



Project Information Document (PID)

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BASIC INFORMATION

A. Basic Project Data

Country Africa	Project ID P167788	Parent Project ID (if any)	Project Name Africa Environmental Health and Pollution Management Program (P167788)
Region AFRICA	Estimated Appraisal Date Nov 27, 2018	Estimated Board Date Jan 15, 2019	Practice Area (Lead) Environment & Natural Resources
Financing Instrument Investment Project Financing	Borrower(s) Republic of Kenya, Republic of Ghana, Republic of Zambia, United Republic of Tanzania, Republic of Senegal	Implementing Agency The National Environmental Management Council (NEMC), Environmental Protection Agency (EPA), National Environmental Management Authority (Ministry of Environment and Forests), Zambia Environmental Management Agency, Division de l'Environnement et des Etablissements Classés - DEEC	GEF Focal Area Persistent Organic Pollutants

Proposed Development Objective(s)

The program aims to strengthen the institutional capacity to manage and regulate mercury (use) in ASGM and e-waste in selected countries in Africa.

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	41.30
Total Financing	41.30
of which IBRD/IDA	0.00
Financing Gap	0.00



DETAILS

Non-World Bank Group Financing

Trust Funds	41.30
Global Environment Facility (GEF)	41.30

Environmental and Social Risk Classification

Moderate

Concept Review Decision

Track II-The review did authorize the preparation to continue

Other Decision (as needed)

B. Introduction and Context

Country Context

Africa’s economic growth rebounded to 3.7 percent in 2017, up from 2.3 percent in 2016, and is forecast to rise further to 3.8 percent in 2018¹. The upward growth trend is likely to sustain if the African economy – currently undergoing structural changes, succeeds in reviving national and regional industrialization. The industrial sector is progressively gaining ground in many African countries. It represents 4 to 32 percent of the national GDPs in most African countries². Undoubtedly, the pace of industrialization will be influenced by the changes in international demand and international prices, and sooner or later industrial growth will lead to increased production and consumption, and higher exploitation and processing of Africa’s mineral and natural resources. This, in turn may lead to more environmental pollution and degradation.

Most Sub-Saharan African countries have already experienced multiple environmental-health challenges related to inadequate capacity to effectively monitor the use of chemicals and manage chemical waste. Institutions lack effective regulation and enforcement; producers lack access to clean production and waste management technologies, and the public has no information on environmental-health risks. Nearly 35% of the deaths in the sub-Saharan Africa are linked to environmental hazards from toxic chemicals. Diseases caused by pollution were estimated to have caused 9 million premature deaths in 2015, which was 16% of all deaths worldwide and three times more than deaths from AIDS, tuberculosis and malaria combined, and 15 times more than from all wars and other forms of violence.³

¹ AfDB: African Economic Outlook 2017

² Ibid

³ Lancet, 2018; 391: “The Lancet Commission on Pollution and Health”: 462-512



The chemical waste challenge experienced by the sub-Saharan African countries is in par with global trends. More than 200 million people around the world are at risk of exposure to toxic waste⁴. Pollution is the leading cause of death in low- and middle-income countries with estimated 23% of total deaths in the developing world being attributable to environmental factors (World Bank, WHO 2015). Globally, estimated 3.5 million people are at risk of the health impacts from artisanal and small-scale gold mining (ASGM), of which 2.5 million are in Africa⁵. Among the most critical chemical waste issues in the Sub-Saharan Africa are those related to the use of mercury in the ASGM sector and e-waste. The complexity of unresolved chemical waste management issues in the region necessitates the proposed Bank assistance to strengthen the institutional interface and capacity of African countries to coordinate and synergize on their efforts to improve chemical waste management and reduce associated risks.

Artisanal and Small-scale Mining (ASGM)

Small-scale farmers in sub-Saharan African countries -- undergoing economic restructuring, have been under enormous strain as agricultural inputs were no longer subsidized by the state. Rising international gold prices and closure of state owned mines forced people to move to ASGM. Consequently, ASGM sector became an attractive employment alternative for struggling farmers, poor and rural communities, and migrant laborers, and a potential ladder to wealth. For instance, the ASGM workforce in Ghana and Tanzania is estimated at more than 1 million people plus their families in each country.⁶ ASGM is an important contributor to GDP. Only in Tanzania the ASGM sector contributes approximately 10% of its gold production. Mercury which is used as an amalgamation agent in ASGM operations is a dangerous neurotoxic with significant health and economic consequences, and broader multi-sectoral risks beyond direct health risks to miners and their families. African countries lack comprehensive mercury risk management strategy and institutional capacity to regulate its use in ASGM and prevent human health risks.

Electronic Waste (e-Waste)

E-waste generation grows at an annual rate of 5% globally. It is estimated that at this pace in 2018, globally, the e-waste will reach 49 million tons⁷. Around 80 % of the e-waste is shipped, often illegally, to developing countries for recycling. Several countries in Sub-Saharan Africa are destinations of choice for recycling and disposal. Most informal recycling of e-waste takes place in Ghana, Benin, Cote d'Ivoire, Nigeria and Liberia where open burning is used for recovery of valuable metals from defunct electronics. The process generates harmful emissions, heavy metals and toxic chemicals which accumulate in soil and water causing food poisoning through agricultural produce chain and serious health risks to workers and neighboring communities. Poor children in developing countries are especially vulnerable to e-waste health risks as they are often forced to work in recycling of obsolete electronics or live in proximity of recycling facilities, or their family members often carry out recycling at home. Poor recyclers cannot afford even low-cost technologies for separation of valuable materials in an environmentally sound manner and the vicious circle continues. African governments face challenges related to inadequate capacity to effectively monitor the use of chemicals, lack of capacity for regulation and weak enforcement, lack of access to cleaner production systems, technologies for waste management and availability of information.'

