kenya, Uganda, Rwanda, Republic of South Sudan, Sudan, Tanzania and Zambia. The overall goal of the organization is to ?address the root causes of intractable conflicts and

constraints to development in a regional and innovative approach? Source: International Conference on the Great Lakes Region (no date) ICGLR Overview. (Accessed: 20 June 2022).

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[171] UNEP (2012) Reducing mercury use in Artisanal and small-scale Gold mining: a practical guide.

[172] GEF/UNEP/CI (2022) ?Project Document GEF 10836: Global Opportunities for Long-term Development of artisanal and small-scale gold mining ASGM) Sector Plus (GEF GOLD +)?.

[173] GEF-4569 project: ?Improve the Health and Environment of Artisanal and Small-Scale Gold Mining (ASGM) Communities by Reducing Mercury Emissions and Promoting Sound Chemical Management?

[174] GEF-4799: Implementing Integrated Measures for Minimizing Mercury Releases from Artisanal Gold Mining (Ecuador, Peru, Regional)

[175] UNEP (2012) Reducing mercury use in Artisanal and small-scale Gold mining: a practical guide.

[176] UNITAR & UN Environment (2018) Handbook for Developing National ASGM Formalization Strategies within National Action Plans.

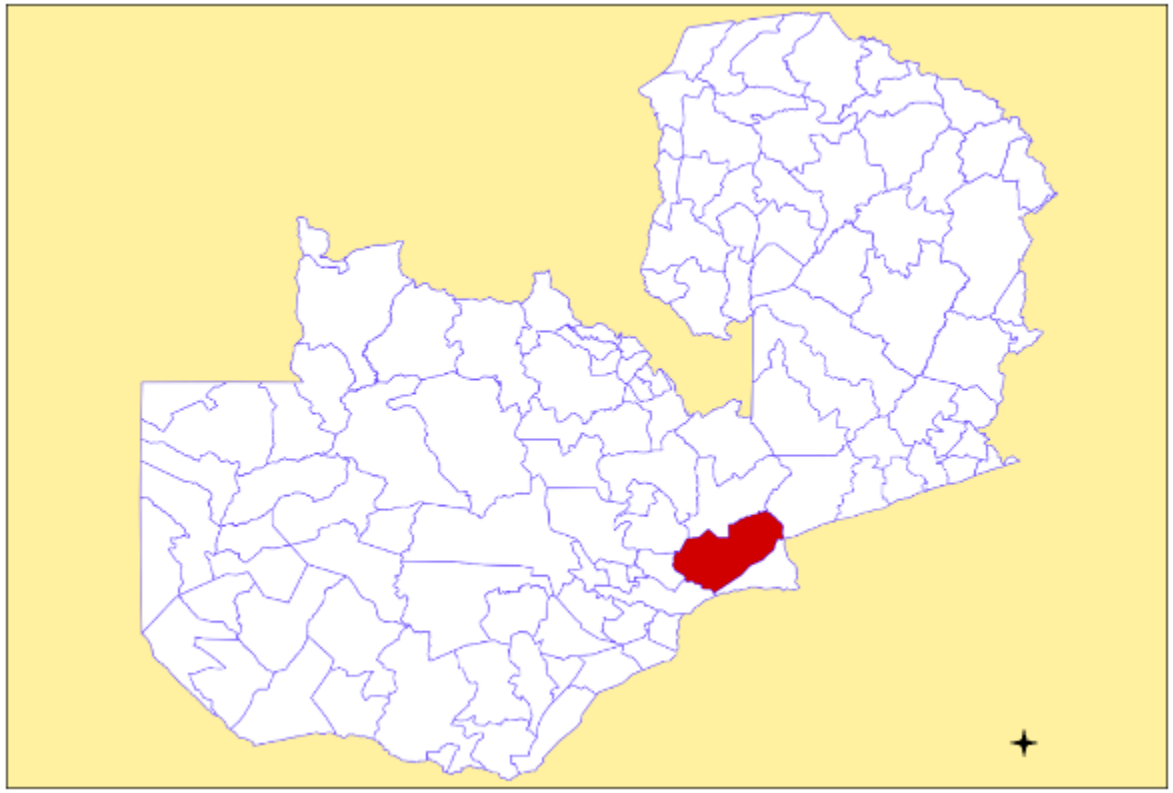
[177] UNEP (2012). Reducing Mercury Use in Artisanal and Small-scale Gold Mining. A Practical Guide. Available here.

[178] To avoid double counting the number of ASGM miners benefiting prom project, the total assumed ASGM female miners could not exceed a total of 781 or 18% of existing ASGM miners in target areas.

1b. Project Map and Coordinates

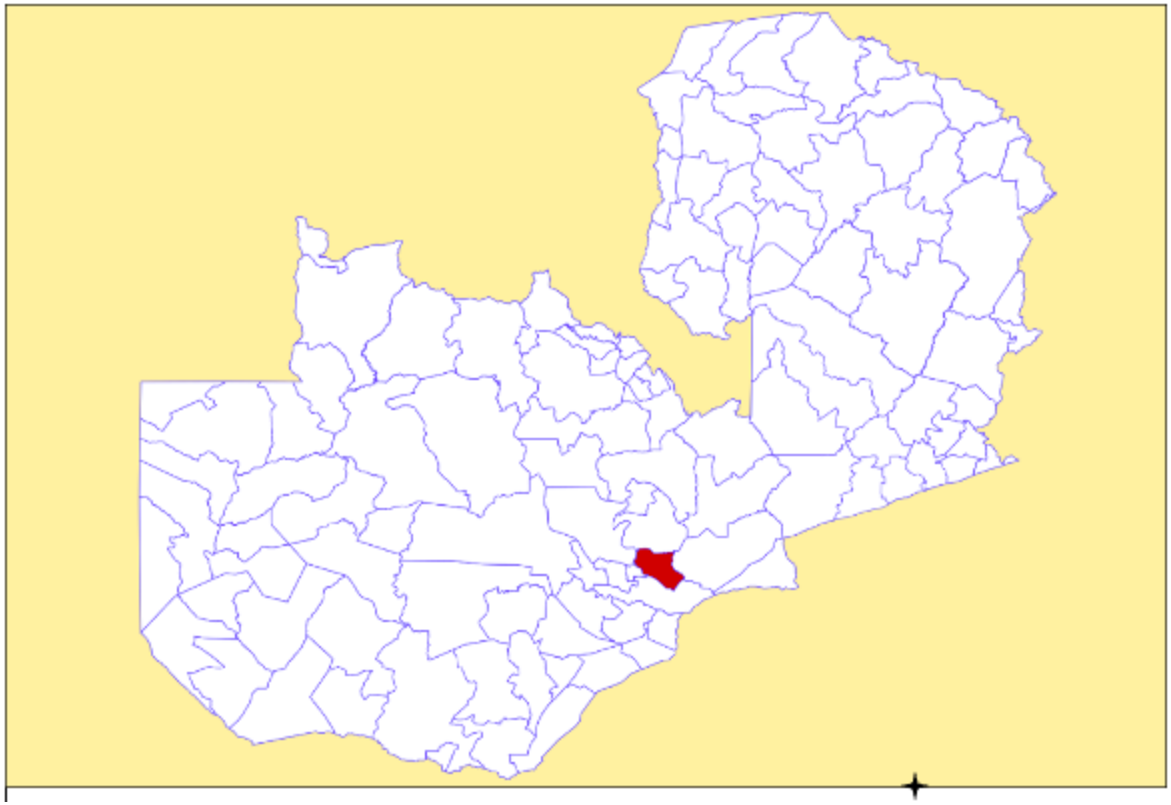
Please provide geo-referenced information and map where the project interventions will take place.

FIGURE 7: RUFUNSA DISTRICT



Star represents location of Mpanshya, Rufunsa District, Zambia: -15.10841, 29.73077 where most ASGM activity was observed during the NAP baseline.

FIGURE 8: CHONGWE DISTRICT



Star represents location of Chobwe Mine, Chongwe District, Zambia: -15.72, 29.33

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

This child project is part of the planetGOLD programme. The objective of the programme is to reduce the use of mercury in the ASGM sector in the participating countries through a holistic, multisectoral integrated formalization approach, and increase access to finance leading to adoption of sustainable mercury free technologies and access to traceable gold supply chains.

The Child project?s theory of change and objectives are thus aligned with the overall programme and focuses on 4 key pathways to achieve the programmatic outcome. These include an emphasis on supporting formalization of the ASGM sector, promoting access to finance for the ASGM

sector through making ASGM supply chains more responsible, introducing mercury-free technologies and equipment, and supporting knowledge sharing of best practices and learnings.

Under the first component, the project will support the Zambian government to continue existing efforts to create and implement a formalization framework for the ASGM sector by supporting the development or finalization of laws, regulations and policies that will guide formalization efforts across the country. Furthermore, the project will support the piloting of jurisdictional/landscape approaches in two Districts where ASGM is taking place, and will support a broader, multistakeholder approach to formalization. Given that this approach has not been widely used in the ASGM sector, the pilot projects will provide lessons learned and help generate potential best practices for its application in the ASGM sector of other countries both in and external to the global programme.

Under the second component, the project will support improvements to the responsible sourcing practices of ASGM associations and engage with various actors involved in access to financing in Zambia (e.g., refiners, banking institutions, credit associations, government-led lending programmes) to promote the expansion of their services or the provision of pre-financing to the ASGM sector. This work will include an initial scoping study to identify potential partners with whom the project can work and provide guidance or technical expertise. Activities under this component will contribute to increased knowledge, understanding and willingness to provide access to financing for the ASGM sector. Finding sustainable financing solutions for the ASGM sector will be the key objective of this component.

Under the third component, the project will carry out sensitization on the harms of mercury usage and practices to reduce these harms and eliminate the use of mercury altogether. This includes the roll out of mercury-free processing equipment with ASGM associations. Transition to mercury-free equipment is necessary to reduce usage of mercury in the sector but has proven difficult for a variety of reasons. The project will consider existing lessons learned from prior efforts to introduce new equipment, and share additional lessons learned throughout the project. This is particularly important as efforts to adapt to the realities of ASGM ? particularly given the rural nature of mining (which means essentials such as electricity or gas can either be inaccessible or very expensive), the small quantities that are produced and the economic dependency that some miners have on gold and mercury traders ? need to be considered when making any significant changes to the ways in which processing is conducted and mine sites are organized (especially from a gendered perspective). This component will be the main driver in contributing towards mercury reduction and avoidance from the child project towards the programme as a whole.

The fourth component will focus on taking lessons learned, knowledge products and tools or resources from the global coordinating project and supporting the dissemination of these amongst Zambian stakeholders. Additionally, the project will also support the development of knowledge products from the project in Zambia and share these with the rest of the programme and the rest of the global ASGM community. This will allow a fluid exchange of ideas, experiences, lessons learned and best practices across a wide range of countries and stakeholders.

At the national level, the project will support the creation of a space in which efforts of multiple stakeholders ? including various levels of government, private sector, academia and civil society ? can better coordinate and streamline their efforts related to mercury reduction, so that both resources and impact can be maximized.

Furthermore, Zambia and the various stakeholders to the project participate in a wide range of initiatives, meetings and events related to responsible natural resource management within the region ? such as the International Conference on the Great Lakes Region (ICGLR) or various regional mining events. These additional forums and events provide additional opportunity for stakeholders in the project to share the lessons learned and promote greater action and collaboration to address mercury reduction efforts in the sector.

And finally, the project will contribute to the overall objectives of the planetGOLD programme by participating in joint communications and planning activities to ensure alignment, efficiency and effective communication throughout the project?s duration.

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Civil Society Organizations Yes

Indigenous Peoples and Local Communities Yes

Private Sector Entities Yes

If none of the above, please explain why:

Please provide the Stakeholder Engagement Plan or equivalent assessment.

In order to ensure inclusive participation and consultation, the following stakeholders have been identified for consultation through the lifetime of the programme. The list includes the identified social groups and persons that are associated with the programme in different ways at all stages as follows:

- ? persons and social groups affected directly or indirectly by the outcomes of the programme?s implementation.
- ? persons and social groups who can influence and decide the outcomes and the manner of the programme?s implementation or make decisions based on the outputs of the programme,
- ? persons and social groups that participate in the program implementation directly.

Particular effort will be taken to ensure that women and representatives of other vulnerable groups (e.g., ethnic or religious minorities, youth, etc.) are adequately represented and able to fully participate in the consultation and engagement that will take place throughout the duration of the programme.

The categories of stakeholders listed in the table below build on the process developed during the National Action Plan (NAP) on the ASGM sector. The stakeholders include government institutions and their affiliated agencies, miner organizations, civil society organizations (CSOs), research and training institutions and development organizations.

In relation to the association of miners, the Federation of Small-Scale Miners Association of Zambia (FSSMAZ) and the Association of Zambian Women in Mining (AZWIM) cover sixteen (16) and thirty (30) affiliated associations and cooperatives respectively. The parent stakeholder institutions are mostly based in Lusaka, but the affiliates are spread throughout the country and making geographical representation fairly reasonable.

The project objectives and main components have been shared with the stakeholders during the PPG phase and feedback have been collected, for designing the project.

It is relevant to note that the government of Zambia through the Ministry of Mines and Minerals Development (MMMD) suspended the issuance of mining licenses with a view of fighting corruption particularly in the cadastre registry of the ministry. This measure was initially to last from February to April 2022 and mainly affected the non-large mining sector that includes the ASGM. At the time of finalizing this report, suspension of mining activities in the major gold belts of Kasenseli and Mumbwa were still in force (July 2022).

In the table here below the stakeholders? roles and interested are detailed:

Stakeholder Name and Function	Stakeholder?s Interest	Impact of Project on Stakeholder	Influence of Stakeholder	Risk Management	Data collection methodology
Government Ministries					
Green Economy and Environment *Environmental policies and focal point for GEF*	Ensure that policies and laws on environment are effective and working. Would like to see the project help in the sound management of mercury from ASGM.	Opportunity to review policies and laws related to dangerous chemicals and mercury. The project will help ministry pilot formalization which will assist the country in dealing with mercury issues.	Alert project promoters and implementers to new directions in policies and laws on environmental protection.	Low	Workshop and direct interviews

Mines and Minerals Development *Licensing and permits*	Ensure that policies and laws on mineral sector development are effective and working	Opportunity to review policies and laws related to mineral development and particular gold and how formalization can be considered in the licensing process.	Alert project promoters and implementors to new directions in policies and laws on mineral development.	Low	Workshop and direct interviews
Health	Ensure that policies and laws on health delivery to all Zambians are effective and working	Opportunity to review policies and laws related to health services in the country and management of health impacts of harmful substances such as mercury through adoption of mercury mining.	Project promoters will gain insights on developments in health delivery especially for rural communities where ASGM mostly operates and advice how to handle any of mercury exposure.	Low	Workshop and direct interviews
Local Government and Rural Development *Delegated governance structures at rural levels*	Ensure that policies and laws on governance systems in councils and wards throughout the country are effective and working	Opportunity to review policies and laws related to governance systems and structures country wide. Provide knowledge and awareness on the dangers of mercury in the community.	This is known to be the most widely represented unit of government in the country and can serve as a useful information dissemination avenue for knowledge and awareness raising.	Low	Workshop and direct interviews

Water Development and Sanitation	Protect water bodies from mercury and other forms of contamination	Will assist objectives of protecting water bodies from contamination by eliminating use of mercury.	Will help project by initiating laws and regulations that protect the environment in general and water sources. In addition, can monitor and report on areas where mercury is widely used.	Low	Workshop and direct interviews
Science and Technology	Support use of mercury free technologies in recovery of gold	Project can expand unit?s outreach programmes on appropriate technologies to embrace ASGM and provide new evidence on mercury use.	Can provide platform for networking of ASGM players and other interests nationally and globally hence disseminate information on mercury use.	Low	Workshop and direct interviews
Commerce, Trade and Industry	Promote transparent marketing in the gold value chain and support small and medium scale enterprises.	Project can help develop capacity of staff in dealing with gold and other related commodities.	Can provide platform for networking of ASGM players and other interests nationally and globally. Help in opening access to markets.	Low	Workshop and direct interviews

Labour and Social Security	Ensure that labor laws and statues are followed in accordance with Constitution of Zambia and other related laws and ensure fair working conditions in the mining sites such as occupational safety.	Will bring to the fore or attention of the PMU, any labour related issues that need to be considered and ensure occupational safety during implementation. The project will help in government meeting the occupation health and safety within mining sites.	The Ministry will support project to meet the labour laws requirements and ensuring occupational health and safety hence support the success of the project.	Low	Workshop and direct interviews
Small and Medium Enterprises	Support to small and medium businesses with business planning and other necessary training	Will bring to the fore or attention of unit different resource needs of ASGM operators and how ASGM organizations can be supported to grow.	Support the project by providing experts on small and medium enterprises, cooperatives strengthening and get necessary growth.	Low	Workshop and direct interviews
Land and Natural Resources	Ensure that ASGM activities are not in conflict with other natural resource needs	Advice on conflicts on titles to land and a land use with other competing economic needs. For instance, the indigenous land rites.	Can help ASGM operators in securing titles to land under formalization activities.	Low	Workshop and direct interviews