⁴ Blacksmith Institute and Green Cross 2013

⁵ UNEP's Global Mercury Assessment of 2013

⁶ UNDP, 2013; World Bank Indicators, 2014



Sectoral and Institutional Context

1. Chemicals Use and Management.

Chemical production in Africa is limited. To meet their developmental needs, African countries import chemicals for industrial, domestic, and agricultural use. Trade liberalization and creation of free trade industrial zones facilitates chemical trade across borders and continents. At the same time, many African countries lack the capacity and knowledge to assess and monitor the risks associated with the trade of chemicals and products containing chemicals. There are also concerns that African countries import chemicals that have been rejected by the industrialized countries. Transboundary trade of hazardous chemicals such as mercury and heavy metals in e-waste, has heightened the public health concern due to the lack of knowledge on environmentally sustainable alternatives and proper quality control of chemical products. African farmers have greatly increased their use of chemical-based insecticides, herbicides, and fungicides. Persistent Organic Pollutants are still being used or stocked in make-shift stores where the dangers and risks due to exposure are enormous. As a result, chemical-related soil degradation, in Africa, affects 51 million hectares of land, about 40 million of which is nutrient deficient, while salinity affects 6 million hectares.

The problem of **illegal trade of mercury** and improper recycling and disposal of heavy metals is particularly acute in Africa, where environmental monitoring and regulatory enforcement is weak. It is estimated that gold production from large and small-scale mining in Africa accounts for about 45% of total mercury emissions on the continent⁸ whereas 90 - 95% of the mercury used in many African nations is obtained illegally and/or smuggled from neighboring nations (UNEP 2012).

ASGM is the largest mercury user regionally and globally, however there is limited data and knowledge about the amount of mercury used in the sector or the severity and extent of mercury contamination and its health, environmental, and social impacts. ASGM has been consistently listed as a driver of deforestation and a major source of water and soil pollution with serious impacts on human and environmental health.

Box 1: Mercury and E-Waste – Environment and Human Health Impacts

Mercury is a dangerous neurotoxin with significant health and environmental consequences. The use of mercury in ASGM has created a legacy of severe and often irreversible hazards, compounded by economic and social problems including child labor, land tenure issues, migration, social instability, and potential conflicts. The socio-economic effects of the use of mercury goes beyond direct health risks to miners and their families. Mercury is toxic even at low concentrations⁹, particularly the organic form of mercury called methylmercury, which accumulates in food chains. It is estimated that 90 to 95% of mercury used in many African countries is obtained illegally and/or smuggled from neighboring nations. ASGM is the largest mercury user and demand sector in the region and globally, however there is limited data and knowledge about the amount of mercury used or the severity and extent of mercury contamination and its health, environmental, and social impacts. The toxic effects of mercury are more profound in children, causing developmental and neurological disorders and women working in the gold mines. The people of Kabwe in Zambia face also serious threats from elevated levels of zinc and lead in mining activities. The vegetation, soil and water are contaminated and about 90,000 children are at risk of lead poisoning.

E-waste is expensive to treat in an environmentally sound manner. Many developing countries lack specific regulation and enforcement for this type of toxic waste, adequate infrastructure, and technologies to implement 'win-win' solutions of this growing challenge. Recycling of e-waste provides business opportunities due to waste's

⁸ Dabrowski JM, Ashton PJ, Murray K, Leaner JJ, Mason RP. Anthropogenic mercury emissions in South Africa: Coal combustion in power plants. *Atmos Environ* 2008; 42: 6620-6626.

⁹ Zahir F, Rizwi SJ, Haq SK, Khan RH. Low dose mercury toxicity human health. *Environ Toxicol Phar* 2005; 30: 351-360.



economic value although e-waste recycling often operates as a 'grey-sector' of the economy. Arguably, recycling of e-waste can generate positive environmental impacts by reducing carbon emissions and reducing the demand for metals from mining. For instance, it is estimated that for every 1 ton of gold or platinum produced, over 10,000 tons of CO₂ is emitted. If the same metals are recovered from recycled e-waste and equal amount of GHG emissions will not be released in the atmosphere. However, the environmental benefits are overshadowed by the huge health and socio-economic risks especially in the developing countries where labor costs are low, regulations are absent, and enforcement is weak. In Ghana, for example, recovery of valuable metals is done manually (mainly copper and aluminum) which includes open burning of plastic-coated components to isolate copper. Burning activates copper as a catalyst for dioxin release, including from polyvinyl chloride (PVC) from plastic (Sepúlveda et al., 2010)
Source: The World Bank: Green ICT: Sustainable E-waste Management in Sub-Saharan Africa (2014) and The World Bank Report on Mercury Trade and Use in Artisanal and Small-scale Mining in Sub-Saharan Africa (2016).

2. Electronic Waste

The global e-waste trade is growing exponentially. A study commissioned by the World Bank¹⁰ indicates that Ghana, Kenya and Nigeria have the highest levels of e-waste in the region due to their growing involvement in ICT imports, recycling and refurbishing. A key characteristic about the advancements in ICT in Ghana is the increased dependence on used or refurbished products, due mainly due to financial considerations. Countries such as Senegal and Uganda can expect e-waste flows from computers alone to increase four- to eightfold by 2020¹¹

While each African country faces unique challenges regarding e-waste policies, regulation, and institutional capacity, there are common root causes that would benefit from consistency across national borders and a coordinated regional response. These include:

- Lack of existing data on e-waste, including the extent of open burning on urban waste disposal sites
- Weak regulations on imports of second-hand electronic goods and unclear exports labeling standards resulting in illegal imports of e-wastes
- Flouting of Basel Convention regulations by 'importers'
- Difficulty tracking the flow of products over borders in personal luggage or other smuggling operations;
- Under-funded and under-trained Customs officials, and
- Lack of financial resources to enforce regulations where they exist.

Specific factors that undermine national efforts to address human health risks associated with mercury and e-waste in the region are: a) illegal trade (mercury and e-waste), b) informal recycling of e-waste, c) inadequate hazardous waste management infrastructure for proper treatment and disposal of hazardous waste, d) weak institutions, lack of monitoring and lack of awareness of risks; and e) lack of coordination and shared objectives among key stakeholders on addressing harmful impacts.

3. Policies and Institutions

¹⁰ The World Bank: Green ICT: Sustainable E-waste Management in Sub-Saharan Africa (2014)

¹¹ Lindgren K. The global impact of e-waste: addressing the challenge / Karin Lundgren; International Labour Office, Programme on Safety and Health at Work and the Environment (SafeWork), Sectoral Activities Department (SECTOR). – Geneva: ILO, 2012



African countries are at various stages of putting in place relevant policies and environmental legislation to support implementation of their commitments under the international conventions. Legislation on chemicals management is still new in most of the countries. Except for a few countries like Ghana, there are no policies in place to manage or control the use and/or importation of mercury. Zambia has tackled to some extent objectively the costing of environmental liabilities in the extractive industry including in small scale mining companies that are a major sources pollution. Due to weak enforcement, however not all measures that have been put in place by government to ensure that the environmental degradation caused by mining activities are adequately managed, are not working effectively¹².

Box 2. National Institutions, Policies and Priorities

Tanzania. The Division of Environment (DOE) is responsible for environmental policies and legislation advocacy and implementation, monitoring and evaluation, environmental planning, and international cooperation. The National Environment Management Council (NEMC) regulates and oversees the implementation of the national Environmental Management Act, 2004. Tanzania has legislation for management of chemicals and DoE is the national focal point for the Stockholm Convention, Basel Convention, Montreal Protocol and the Bamako Convention. Tanzania's national policies are yet to be harmonized with the provisions of the international conventions. However, there are several policies with elements for protection of the environment and human health [e.g., National Environment Policy, 1997; Sustainable Industrial and Development Policy (1996 – 2020) of 1996; National Energy Policy (2003); Trade Policy (2003); National Water Policy (2002); the National Health Policy (2003); and the Small and Medium Enterprise (SME) Development Policy (2003)]. There is also a legislative framework for control and regulation of chemicals management throughout the life cycle. These include the Environment Management Act No. 20 of 2004; Industrial and Consumer Chemicals (Management and Control) Act No. 3 of 2003; Plant Protection Act No. 13 of 1997; Occupational Safety and Health Act No 5 of 2003; Tanzania Food, Drugs and Cosmetics Act No. 1 of 2003; Tropical Pesticides Research Institute (TPRI) Act (1979); Atomic Energy Act (2002) and Mining Act (1998).

Ghana. The Ministry of Environment, Science, Technology, and Innovation has the overall sector responsibility for policy development. EPA is the regulatory and enforcement body. The Environmental Assessment Regulations of 1999 refer to the issue of mining “undertakings” stating that those involving metal and nonmetal mines must be registered and issued with an environmental permit. The environmental impact assessment (EIA) is mandatory for the mining and processing of minerals in areas where the mining lease covers a total area of more than 10 hectares. The current laws guiding the management of hazardous, solid and radioactive waste including the local Government Act (1994), Act 462 and Environmental Sanitation Policy of Ghana (1999) were passed before the e-waste problems emerged. The use of mercury is regulated by the Mercury law (1989) which recognizes that the use of mercury has serious health and environmental consequences. However, institutional capacity, for monitoring and enforcement for compliance remains very weak. Ghana has established the Mineral Development Fund as a mechanism both to finance mining agencies and transfer a share of the royalties back to the mining communities, but it failed to reinvest in rehabilitation activities in communities most affected by the mining activities.

Zambia. Zambia had passed the Environmental Protection and Pollution Control Bill (EPPCB) and Environmental Protection and Pollution Control Act- EPPCA (CAP 204) in 1990 pursuant to the National Conservation Strategy (NCS) that raised concerns about mining pollution. The EPPCA provided for the establishment of the Environmental Council of Zambia (ECZ) in 1992 which assumed an advisory role to the government on environmental matters and has a mandate to issue environmental permits and monitor compliance of extractive and processing industries; enforce

¹² Cuthbert Casey Makondo, Sydney Sichilima, Matthews Silondwa, Richard Sikazwe, Lombe Maiba, Chawezi Longwe, Yvonne Chilibozi. Environmental Management Compliance, Law and Policy Regimes in Developing Countries: A Review of the Zambian Case. *International Journal of Environmental Protection and Policy*. Vol. 3, No. 4, 2015, pp. 79-87. doi: 10.11648/j.ijep.20150304.11



regulations on environmental media and educate the public on matters of environmental and public health. The EPPCA law has provisions for financial penalties of violators. It adopts the precautionary principle and mandates Environmental Impact Assessment (EIA) and public participation. In 1997, Statutory Instrument (SI) No. 28 (Environmental Impact Assessment) Regulations was adopted and since then it has governed the EIA process facing multiple weaknesses and challenges and thus not serving well the precautionary principle. The institutional set up faces considerable administrative challenges such as duplication of functions, bureaucracy, and inefficiency due to a lack of policy synchronization. The Zambia Environmental Agency (ZEMA) is responsible for public health and safety issues in coordination with other agencies and local government (e.g. Zambia Wildlife Authority on wildlife and natural resourced conservation, and with Water Resources Authority and Department of Water Affairs on water access rights, ground and surface water quality preservation. Nonetheless, the regulatory measures that have been put in place by government to ensure that the environmental degradation caused by mining activities are adequately managed, are not working effectively¹³.