Community Development and Social services	Ensure that vulnerable groups affected by the project are taken care of. These include women, girls and children.	Create awareness on dangers of mercury to the community and reduce exposure to mercury through mercury free technologies	Contribute to success of the project through awareness creation.	Low	Workshop and direct interviews
Youth and Sport	Ensure that youth affected by the project are properly included and protected.	Create awareness on dangers of mercury through sporting activities.	The stakeholder can support in creating awareness for the youth on mercury free technologies and awareness through sporting activities.	Low	Workshop and direct interviews
Finance and National Planning	Explore ways to have affordable finance for ASGM activities.	A vibrant ASGM sector is a potential tax contributor and will create decent jobs.	Can open up ways of accessing affordable financing.	Low	Workshop and direct interviews
Miner?s Organizations and CSOs					
Local communities	Are the focal points during implementation and will benefit from the reduction in mercury use in ASGM in their communities.	The local communities will have less impacts from mercury exposure due to the adoption of Hg free technologies.	For smooth implementation there has to be local community acceptance, this will be achieved through support from the chief.	Low	Engagements with chief and data collection during the NAP

Federation of Small-scale Miners Association of Zambia (FSSMAZ) *Coordinates activities of individual miners? associations countrywide*	As an umbrella organization it promotes and lobbies for all interests to do with operations of ASGM members,	The project will support FSSMAZ in formalization and training on Hg Free technologies.	They can support the success of the project since they have vital information on occurrence of gold deposits and location of active mining sites. In addition, they know the miners since they are an association. They will be key in formalization.	Medium As a mitigation measure, they will be constantly engaged in the project activities at every level.	Workshop and direct interview
Association of Zambian Women in Mining (AZWIM) *Promotes participation of women in mining*	As an umbrella organization it promotes and lobbies for all interests to do with operations of female ASGM members. Hence in this project they are interested on the female inclusion in ASGM.	Gain insights into how to better to manage and attend to members? interests especially on promoting participation of women.	Provide vital information on occurrence of deposits and location of active mining sites managed by women.	Medium As a mitigation measure, they will be constantly engaged in the project activities at every level.	Workshop and direct interview
Non-governmental Gender Organisations' Coordinating Council (NGOCC) *Umbrella body that oversees and coordinates gender related issues country-wide*	Inputs into national policies on gender. Hence the interest in this project will be to oversee gender related issues.	Project can provide new insights for policy formulations and ensure gender related issues are integrated, implemented, and monitored during project implementation.	Provide support raising awareness, education and contribute towards scaling up of the project.	Low	Workshop and direct interview

Citizens for a Better Environment (CBE) *Advocates for a balanced management of the environment*	Advocacy for the protection of the environment and support the initiatives that contributes to the project goal.	Expand the CBE?s? footprint or mandate on environmental issues.	The Organization?s public visibility is very high and can help project	Low	Direct interview
Geological Society of Zambia (GSZ) *Membership association of geoscientists*	Provide a forum for information on mineral exploration and resource evaluation expertise.	Broader membership and capacity building from mercury free technologies. Embracing this category of miners will benefit the goals of the GSZ.	GSZ will be critical in the provision of experts on mercury free technologies and scaling scaling-up of lessons learnt to the project	Low	Direct interview
Private Sector					
Zambia Chamber of Mines (ZCM) *Business forum for operating mines*	Acts as a lobbying forum for their members with govt. on various issues such as taxes and licensing on mining. Linking of small-scale miners to off takers like ZCCM-IH and First Quantum Minerals (FQM).	Project can sharpen organization?s strategic planning and inclusion of ASGM in their work	Can facilitate linkages of ASGM operators with their LSGM members	Low	Direct interview

Association of Mining and Exploration Companies in Zambia (AZMEC) *Promotes exploration interests for new entrants and active mining companies*	Acts as a lobbying forum for their members with govt. on various issues such as taxes and licensing on mining. Linking of small-scale miners to off takers like ZCCM-IH and First Quantum Minerals (FQM).	Project can sharpen organization?s strategic planning and inclusion of ASGM in their work.	Can facilitate sharing of vital exploration data from large area surveys that ASGM can hardly afford to undertake.	Low	Direct interview
Research and Training Institutions					
University of Zambia (UNZA)	Provision of training and technical know-how on mercury free technologies.	Provide practical and field experiences on mercury free technologies. Provide data for further research.	Provide information on latest research as regards mercury free technologies.	Low	Direct interview
Copperbelt University (CBU)	Provision of training and technical know-how on mercury free technologies.	Provide practical and field experiences on mercury free technologies. Provide data for further research.	Provide information on latest research as regards mercury free technologies.	Low	Direct interview
Development Organizations					
UN AGENCIES (UNEP, UNDP, UNIDO, WHO, ILO)	Development, technical support and monitoring of international conventions such the Minamata, Basel, Rotterdam conventions etc. in chemicals and hazardous waste.	The project helps in the implementation of the necessary conventions in this case Minamata. Convention.	Support effective implementation through collaborative. Share information on experiences on similar projects and may provide financing to implement some actions	Low	Direct interview and desk reviews

Development Partners (FCDO, USAID, SIDA, NORAD, DANIDA, SDC, JICA, World Bank, African Development Bank (AfDB) and other bilateral/multilateral partners)	Helping growth sectors such as ASGM in the economy to build national wealth and attain the SDGs.	Experience from project implementation to be used to plan for future support to similar initiatives.	Can contribute financial resources and technical support to scale the impacts nationally.	Low	Direct interview and desk reviews

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

Proper and meaningful stakeholder engagement will be ensured in line with GEF and UNEP requirements for Stakeholder engagement and, more in general, for compliance with Environmental and Social Standards.

The stakeholder engagement process started during the PPG phase and will be part of the implementation of the process, as a way to ensure the sustainability and replicability of the project.

In the table below the list of stakeholders to be consulted and methods of engagement required are summarized.

Stakeholder Name	Method of Engagement	Location and Frequency	Resources Required	Budget
Ministry of Mines and Minerals Development	Face to face discussions / meetings by project staff trainings, inception workshop etc. Other ways being email, phone, website, and workshops. Introductory letter will be sent and refreshers if needed at inception phase.	ZEMA offices/ project office at least once every month and conference venues as needed	Training modules, Project document, quarterly/annual reports, workshops/training reports and progress reports	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)

Ministry of Tourism and Art Dept. of NPW and the NCHC	Face to face discussions / meetings by project staff trainings, inception workshop etc. Other ways being email, phone, website, and workshops. Introductory letter will be sent and refreshers if needed at inception phase.	ZEMA offices/ project office at least once every month and conference venues as needed	Training modules, Project document, quarterly/annual reports, workshops/training reports and progress reports	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)
Ministry of Commerce Trade and Industry & Ministry of Finance and National Planning	Face to face discussions / meetings by project staff trainings, inception workshop etc. Other ways being email, phone, website, and workshops. Introductory letter will be sent and refreshers if needed at inception phase.	ZEMA offices/ project office at least once every month and conference venues as needed	Training modules, Project document, quarterly/annual reports, workshops/training reports and progress reports	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)
Ministry of Water and Sanitation	Face to face discussions / meetings by project staff trainings, inception workshop etc. Other ways being email, phone, website, and workshops. Introductory letter will be sent and refreshers if needed at inception phase.	ZEMA offices/ project office at least once every month and conference venues as needed	Training modules, Project document, quarterly/annual reports, workshops/training reports and progress reports	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)
Ministry of Youth and Sport	Face to face discussions / meetings by project staff trainings, inception workshop etc. Other ways being email, phone, website, and workshops. Introductory letter will be sent and refreshers if needed at inception phase.	ZEMA offices/ project office at least once every month and conference venues as needed	Training modules, Project document, quarterly/annual reports, workshops/training reports and progress reports	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)

Miners? associations such as FSSMAZ and AZWIM	Face to face discussions / meetings by project staff trainings, inception workshop etc. Other ways being email, phone, website, and workshops. Introductory letter will be sent and refreshers if needed at inception phase.	ZEMA offices/ project office at least once every month and conference venues as needed	Training modules, Project document, quarterly/annual reports, workshops/training reports and progress reports	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)
Non-Govt. Gender Organizations? Coordinating Council (NGOCC)	Face to face discussions / meetings by project staff trainings, inception workshop etc. Other ways being email, phone, website, and workshops. Introductory letter will be sent and refreshers if needed at inception phase.	ZEMA offices/ project office at least once every month and conference venues as needed	Training modules, Project document, quarterly/annual reports, workshops/training reports and progress reports	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)
Copperbelt University & University of Zambia	Face to face discussions / meetings by project staff trainings, inception workshop etc. Other ways being email, phone, website, and workshops. Introductory letter will be sent and refreshers if needed at inception phase.	ZEMA offices/ project office at least once every month and conference venues as needed	Training modules, Project document, quarterly/annual reports, workshops/training reports and progress reports	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)

Financial institutions	Financial institutions need to be actively engaged throughout project implementation, and their awareness raised on issues relating to ASGM and the specific needs of women, in order to promote the development of new or improved inclusive financial products. Engagements will take the form of workshops, forums, one-on-one meetings, email, phone, website and printed communication materials.	At forums, in-person meetings for awareness raising, etc. on an ongoing basis. At least	Training materials for Component 2. Additional materials to be determined based on project awareness raising and KM strategy to be developed at inception	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)
Zambia Chamber of Mines (ZCM) & Association of Zambian Mineral Exploration Companies (AZMEC)	Email, phone, website, and workshops mainly. Face to face when needed by project staff. Introductory letter was sent and refreshers if need be	ZEMA offices/ project office at least once every month and conference venues as needed	Training modules, Project document, quarterly/annual reports, workshops/training reports and progress reports	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)
Zambia Consolidated Copper Mines-Investments Holdings (ZCCM-IH)	Email, phone, website, and workshops mainly. Face to face when needed by project staff. Introductory letter to be sent	ZEMA offices/ project office at least once every month and conference venues as needed	Training modules, Project document, quarterly/annual reports, workshops/training reports and progress reports	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)
DFID (Prospero Zambia), UNDP and UNEP in Zambia	Email, phone, website, and workshops mainly. Face to face when needed by project staff. Introductory letter to be sent	ZEMA offices/ project office at least once every month and conference venues as needed	Training modules, Project document, quarterly/annual reports, workshops/training reports and progress reports	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)
ABSA Bank Plc. & Bankers Association of Zambia (BAZ)	Email, phone, website, and workshops mainly. Face to face when needed by project staff. Introductory letter to be sent	ZEMA offices/ project office at least once every month and conference venues as needed	Training modules, Project document, quarterly/annual reports, workshops/training reports and progress reports	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)

Local communities, including vulnerable groups	Email, phone, website, and workshops mainly. Face to face when needed by project staff. Introductory letter to be sent	Local communities? location at least once every month and conference venues as needed	Written communication or meetings where the project document, quarterly/annual reports are presented and explained, workshops/training reports and progress reports	Cost items built in main project budget (inception workshop, steering committee meetings, national technical committee, trainings etc)

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; Contractor;

Co-financier;

Member of project steering committee or equivalent decision-making body; Yes

Executor or co-executor; Yes

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

The gender analysis of the ASGM sector, with an emphasis on mercury usage, has informed the development and implementation of the planetGOLD project in Zambia and will ensure that gender norms, inequalities and realities are considered by the project. Although women are often dependent on natural resources for their income, sustenance, and health, they are disadvantaged in terms of ownership of and access to land and control over the resources they produce. They are also least able to benefit from the sector from an economic perspective, while bearing a disproportionate amount of the risks and negative impacts associated with the sector. This has significant implications for the different situations that women face in the sector compared to men, which need to be acknowledged, well understood and accounted for in the design of the planetGOLD project in Zambia in order to ensure both the success of the project, as well as to mitigate any potential unintended consequences for women in particular.

Based on the Gender Analysis, developed from secondary and primary data, a Gender Action Plan has been developed and will be updated at project inception phase, to ensure the Plan is in line with the project implementation plan.

The Gender Analysis identified the following challenges that are taken into consideration for the development of the Gender Action Plan:

- ? Limited education, that can have an impact on business development opportunities for women.
- ? Lack of mining licenses, that also affect men, but integrated with the limited education can lead to the women involvement in the informal sector, with less opportunities to guarantee the respect of human rights.
- ? Lack of information, that can lead to a decrease of opportunity for access to livelihoods opportunities in the mining sector.
- ? Inadequate financial support to enable women procure basic mining equipment.
- ? Cultural norms that lower the status of women relative to men.
- ? Problems in terms of capacity for leadership and management within the cooperatives or informal groups, that can lead to the weaknesses of the role of women in the economic sector.
- ? Sexual abuse and occupational health risks.

The Gender Action Plan has been included in the M&E reporting process which will be implemented throughout the project.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

Yes

Closing gender gaps in access to and control over natural resources;

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women Yes

Does the project?s results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Elaborate on the private sector's engagement in the project, if any.

Private sector engagement will be key to the success of the project. Private sector actors include but are not limited to: ASGM miners; small scale gold mines; gold buyers and traders; and financial institutions. On the one hand, early engagement with financial institutions will be essential to raise awareness of the needs of ASGM actors, as well as increase their confidence in the sector. The latter will be further supported through the project?s approach to formalization, which should reduce the risks to be taken up by those financial institutions. Secondly, building on good practices associated with the JA process, the project will engage private sector actors along the gold value chain through the different planning processes. They will be key stakeholders engaged in both the Landscape Action Plan and the Landscape Finance Plan. Engagement with ASGM miners is at the center of the project, with a focus on supporting formalization of ASGM miners and the creation of ASGM organizations; enhancing access to financial services through participation in forums linking them to financial institutions; and capacity-building on better mining practices amongst others.

Early engagement with financial institutions will be essential to ensure the development of financial products specifically addressing the needs of mining communities. Microfinance institutions in particular can serve as a financial bridge between the project and the beneficiaries in terms of any financial support planned to enhance the living condition of miners and can be partners in providing education on financial literacy tailored to the artisanal mining sector.

Private sector actors along the gold value chain will also be engaged, in particular as part of the implementation of the Jurisdictional Approach and the interventions relating to traceability and certification of responsible gold. Indeed, buy-in of gold buyers and end users in the project is essential to ensure its success, and as such needs to be consulted throughout. Moreover, these private sector actors can be direct beneficiaries of planetGOLD data and other insights as they increase implementation of gold sourcing due diligence programs, and as such it is essential that the project take into consideration ongoing private sector due diligence policies and programs, as well as identifying opportunities for aligning with OECD Due Diligence Guidance. An added benefit of improved traceability and certification schemes can potentially be improved investors? confidence in ASGM investments, thereby providing an entry point for sustainable financing of the sector and plays an important role in the long-term sustainability of project interventions. Eventually, funding for these types of projects, and demand for responsible mercury free gold, will come from the downstream supply chain. Hence, these actors will need to be engaged in both the Landscape Action Plans, and the Landscape Finance Plans.

Finally, the project will also engage small scale mining companies in the selected districts in particular, in project activities related to Component 4 on Knowledge sharing, communication, and local capacity-building support, but also Output 2.2 related to piloting a tracing AGM gold trade system.

5. Risks to Achieving Project Objectives

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

For more detailed information, please refer to Appendix 9 on the RISK MITIGATION PLAN.