Senegal. The Environment and Classified Establishments Directorate (Division de l'Environnement et des Etablissements Classés - DEEC) is responsible for the implementation of the Government policies on environmental protection and prevention of pollution and risks from dangerous waste. For the purpose of the project DEEC will be the Implementing authority under the supervision of municipalities in collaboration with the ACDEV NGO.

Kenya. Institutional capacity of the National Environmental Management Authority (NEMA) and the Ministry of Environment and Forests to monitor, enforce compliance and address health and environmental consequences is limited. The existing policy framework includes Waste Management Regulations (2006) the Electronic Waste Management Regulations (NEMA) (currently a draft) the institutional framework for waste management in Kenya is not fully operational. Enforcement of regulations is also challenging due to the diversity and variety of e-waste streams, scattered sources, unregulated imports and the large informal workforce. There is a need for supporting standards or guidelines for e-waste management and their enforcement, based on the new national regulations.

In summary, the principle shortcomings in the institutional arena concerning chemicals management and prevention of human health risks are as follows.

Public policies are missing the economic 'translation'¹⁴ of health effects of the use chemicals that allows these effects to be better integrated into political and financial decision-making. There are no specific policies on chemicals management to ensure recognition of chemicals management as a national priority, and for mainstreaming into national development plans and development strategies. The functional organization and institutional capacity and staff capabilities are incompatible with the needs for robust reporting on chemical incidences and managing a comprehensive inventory of chemicals and chemical wastes, and to ultimately reduce their environmental and health effects across sectors and users. Private sector has little incentives to engage and participate along with civil society and governments in discussions and decisions regarding chemicals management. There is no comprehensive national data on chemicals or adequate monitoring of chemical residues, nor on environment and human impacts. Lack of up-to-date information systems has made informed decision making difficult. Often there are overlaps and incompatibility in the existing national legislation,

¹³ Cuthbert Casey Makondo, Sydney Sichilima, Matthews Silondwa, Richard Sikazwe, Lombe Maiba, Chawezi Longwe, Yvonne Chiliboyi. Environmental Management Compliance, Law and Policy Regimes in Developing Countries: A Review of the Zambian Case. *International Journal of Environmental Protection and Policy*. Vol. 3, No. 4, 2015, pp. 79-87. doi: 10.11648/j.ijjepp.20150304.11

¹³UNEP Environment for Development Perspective. Mercury Use in ASGM (draft). 2012

¹⁴UNEP Environment for Development Perspective. Mercury Use in ASGM (draft). 2012.



conflicting institutional functions, and interests, competing sector priorities and low level of public awareness on issues related to chemical management which impairs a policy shift.

Unprecedented impacts on human health and environment risks due to ASGM and import and open burning of e-waste is now a critical reality in most African countries. It is therefore a fundamental prerequisite to provide economic stimuli in the context of local conditions in order to find a sustainable solution of the problems of mercury and e-waste and change current unsafe practices. Delaying the solutions will have economic, social, and environmental repercussions for the wellbeing of the people of sub-Saharan countries. Effective regulations combined with incentives would help the governments to deliver on their commitments under Multilateral Environmental Agreements (MEAs) the (e.g, the Stockholm Convention on protecting human health and the environment from POPs, Minamata Convention on mercury, the Basel convention on controlling transboundary movements of hazardous wastes and their disposal).

The Minamata Convention on mercury, aims to regulate anthropogenic emissions and releases of mercury and its compounds to protect human health and the environment. Tanzania, Kenya, Ghana and Zambia signed the Minamata Convention and thus undertaking a commitment to reduce and where feasible eliminate, mercury use in artisanal and small-scale gold mining. They will benefit from harmonizing countries' efforts in addressing institutional capacity gaps at national and regional levels and shifting sooner than later to sound management of chemicals and waste through measures that are fully integrated into budgets and sector level plans. The implementation of national programs for management of chemical waste will benefit from a shared regional platform for knowledge management, communication, partnership in policy formation, and capacity development. Country programs and coordinated measures are likely to have a larger impact if viewed through a regional lens. Hence, the proposed regional approach to enable adoption of a more inclusive and comprehensive mechanism to address cross-border issues related to trade of hazardous materials. An effort to tackle these issues at a regional scale will help increase the sustainability of the Program.

Relationship to CPF

The EHPMP is aligned with and will support to the objectives of Pillars 1 and 2 of the Bank's Africa Strategy -- competitiveness and employment, and vulnerability and resilience, and the foundations of the strategy —governance and public-sector capacity. This program follows the Regional Integration Assistance Strategy FY18-FY23, specifically Strategic Priority 4 "Promote Collective Action to Address Regional Economic Contagion, Fragility, Epidemic and Climate 'Hot Spots'" aiming to build regional collaboration and knowledge sharing to address common problems such as waste management and pollution and to share good practices and support capacity building and strengthen civic engagement. Most African countries have already experienced multiple challenges related to inadequate capacity to effectively monitor the use of chemicals, and management of chemical waste. They lack regulations and effective enforcement, access to clean production and waste management technologies, and up to date information on environmental-health risks. The EHPMP will complement other regional initiatives and individual projects that the Bank supports in line with the CPFs focusing on competitiveness, sustainability and governance. Example of such projects include - the Sustainable Management of Mineral Resource Project (SMMRP) supporting environmental and social aspects of artisanal and small-scale mining in Tanzania, Lake Victoria Environmental Management Project, as well as a Strategic Environmental and Social Assessment to identify policy changes and capacity building needs to improve the environmental performance of the mining sector in Tanzania.