Risks	Rating High (H), Medium (M), Low (L)	Risk Mitigation Measures
Operational Risks		

Risks	Rating High (H), Medium (M), Low (L)	Risk Mitigation Measures
Lack of buy-in and support from policy makers to develop/ amend/revise and approve the ASGM legislative frameworks generated through the project's support	Medium	The project will actively engage high level policymakers throughout the process of development/amendment/revision. Membership of the coordination mechanisms under Output 1.1.1 will indeed consider integrating these key stakeholders to mitigate this risk.
Lack of coordination between key ministries, main stakeholders, and various ASGM initiatives	Medium	The project will ensure close coordination with all relevant ministries and institutions including parliamentarians as a constituency to improve the broad-based ownership of the project including data sharing for better-compiling data survey table and report, in line with its Stakeholder Engagement Plan. Regular communication and project updates will be provided, and quarterly reports will be shared with national and local authorities to ensure institutional support for the project. Moreover, the project will work through Component 1 on forming coordination mechanisms for ASGM formalization, which will contribute in itself to better cross-sectoral coordination.
Political changes and high turnover of government staff	High	Frequent staff changes could be a risk to the sustainability of the capacity-building outcomes. The project management unit (PMU) will incorporate a sustainable mechanism to strengthen political buy-in and technical stability and coordinate with relevant ministries to address this issue. A Training of Trainers approach will be used in relevant contexts to ensure that the capacity-building activity results are sustainable and can be scaled out.
Lack of support from relevant ministry to deliver the mining licenses required to run the pilots	Medium	Delay during the project implementation due to the lack of support from the ministry can be mitigated by building the relationship with the project through good and early communication about the project and a good stakeholder engagement process.
Political unrest, armed conflict, armed groups, and/or tax-seeking behavior impeding the planned interventions. This can translate into (i) movement restrictions for staff and executing partners, (ii) staff, implementing partner, or service provider injuries, and (iii) damages to infrastructure and equipment, impacting the project delivery plan.	Low	The pilot projects will be undertaken in areas with a low-security risk. The Project Team will also develop a security plan and related procedures and keep a close watch on the situation to predict as much as possible when and where there could be unrest and prevent impacts on project implementation. Local law enforcement at pilot sites will be involved in the design of mitigation measures. Compliance with UN procedures for safety and security planning is key. Particular focus will be placed on road safety (road cuts, traffic accidents), and

Risks	Rating High (H), Medium (M), Low (L)	Risk Mitigation Measures
		mining site security (illegal gold and mercury trade, conflicts with local communities).
Difficulty to identify locally based and qualified consultants leading to project delays	Medium	The PPG phase prepared a preliminary procurement plan to accelerate the recruitment of consultants. Moreover, the budget allows for the recruitment of international expertise if required, to mitigate the limited availability of local expertise. Strict deadlines will be set for each stage of the procurement process, and progress will be closely monitored by the PMU . Finally, coordinating early with the Executing Agency to align with their procurement processes while meeting the project recruitment needs of the project will be prioritized.
Technical Risks		
Lack of maintenance training for mercury-free technology and difficulty to find spare parts or replacement parts interrupting the adoption of mercury-free technology	Medium	Maintenance training and materials will be provided to several operators in the pilot sites, creating some redundancies in case an operator moves out of the pilot area. The project will carefully consider promoting only mercury-free technology with spare parts (budgeted for), or where spare parts are affordable and easily accessible in the pilot area. Partnerships with academic institutions and private sector actors will be explored to provide the trainings and equipment maintenance, if relevant.
Unsuccessful adoption of mercury-free method promoted by the project as the miners preferred the cyanidation process	Low	In several past projects, mercury use was observed to be replaced by cyanide in gold processing. However, cyanide also generates problems such as contamination due to the lack of proper tailing

Risks	Rating High (H), Medium (M), Low (L)	Risk Mitigation Measures
		facilities and the dumping of toxic sediments. In this respect, the use of cyanide in the pilot sites will not be promoted. The project will ensure to promote cost-efficient environmentally sustainable technology to reduce mercury use, improve production, as well as accessible and easily replicated.
The reluctance of miners to use the retort method for mercury use reduction due to its complexity	Low	The project will promote mercury use reduction methods that are easily replicated and affordable for the miners. In addition, the training of the ASGM operators will include practical demonstrations of the low efficiency of the whole ore amalgamation process and its consequences on the profitability of the ASGM operations. Particular attention will be given to focusing the demonstrations on the enhanced productivity offered by the new technologies proposed.
Mercury reduction technology cannot be replicated outside pilot sites due to a lack of government enforcement of mercury bans	Low	The replication of the free-mercury method outside the pilot sites can be achieved by increasing government enforcement, both at the national and regional levels to ban mercury that is followed by effective monitoring and evaluation. The project will in part support creating this enabling environment.
Lack of interest of intermediary financial institutions to provide financial support targeting ASGM	High	The project will target intermediary financial institutions in the stakeholder engagement process. They will be involved in awareness-raising activities presenting the importance of these mechanisms to support the objective of the project and the potential to benefit from this scheme for their business.
Language barrier/low education among mining communities impedes communication in the project or conducting training workshops, and ultimately technology adoption	Low	Communication, trainings, and knowledge products targeting local communities will be conducted in the local language by local specialists. Communication materials will be delivered with understandable and easy access. PMU staff will visit the pilot project sites regularly and maintain close communication with local communities in order to facilitate and bridge the communication between the central level of the project and its field site locations.
Social Risks		
Project results are not well disseminated to project beneficiaries	Medium	The project result will be disseminated nationally and locally through various communication means (such as posters, flyers, documentary films, social media, websites, etc), including achievement and lesson-learned to ensure the replication in other areas.

Risks	Rating High (H), Medium (M), Low (L)	Risk Mitigation Measures
		The EA will be involved in the monitoring and evaluation phase to have a better understanding of the results and to increase the ownership of the project output and outcomes.
Limited participation of women in project activities and/or limited access to its benefits for women, leads to limited impact of the project.	Medium	The Gender Action Plan will be implemented, progress of targets monitored and reported on a quarterly basis.
The areas of work located in natural reserves or indigenous people (IP) territories	Low	The selection of pilot site locations has considered the social and environmental safeguards, including as exclusion criteria interventions in indigenous people territories. Should other sites need to be selected during implementation, the same criteria will be applied.
Environmental / Climate Risks		
Vulnerability to extreme weather events (floods, droughts, landslide, etc.) affect mining operations, transportation of equipment, and project activities	Medium	? The selection of pilot sites has considered the impact of climate change, and it will be closely monitored during the implementation. The project pilot areas were selected through the exclusion of high risk of disaster due to unsafe mining conditions. ? The project activities will take into account the dry/rainy season in the planning and its impact on mining operations, as well as the impact on critical infrastructure and access to pilot sites.
Water shortage as a result of climate variability impacting mining communities	High	The project will conduct an analysis on water availability in the pilot sites and areas of mining operations. The project will introduce and will train the local community about water recycling technology and techniques in order to avoid water loss and associated conflict over water scarcity as well as other related environmental footprints under Components 3 and 4.

Additionally, the project team will ensure that all PlanetGOLD beneficiary mining entities conform with the PlanetGOLD Criteria for Environmentally and Socially Responsible Operations through the review of the PlanetGOLD Environmental and Social Risk Assessment Report and the Mitigation Report.

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

Institutional arrangements

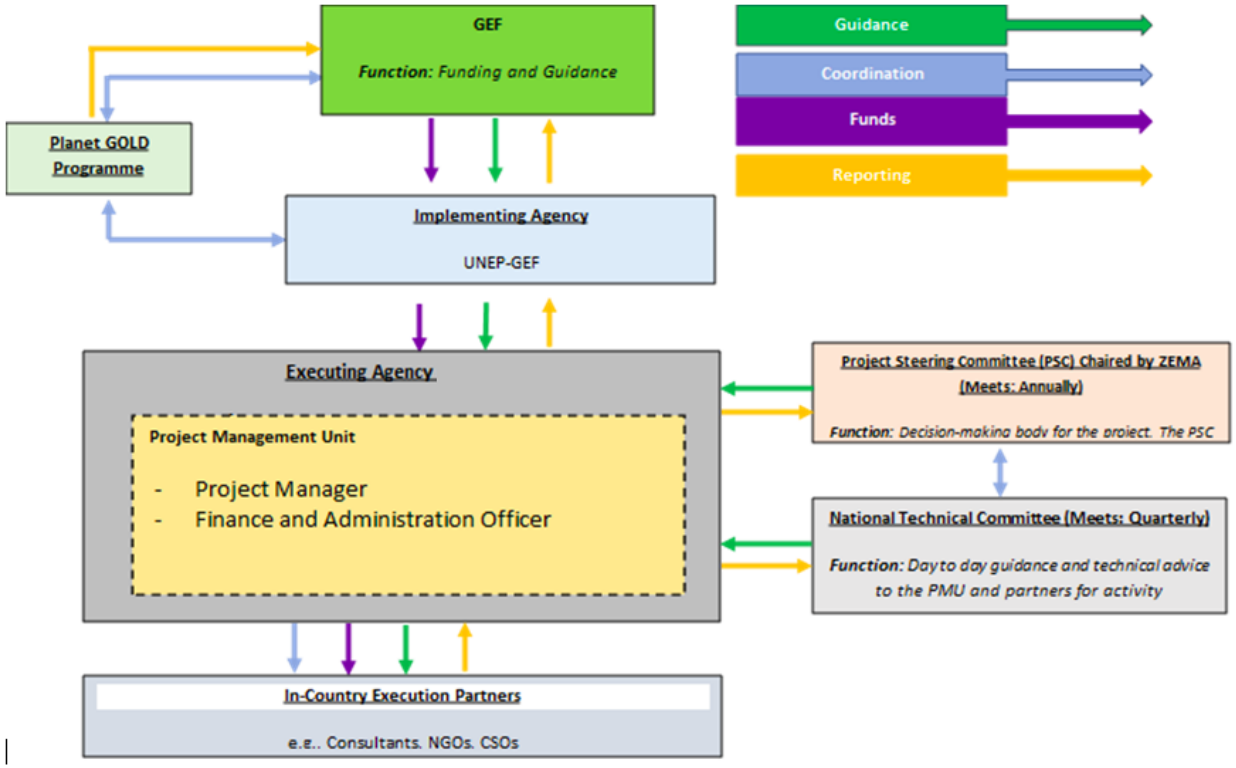


FIGURE 8: PROJECT GOVERNANCE ARRANGEMENTS

Below is a general description of each management body:

? Implementing Agency (IA): UNEP will serve as the IA. The IA will be responsible for the overall project supervision, overseeing the project progress through the monitoring and evaluation of activities and progress reports of the established components. It will be responsible for quality

assurance procedures, organize contracting, in coordination with ZEMA and the Executing Agency (EA), approve progress reports and clear disbursement. The IA will also monitor progress to ensure the proper quality of outputs. UNEP will report project implementing progress to GEF. The IA will also take part in the Project Steering Committee (PSC) and can request PSC to meet outside of the planned schedule as deemed necessary.

? Executing Agency (EA): Artisanal Gold Council (AGC) will serve as the EA. With the guidance of the PSC, the EA is responsible for the overall management of the financial and human resources directly related to project execution in the country. It will function as the general oversight for the project and will be accountable to the implementing agency for the achievement of project outputs and outcomes. The EA will take guidance from the GEF implementing agency and the PSC in all matters concerning the project.

? In the delivery of its functions, it will participate in PSC and National Advisory Committee meetings. A Project Management Unit (PMU) will be embedded within AGC, hosted at the premises of ZEMA,and will oversee the day-to-day management of the project. This will be composed of a Country Project Manager and other project staff who will be directly under AGC?s supervision, and who will have access to a wide range of experts and specialists throughout the execution of project activities. The PMU will regularly provide updates to the PSC and will submit quarterly progress reports. Annual workplans and progress reports will be submitted to the PSC for endorsement. The PMU will also be responsible for the daily project finances with approval from the EA. The PMU will:

- be responsible for the efficient and timely preparation and execution of project activities.
- provide on-the-ground coordination to facilitate project execution.
- prepare concept notes, plans, summaries, and reports as required by the project in a timely manner.
- facilitate coordination meetings and other related dialogues with the guidance of the PSC.
- form part of any technical working group that may be established by the project.
- identify, develop, and foster contacts and relationships that will be beneficial for the project.
- execute the project communication strategy including information dissemination with the guidance of the PSC.
- apply the project?s knowledge management approach.
- execute a regular project monitoring plan.
- functions as secretariat of the PSC.

? Project Steering Committee (PSC): The PSC will be chaired by ZEMA and provide project direction and overall guidance to project implementation, making critical decisions on strategic matters. The PMU (functionally AGC) will serve as the Secretariat and provide annual workplans for endorsement and regular progress reports. The PSC will consist of representatives of the beneficiary country, the IA, and the EA. It will also ensure the timely delivery of project outputs and the eventual achievement of the project outcomes by reviewing workplan and progress reports. Additional stakeholder representatives from academia, NGOs and other relevant areas may be invited to join the PSC during the project execution as experts or observers, including members of the National Advisory Committee (see below). At all times, the PSC and its activities will comply with the policies, conditions and regulations of the UN and the GEF.

? National Advisory Committee (NAC): Zambia will establish a multistakeholder national advisory committee to advise the PSC and support efficient project delivery with all relevant national and local stakeholders. The NAC will periodically participate in PSC meetings, as needed, and may be relied on for bilateral meetings to provide input into project planning and implementation. The PSC and National Advisory Committee will also facilitate collaboration of the project with other country initiatives, stakeholders and institutions. The composition of the NAC will be confirmed by the PSC at the beginning of the project, but this will likely mirror the same composition of the National Stakeholder Advisory Committee Group for the National Action Plan, whose members were drawn from:

- Miner organisations - like cooperatives and/or associations
- Miners/miner representatives
- Community leaders and local government from ASGM areas
- Indigenous groups - members from the local community
- Technical experts in gold mining
- Environmental and human health organisations
- Academic and research organisations - universities and research institutions
- Legal professionals
- Representatives from large scale mining
- Other relevant land holders
- Police and customs officials
- Gold buying agents, gold traders, mercury traders
- Waste management specialists - environmental and public health officials
- Private sector partners such as large-scale mining companies or equipment providers
- Financial/banking sector
- Representatives of the United Nations country teams
- Women-based organisations dealing with mining

Roles of the key stakeholders:

ZEMA, as the project counterpart and Minamata Convention Focal Point will have the following specific roles:

? Chair the Project Steering Committee.
? Coordinate the Government?s efforts through communication and information dissemination to relevant government stakeholders to support effective implementation of the project.
? Serve as the main convening body of the government.
? Guide AGC, as the executing agency, during the implementation process of the project.

? Take an active role in applying and disseminating the lessons derived from the Project in the ongoing development of policies and regulations in or related to the extractive sector in Zambia.
? Provide advice, information, and other relevant data on the appropriate policy frameworks and legislation at the national level that must guide the implementation of the project.
? Provide guidance to AGC and local partners organization/s in collecting, documenting, analysing and sharing with appropriate stakeholders for possible adaptation and/or replication, information on successful models, best practices and lessons learned from the Project.
? Facilitate communication and information dissemination within the ministry and with other stakeholders as appropriate.
? Host the planetGOLD team members at their premises, facilitating a working space.

UNEP as implementing agency will have the following role:

? Participate to project Steering Committee Meetings and ensure decisions are compliant with GEF and UNEP?s rules.
? Participate to project Steering Committee Meetings and ensure project is implemented as planned.
? Communicate with the GEF on project implementation.
? Validate quarterly reports received from AGC
? Validate and finalize PIR and forward to the GEF.
? Organize Mid-Term Review.
? Organize independent Terminal Evaluation.

AGC as executing agency will have the following role:

? Coordinate the PMU.
? Report quarterly to UNEP and ZEMA on expenditure and progress.
? Prepare annual Project Implementation report (PIR report).
? Provide independent financial audit to UNEP in coordination with ZEMA.
? Directly recruit team personnel such as staff/consultants and contract sub-contractors as per TORs and budget.

The Project Management Unit will:

? Manage the day-to-day management of the project according to workplan and budget approved by Steering Committee.
? Review reports from consultants and sub-contractors against TORs.
? Act as secretariat to the Steering Committee.
? Prepare documents for the Project Steering Committee (state of expenditures, work plan, TORs for consultants and sub-contractors, agenda).
? Monitor, track and report on gender mainstreaming progress.
? Take Steering Committee minutes and circulate for approbation.

The Project Steering Committee will, under the chairmanship of ZEMA:

- ? Approve TORs for PMU (only at beginning of project).
- ? Discuss and approve work and budget plan (annually).
- ? Discuss and approve TORs for consultants and subcontractors.
- ? Guide communication and information dissemination.
- ? Provide oversight of gender mainstreaming activities.
- ? If needed, propose adjustments to project plan.
- ? Host an annual stakeholder workshop (with logistical support and organization provided by the PMU).

The National Advisory Committee will:

- ? Attend PSC meetings, when needed.
- ? Advise on the development of the project progress, and ensuring alignment with other national priorities, projects and programming.
- ? Provide technical expertise and experiences, as needed.

The planetGOLD global project will:

- ? Produce annual progress report for programme that includes narrative as well as quantitative reporting from all projects, including Zambia, on achievement of project level and programme-level indicators, as well as produce quarterly summaries of key activities and progress across programme, including Zambia, for dissemination to PSC and Programme Advisory Group.
- ? Organize and facilitate inception/implementation orientation for country projects, including Zambia, to provide clarification on cross-programmatic coordination and knowledge sharing activities.
- ? Organize and facilitate bimonthly programme coordination calls.
- ? Further develop, disseminate, and socialize the planetGOLD Criteria for Environmentally and Socially Responsible Operations, and assist country projects to access existing training and resources to implement these criteria.
- ? Elaborate and disseminate overall stakeholder engagement guidelines for programme participants, and further refine and disseminate global programme communications strategy, including recommendations for approach and messaging.
- ? Disseminate suite of planetGOLD country logos and brand assets (templates for fact sheets, reports, presentation slides, event banners, etc), and disseminate style guide and messaging guide documents to all child projects.
- ? Create communications products to promote responsible ASGM at the international level and stories of success or lessons learned among country projects.
- ? Facilitate programme-wide communications network, tools for collaboration, and plans for cross-programmatic communications activities, organize and facilitate the planetGOLD communications network side meeting for the APM, including supporting travel of country

communications managers, and maintain global editorial calendar and support country projects in publishing original content on website and other planetGOLD communication channels.

? Organize and facilitate the planetGOLD Global Forum every two years for exchange of lessons learned between child projects and other ASGM stakeholders and organize and facilitate the planetGOLD Annual Programme Meeting each year [to be organized back-to-back with GFs in years when the GFs take place].

? Organize and facilitate regular (~quarterly) knowledge exchange meetings/networks for subject matter experts.

? Facilitate the sharing of relevant information and materials across all child projects and develop original knowledge products or organize knowledge sharing opportunities on key gaps or areas of interest across the programme based on inputs received from country projects.

? Establish, monitor and manage grievance mechanisms at both global and child project levels

? Manage knowledge repository and broader knowledge sharing via the planetGOLD website, email listserv, and other dissemination channels.

Coordination with other GEF-financed and other initiatives

Below is a description of the key ongoing projects and relevant initiatives that the project intends to coordinate with to ensure the most efficient use of funds and avoid duplication of efforts:

GEF Projects and other initiatives	Linkages and Coordination
EHPMP - Environmental Health and Pollution Management Program in Africa Countries: Ghana, Kenya, Senegal, Tanzania, Zambia, Regional GEF ID: 9444; 9852 (Zambia) *Donors:* GEF *Project implementation:* IA: World Bank; EA Zambia: Ministry of Mines, Energy and Water Development *Period of implementation:* 2020-2025 *Budget:* 42,201,835, of which 8,256,881for the Zambia Project *Objective:* This project aims to reduce environmental health risks related to harmful chemicals and waste through strengthened institutional partnership and capacity in pollution management in targeted countries in Africa. Reduce Environmental health risks related to mercury in ASGM and POPs in waste in Zambia through strengthened institutional partnership and capacity.	The project will continue to follow the progress related to the development of guidelines and monitoring protocols as well as the methodology for screening and evaluating health and environmental risks associated with hazardous chemicals, particularly mercury. As this project focuses on demonstrating the applicability of technological tools and economic approaches, any lesson learnt from this could be integrated. The implementation of cleaner technologies to meet the Minamata convention obligations. As feasible, the planetGOLD project will leverage knowledge products such as the regional guidance developed on formalization of ASGM. The lesson learnt from building awareness activities on sound management of waste and its impact on human health and the environment can be built on in order to avoid the duplication of activities. The coordination with Program Coordination Unit (PCU) will be maintained to strengthen the regional approach to harmonize the policy on mercury import licensing and its use in the ASGM sector.

AFLDC-2 Scaling-up Investment and Technology Transfer to Facilitate Capacity Strengthening and Technical Assistance for the Implementation of Stockholm and Minamata Conventions in African LDCs (Angola, Ethiopia, Gambia, Guinea, Liberia, Mauritania, Senegal, Sierra Leone, Togo, Uganda, Zambia, Senegal) GEF ID: 10218 *Donors:* GEF *Project implementation:* IA: AfDB EA: Zambia Environmental Management Agency (ZEMA) in Zambia *Period of implementation:* 2022-2027 *Budget:* USD21,300,000 *Objective:* To promote circular economy approaches within national development frameworks to achieve economic development while scaling-up investments and BAT/BEP to eliminate, reduce and control POPs and Mercury pollution sources in African LDCs	One of the components of this project consists in integrating the environmentally sound management of chemicals and waste into decision-making development and consumer choices. The outcomes of the project?s strategy to influence consumers to buy mercury-free processed products will be relevant for building the present awareness-related activities and align with Component 2 of the project on transparency of the gold supply chain.
ACP-EU Development Minerals Programme - Phase II *Donors:* EU, UNDP *Project implementation:* UNDP *Period of implementation:* 2020-2024 *Budget:* EUR 11.1 Millions *Objective:* Increased employment and income for artisanal and small-scale mining enterprises in particular. Increased economic opportunities for women participating in ASMEs. Areas of focus: Formalizing ASMEs operation and improving the business environment; Increasing incomes of ASMEs; Addressing environmental and social impacts; Supporting women-owned and -run ASMEs; Facilitating Inter-ACP knowledge exchanges.	The project is a continued project of ACP-EU Development Minerals Programme - Phase I to improve the livelihood of ASM communities, particularly in development minerals (low-value minerals, such as construction materials, dimension stones, industrial minerals, and semi-precious stones) with a strong emphasis on women empowerment. The intended gender-based efforts are designed to provide women-owned and women-run ASMEs better access to finance, greater ability to participate in mining project procurement opportunities; improvement in organization of mining activities; training and capacity building, and exposure to technology. It will review the government policies to ensure that the institutional and regulatory frameworks in the Development Minerals sector support gender equality and women?s empowerment.[1] Coordination can be maintained to share the ideas and experiences on women ASMEs empowerment, access to finance, and incorporation of gender equality into the institutional and regulatory frameworks and exchange ideas to promote the formalization in the ASM sector.

To strengthen the institutional capacity for Zambia to implement the obligations of the Minamata Convention by reducing the presence of mercury in vulnerable populations. *Donors:* SPECIFIC TRUST FUND of the Minamata Convention *Project implementation:* Zambia Environmental Management Agency (ZEMA), Ministry of Health, Ministry of Labor and Social Security, University of Zambia, Ministry of Commerce, Trade and Industry. *Period of implementation:*2021-2024 *Budget:* USD 192,000 *Objective:* The overall objective of this project is to support Zambia in implementing the obligations of the Minamata Convention by reducing the presence of mercury in vulnerable populations as provided for under Articles 16 and 18.	Coordination between the CI-GEF project and this project will be facilitated through ZEMA, which is the implementing agency for both projects. This project will conduct an in-depth national survey identifying vulnerable populations to mercury exposure. The project will also conduct awareness-raising activities on the effects on human health of exposure to mercury and mercury compounds. The survey generated from this project can be beneficial for the CI-GEF project. In terms of public awareness activities, the lessons learnt can be shared. The project needs to target different beneficiaries to avoid duplication. In addition, this project will also develop strategies for monitoring mercury in biota and on the phase-out of mercury-added products including skin lightening creams and soaps. The data from mercury in biota will enrich the baseline of the project related to the impact of mercury on biodiversity.

[1] ACP, (2019). Overview: ACP-EU Development Minerals Programme. https://businessacp.com/en/programs/ (accessed 14 June 2022)

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assesments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

The table below summarizes the project alignment with the international, regional priorities, and national strategies to prevent environmental and health issues related to the use of mercury in ASGM in Zambia.

National Priorities	Project Consistency

Minamata Convention on Mercury	Zambia signed the Minamata Convention on Mercury in 2013 and ratified the Convention in 2016. The Convention requires signatory countries with more than insignificant ASGM to develop and implement National Action Plans (NAP) to reduce, and where feasible eliminate, the use of mercury in the sector. As a roadmap to ensure the compliance of Zambia with the Minamata Convention on Mercury, ZEMA has developed a draft National Action Plan (NAP) to transform the ASGM sector sustainably and inclusively. The planetGOLD project will directly support the Minamata Convention obligations related to mercury in the ASGM sector.
International Conference on the Great Lakes Region (ICGLR)	Zambia joined the ICGLR in 2000. The ICGLR is a pact signed by twelve African states[1] which recognize the regional dimension of political conflicts and the need for a concerted effort to promote peace and sustainable development in the region. Acknowledging that illegal exploitation and trade of minerals often fuel local conflicts, part of the ICGLR approach aims at regionally formalizing the ASGM sector. In particular, Zambia participates in the initiatives to address ASGM challenges in relation to formalization, illicit financing, responsible gold supply chains, and mercury reduction. These include harmonizing mining legislation in the region, developing a Regional Certification Mechanism, an ASGM formalization strategy, and a Regional Gold Strategy for ASGM Due Diligence which will be supported throughout the project.
Africa Mining Vision	Africa Mining vision has been published in 2009 by the African Union and aims at proposing a shared vision of the African Mining Sector Zambia is aligned with the African Mining Vision, which recognizes ASM as an important sector for socio-economic development, the need to formalize ASM, and upgrade knowledge skills and technology in the sector. As Zambia?s NAP, the vision underlines the need to strengthen ASM associations.

Southern African Development Community (SADC)	Zambia is part of the Southern African Development Community which is a legally binding agreement that have been established in 1992. Its main objective is to achieve development, peace, security, and economic growth, alleviate poverty, enhance the standard and quality of life of the people of Southern Africa, and support the socially disadvantaged through regional integration, built on democratic principles and equitable and sustainable development. As a member of the Southern African Development Community (SADC), Zambia has participated in the harmonization of mining policies (including ASM) and has also participated in the development of the SADC Regional Mining Vision which is aligned with the objectives and components of this planetGOLD project.
African Union Agenda 2063	African Union Agenda 2063 is a shared framework for inclusive growth and sustainable development for Africa to be realized in the next fifty years. One of the goals of this agenda is that African people have a high standard of living, quality of life, sound health, and well-being. This objective can be achieved by taking into account the health and well-being of people. One of them is the elimination of hazardous waste which is addressed by the planetGOLD project. In addition, the artisanal and small-scale gold mining sector is an important livelihood for communities in Zambia. Improvement in management and technology in the ASGM sector that is targeted by the planetGOLD project will thus help to reduce poverty and achieve sustainable development for local communities in order to achieve AU Agenda 2063.

Other international and regional agreements under relevant conventions have been identified, to a lesser extent, as consistent with this planetGOLD project:

- ? The United Nations 2030 Agenda for Sustainable Development.
- ? The Second National Biodiversity Strategy and Action Plan (NBSAP-2) under the United Nations Convention on Biological Diversity (UNCDB).
- ? The Land Degradation Neutrality under the United Nations Convention to Combat Desertification (UNCCD).
- ? The Nationally Determined Contribution under the United Nations Framework Convention on Climate Change.

[1] Angola, Burundi, Central African Republic, Republic of Congo, Democratic Republic of Congo, Kenya, Rwanda, Republic of South Sudan, Sudan, Tanzania, Uganda and Zambia.

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

The ASGM sector is poorly known and understood by the general public as well as by financial institutions and governments. It also often carries a negative image of these same stakeholders being associated with informality, illegality, and smuggling. One of this project objectives is to tackle these issues by building a common and mainstream understanding of the sector across stakeholders while encouraging the uptake of a diversity of good practices (technical, financial, managerial). To this end, knowledge generation and management will be systematically integrated across the project. During its first year, the project will develop a Knowledge Management and Communication Strategy (KM&CS) to ensure: (i) in the short term, a great uptake of the interventions proposed throughout the project; (ii) in the medium-term, the sustainability, replicability, and complementarity with other initiatives, of the positive impacts generated by this planetGOLD project securing also that the associated lessons learnt are available - thus paving the way to reproduce or scale-up nationally or abroad the project?s success stories; (iii) in the long-term, improve the overall image of the sector and foster its economic sustainable development.

The project?s KM&CS shall be aligned with the GEF Knowledge Management Guidelines[1] and the PlanetGOLD Communication Strategy.

- ? The first aspect of the KM&CS for the project is to identify lessons learnt from recently completed interventions and integrate them into project design during the PPG phase. The compilation of these lessons learnt by the project, extracted from evaluation and other documents, alongside the identification of key Knowledge Products already generated through these past initiatives.
- ? During the early stages of implementation, key stakeholders, in particular ASGM communities and financial institutions, will be approached to ensure their voluntary and proactive participation in the activities of the project.
- ? Then, following the achievement of the different assessments and baselines performed within the framework of the different components, all the interested stakeholders will be invited to share their materials and communicate results to the concerned participants thus contributing to the generation of knowledge at the local to a national level while ensuring communities enrolment in the process.
- ? As part of the capacity-building activities of this project, numerous training sessions will be organized on relevant topics to a diversity of stakeholders: ASGM formalization, cooperative organization, and license application, financial literacy, access to finance, ASGM legal implication, jurisdictional approach, mercury-free technologies.

Awareness-raising campaigns will be developed as well to sensitize the dangers of mercury and the benefits of mercury-free technologies. Online and physical workshops will be organized, and posters will be displayed in strategic areas to sustain the key messages of these campaigns.

The project will also be working with mining schools to transfer knowledge and skills in improved gold processing and mercury free technologies in the local areas.

Lessons learned and information produced as a result of the pilot experiences implemented within the project will be documented and disseminated. The project will leverage existing platforms for the wider dissemination of knowledge products, in particular the PlanetGOLD website, which will ensure lessons learnt and knowledge products can continue to be accessed by the wider public beyond the timeframe of project implementation and support a wider appropriation of its results by other child projects or ASGM stakeholder. Regarding knowledge management also contributing to the PlanetGOLD program, representatives of this planetGOLD project will be sent to Global Forums and Annual Programme Meetings.

Finally, the KM&C Strategy will focus on developing relevant knowledge products, adapted, and highly usable by the different groups of targeted stakeholders, including illiterate and semi-literate individuals. Such individuals should also be actively engaged in Training of Trainers activities.

Gender will be mainstreamed across these knowledge products, and the KM&C Strategy will take into account the differentiated needs of women. Moreover, the specific skills and capacities of women will be leveraged to ensure they can also be agents of change in decision-making processes and will be actively engaged as effective communicators. This approach will apply, amongst others, to training materials developed by the project, and will be used in the project?s capacity-building activities undertaken under all three project Components.

Type of K&M activity	**Budget from GEF (USD)**	**Time Frame**
Activity 4.1.1: Design and implement awareness raising campaigns	**209,250 (Budget shared with activity 4.1.2.)**	**Continuously, from project?s inception to closure**
Activity 4.1.2: Localization and distribution of GEF planetGOLD programme EIC?	**209,250 (Budget shared with activity 4.1.1.)**	**Continuously, from project?s inception to closure**

Activity 4.1.3: Support participation in national and regional knowledge sharing opportunities and events?	**115,000 (budget shared with activity 4.2.1)**	**Continuously, from project?s inception to closure**
Activity: 4.2.1: Participate in planetGOLD Knowledge sharing activities and events	**115,000 (budget shared with activity 4.13)**	**Continuously, from project?s inception to closure**
Activity 4.2.2: Produce knowledge products (Components 1, 2 and 3)	**125,000 (budget shared with activity 4.2.3)**	**Continuously, from Year 3 to Year 5**
Activity 4.2.3: Contribute to the planetGOLD knowledge platform and programme communication activities?	**125,000 (budget shared with activity 4.2.2)**	**Continuously, from Year 2 to Year 5**
TOTAL	**449,250**	

[1] See GEF Approach on Knowledge Management https://www.thegef.org/sites/default/files/council-meeting documents/EN_GEF.C.48.07.Rev_.01_KM_Approach_Paper.pdf

9. Monitoring and Evaluation

Describe the budgeted M and E plan

The project will follow UN Environment standard monitoring, reporting and evaluation process procedures. Reporting requirements and templates are an integral part of the UN Environment legal instrument to be signed by the executing agency and UN Environment.

Project M&E will be conducted in accordance with established UN Environment and GEF procedures and will be provided by the EA. The M&E plan includes inception report, annual review and final evaluations.

The **Project Management Unit (PMU)** will be responsible for stakeholder engagement, gender monitoring, and outreach to the broader community in the country. The M&E plan will be reviewed and revised as necessary during the project inception workshop to ensure project stakeholders understand their roles and responsibilities vis-?-vis project monitoring and evaluation. Indicators and their means of verification may also be fine-tuned at the inception workshop. Day-to-day project monitoring is the responsibility of the PMU, but other project partners will have responsibilities to collect specific information to track the indicators. It is the responsibility of the PMU to inform UN Environment of any delays or difficulties faced during implementation so that the appropriate support or correlative measures can be adopted in a timely fashion.

The **Project Steering Committee (PSC)** will receive periodic reports on progress and will make recommendations to UN Environment concerning the need to revise any aspects of the Results Framework or the M&E plan. Project oversight to ensure that the project meets UN Environment and GEF policies and procedures is the responsibility of the Task Manager of the Implementing Agency. The Task Manager will also review the quality of draft projects outputs, provide feedback to the project partners, and establish peer review procedures to ensure adequate quality of scientific and technical outputs and publications.

Project supervision will take an adaptive management approach. The Task Manager will develop a project supervision plan at the inception of the project which will be communicated to the project partners during the inception workshop. The emphasis of the Task Manager supervision will be on outcome monitoring but without neglecting project financial management and implementation monitoring. Progress vis-a-vis delivering the agreed project global environmental benefits will be assessed with the Steering Committee at agreed intervals. Project risks and assumptions will be regularly monitored both by project partners and UN Environment. Risk assessment and rating is an integral part of the Project Implementation Review (PIR). The quality of the project monitoring and evaluation will also be reviewed and rated as part of the PIR. Key financial parameters will be monitored quarterly to ensure cost-effective use of financial resources.

In line with the GEF Evaluation requirements and UNEP?s Evaluation Policy, GEF Full-Sized Projects and any project with a duration of 4 years or more will be subject to an independent Mid-Term Evaluation or management-led Mid-Term Review at mid-point. All GEF funded projects are subject to a performance assessment when they reach operational completion. This performance assessment will be either an independent Terminal Evaluation or a management-led Terminal Review.

In case a Review is required, the UNEP Evaluation Office will provide tools, templates, and guidelines to support the Review consultant. For all Terminal Reviews, the UNEP Evaluation Office will perform a quality assessment of the Terminal Review report and validate the Review?s performance ratings. This quality assessment will be attached as an Annex to the Terminal Review report, validated performance ratings will be captured in the main report.

However, if an independent Terminal Evaluation (TE) of the project is required, the Evaluation Office will be responsible for the entire evaluation process and will liaise with the Task Manager and the project implementing partners at key points during the evaluation. The TE will provide an independent assessment of project performance (in terms of relevance, effectiveness and efficiency), and determine the likelihood of impact and sustainability. It will

have two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP staff and implementing partners. The direct costs of the evaluation (or the management-led review) will be charged against the project evaluation budget. The TE will typically be initiated after the project?s operational completion If a follow-on phase of the project is envisaged, the timing of the evaluation will be discussed with the Evaluation Office in relation to the submission of the follow-on proposal.

The draft TE report will be sent by the Evaluation Office to project stakeholders for comment. Formal comments on the report will be shared by the Evaluation Office in an open and transparent manner. The project performance will be assessed against standard evaluation criteria using a six-point rating scheme. The final determination of project ratings will be made by the Evaluation Office when the report is finalized. The evaluation report will be publicly disclosed and will be followed by a recommendation compliance process. The evaluation recommendations will be entered into a Recommendations Implementation Plan template by the Evaluation Office. Formal submission of the completed Recommendations Implementation Plan by the Project Manager is required within one month of its delivery to the project team. The Evaluation Office will monitor compliance with this plan every six months for a total period of 12 months from the finalization of the Recommendations Implementation Plan. The compliance performance against the recommendations is then reported to senior management on a six-monthly basis and to member States in the Biennial Evaluation Synthesis Report.