The proposed *EHPMP in Africa* will contribute to the capacity of African countries participating in the Program to better understand the management aspects of chemical waste in relation to their aspiration to meet SDGs. Chemicals play an important role in development, and so the Sound Management of Chemicals and Wastes (SMCW) is an important component of the global effort to achieve sustainable, inclusive and resilient human development and the SDGs. Widespread contamination from chemical waste and lack of policies to address human health risks may jeopardize the efforts of African countries to achieve SDGs. Management of hazardous chemicals is closely linked to Goal 3 (Good health and Well-being), Goal 6 (Clean water and Sanitation), Goal 11 (Sustainable Cities and Communities), Goal 12 (Responsible Consumption and Production), Goal 14 (Life Below Water), and Goal 8 (Decent Work and Economic Growth). There are specific targets for each of the goals related to chemical pollution and health. For instance, target 3.9 refers to reduction of deaths and illnesses caused by hazardous chemicals and air, water, and soil pollution. Target 6.3 aims to reduce pollution, eliminate dumping, and minimize release of hazardous chemicals and materials. Target 12.4 specifically aims to achieve environmentally sound management of chemicals and all waste throughout management impacts through entire product life cycle and minimize the adverse impacts on human health and the environment. Target 12.5 aims to substantially reduce waste generation through prevention, reduction, repair, recycling, and reuse.

Several projects and initiatives support environmental-health agenda in Africa and the EHPMP aims to coordinate with those for greater synergy of development outcomes. Principal among these projects are: (i) The Global Center of Excellence in Artisanal and Small-Scale Mining led by the Energy and Extractives GP in close collaboration with the Environment and Natural Resources GP and the Organization of Economic Cooperation and Development (OECD); (ii) the Ghana Forest Investment Program – Enhancing Forest Landscapes; (iii) the Zambia Mining and Environmental Remediation and Improvement Project; and (iv) the Lake Victoria Environmental Management Project. The Environment and Natural Resources GP has ongoing operations in most of the countries (Ghana, Tanzania, Zambia, and Kenya) considered under the EHPMP.

C. Proposed Development Objective(s)

The program aims to reduce environmental health risks related to harmful chemicals and waste through strengthened institutional partnership and capacity building in pollution management in selected countries including Ghana, Kenya, Senegal, Tanzania, and Zambia.

Key Results (From PCN)

1) Capacity of national agencies/authorities responsible for identifying and addressing environmental health risks associated with chemicals and waste (including POPs and mercury) improved.

This outcomes will be measured by: (a) improved capacity for monitoring and collection of data on the usage and trade of mercury and e-waste; (b) development of an inventory of mercury import data at country level; (c) Inspection protocols developed and enforcement authorities equipped with monitoring equipment; (d) increased awareness among targeted mining communities about environmental health risks; (d) train inspectors and officers of agencies of participating countries; and (e) establish a regional forum for monitoring and decision-making on use and trade of mercury and unsound processing of electronic waste.

2) National environmental policies and regulations of participating countries strengthened:

These outcomes will be measured by the following: (a) policies and regulations targeting mercury reduction in ASGM developed by participating countries; (b) policies and regulations for management of urban and e-waste developed by



participating countries; (c) Regional guidance note on formalization of ASGM developed and discussed at regional level; (d) Regional guidance on e-waste prepared and discussed at regional level; (e) South-South exchange organized for sharing knowledge on ASGM chemicals management and e-waste; (f) Regional meetings on common ASGM, e-waste and other chemicals management priorities organized

3) Demonstration pilots for reducing environmental-health risks (from POPs and mercury) and introducing models that engage affected communities, carried out in participating countries.

The outcomes will be measured by (a) deployment of clean technologies promoting phasing out of mercury usage; (b) number of private entities engaged in e-waste demo pilots; and (c) number of pilots demonstrating reduction of POPs from open burning of solid waste.

D. Concept Description

Regional coordination and cooperation in addressing chemicals-related issues and interventions across national borders have the potential to stimulate safer and more cost-effective solutions to address the gaps and challenges of chemical and waste management. The geographic coverage of EHPMP includes the five participating countries: Zambia, Ghana, Kenya, Senegal and Tanzania. The Program's focus will be on policy and strategy formulation and implementation; knowledge and experience sharing; institutional and human capacity building; chemical and hazardous waste management; and coordination and collaboration. The EHPMP will support demonstration projects for low-cost technologies for reducing and eliminating human health hazards from chemicals in ASGM and recycling of e-waste. Program activities are grouped under three main components which will be implemented at national level adapted to the national conditions.

The EHPMP management during implementation will be supported with the accompanying proposed Knowledge exchange and institutional partnerships to reduce environmental health risks from exposure to harmful chemicals and waste (P166233), which is financed under the same GEF allocation in the amount of US\$5 mln.