Table: M&E Summary Table

Type of M&E activity	**Responsible Parties**	**Budget from GEF (USD)**	**Budget co-finance**	**Time Frame**
Inception Meeting	EA	28,750 (Covered under meetings/conferences budget line)		Within 2 months of project start-up
Inception Report	EA	Covered under meetings/conferences budget line		1 month after project inception meeting
Measurement of project progress and performance indicators	EA	Covered under project personnel/consultants budget line		Annually
Baseline measurement of project outcome indicators, GEF Core indicators	EA	Covered under project personnel/consultants budget line		Project inception
Mid-point measurement of project outcome indicators, GEF Core indicators	EA	Covered under project personnel/consultants budget line		Mid-point

Quarterly progress/Operational Reports to UNEP	EA	Covered under project personnel/consultants budget line		Within 1 month of the end of the reporting period (quarterly)
Project Steering Committee (PSC) meetings and National Steering Committee meetings	EA	50,000 (Covered under meetings/conferences budget line)		Once a year minimum
Reports of PSC meetings	EA	Covered under project personnel/consultants budget line		Annually
Project Implementation Review (PIR) report	EA and IA	Covered under project personnel/consultants budget line		Annually, part of reporting routine
Monitoring visits to field sites	EA	Covered under project travel budget line		As appropriate
Mid-Term Review/Evaluation	IA	30,000		At mid-point of project implementation
Terminal Review/Evaluation (whether a project requires a management-led review or an independent evaluation is determined annually by UNEP?s Evaluation Office)		30,000		Typically initiated after the project?s operational completion
Audit	EA	Covered under evaluation budget line (part of PMCs)		Typically initiated after the project?s operational completion
Project Operational Completion Report	EA	Covered under project personnel/consultants budget line		Within 2 months of the project completion date

Co-financing report (including supporting evidence for in-kind co-finance)	EA	Covered under project personnel/consultants budget line		Within 1 month of the PIR reporting period, i.e., or on before 31 July
Publication of lessons learned and other project documents	EA	Covered under reporting costs budget line		Annually, part of quarterly reports and Project Final Report
TOTAL		60,000		

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

The implementation of the planetGOLD project will also contribute to the following socio-economic benefits:

Sustainable livelihoods: Overall, the improved gold processing and enhanced formalization of the ASGM sector promoted by this project will serve as a vehicle of sustainable development: alleviating poverty, improving living conditions, and stimulating job creation. Indeed, gold capture and recovery will be enhanced which will eventually generate more income for mining communities. Throughout the project, ASGM miners will also gain better access to the formal market and will be able to sell their gold at a fair price. Promoting ASGM formalization will also lead to improved gold trade transparency on a national scale, contributing to the efforts towards eliminating gold smuggling, and increasing the opportunity for ASGM miners to access financial support, which is also expected to improve their livelihoods. It can also be expected that the formalization of the activity will have a spillover effect on other economic sectors as the increased incomes will be reinjected into the local economy. Lastly, as the government will obtain more revenue from the formal market taxes, more money will be available to finance development programs aiming at sustaining ASGM mining communities and livelihoods through education and health services, improved sanitation, or enhanced access to potable water. Improved economic status of homes will reduce child labour and illiteracy rates, as more children will be able to go to school. Moreover, there are expected to be multiple socio-economic benefits of healthy ecosystems due to reduced pollution of water and land from mercury, including for livelihoods dependent on agriculture and fisheries, amongst others.

Improvement of health conditions: The improvement of mining practices and promotion of mercury-free technologies will reduce the direct exposure of ASM miners to mercury and its related compounds during gold processing. Awareness-raising campaigns on the dangers of mercury, developed within the framework of this planetGOLD project, are expected to further improve the appropriation of the techniques. In fact, the awareness-raising strategy is expected to change the behaviour of ASGM miners towards their mercury handling and use which will ultimately provide them with better working conditions, including vulnerable people.

In addition, mercury-free technologies? implementation is expected to decrease indirect exposure to mercury as it will dramatically reduce air, water, and soil contamination. This will maintain a decent natural environment including a sustained quality of water and food. Finally, better mining practices

including forest smart mining initiatives will ensure that ASG miners reduce their environmental impacts. They will help preserve ecosystem services for the benefit of the surrounding communities by limiting deforestation or backfilling and restoring mined-out pits which will reduce, among other things, the incidence of water-borne diseases such as malaria.

Gender equality: The project will include gender equality and women empowerment in a cross-cutting way across all components. All activities will be gender-sensitive and will be implemented, monitored and evaluated to equally benefit men and women. As a result of the gender assessment conducted during the PPG phase, gender mainstreaming will be included: (i) in local and mining cooperatives governance through the effective participation of women in decision-making; (ii) in capacity building through the consolidation of women economic activities along the supply chain; and (iii) initiatives aiming at expanding access to financial services which will improve economic empowerment. For this purpose, the gender approach will be integrated transversally among outputs and activities of all components.

11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
	Medium/Moderate		

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

The project?s risk mitigation matrix included in the CEO Endorsement document includes the following:

Risk	Risk rating	Proposed mitigation measures
Operational Risks		

Lack of buy-in and support from policy makers to develop/ amend/revise and approve the ASGM legislative frameworks generated through the project's support	Medium	The project will actively engage high level policymakers throughout the process of development/amendment/revision. Membership of the coordination mechanisms under Output 1.1.1 will indeed consider integrating these key stakeholders to mitigate this risk.
Lack of coordination between key ministries, main stakeholders, and various ASGM initiatives	Medium	The project will ensure close coordination with all relevant ministries and institutions including parliamentarians as a constituency to improve the broad-based ownership of the project including data sharing for better-compiling data survey table and report, in line with its Stakeholder Engagement Plan.? Regular communication and project updates will be provided and quarterly reports will be shared with national and local authorities to ensure institutional support for the project. Moreover, the project will work through Component 1 on forming coordination mechanisms for ASGM formalization, which will contribute in itself to better cross-sectoral coordination.
Political changes and high turnover of government staff	High	Frequent staff changes could be a risk to the sustainability of the capacity-building outcomes. The project management unit (PMU) will incorporate a sustainable mechanism to strengthen political buy-in and technical stability and coordinate with relevant ministries to address this issue. A Training of Trainers approach will be used in relevant contexts to ensure that the capacity-building activity results are sustainable and can be scaled out.
Lack of support from relevant ministry to deliver the mining licenses required to run the pilots	Medium	Delay during the project implementation due to the lack of support from the ministry can be mitigated by building the relationship with the project through good and early communication about the project and a good stakeholder engagement process.
Political unrest, armed conflict, armed groups, and/or tax-seeking behavior impeding the planned interventions. This can translate into (i) movement restrictions for staff and executing partners, (ii) staff, implementing partner, or service provider injuries, and (iii) damages to infrastructure and equipment, impacting the project delivery plan.	Low	The pilot projects will be undertaken in areas with a low-security risk. The Project Team will also develop a security plan and related procedures and keep a close watch on the situation to predict as much as possible when and where there could be unrest and prevent impacts on project implementation. Local law enforcement at pilot sites will be involved in the design of mitigation measures. Compliance with UN procedures for safety and security planning is key. Particular focus will be placed on road safety (road cuts, traffic accidents), and mining site security (illegal gold and mercury trade, conflicts with local communities).

Difficulty to identify locally based and qualified consultants leading to project delays	Medium	The PPG phase prepared a preliminary procurement plan to accelerate the recruitment of consultants. Moreover, the budget allows for the recruitment of international expertise if required, to mitigate the limited availability of local expertise. Strict deadlines will be set for each stage of the procurement process, and progress will be closely monitored by the PMU. Finally, coordinating early with the Executing Agency to align with their procurement processes while meeting the project recruitment needs of the project will be prioritized
Technical Risks		
Lack of maintenance training for mercury-free technology and difficulty to find spare parts or replacement parts interrupting the adoption of mercury-free technology	Medium	Maintenance training and materials will be provided to several operators in the pilot sites, creating some redundancies in case an operator moves out of the pilot area. The project will carefully consider promoting only mercury-free technology with spare parts (budgeted for), or where spare parts are affordable and easily accessible in the pilot area. Partnerships with academic institutions and private sector actors will be explored to provide the trainings and equipment maintenance, if relevant.
Unsuccessful adoption of mercury-free method promoted by the project as the miners preferred the cyanidation process	Low	In several past projects, mercury use was observed to be replaced by cyanide in gold processing. However, cyanide also generates problems such as contamination due to the lack of proper tailing facilities and the dumping of toxic sediments. In this respect, the use of cyanide in the pilot sites will not be promoted. The project will ensure to promote cost-efficient environmentally sustainable technology to reduce mercury use, improve production, as well as accessible and easily replicated.
The reluctance of miners to use the retort method for mercury use reduction due to its complexity	Low	The project will promote mercury use reduction methods that are easily replicated and affordable for the miners. In addition, the training of the ASGM operators will include practical demonstrations of the low efficiency of the whole ore amalgamation process and its consequences on the profitability of the ASGM operations. Particular attention will be given to focusing the demonstrations on the enhanced productivity offered by the new technologies proposed.
Mercury reduction technology cannot be replicated outside pilot sites due to a lack of government enforcement of mercury bans	Low	The replication of the free-mercury method outside the pilot sites can be achieved by increasing government enforcement, both at the national and regional levels to ban mercury that is followed by effective monitoring and evaluation. The project will in part support creating this enabling environment.
Lack of interest of intermediary financial institutions to provide financial support targeting ASGM	High	The project will target intermediary financial institutions in the stakeholder engagement process. They will be involved in awareness-raising activities presenting the importance of these mechanisms to support the objective of the project and the potential to benefit from this scheme for their business.

Language barrier/low education among mining communities impedes communication in the project or conducting training workshops, and ultimately technology adoption	Low	Communication, trainings, and knowledge products targeting local communities will be conducted in the local language by local specialists. Communication materials will be delivered with understandable and easy access. PMU staff will visit the pilot project sites regularly and maintain close communication with local communities in order to facilitate and bridge the communication between the central level of the project and its field site locations.
Social Risks		
Project results are not well disseminated to project beneficiaries.	Medium	The project result will be disseminated nationally and locally through various communication means (such as posters, flyers, documentary films, social media, websites, etc), including achievement and lesson-learned to ensure the replication in other areas. The EA will be involved in the monitoring and evaluation phase to have a better understanding of the results and to increase the ownership of the project output and outcomes.
Limited participation of women in project activities and/or limited access to its benefits for women, leads to limited impact of the project.	Medium	The GMP will be implemented, progress of targets monitored and reported on a quarterly basis.
The areas of work located in natural reserves or indigenous people (IP) territories.	Low	The selection of pilot site locations has considered the social and environmental safeguards, including as exclusion criteria interventions in indigenous people territories. Should other sites need to be selected during implementation, the same criteria will be applied.
Environmental / Climate Risks		
Vulnerability to extreme weather events (floods, droughts, landslide, etc.) affect mining operations, transportation of equipment, and project activities	Medium	? The selection of pilot sites has considered the impact of climate change and it will be closely monitored during the implementation. The project pilot areas were selected through the exclusion of high risk of disaster due to unsafe mine conditions. ? The project activities will take into account the dry/rainy season in the planning and its impact on mining operations, as well as the impact on critical infrastructure and access to pilot sites.
Water shortage as a result of climate variability impacting mining communities	High	The project will conduct an analysis on water availability in the pilot sites and areas of mining operations. The project will introduce and will train the local community about water recycling technology and techniques in order to avoid water loss and associated conflict over water scarcity as well as other related environmental footprints under Components 3 and 4.

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
Appendix 8 - SRIF	**CEO Endorsement ESS**	

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Project: 10837 Global Opportunities for Long Term Development of ASGM (GOLD+) in Zambia						
Project Objective	**Objective level Indicators**	**Baseline**	**Targets and Monitoring Milestones**	**Means of Verification**	**Assumptions & Risks**	**Link to SDGs**

To reduce the use of mercury in the ASGM sector in Zambia through a holistic, multisectoral integrated formalization approach and increased access to finance leading to the adoption of sustainable mercury-free technologies and access to traceable gold supply chains.	**Indicator a.** Tons of mercury reduced/avoided per year (GEF Core Indicator 9: Reduction, disposal/destruction, phase out, elimination, and avoidance of chemicals of global concern and their waste in the environment and in processes, materials, and products metric tons of toxic chemicals reduced) **Indicator b.** Quantity of gold (Kg) produced without mercury **Indicator c**. Quantity of gold (Kg) produced fulfilling planetGOLD criteria **Indicator d**. Number of miners formalized (women/men) **Indicator e**. Amount of investments (USD) from new or existing financial inclusion mechanisms or	**Baseline Indicator a.** 286.66 kg of mercury used (per year, for 142.83 kg of gold in a small-scale Zambian mine)	**Mid-Term of project:** Target a: 500 kg of mercury reduced/avoided (in the project areas) Target b: XX kg of gold produced without mercury (TBC during Implementation Phase) Target c: XX kg of gold produced fulfilling planetGOLD criteria (TBC during Implementation Phase) Target d: 20% of ASGM miners in the project intervention areas are formalized by the end of the project, of which 30% are women (i.e., 1,736 miners of which 520 are women) Target e: 200,000 USD from new or existing financial inclusion mechanisms or responsible supply chain mechanisms	Survey of key ASGM actors at the pilot sites (UNEP toolkit)	**Risks**: Change in the political and economic situation during the lifetime of the project impacts its implementation Avoided mercury volumes from targeted areas could be displaced to neighboring areas as mercury traders would like to compensate for losses. ***Assumptions:*** Governments are engaged in creating an enabling environment for formalization.	*SDG 5.c:* *Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels* *SDG 9.3:* *Increase access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets* *SDG 9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-*

	responsible supply chain mechanisms made supporting mercury-free technologies **Indicator f**. Area of landscapes under improved practices (excluding protected areas) in hectares (GEF Core indicator 4) **Indicator g**: Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment		made supporting mercury-free technologies Target f: 100,000 hectares of landscapes under improved practices Target g: 5,000 beneficiaries supported by the project (of which at least 2,000 are women) **End of project:** Target a: 1,140 kg of mercury reduced/avoided (in the project areas) Target b: XX kg of gold produced without mercury (TBC during Implementation Phase) Target c: XX kg of gold produced fulfilling planetGOLD criteria (TBC during Implementation Phase) Target d: 40% of ASGM miners in the		The Private Sector considers ASGM an investment opportunity with managed risks. Financial sector actors are able to overcome barriers (perceived and real) to providing finance. Miners are willing to access the finance and transition to mercury free processes.	*use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities* *SDG 12.4:* *By 2020, achieve the environment-tally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment*

			project intervention areas are formalized by the end of the project, of which 30% are women (i.e., 1,736 miners of which 520 are women) Target e: 500,000 USD from new or existing financial inclusion mechanisms or responsible supply chain mechanisms made supporting mercury-free technologies Target f: 243,800 hectares of landscapes under improved practices Target g: 11,261 beneficiaries supported (of which at least 4,417 are women)			
Component 1: Enhancing formalization in the ASGM sector						

Outcome 1	Outcome Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	Link to SDGs

Enhanced formalization in the ASGM sector through multisectoral, integrated approaches and capacity building	**Outcome Indicator 1.1:** Number of ASGM miners formalized (include sex-disaggregated data) (C&W Unit Impact Class 10) **Outcome Indicator 1.2:** Number of institutions strengthened to enhance service delivery in the ASGM sector (C&W Unit Impact Class 11)	**Baseline Indicator 1.1.** Currently 2% formalization level at national scale, with no capacity building activities for ASGM actors, the ASGM actors are disorganized and are not using gender-inclusive formalization models and sustainable practices. **Baseline Indicator 1.2.** There is inadequate institutional technical capacity for service delivery in the ASGM sector.	**Mid-Term of project:** **Target 1.1:** 20% of ASGM miners in the project intervention areas are formalized by the mid-term of the project, of which 30% are women (i.e., 868 miners of which 260 are women). **Target 1.2:** Two (2) institutions with enhanced technical capacity for service delivery in the ASGM sector. **End of project** **Target 1.1:** 40% of ASGM miners in the project intervention areas are formalized by the end of the project, of which 30% are women (i.e., 1,736 miners of which 520 are women). **Target 1.2:** Five (5) institutions with enhanced technical capacity for service	Count of individuals within cooperatives created and licensed The project will develop a custom capacity assessment tool for monitoring and evaluation, which may be derived from similar questionnaire-based tools. Capacity score of each institution (out of a maximum of 4: Low capacity = 1; Basic Capacity = 2; Moderate Capacity = 3; Strong Capacity = 4)	**Risks** Governments sideline the issue of ASGM and fail to put it forward as an agenda for policy change and support Inability or lack of capacity for governments to provide adequate support services **Assumptions** Governments engaged in creating an enabling environment for formalization. The legal framework will advance formalization.	*17.14 Enhance policy coherence for sustainable development* *17.15 Respect each country?s policy space and leadership to establish and implement policies for poverty eradication and sustainable development* *17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships*

			delivery in the ASGM sector.			
Component outputs	**Output Indicators**	**Baseline**	**Targets and Monitoring Milestones**	**Means of Verification**	**Assumptions & Risks**	**Link to SDGs**

***Output 1.1**: Legislative, regulatory and policy frameworks for formalizing the ASGM sector are adopted by the government*	**Indicator 1.1.1:** Number of coordination mechanisms established with clear ToRs. (C&W Indicator 11.2) **Indicators 1.1.2:** Number of policies, policy instruments, or regulatory frameworks developed, revised, or amended (C&W Indicator 4.1)	**Baseline Indicator 1.1.1.** At the national level there is no coordination mechanism explicitly supporting the formalization of the ASGM sector and management of mercury in Zambia, bringing together all the relevant stakeholders needed to achieve the ASGM NAP objectives. According to the NAP on ASGM, the coordination of ASGM-related activities had to be ensured by two structures: (i) the Advisory Council and (ii) the Technical Committee which both were to be led by the Ministry	**Mid-Term project:** **Target 1.1.1:** Two (2) coordination mechanisms established (Advisor Council and the Technical Committee). **Target 1.1.2:** TBD at inception through baseline study policies, policy instruments, or regulatory frameworks with contributions from the project to improve gender-sensitive ASGM formalization and mercury management at national/local level developed, revised, or amended. **End of project:** **Target 1.1.1:** Two (2) coordination mechanisms established (Advisor Council and the Technical Committee).	Monitoring of publication of ToRs and regular meeting minutes of the coordination mechanisms Monitoring of policies, policy instruments, or regulatory frameworks with direct contributions from the project to improve ASGM formalization and mercury management at national/local level developed	**Risks** Inability or lack of capacity for governments to provide adequate support services **Assumptions** National, provincial and district governments work cohesively and ensure transfer of knowledge and utilize capacity to facilitate development of formalization strategies.	

		of Mines and Mineral Development under the stewardship of ZEMA but have yet to be created. **Baseline Indicator 1.1.2** The baseline study performed during the NAP revealed that the ?existing regulatory framework, even though adequate to address ASGM, does not provide for the formalization or specifically regulate ASGM as a sector.	**Target 1.1.2:** TBD at inception through baseline study policies, policy instruments, or regulatory frameworks with contributions from the project to improve gender-sensitive ASGM formalization and mercury management at national/local level developed, revised, or amended.			