Component 1: Institutional strengthening, capacity building and knowledge sharing (estimated US\$ 15.0 m)

The component aims to enhance the capabilities of participating countries to obtain and share the information needed for their national decision-making, in particular, the sound management of chemicals. It will create a framework for exchange of information to support related national, regional and international policy development and activities related to reducing environmental health risks from poor management of chemicals in ASGM and waste recycling sectors. Poor coordination between sectors and ministries can also be an obstacle for effective monitoring, surveillance and enforcement on chemicals and waste management, which results in their becoming a significant risk to environmental health. The component aims to help eliminate the barriers to information exchange and enhance the communication among national and regional stakeholders. The capacity building interventions will be further detailed based on country-specific institutional diagnosis, stakeholder engagement, and best international practices in pollution prevention, monitoring, enforcement and compliance:

1.1. Tanzania: The component will support strengthening of the institutions related to environmental monitoring in the artisanal gold mining sector, where there is significant use of mercury. It will focus on authorities regulating mercury trade (environmental regulators, mining policy makers). These may include the Ministry of Mines (including Zonal Mines Offices, Resident Mines Offices, Inspections office), the National Environmental Management Council (NEMC), and customs/border control tax offices, artisanal gold miners, and mining communities. Activities will support the State Mining Corporation (STAMICO) to put in place systems for regulating the mercury trade, in line with the country commitment to implement the Minamata Convention. This component will also support development of guidelines and monitoring systems, procurement of monitoring equipment, laboratories (list all major items that will be procured). The component will promote enhanced transparency along the whole value chain, which will offer greater opportunity for miners to have direct access to the market and strengthen their negotiating skills for better prices, leading to greater



economic and social stability.

1.2. Zambia: This component will strengthen the institutional and legislative framework for managing risks from POP releases. It will promote an area-based approach for sustainable waste management in line with Government's National Solid Waste Management Strategy (NSWMS) by supporting the development of national guidelines. It will support training for strengthening the capacity of municipalities for collection, transportation and disposal of waste; will facilitate partnerships with private sector for recovery and recycling of waste, leading to reduced UPOPs releases. Training will target entities and regulators aiming that POPs containing mining waste is treated separately. This component will also support measures for improving the effectiveness of monitoring systems and for building awareness on sound management of waste and its impact on human health and the environment. In addition, the component will engage stakeholders and facilitate coordination and participation in the regional learning on the chemicals management agenda.

1.3. Ghana: The activities in Ghana focus on artisanal gold mining (AGM) and e-waste.

AGM: The component will support activities for strengthening of institutional systems and capacity building for the Environmental Protection Agency (EPA) and the Minerals Commission (MC) for managing the AGM sector, through training at the national and local levels. It will support the development of guidelines and monitoring systems for the management of mercury usage and waste in ASGM. In addition, the component will support workshops and other fora to engage national level stakeholders for coordination and participation in the regional learning and knowledge sharing activities on chemicals management. This component will also include assistance to facilitate the formalization of artisanal and small-scale gold mining sector; studies for baseline assessment of the quantities of mercury used and the practices employed in artisanal and small-scale gold mining and processing within the country. The component will assist in the development of a strategy promoting reduction of emissions and exposure to mercury in artisanal and small-scale gold mining and processing, including application of mercury-free methods. The strategy will propose measures for managing trade and preventing diversion of mercury and mercury compounds from both foreign and domestic sources to use in artisanal and small-scale gold mining and processing. Preparation of the strategy will involve stakeholders in the implementation of a national action plan through continued dialogue and engagement. The component will support preparation of a public health strategy to prevent exposure of artisanal and small-scale gold miners and their communities to mercury.

E-Waste: This component will support capacity building activities which include (a) benchmarking of key EPA staff to acquire best practices on waste management and ensure appropriate skills transfer; (b) Awareness raising/sensitization workshops on e-waste management along with stakeholders in the value chain country-wide; (c) support to waste management unit in EPA; and (d) streamlining Customs coding with appropriate training of the Customs Officers and borders inspectorate to curtail entry of illicit e-waste in the first place. It will support strengthening of E-waste Management Regulations and Guidelines and development of systems for monitoring and enforcement, relevant to waste management with a focus on e-waste. The component will also review existing documentation and undertake a country-wise situation analysis on waste, including an inventory of major toxic pollutants; assessment of environmental health implications of harmful chemicals and waste and options for risk management; and an economic sector analysis. The component will ensure both national level stakeholders' coordination and participation in the regional learning and knowledge sharing activities on the harmful chemicals agenda.

1.4. Kenya: The component will support capacity building of NEMA staff on best practices on waste management and Environmentally Sound Technologies for reduction of releases of POP's e-waste management practices and ensure appropriate skills and knowledge transfer. NEMA will also receive project support for development of the national e-waste inventory of products and IT vendors and training on sustainable product life cycle practices. The component will



support the Ministry of environment, NEMA and customs officers in implementation and enforcement of e-waste management regulations and laws including at the port of entry. Activities will include streamlining customs codes with appropriate training of customs and borders inspectorate to curtail entry of e-waste dumping as provided in the Basel Convention on Transboundary movement of hazardous waste and other waste. The component will support a country-wise situation analysis on waste, including an inventory of major toxic pollutants emanating from the sector; assessment of environmental health implications of harmful chemicals and waste and options for risk management; and economic analysis of the waste management sector for the national economy. The component will ensure both national level stakeholders' coordination and participation in the regional learning and knowledge sharing activities on the harmful chemicals' agenda.

1.5. Senegal: The component will support measures for institutional enhancement to improve the performance of solid waste management in large cities including designing results-based financing mechanisms such as innovative financing through public-private joint ventures for waste management services and enhanced cost efficiency. The component will provide support for institutional capacity for monitoring and enforcement. The capacity building assistance will target stakeholders from the Ministry of Environment and Sustainable Development, National Commission for Chemicals Management, Ministry of Industry, Ministry of Planning, selected municipal authorities and private companies as well as other departments involved. Civil society and NGOs would be involved in delivery of training, awareness and education and communication programs. The component also aims to improve the process of redefinition and clarified roles and responsibilities and associated administrative rules and directives to improve overall waste management sector performance and develop a sectoral database for SWM and user feedback management system.

Component 2: Support to policy dialogue and regulatory enhancements (estimated US\$ 10.0 m)

This component is designed to provide support to participating countries for policy development in sound management of chemicals recognizing that most African countries lack sound policies and effective management tools to control the use of chemicals and reduce human health risk. The component will support policies focusing on measures for strengthening current financial incentives; regulations regarding management of hot spots near sensitive habitat; safety and contamination of public resources; institutional capacity for pollution prevention and control; health and environmental assessments, monitoring and reporting. While many of these are national level activities, the component will support harmonization of national approaches for addressing illegal transboundary movements of chemicals (mercury) and e-waste. Country specific activities include:

2.1. Tanzania: This component will support the development of a strategy for promoting reduction of harmful emissions and releases of, and exposure to mercury in artisanal and small-scale gold mining and processing, including application of mercury-free methods. One of the activities under the component will include devising regulatory solutions for managing the trade illegal diversions of mercury and mercury compounds. Development and improvement of the regulatory framework will be in a participatory manner which will increase the receptibility of enforcement measures by stakeholders from the mining, health, Customs and Environment departments and the ASGM associations and communities. The component will explore developing a public health strategy on the exposure of artisanal and small-scale gold miners and their communities to mercury; and provide more localized training of artisanal miners and stakeholders.

2.2. Zambia: This component will support the Government's efforts in strengthening the current environmental policies and regulations and capacity to monitor; screen and evaluate health and environmental risks associated with POPs and hazardous chemicals through the development of guidelines. This component will support Government's efforts in strengthening the current environmental policies and regulations and capacity to monitor; screen and evaluate health and environmental risks associated with POPs and hazardous waste. The component will support the development of a strategy for reduction of emissions and releases of, and exposure to, harmful chemicals and hazardous waste. As a background for the strategy the component will finance studies for gathering of health data, training for health-care



workers and awareness-raising through health facilities.

2.3. Ghana: The component activities in Ghana focus on artisanal gold mining (AGM) and e-waste:

AGM - The component will support the EPA in strengthening the policy requirements targeted at the ASGM sector. This will include support for amending the Mining Act to include provisions for small-scale miners to prepare Environment Plans for rehabilitating mines after closure with prior environmental and social due diligence. The component will support enhancement of monitoring and evaluation (M&E) framework to ensure the achievement of the project outcomes in accordance with WB and GEF requirements.

e-Waste - This component will support Government's efforts in strengthening the current environmental policies and regulations and capacity to monitor; screen and evaluate health and environmental risks associated with e-waste. The component will assist the development of strategy for promoting the reduction of emissions and releases of, and exposure to, harmful chemicals and hazardous waste. The strategy will be backed by studies and gathering of health data, training for health-care workers and awareness-raising through health facilities.

2.4. Kenya: The component activities will support development of e-waste management regulation with provisions for national and local level implementation. This regulation will be key for strengthening current waste management policies. Training will be provided to enhance agencies' capacity to monitor the flow of e-waste throughout its life cycle. The component will assist the national government in development of a strategy for promoting the reduction of emissions and releases of, and exposure to, harmful chemicals and hazardous waste. The strategy will cover a number of themes, including: (a) mechanisms to prevent human exposure, particularly most vulnerable such as children and women, to harmful chemicals; (b) modalities for dissemination of information to stakeholders and affected communities; (c) assessment of requirements for healthcare staff to screen and evaluate health and environmental risks associated with e-waste; and (d) development of a national framework for monitoring and evaluation of e-waste and safe management.

2.5. Senegal: The component will help augment the effectiveness of activities financed under an ongoing Bank funded project Senegal Municipal Solid Waste Management Project (P161477) which focus on improved solid waste management services in selected cities in Senegal. The component will specifically, finance technical assistance for assessment and update of the existing regulations and guidelines needed to fill the legal gap for a sound management of municipal solid waste and hazardous waste. The component will support the a) development of the National plan for treatment and disposal of special waste (biomedical, e-waste, C&D and industrial waste); and b) a value chain and market analysis for recyclable wastes.

Component 3: Demonstrating application of technological tools and economic approaches (estimated US\$ 15.3 m)

The component will finance specific demonstration projects for cleaner technology in areas contaminated by chemical waste. These investments will be based on a standard set of (social, environment and economic) criteria, without impacting the livelihood and employment opportunities and tailored to country specific implementation conditions. The pilot investments are aiming to demonstrate cleaner technologies and methodologies to phase-out mercury use in Artisanal and Small-scale mining and reduce emissions of unintentional POPs in waste management. The pilots will be selected and designed based on priority environmental health risks and cost effectiveness of interventions. These pilots will be directly connected to ongoing Bank operations in each participating country:

- Ghana - Artisanal and Small-scale Mining Formalization (P168002)
- Tanzania - Industrial Transformation for Growth Project (P160164)
- Kenya - Urban Support Program (P156777)
- Zambia - Mining and Environmental Remediation and Improvement Project (P154683)
- Senegal - Municipal Solid Waste Management Project (P161477)

Recognizing that the risks of exposure, scope of regulations, institutional approaches and enforcement may vary among countries, country specific initiatives are outlined for the participating countries as follows below:



3.1. Tanzania: The component will support the drive of the Government of Tanzania to formalize the ASGM sector. Specific activities which be designed to create incentives for artisanal miners to access relevant knowledge, financing and institutional support in line with Government's obligations under the Minamata Convention. Technical assistance under the program will help improve working condition for local mining community by providing better equipment. The measures aim to facilitate the collaboration with Small Enterprise Development Corporation (SEDCO) or local manufacturers, to manufacture/replicate low cost centralized mercury management equipment allowing miners to move away from individual retorts. Such environmental improvements will act as demonstration pilots for the primary license holders who are mandated to rehabilitate their mines based on the Mine closure policy in the Mining Act. The demonstration investments will be linked with Industrial Competitiveness for Jobs Project (P160164) and will aim to enhance the Government's policy towards appropriate land usage for pastoral and agricultural activities and strengthen community level monitoring, through involvement of communities in land use shifts.