***Output 1.2**: Support provided to and accessed by ASGM cooperatives in selected ASGM communities to improve formalization in the sector*	**Indicator 1.2.1:** Number of people trained and technically supported for the adoption of gender-inclusive formalization models and responsible practices (sex-disaggregated) (C&W Unit indicator 10.1) **Indicator 1.2.1:** Number of knowledge product/guidance document produced on JA/LA o strengthen formalization in the ASGM sector (Landscape Action Plan) (C&W Unit indicator 9.1) **Indicator 1.2.3:** Number of Partnership Agreements/MoUs signed with key ASGM stakeholders to pilot jurisdictional approach for ASGM sector (C&W Unit indicator 11.2)	Jurisdictional and multi-stakeholder approaches for natural resource governance that go beyond traditional sector considerations have been successfully piloted in some countries but not yet in Zambia and not yet specifically in the ASGM sector.	**Mid-term of the project:** **Target 1.2.1:** 50 (of which 50% women) **Target 1.2.2.:** One (1) **Target 1.2.3:** One (1) **End of the project:** **Target 1.2.1:** 100 (of which 50% women) **Target 1.2.2.:** One (1) **Target 1.2.3:** One (1)	Training reports/Attendance reports Monitoring of the publication of the Landscape Action Plans Monitoring of the publication of maps delineating mining jurisdictional landscapes Monitoring of signature of agreements/MoUs	**Risks** Inability or lack of capacity for governments to provide adequate support services. **Assumptions** Zambian government engaged in creating enabling environment for formalization. Zambian government open to innovative governance approaches.	

Component 2: Financial Inclusion and Responsible Supply Chains						
Outcome 2	**Outcome Indicators**	**Baseline**	**Targets and Monitoring Milestones**	**Means of Verification**	**Assumptions & Risks**	**Link to SDGs**

Enhanced access to Finance by the promotion of Financial Inclusion and Responsible Supply Chains	**Indicator 2.1**: USD accessed by miners in targeted ASGM associations from new financial mechanisms (impact class 12)	**Baseline Indicator 2.1:** Limited/No finance available to actors in the ASGM sector	**Mid-Term of the project:** **Target 2.1:** 50,000 USD accessed to targeted ASGM operations through new or existing formal financial mechanism. **End of the project:** **Target 2.1:** 100,000 USD accessed to targeted ASGM operations through new or existing formal financial mechanism.	Reports of finance leveraged for ASGM through the project, from survey of direct beneficiaries Logs of number of entries to the database	**Risks** Expectations from downstream actors are not compatible with the reality of ASGM operators. Financial services might be primarily accessed to cover other needs than mercury-free technologies. Financial illiteracy might increase the credit default rate of miners. **Assumptions** Governments are engaged in creating an enabling environment for transparent	*1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.* *8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all.*

					supply chain investments. The financial sector is able to overcome barriers (perceived or real) to providing finance. Downstream actors show increased interest in buying mercury-free ASM gold ASGM operators apply OECD DDG.	
Component 2 outputs	**Output Indicators**	**Baseline**	**Targets and Monitoring Milestones**	**Means of Verification**	**Assumptions & Risks**	**Link to SDGs**

Output 2.1: *A financial support mechanism is developed and accessible for the ASGM sector*	***Indicator 2.1.1:*** *Number of new or improved gender inclusive financial mechanisms developed (C&W Unit indicator 12.3)*	*Lack of financial inclusion mechanisms is one of the main barriers to the development of non-mercury ASGM operations, especially female operators.*	**Mid term of the project:** **Target 2.1.1:** One (1) new or improved gender inclusive financial mechanisms developed **End of the project:** **Target 2.1.1:** Two (2) new or improved gender inclusive financial mechanisms developed	Count of new or improved financial mechanisms developed through direct project support Training reports/Attendance reports	**Risks** The financial sector is unable to overcome barriers (perceived or real) to providing finance. **Assumptions** Identified investors are interested and engaged in potential ASGM investing Miners are willing to access finance and transition to mercury free process	*9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets*

Output2.2: *Capacities of ASGM actors on due diligence and transparent and traceable supply chains are built*	**Indicator 2.2.1.:** Amount of gold (Kg) sold through formal market **Indicator 2.2.2.:** Number of Landscape Finance Plans developed. (C&W Unit indicator 9.1) **Indicator 2.2.3:** Number of ASGM mining entities/miners trained on planetGOLD Environmentally and Socially Responsible Criteria (sex-disaggregated) (C&W Unit indicator 10.1) **Indicator 2.2.4:** Number of completed planetGOLD Environmental and Social Risk Assessment Reports and Mitigation Reports. (C&W Unit indicator 9.1)	No responsible supply chains with ASGM actors in targeted areas so far.	**Target 2.2.4:** One (1) **Mid-Term of the project:** **Target 2.2.1.:** XX kg of gold **Target 2.2.2:** one (1) **Target 2.2.3:** 75 people, of which 30 women **Target 2.2.4:** One (1) **End of the project:** **Target 2.2.1.:** XX kg of gold **Target 2.2.2:** One (1) **Target 2.2.3:** 150 people, of which 75 women	-Transaction records of supply chain actors - Surveys and interview - Export data - Surveys and interviews with downstream supply chain participants	**Risks** Expectations from downstream actors are not compatible with the reality of ASGM operators **Assumptions** Governments engaged in creating enabling environment for transparent supply chain investments The financial sector is able to overcome barriers (perceived or real) to providing finance. Downstream actors show increased interest in buying	*9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets*

					mercury-free ASM gold ASGM perceives value in implementing OECD DDG.	
Component 3: Enhancing uptake of Mercury-free technologies						
Outcome 3	**Outcome Indicators**	**Baseline**	**Targets and Monitoring Milestones**	**Means of Verification**	**Assumptions & Risks**	**Link to SDGs**

Reduced mercury use in ASGM enabled by the increased uptake of mercury-free technologies & techniques by ASGM miners	**Indicator 3.1:** Number of ASGM miners adopting mercury-free practices (C&W Impact class 8) **Indicator 3.2:** Number of targeted ASGM associations that have implemented the planetGOLD environmental and social standard (C&W Impact class 10) **Indicator 3.3.** Amount of responsible gold produced (kg)	**Baseline Indicator 3.1:** 60% of ASGM miners currently use mercury-based methods to extract gold. The Zambia NAP targets 25% of ASGM miners currently using Hg converted to using Hg free technologies. **Baseline Indicator 3.2**. Baseline to be determined in first 6 months of implementation.	**Mid-term of project:** **Target 3.1:** 300 miners, of which 150 women) convert to/adopt mercury-free practices **Target 3.2**: 50% of targeted ASGM associations have implemented the planetGOLD environmental and social standard. **Target 3.3:** XX kg of gold produced without mercury and fulfilling planetGOLD environment and social criteria **End of project:** **Target 3.1:** 650 miners, of which 325 women[1][1]) convert to/adopt mercury-free practices **Target 3.2**: 100% of targeted ASGM associations have implemented the	Survey of key ASGM actors at the pilot sites (UNEP toolkit)	**Risks** ASGM operators are unable/ unwilling to break their existing informal contractual arrangements and are unwilling to pay taxes. Miners are unwilling to take up mercury-free practices because of mistrust of (real or perceived) lack of efficiency of those methods. Better practices are adopted during the project and then	*3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination*

			planetGOLD environmental and social standard. **Target 3.3:** XX kg of gold produced without mercury and fulfilling planetGOLD environment and social criteria.		abandoned by miner groups once the project support stops. **Assumptions** Miners endorse the conversion to mercury-free gold processing methods. Efficient and lucrative alternative mercury-free gold processing techniques are appropriate and available for ASM. Mercury suppliers (informal gold traders) are willing to engage with formal financial markets.	

Component 3 outputs	Output Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	Link to SDGs

Output 3.1: *Improved gold mining practices and mercury-free technologies addressing gender-differentiated needs introduced in selected sites*	**Indicator 3.1.1:** Number of baseline assessments updated (C&W Unit indicator 2.1) **Indicator 3.1.2.:** Number of miners trained on improved mining practices and mercury-free processes (sex-disaggregated) (C&W Unit indicator 10.1) **Indicator 3.1.3.** Number of mercury-free techniques/technologies introduced in pilot sites (C&W Unit indicator 3.1) **Indicator 3.1.4.** Quantity of mercury reduced or avoided (C&W Unit indicator 1.1 & 1.2)	*Many ASGM operators lack knowledge about the negative health and environmental impacts of mercury use.* *Information is not completely available and not properly synthesized in a useful manner for ASGM sites. ASGM operators lack knowledge about and access to alternative, mercury-free technologies.*	**Mid Term of Project:** **Target 3.1.1:** One (1) baseline assessment updated **Target 3.1.2:** 150, of which 75 women trained on improved mining practices and mercury-free processes **Target 3.1.3.:** Two (2) mercury-free techniques/technologies introduced in pilot sites **Target 3.1.4:** 550 kg of mercury reduced or avoided **End of Project:** **Target 3.1.1:** Two (2) baseline assessments updated to assess amounts of mercury used, identify and map the existing ASGM miners (men and women), gold mining technologies used, gaps and challenges, recommendations for	Count of baseline assessments completed/updated Count of reports produced on local geological survey and mining mapping reports for gold mineralized areas Training attendance reports Count of the number of technologies implemented Field observations	**Risks** Men and women are not interested in or are unable to participate in training or in taking up better practices. Varying levels of education and literacy amongst mineworkers causing differences in the ability to enhance knowledge and capacity. Women are unable to participate in training or access equipment due to gendered biases. Delays in importation of equipment.	*12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment*

			entry points of project interventions **Target 3.1.2:** 300, of which 150 women trained on improved mining practices and mercury-free processes **Target 3.1.3.:** Four (4) mercury-free techniques/technologies introduced in pilot sites **Target 3.1.4:** 1,140 kg of mercury reduced or avoided		**Assumptions** Suitable participants for ASGM training are selected Training strategies are suitable for target participants	

Output 3.2: *Improved waste and tailings management implemented in selected sites*	**Indicator 3.2.1:** Number of waste management facilities implemented (C&W Unit indicator 3.1)	*No such facilities exist in pilot sites*	**Mid-term of the project:** **Target 3.2.1:** Zero (0) waste management facility implemented in a project site **End of the project:** **Target 3.2.1:** One (1) waste management facility implemented in a project site	Count of the number of waste management facilities operational Field observations		*12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment*
Component 4: Knowledge sharing, communication and local capacity building support						
Outcome 4	**Outcome Indicators**	**Baseline**	**Targets and Monitoring Milestones**	**Means of Verification**	**Assumptions & Risks**	**Link to SDGs**

Information and knowledge shared led to improvement in the management of the ASGM sector in Zambia	**Indicator 4.1:** # of beneficiaries changing their practices as a result of improved awareness (C&W Impact class 8)	**Baseline Indicator 4.1:** Information is scattered among the different locations and not properly organized in a useful manner to ASGM stakeholders.	**Mid-term of the project:** **Target 4.1:** 4,000 direct beneficiaries of awareness raising activities, of which 1,500 women **End-of project:** **Target 4.1:** 8,000 direct beneficiaries of awareness raising activities, of which 3,000 women	Survey of project beneficiaries	**Risks** Coordination between various ASGM initiatives on the ground Lack of political will to communicate continued commitment.	*12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature*
Component 4 outputs	**Output Indicators**	**Baseline**	**Targets and Monitoring Milestones**	**Means of Verification**	**Assumptions & Risks**	**Link to SDGs**

Output 4.1: *Knowledge products and tools developed through the project are made available nationally to all planet GOLD project stakeholders in Zambia*	**Indicator 4.1.1:** Number of communication materials produced and disseminated that follow planetGOLD branding, style guide and messaging guide (C&W Unit indicator 8.1). **Indicator 4.1.2:** # blogs, news articles, events, photo essays, videos, etc. published on planetgold.org or on other planetGOLD digital communication platforms; # hits on website (C&W Unit indicator 8.3). **Indicator 4.1.3: Number** of beneficiaries accessing published/available knowledge generated from components 1,2, and 3 (output indicator 8.2).	Currently Zambia does not have an organized country-level communication platform.	**Mid-term of project:** **Target 4.1.1:** At least 4 communications materials produced that follow planetGOLD branding, style guide and messaging guide **Target 4.1.2:** At least 50 blogs, news articles, events, photo essays, videos, etc published on planetgold.org or on other planetGOLD digital communication platforms **Target 4.1.3:** 2,250 beneficiaries accessing available knowledge **End of project:** **Target 4.1.1:** At least 8 communications materials produced that follow planetGOLD branding, style guide and messaging guide **Target 4.1.2:** At least 10 blogs, news	Communication strategy/plan - IEC Materials developed - Website - Distribution list of IEC materials - Website data - Websites developed - Articles published in knowledge hub - Incentives developed	**Assumptions** Interest by the ASGM stakeholders at the local, national, and international levels remain high Programme stakeholders are willing to use the branding assets	*12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature*

			articles, events, photo essays, videos, etc published on planetgold.org or on other planetGOLD digital communication platforms; at least 50 hits on website per year **Target 4.1.3:** 4,500 beneficiaries accessing available knowledge			

Output 4.2: *Knowledge products and tools developed through the project are available globally through the planet GOLD programme*	**Indicator 4.2.1:** Number of knowledge products produced and disseminated (in relation to components 1, 2 and 3) (C&W Output Indicator 8.3)		**Mid-Term of the project:** **Target 4.2.1:** At least 1 knowledge products produced (in relation to components 1, 2 and 3) **End of the project:** **Target 4.2.1:** At least 3 knowledge products produced (in relation to co	- Activity documentation - List of participants - journals, platforms - ASGM relevant related websites, groups and association	**Assumptions** Interest by the ASGM stakeholders at the local, national, and international levels remains high. Relevant information can be synthesized in a manner that is useful to a variety of ASGM stakeholders.	*12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature*

[1] Assuming the project intervenes in Rufunsa and Chongwe, this would represent 635 miners in Rufunsa District and 15 in Chongwe District

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

USA

Project (Country)	Comment	Agency Response
Suriname	Within the Suriname child project, we would like clarity on the significant discrepancy between the cited amount of total annual mercury release from ASGM (0.086 MT) and the project target of reducing Hg use by 6 MT over 4 years.	(Relates to a different child project under the GEF planet GOLD programme)
Suriname	Also, in Suriname project, in the next iteration of the child project we would like to see coordination with the U.S. Department of State project also working on ASGM and mercury-free technologies.	(Relates to a different child project)

Republic of Congo	Within the Republic of Congo child project, the executing agency is the Basel Convention Regional Center in Dakar, Senegal, justified by its expertise in implementation of chemical conventions. We are concerned that the proposed executing agency is not in-country, and additionally has very little experience with Minamata Convention nor with ASGM, or with biodiversity, the other focus of this program. We would like to understand better the choice of this executing agency, and what alternatives exist.	After consultation with the National Counterparts, The Republic of Congo child project will be executed by the Centre Africain pour la Sante Environnementale (CASE) based in Abidjan, Cote d?Ivoire. CASE will set up an office in Brazzaville. CASE has the required expertise and experience as it is already an executing agency for UNEP on ASGM project and it has supported the development of the NAP in the Republic of Congo (contracted by the executing agency).

Nigeria	Within the Nigeria child project, the executing agency is also the Basel Convention Coordination Center for Africa Region. While they are at least based in Nigeria, we have similar concerns as above about their suitability for these issues, including if they have the contacts or substantive understanding of the ASGM sector to effectively manage the projects. We understand the EU is supporting an effort across Africa to build capacity in the small-scale mining sectors, especially of the geological survey agencies. This may be a more effective way to make progress on mercury in ASGM.	The comment is acknowledged, and the team would like to clarify that the execution arrangements involving the Basel Convention Coordination Center for Africa Region (BCCC-Nigeria) considered and endorsed at the concept stage were discussed during the project preparatory phase. The project decision-making committee (incl. relevant Ministries, private sector stakeholders, representatives of the mining sector and UNIDO) concluded during the preparatory phase that a combination involving national executing partners (Federal Ministry of Environmental FMENV and Federal Ministry of Mines and Steel Development FMMSD) and the BCCC-Nigeria would be the most appropriate approach. The BCCC-Nigeria will be involved as a co-executing partner in particular regarding their specific international experience on jurisdictional approaches. The proposed institutional and execution arrangements are explained in the CEO Endorsement Document.

Madagascar	Within the Madagascar child project, the project includes $2 million of recurring expenses from the MEDD. It is our understanding that their budget has recently been significantly downsized, and we would request confirmation of this support in the next iteration of project development.	The MEDD has confirmed $3 million co-financing contribution for the GOLD+ Madagascar project.

Madagascar	Also, within the Madagascar child project, we would like further information in the next iteration of the project on the justification for selecting GIZ as a basis to build on. They are mentioned as an ?excellent basis for the proposed GOLD+ Madagascar project to build on?, since GIZ has a very small-scale mining component under their Programme d?Appui ? la Gestion de l?Environnement or PAGE Programme. However, we understand that GIZ does not cover all the areas that will be covered by this project and have a distinct domain of expertise and experience than this project, namely in fair-trade affiliated very small-scale mining.	At the time of project submission, the PAGE Programme delivered outputs that have systemic importance for the GOLD+ Madagascar Project: a) Support to the Ministry of Mines and Strategic Resources? five-year sustainable development strategy for the ASGM sector (SDDEMAPE); b) Roadmap for responsible ASGM in Madagascar, including an action plan for the professionalization of artisanal miners through the implementation of a ?Fairmined Malagasy? certification and traceability system; and c) Introduction of practices that could lead to Fairtrade certification in ASGM pilot sites. While the GOLD+ Madagascar project has a broader scope, the SDEEMAPE strategy and ASGM roadmap have been included in the project design. During the GOLD+ Madagascar inception phase, the project team will explore whether the activities carried out by the PAGE programme can be replicated and/or scale up across the GOLD+ Project sites.

Madagascar	We look forward to greater clarity on CSO involvement in the next iteration. This will also be critical, given ongoing efforts at mining code reform in Madagascar. CSOs were very active during the government?s efforts to reform the mining code at the end of 2019. Related, are there planned contributions from this project to ongoing efforts for mining code reform, and/or considerations for the potential implications of reform for the implementation of this project?	CSOs will be involved in the following areas: a) improvement of gold supply chain; b) waste management in ASGM sites; c) advocacy and awareness raising on the extractive sector in Madagascar and health and environmental risks related to the use of mercury; d) development of skills at the national level; e) development and implementation of education strategy for ASG miners; and f) awareness raising on good governance of natural resources. The GOLD+ Madagascar project, under its component 1, will work jointly with national authorities and ASGM stakeholders to identify gaps and opportunities across policy and regulatory framework (incl. the Mining Code). Where appropriate, the Project will provide technical support to strengthen legislative and capacity gaps in relation to formalization.

Madagascar	Finally, in the next proposal iteration, we would like to better understand the relationship between the proposed activities and the MECIE (Mise en Compatibilit? des Investissements avec l'Environnement). We understand that the proposed activities are subject to environmental impact study and approval of an environmental commitment program, subject to this decree, but did not see this referenced within the project documents.	The project has allocated funds in the budget plan and developed the ToR to carry out an Environmental and Social Impact Assessment (ESIA) of the proposed activities in the selected mining sites as required by the Mining Code No. 99-022 of 19 August 1999 and as amended by Law No. 2005-021 of 17 October 2005.

Congo & Uganda	The child projects for Congo and Uganda should coordinate with current gold formalization and supply chain efforts by the International Conference on the Great Lakes Region (ICGLR), of which both Uganda and Congo are members. http://www.icglr-rinr.org/index.php/en/. The ICGLR was also instrumental in the establishment of the OECD Due Diligence Guidance, which is a key supply chain component for this program. Up to this point, there has not been much focus on mercury in the PPA, mostly due to lack of funding for the specific issue. We strongly encourage coordination with this strong Partnership working on ASGM in this region of Africa, and further encourage coordination with USG partners (State, USAID, DOL) that fund and participate in a Public-Private Alliance (PPA) for Responsible	In Uganda, the Executing Agency has a strong relationship with and significant work experience with the ICGLR. IMPACT has been a technical partner to the ICGLR for a decade. IMPACT is also a member of the PPA, and a staff member of IMPACT (who will be a team member of the project) is currently a member of the Governance Committee of the PPA. This offers an excellent opportunity to support the Ugandan government and other stakeholders in the project to create greater linkages with these various initiatives and bodies (note that the Ugandan government has already been active in both the ICGLR and the OECD through the Ministry of Mines (notably DGSM) In the Republic of Congo, the Ministry of Environment as chair of the project?s steering committee will ensure that the development of the project benefits and shares synergies from the ICGLR experiences, not only in the field of ASGM formalization but also in terms for forest resources management as it has been identified as feature of importance in the Congo child project. Links with the Congo Basin Programme have also been established. Finally, OECD is a strong partner and co-financer of the global project of planetGOLD.

	Minerals Trade in the ICGLR.	
Global	Overall, for Program component 6, Global coordination, knowledge management and outreach, there seems to be a lack of focus on the private sector gold buyers and users. Large companies (refiners, jewelers, electronics) can benefit from GOLD+ data and other insights as they increase implementation of gold sourcing due diligence programs. If this program can better consider and be sensitive to ongoing private sector due diligence policies and programs, then the program?s sustainability can be greatly amplified. Eventually, funding for these types of projects, and demand for responsible mercury free gold, will come from the downstream supply chain.	Refiners and jewelers are active members of the Programme Advisory Group of the current planetGOLD which will be continued under GOLD+. Private sector has been fully involved in the development of the planetGOLD criteria.

Global	A related supply chain concern is that in our view, the current program potentially hides supply chain issues under the ?lack of access to finance? heading. While they are related, lack of access to finance is not completely a supply chain question, and vice versa. Critical supply chain issues that should be considered include transparency, customs and trade, consumer demand (how do we mainstream responsible gold for the final consumer), responsible production, and coordination with company due diligence measures (OECD DDG). To couple these supply chain issues with another large issue like access to finance dilutes the importance of both of these barriers.	The comment is duly noted and will be taken into consideration where applicable.
GERMANY		

Madagascar	In Madagascar, apart from the BMZ/GIZ PAGE project already mentioned further synergies could be generated with the ProD?CID project. The ProD?CID project works on anti-corruption at national scale as well as on community development (community service, finance and local economic development) in the regions Analamanga, Boeny and DIANA in Madagascar. GER therefore kindly asks to consult the PAGE and the ProD?CID project during the further project preparation phase.	The ProD?CID project has been identified as a potential partner for piloting jurisdictional approaches within the Malagasy ASGM sector. During the inception phase, ProD?CID staff (national and DIANA-based) will be involved. BMZ/GIZ PAGE project staff and other relevant stakeholders (Focal Point, Gender Officer and Head of DIANA) were consulted during the project preparatory phase and will be involved in the implementation phase as well. Formal collaboration agreements with both initiatives will be explored, and synergies between the GOLD+ Project and the activities planned under both ProD?CID and PAGE Phase 2 will be pursued.

Madagascar	In addition, the project proposal points out on page 9 that there is a Co-Finance/ grant investment of 8,631,495 USD from GIZ?s PAGE project. This information is incorrect. GIZ PAGE is not a donor of the upcoming project, but the implementing agency. Therefore, GER kindly asks to list the Federal German Ministry for Economic Cooperation and Development (BMZ) as the donor agency with the GIZ as the implementing agency.	The comment is duly noted, and changes will be done where applicable.
Honduras	In Honduras, the German Civil Peace Service (CPS) works on environmental conflicts and might be a relevant stakeholder/partner for cooperation.	
Uganda	In Uganda, the BMZ/GIZ project Responsible Fisheries Business Chains Project (RFBC) is interested in cooperating around the issue of tracing mercury in fish in Lake Victoria.	Outreach with BMZ/GIZ will be carried out to identify potential synergies and opportunities for collaboration. The Executing Agency has already engaged representatives from GIZ who are responsible for supporting the ICGLR to share information about the project and will broaden this engagement to those involved in the RFBC.

Global	To include the international multi-stakeholder working group on Women and Mining (www.womenandmining.org) as a global knowledge-sharing partner on gender aspects of the proposal.	Noted and included.
Global	Education institutions appear in the Sources of Co-financing but are not specifically mentioned as stakeholders. Please include them.	Noted and updated.

Global	Monitor the outcome additional environmental parameters could be added such as monitoring the mercury concentrations in fish and/or along the food chain in the affected areas. The evaluation of the GEF GOLD program has noted that other issues (apart from mercury pollution) caused by ASGM (e.g. deforestation, harmful replacement technologies, child labour, indigenous peoples rights) could have been better addressed. While they cannot be accurately assessed before sites have been selected, Germany asks the project to fully consider these risks and to ensure co-benefits once possible.	The comment is duly noted, and changes will be made where applicable. All country level projects have been instructed to analyze co-benefits. Please see individual country level comments for details.

Global	According to the evaluation of the GEF GOLD program the reduction of mercury use after project completion varies significantly in different project regions. In light of these results, Germany appreciates further clarification on whether the application of a uniform replication factor for all countries is appropriate. In the current proposal the replication factor after project completion is 3. The final project proposal should state how obstacles for replication identified in the evaluation (e.g. lack of government enforcement of mercury bans, lack of training and lack of availability of replacement parts for nonmercury technology) will be tackled by the project.	Since each country has their own reduction target, in-country replication through component 4 and continuation/replication of project interventions at project sites would lead to doubling of the target. Furthermore, dissemination to neighboring countries and global knowledge sharing efforts through the global project would lead to another level of reduction equivalent to the original target. Therefore, in sum, the programme target is 3 times the country's specific reduction target.
Switzerland		

Global	We welcome this program, but it is unclear to us, how the lessons learned from the GEF GOLD Program were included in the design of the GEF GOLD+ Program. Institutional Learning is key to us, so could you clarify how this program builds on the lessons learnt on AGSM in particular from the GEF GOLD Program so far?	The GEF GOLD agencies have been fully involved in the development of the CEO endorsement document.
Global	Page 16, Para 41: It is estimated that nearly 100% of all mercury used in ASGM is released into the environment (Global Mercury Project, UNIDO 2007). Is there no more recent literature you could quote for this?	Response Pending

Global	Page 17, Para 44: the access to finance for the transition to mercury free practices in the ASGM sector is a key challenge in particular in the informal sector, but it is unclear to us how GEF GOLD+ will tackle this challenge after the GEF GOLD program has already addressed this challenge and was not fully successful.	Comment is duly noted. Please see country level ProDocs for details on country specific financial mechanisms.
Global	Component 2: Please further clarify more specifically which concrete measures will be taken to include responsible supply chains and traceability in the program, since we consider them as key.	PlanetGOLD criteria was designed to guide traceability and supply chain criteria for the program. The criteria can be found here: https://www.planetgold.org/sites/default/files/planetGOLD_Criteria_for_Environmentally_and_Socially_Responsible_Operations_Feb21.pdf

Global	Please further elaborate how you will ensure the sustainability of the program. The information contained is very limited. Please e.g. add an element on institutional strengthening, since we consider this to be crucial for the sustainability of the program. Governments often do not issue any regulation for ASGM or issue last minute regulations which often leads to an even larger illegal / informal ASGM sector. Institutional intermediary steps and well thought through policies are key for the long-term success.	Response Pending

Global	Could you clarify what will happen with the mercury still in use at this stage and the various mercury waste stocks in the ASGM areas of the recipient countries of the program? Where will the mercury waste be treated and by whom? Who will transport it? The treatment of the waste is key to ensure that the mercury intake to the environment will be avoided / limited as much as possible.	The comment is duly noted. Please reference individual country ProDocs for details regarding in country mercury protocols.
STAP		

Global	Section B of the PIF indicates that the project will have six components. However, Section 3 of the PIF (the proposed alternative scenario) only presents four components. The components on "monitoring and evaluation of country-level child projects" and that on "global coordination, knowledge management, and outreach" are not described. These are essential parts of the project and should be fully presented.	To clarify, the country level child projects have 4 components, while the Global child project has 2, totaling 6 components. The Global child project will focus on global coordination and knowledge management. Each country level project has reporting requirements at the global level as well as individual M&E resources for the respective projects.

Global	The project will adopt the jurisdictional approach (JA) as a framework for structuring interventions. The second paragraph on page 28, however, highlights some of the challenges associated with the JA, including unrealistic expectations, political turnover, limited public sector capacity, and lack of broader support and incentives. Yet, the PIF is silent on how the project will overcome these challenges to ensure success. STAP recommends that this should be done.	This comment is duly noted and additional information regarding how the JA approach will be piloted is included in the ProDoc. Through the jurisdictional approach, the market- and policy-based interventions could be bridged for greater impact on the ground. This includes encouraging governments, businesses, local communities, and NGOs to work together towards common goals, such as improving local livelihood, eliminating mercury and maintaining natural ecosystems through coordinated strategies across the sector. By involving and educating all the relevant actors across the ASGM landscape, the efforts to improve the perception of the ASGM sector, including raising awareness about the challenges and opportunities the miners are facing, can be magnified.

Global	Component 4 will support capacity building, knowledge sharing, and communication, including "using online education and digital marketing tools to support the traditional participatory workshop and training model to help institutionalize sustainable mining methods at the community level." It is, however, unclear how online education and digital marketing tools will be used given the remoteness of ASGM operations. Does this project intend to provide digital access to ASGM miners? The details of how this component will be achieved need to be elaborated.	Response Pending

	Further clarification is needed on replication estimates of the global environmental benefits. A reduction of 70 metric tons in mercury use is expected in the participating countries. Another 210 metric tons is expected via replication. It is, however, unclear if the replication will occur in the participating countries or whether it will occur indirectly through the transfer of knowledge from this project to other countries (given the global nature of the project). This needs to be clarified. Also, how was the replication factor of 3 determined?	GEF investments are predicated on the delivery of global environmental benefits in biodiversity, climate change mitigation, international waters, land degradation and chemicals and waste. The global project will support child project countries in their efforts to achieve an aggregate of more than 129.138 metric tonnes reduction in mercury and engage more than 202,500 direct beneficiaries over a 5-year period through sharing lessons. It is expected that mercury use reduction will be replicated through sharing lessons on the planetGOLD platform, webinars at national and global level. As such, it is anticipated that through technology replication, additional mercury will be reduced attributed to lessons learned. After 10 years following the project, it is anticipated that a replication by a factor of 3 will be achieved, representing an additional 387.414 metric tonnes reduction in mercury globally. These activities in the reduction of mercury use are directly aligned with GEF?s long term goal of curbing the exposure of humans and the environment to harmful chemicals through a significant reduction in the use and release of mercury. Since each country has their own reduction target, in-country replication through component 4 and continuation/replication of project interventions at project sites would lead to doubling of the target. Furthermore, dissemination to neighboring countries and global knowledge sharing efforts through the global project would lead to another level of reduction equivalent to the original target. Therefore, in sum, the programme target is 3 times the country's specific reduction target.

	It is good that the PIF acknowledged that the project would contribute to other GEF core indicators, including the area of land restored, area of landscapes under improved practices, and greenhouse gas emission reduction. The PIF did not, however, present clearly how the interventions will lead to these benefits. We encourage that the project proponent elaborates further on this and provide a detailed estimation of all expected GEBs at the PPG stage.	The comment is duly noted, and changes will be made where applicable. All country level projects have been instructed to analyze co-benefits. Please see individual country level comments for details.

	For a project that will depend on significant multi-stakeholder engagement for its success, the stakeholder section of the PIF is inadequate. Please provide a detailed analysis of stakeholders expected to be engaged in the project in the participating countries. Please, also highlight how they will be engaged, their expected role in the project, and whether they have been engaged already or if this is ongoing.	The comment is duly noted, and a detailed stakeholder engagement plan has been included in CEO endorsement submission.
	It is good that the PIF acknowledges the potential impacts of projected climate change, for example, desertification on achieving project objectives. The effects of climate change may also influence decisions on ASGM sites? We recommend that a detailed analysis of climate risk and management strategy should be presented for the project.	The comment is duly noted. Please reference country level ProDocs for respective climate risks analysis.

ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:

Budget Category	*GETF/LDCF/SCCF Amount ($)*		
	Budgeted Amount	*Amount Spent To date*	*Amount Committed*
Personnel- Project Design and Coordination	**28,500**	**26,604**	**1,896**
Professional Services-ProDoc Development*	**62,000**	**58,130 + 3,000 pending**	**870**
Travel, Meetings and Workshops	**9,500**	**8,060**	**1,440**
Total	**100,000**	**95,794**	**4,206**

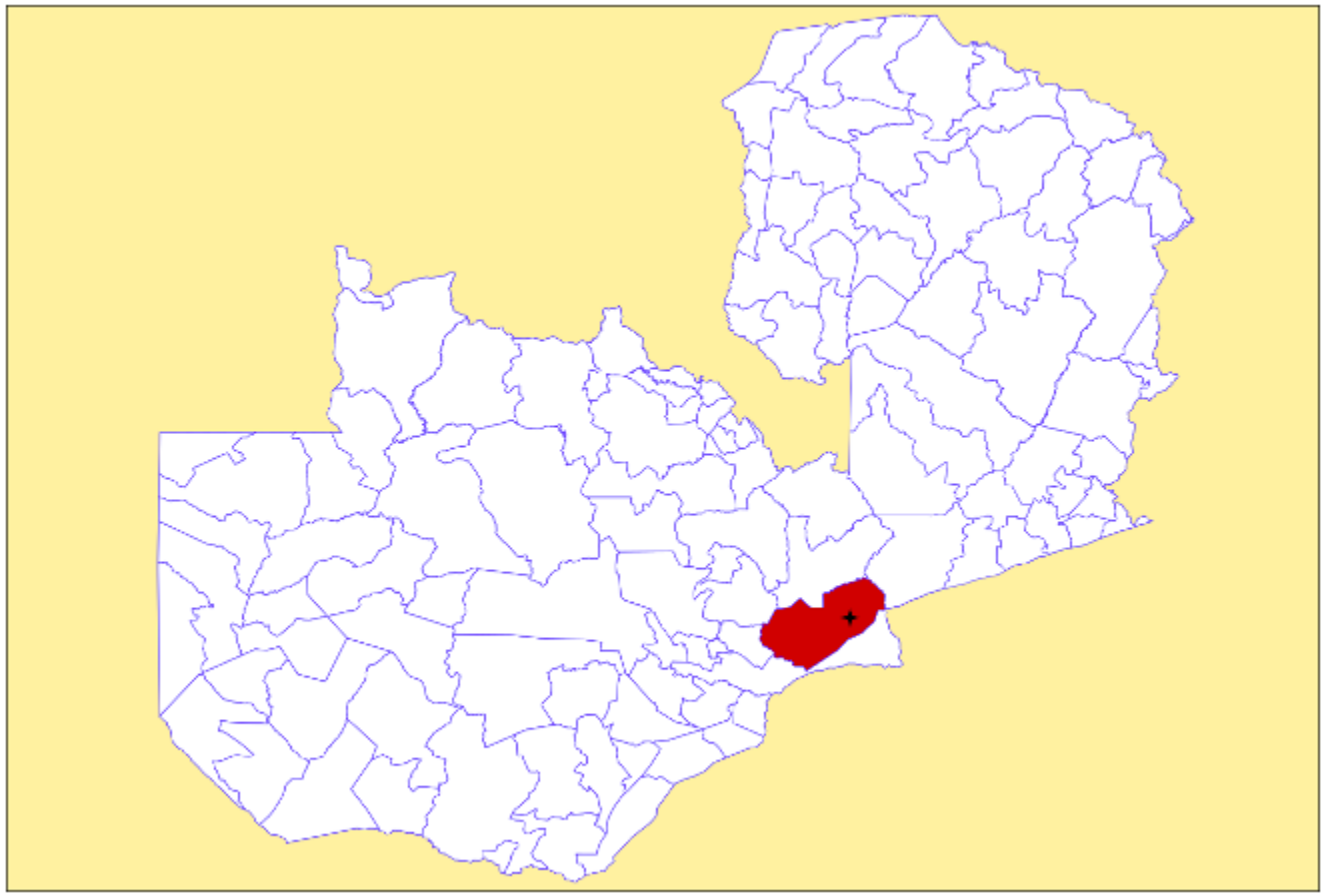
* The professional services provided by Baastel (International consultant) together with Mr. Chozi (National Consultant) were aimed for the preparation of the planetGOLD Zambia child project?s CEO Endorsement Package. A USD 3,000 payment is still pending upon the receipt of the final invoice by the national consultant.

ANNEX D: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

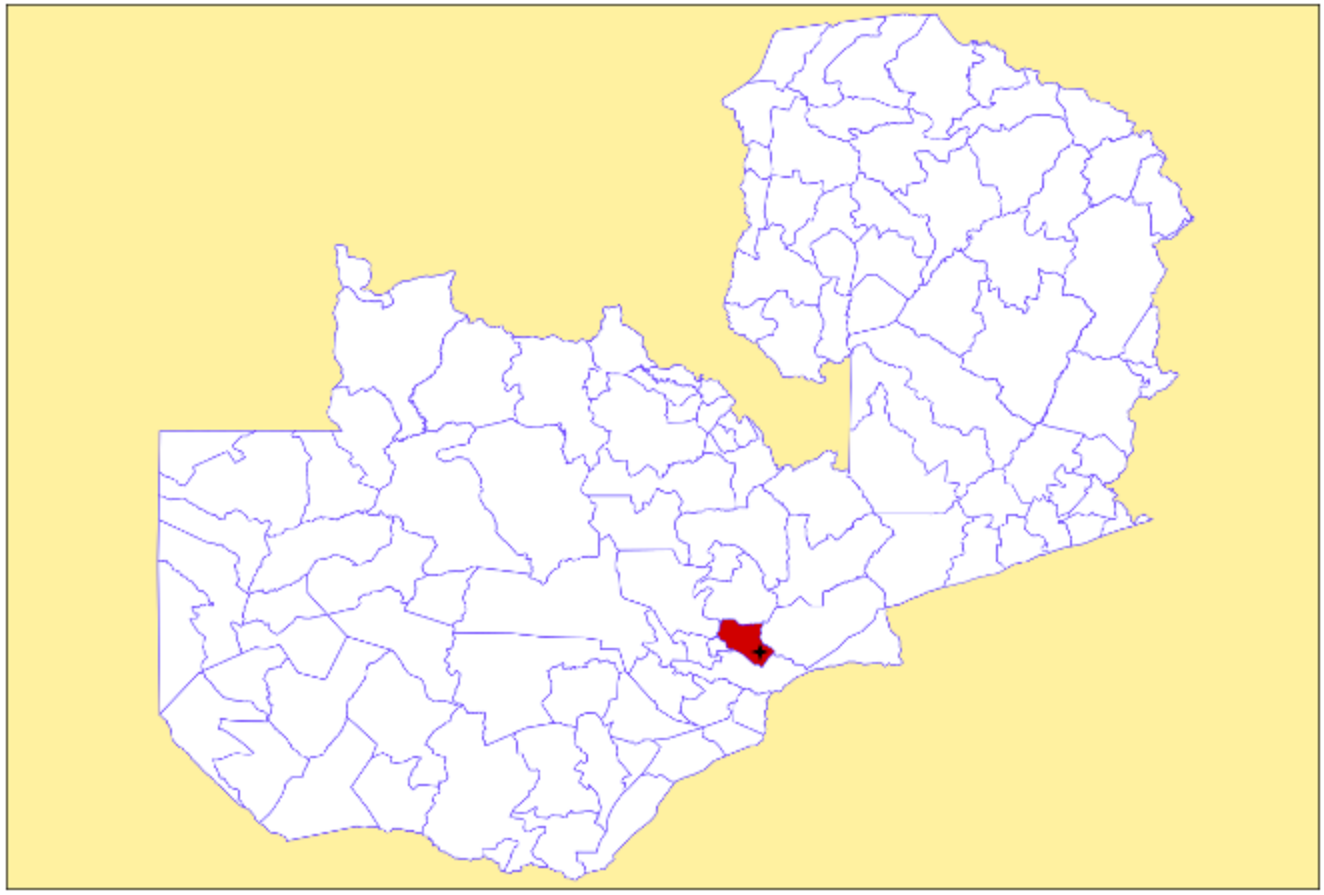
The planetGOLD Zambia project will be implemented in the Chongwe District (Geo code: 7910080) and the Rufunsa District (Geo code: 10815855[2]). The maps showing the location are available below.

RUFUNSA DISTRICT



Star represents location of Mpanshya, Rufunsa District, Zambia: -15.10841, 29.73077 where most ASGM activity was observed during the NAP baseline.

CHONGWE DISTRICT



Star represents location of Chobwe Mine, Chongwe District, Zambia: -15.72, 29.33

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[1] Chongwe District Geo Code: http://www.geonames.org/7910080/chongwe-district.html

[2] Rufunsa District Geo Code: http://www.geonames.org/10815855/rufunsa-district.html

GEO LOCATION INFORMATION

The Location Name, Latitude and Longitude are required fields insofar as an Agency chooses to enter a project location under the set format. The Geo Name ID is required in instances where the location is not exact, such as in the case of a city, as opposed to the exact site of a physical infrastructure. These IDs are available on the GeoNames? geographical database containing millions of placenames and allowing to freely record new ones. The Location & Activity Description fields are optional. Project longitude and latitude must follow the Decimal Degrees WGS84 format and Agencies are encouraged to use at least four decimal points for greater accuracy. Users may add as many locations as appropriate. Web mapping applications such as OpenStreetMap or GeoNames use this format. Consider using a conversion tool as needed, such as:https://coordinates-converter.com Please see the Geocoding User Guide by clicking here.

Location Name	Latitude	Longitude	Geo Name ID	Location & Activity Description

ANNEX E: Project Budget Table

Please attach a project budget table.

			Component 1: Formalization	Component 2: Market Access	Component 3: Improved practices	Component 4: Communication									
Max PMC	$	128,750													
			Component 1	Component 2	Component 3	Component 4	PMC	M&E	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Total
		UNEP BUDGET LINE/OBJECT OF EXPENDITURE						US$	US$	US$	US$	US$	US$	US$	US$
10	PROJECT PERSONNEL COMPONENT														
	1100	Project Personnel													
	1101	Project Manager	0	0	0	0	53,562		53,562	5,562	12,000	12,000	12,000	12,000	53,562
	1102	Stakeholder Engagement Manager	50,000	50,000	50,000	50,000			200,000	40,000	40,000	40,000	40,000	40,000	200,000
	1103	Access to Finance and Responsible Sourcing Officer	0	82,000	0	0			82,000	11,000	17,000	17,000	19,000	18,000	82,000
	1104	Knowledge and Capacity Building Specialist	29,700	29,700	29,700	0			89,100	17,820	17,820	17,820	17,820	17,820	89,100
	1105	Communications Director	0	0	0	50,000			50,000	10,000	10,000	10,000	10,000	10,000	50,000
	1106	Logistics and Operational Support Expert	10,000	10,000	75,000	0			95,000	19,000	19,000	19,000	19,000	19,000	95,000
	1200	Consultants													
	1201	ASGM Experts (National)	40,000	45,000	10,000	0			95,000	20,000	30,000	30,000	15,000	0	95,000
	1202	ASGM Experts (International)	5,000	0	5,000	0			10,000	10,000	0	0	0	0	10,000
	1203	Community Awareness Raising Expert	0	0	0	70,000			70,000	10,000	30,000	30,000	0	0	70,000
	1204	Gender Rights Expert	15,000	25,000	7,500	0			47,500	2,500	20,000	17,500	7,500	0	47,500
	1205	ASGM Clean Technology/Good Mining Practices Expert	0	0	37,500	0			37,500	0	7,500	15,000	15,000	0	37,500
	1206	Investment and Financing Specialist	0	105,000	0	0			105,000	15,000	30,000	30,000	30,000	0	105,000
	1207	Communications Consultant	0	0	0	75,000			75,000	15,000	15,000	15,000	15,000	15,000	75,000
	1299	Sub-Total	149,700	346,700	214,700	245,000	53,562	0	1,009,662	175,882	248,320	253,320	200,320	131,820	1,009,662
	1300	Administrative support													
	1301	Finance Officer	0	0	0	0	40,188		40,188	8,038	8,038	8,038	8,038	8,038	40,188
	1399	Sub-Total	0	0	0	0	40,188	0	40,188	8,038	8,038	8,038	8,038	8,038	40,188
	1600	Travel on official business (above staff)													
	1601	Travel	37,500	60,000	35,000	59,812			192,312	38,500	44,500	47,000	37,000	25,312	192,312
	1699	Sub-Total	37,500	60,000	35,000	59,812	0	0	192,312	38,500	44,500	47,000	37,000	25,312	192,312
	1999	Component Total	187,200	406,700	249,700	304,812	93,750	0	1,242,162	222,420	300,858	308,358	245,358	165,170	1,242,162
20	SUB-CONTRACT COMPONENT														
21	2100	Subcontract (UN organization)													
	2199	Sub-Total													
22	2200	Sub-contracts (SSFA, PCA, non-UN)													
	2201	Mining Cooperatives Experts	125,000	0	0	0			125,000	0	75,000	50,000	0	0	125,000
	2202	Jurisdictional Approach/Landscape Planning Expert	60,000	0	0	0			60,000	0	30,000	30,000	0	0	60,000
	2203	Cooperative Business Management and Responsible Gold Buying Trainer/Expert	0	90,000	0	0			90,000	0	30,000	30,000	30,000	0	90,000
	2204	Geological survey and gold extraction expert (MoU with research institution)	0	0	50,000	0			50,000	50,000	0	0	0	0	50,000
	2205	ASGM waste management expert (MoU with NGO or other)	0	0	30,000	0			30,000	0	0	30,000	0	0	30,000
	2299	Sub-Total	185,000	90,000	80,000	0	0	0	355,000	50,000	135,000	140,000	30,000	0	355,000
	2999	Component Total	185,000	90,000	80,000	0	0	0	355,000	50,000	135,000	140,000	30,000	0	355,000
30	TRAINING COMPONENT														
	3200	Group training (field trips, WS, etc.)													
	3201	Workshops for coordination mechanisms for ASGM formalization	27,938	0	0	0			27,938	4,000	7,500	8,938	7,500	0	27,938
	3202	Tier 2 Jurisdictional Approach Trainings/Workshops for Chiefdom Stakeholders	25,000	0	0	0			25,000	0	25,000	0	0	0	25,000
	3203	Workshops and Trainings for ASGM Cooperatives	40,000	0	0	0			40,000	0	20,000	20,000	0	0	40,000
	3204	Workshops on access to finance, responsible business practices, due diligence, traceability, etc.	0	79,930	0	0			79,930	5,000	24,930	18,000	18,000	14,000	79,930
	3205	Trainings for operation and maintenance of mercury-free technology/Monitoring of adoption	0	0	60,000	0			60,000	0	20,000	20,000	20,000	0	60,000
	3206	Awareness-raising and advocacy campaign on safe/mercury-free ASGM	0	0	0	80,000			80,000	0	40,000	40,000	0	0	80,000
	3207	Awareness-raising and advocacy campaign on risks associated with mercury	0	0	0	80,000			80,000	0	40,000	40,000	0	0	80,000
	3208	Trainings on mercury waste disposal and mercury contamination detection for the Gold Mining environment	0	0	30,000	0			30,000	0	0	30,000	0	0	30,000
	3299	Sub-Total	92,938	79,930	90,000	160,000	0	0	422,868	9,000	177,430	176,938	45,500	14,000	422,868
	3300	Meetings/conferences													
	3301	Consultation meetings (e.g. formalization framework, LA/JA approaches)	20,000	0	0	0			20,000	5,000	5,000	5,000	5,000	0	20,000
	3302	Capacity-building of financial institutions for ASGM financing, including forum linking ASGM and Fis	0	40,000	0	0			40,000	0	20,000	20,000	0	0	40,000
	3303	National, regional and international (planetGOLD programme) knowledge sharing opportunities (meetings, workshops, conferences)	0	0	0	115,000			115,000	15,000	25,000	25,000	25,000	25,000	115,000
	3399	Sub-Total	20,000	40,000	0	115,000	0	0	175,000	20,000	50,000	50,000	30,000	25,000	175,000
	3999	Component Total	112,938	119,930	90,000	275,000	0	0	597,868	29,000	227,430	226,938	75,500	39,000	597,868
40	EQUIPMENT & PREMISES COMPONENT														
	4100	Expendable equipment (under 1,500 $)													
	4101	Technology and technical equipment and materials to support the project's activities (Mining equipment, PPE, Tablets, mobile phones, GPS handsets, project t-shirts/hats, paper, ink, etc.	0	0	125,000	0			125,000	0	50,000	75,000	0	0	125,000
	4102	Local transportation and fuel	8,000	8,000	8,000	8,000			32,000	6,400	6,400	6,400	6,400	6,400	32,000
	4199	Sub-Total	8,000	8,000	133,000	8,000	0	0	157,000	6,400	56,400	81,400	6,400	6,400	157,000
	4200	Nonexpendable equipment (beyond 1,500$)							0						
	4201	Alternative mercury free technology and maintenance of the equipment (spare	0	0	67,500	0			67,500	0	36,500	31,000	0	0	67,500

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

Not applicable.

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencys is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

Not applicable.

ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).

Not applicable.