3.2. Zambia: The component support will focus on improving the waste value chain and measures that will reduce UPOPs releases from solid waste by strongly limiting the quantities of waste subject to uncontrolled burning; invest into improving the management of waste collection; transportation; treatment and disposal and improved recycling of waste. The current dumpsite at Kabwe will be upgraded into a sanitary landfill (through IDA financing), and feasibility study of short- and long-term BAT/BEP actions will be supported to determine the volumes and types of waste and the economic viability for private sector collaboration. This will be carried out by improving the segregation between hazardous contaminated wastes from the other non-hazardous waste streams. The component will support training for the existing rag-pickers. Raggpickers will benefits from occupational health and safety training and equipment supported by the component. Support will be provided to explore ways to reduce the impact of chemical pollution emanating from unregulated landfills in economic and socially acceptable manner and support the development of communication tools to raise awareness about the health costs and benefits of pollution management, including community outreach to increase public understanding and visibility of the scale and environmental health impacts.

3.3. Ghana: The component activities in Ghana focus on artisanal gold mining (AGM) and e-waste:

-AGM. Support under this component is linked to Component 1. It aims to demonstrate the environmental improvement of 2-3 pilot abandoned mines, based on cost-effective and environmentally sound technologies. The component will also enhance Government's policy towards shifting to appropriate land use for agricultural activities. This component will also support the improvement of environmental and social work conditions to promote mercury abatement techniques.

-e-Waste. This component will support the initiation of a pilot project related to Agbobloshie on implementation of integrated and environmentally sound management approach to improve collection, transportation, and safe disposal/recycling of e-waste, following Article 6 of the Stockholm Convention on wastes, and relevant guidance. This will include investment in infrastructure and technologies by looking at the entire e-waste management cycle from collection, transportation, setting up of collection centres or transfer stations and sorting stations and treatment (recycling) facility. It includes formalizing recycling systems, providing protective equipment for the collectors and recyclers, training and capacity building and developing protocols and methodologies for assessment of environmental health risks associated with e-waste.

3.4. Kenya: This component will support a pilot project in a selected county in Kenya in support of the Kenya Urban Support Program on implementation of integrated waste management approach to reduce releases of POPs from e-waste through improving source reduction/reuse, collection, transportation, and disposal/recycling. The pilot project will be identified based on review of priorities and institutional capacity (including private sector) for the selected location. Such pilot project may target either (a) Strengthening of the financing system for e-waste recycling and disposal; or (b) Infrastructure investments for selected elements of the e-waste management cycle from generation, to collection, transportation, establishing collection centres or transfer stations. Based on the technologies and approaches identified for the pilot, the component will provide support for capacity building for all relevant stakeholders in the county (including government, CSOs, and private sector), and identify opportunities for leveraging and eventually



mainstreaming the existing good practices. Another set of activities will focus on development and piloting a take back scheme with IT manufacturing industry, government ministries, for example Ministry of Education on computer-for-schools programme.

3.5. Senegal: This component will focus on improving the waste value chain and measures that will reduce UPOPs releases from solid waste by introducing new technologies and behavioural change methods for waste minimization and disposal. A demonstration project will invest in improving the management of waste cycle and improved recycling in a pilot site. A waste management unit will be strengthened in the identified municipalities to coordinate waste management efforts. This component will also look into the ways to reduce the impact of chemical pollution emanating from unregulated landfills and support the development of communication tools to raise awareness about the health costs and benefits of pollution management.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

The key potential environmental and social issues, which can be readily managed/mitigated are related to (i) hazardous waste management (including disposal) during preparation of pilot sites, (ii) occupational health and safety of workers, and (iii) negative effects of pollution from hazardous chemicals on workers and communities. The Bank’s review considered the Project’s capacity to manage its environmental, social, safety and health performance in compliance with ESS1 and other relevant standards. From the preliminary review carried out at this concept stage, it can be concluded that implementing agencies’ environmental and social management system and procedures need to be complemented/enhanced to comply with ESF requirements. The Project will address the gaps through the preparation and implementation of an Environmental and Social Commitment Plan (ESCP). The ESCP will be based on the preparation and implementation of the ESIA and the associated ESMPs. The demonstrative investments (pilots) will introduce cleaner technologies and methodologies to phase-out mercury use in Artisanal and Small scale mining and reduce emissions of unintentional POPs in waste management. The pilots will be selected and designed based on priority environmental health risks and cost effectiveness of interventions. These pilots will be directly connected to ongoing Bank operations in each participating country: - Ghana - Artisanal and Small-scale Mining Formalization (P168002) - Tanzania – Industrial Competitiveness for Jobs Project (P160164) - Kenya - Urban Support Program - (P156777) - Zambia – Mining and Environmental Remediation and Improvement Project (P154683) - Senegal –Municipal Solid Waste Management Project (P161477) Each pilot preparation is going to include review of existing E&S due diligence (ESIA/ESMP/SA), which will be updated and publicly redisclosed to reflect the requirements of relevant ESSs.

Note To view the Environmental and Social Risks and Impacts, please refer to the Concept Stage ESRS Document.



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