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|  | Revised Environmental and Social Management Framework (ESMF) |  |

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| **Project title:** Demonstration of phase-out of mercury-containing medical thermometers and sphygmomanometers and promoting the application of mercury-free alternatives in medical facilities in China |
| **Country:** China | **Implementing Partner (GEF Executing Entity):** Foreign Environmental Cooperation Center (FECO), Ministry of Ecology and Environment (MEE) | **Execution Modality***:* National Implementation Modality (NIM) |
| **Contributing Outcome (UNDAF/CPD, RPD, GPD)***:* United Nations Sustainable Development Cooperation Framework (2021-2025): Outcome 3: People in China and the region benefit from a healthier and more resilient environment.UNDP Country Programme Document for China (2021-2025), Pillar 2 (A healthier planet and resilient environment, Output 2.1: Adaptive policies developed at target level (subnational), financed and applied for nature-based systems to align with multilateral agreements and transboundary platforms. |
| **UNDP Social and Environmental Screening Category:**MODERATE | **UNDP Gender Marker:** GEN2 |
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| **Public Consultation/Disclosure Notice** |
|  *Date:* November 03, 2021  *Vehicle*: Implementing Partner´s WebpageEnterprises that are willing to promote the replacement of mercury-containing thermometers and mercury-containing sphygmomanometers and reduce the use and discharge of mercury through the elimination of mercury-containing thermometers and mercury-containing sphygmomanometers through the demonstration of technological transformation under the GEF Project 6279 were invited to submit their application before 5:00 pm on November 24, 2020 to FECO in order to be considered in the selection process to be undertaken in the first initial six (6) months of project implementation *Date*: December 14, 2021  *Vehicle*: Implementing Partner´s WebpageOn December 8, 2021, the full Project Document of the "China Mercury-Containing Thermometer and Sphygmomanometer Phase-Out and Mercury-Free Product Application Alternative Demonstration Project" jointly FECO and UNDP was endorsed by the Global Environment Facility (GEF). *Date*: March 16, 2022 *Vehicle*: UNDP Country Office WebpageThe United Nations Development Programme (UNDP) requests feedback on Environmental and Social Management Framework and associated Social and Environmental Screening Procedures the GEF Project 6279, “China Mercury-Containing Thermometer and Sphygmomanometer Phase-Out and Mercury-Free Product Application Alternative Demonstration Project”. The public consultation period will be opened for 30 days (The last date for receiving of comments is April 15, 2022). Comments and questions can be sent to the following address:**United Nations Development Programme – UNDP****Physical Address**: 2 Liangmahe Nan Road, Chaoyang District, Beijing China**Tel**: +86 10 8532 0800**Fax**: +86 10 8532 0900**Email**: registry.ca@undp.org**Website**: <https://cn.undp.org> |
| **Note:** *UNDP takes note of the SES Guidance that applies to this ESMF disclosure procedure “If undertaken as part of project implementation, must be disclosed and consulted on atleast 30 days prior to implementation of any activities that may cause adverse social and environmental impacts*”. |

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# ACRONYMS AND ABBREVIATIONS

**ARAP** Abbreviated Resettlement Action Plan

**CDC** Center for Disease Control and Prevention

**EEB** Ecology and Environment Bureaus (at local -i.e., city or county- level)

**EED** Ecology and Environment Departments (at provincial level)

**EIC** Environmental Impact Chapter

**EIF** Environment Impact Form

**EIR**  Environmental Impact Report

**EIRF** Environmental Impact Registration Form

**EIS** Environmental Impact Statement

**EMSs** Environmental Monitoring Stations (attached to EEDs or EEBs)

**ESA** Environmental and Social Audit

**ESHS** Environmental, Social, Health and Safety

**ESM** Environmentally Sound Management

**EPB** Environmental Protection Bureau

**FECO** Foreign Environmental Cooperation Office

**GAC** General Administration of Customs

**GEF** Global Environment Facility

**GRC** Grievance Redress Committee

**GRM** Grievance Redress Mechanism

**HD** House Demolition

**Hg** Mercury

**KM** Knowledge Management

**LA** Land Acquisition

**M&E** Monitoring and Evaluation

**MEE** Ministry of Ecology and Environment

**MEM** Ministry of Emergency Management

**MEP** Ministry of Environmental Protection

**NDRC** National Development and Reform Commission

**NGO** Non-Governmental Organization

**NHFPC** National Health and Family Planning Commission

**OHSP** Occupational Health and Safety Plan

**PIR** GEF Project Implementation Report

**PMU** Project Management Unit

**PPG** Project Preparation Grant

**PRC** People’s Republic of China

**RA** Risk Analysis

**R&D** Research and Development

**SAWS** State Administration on Work Safety

**SCC** Solid Waste and Chemicals Management Center

**SEA** Strategic Environmental Assessments

**SEPA** State Environmental Administration for Protection

**SES**  Social and Environmental Standards

**SESMO** Safeguards and Environmental Sound Management Officer

**SESP** Social and Environmental Screening Procedure

**TOR** Terms of Reference

**UNDP** United Nations Development Program

**WHO** World Health Organization

# EXECUTIVE SUMMARY

This Environmental and Social Management Framework (ESMF) was prepared as response to the Social and Environmental Safeguards Procedure (SESP) screening of the CEO Endorsement Request (CEO ER) to the Global Environment Facility (GEF) of the Project “Demonstration of phase-out of mercury-containing medical thermometers and sphygmomanometers and promoting the application of mercury-free alternatives in medical facilities in China” (herewith “the Project”).

The purpose of this ESMF is to assist in the assessment and management of potential environmental and social impacts during the Project´s lifecycle. The ESMF will be implemented by the Foreign Environmental Cooperation Center (FECO) of the Ministry of Ecology and Environment (MEE), monitored throughout the duration of the project by the Project Monitoring Unit (PMU) and overseen by the United Nations Development Programme (UNDP) .

The objective of the Project is to establish the enabling environment to accelerate the transfer to the production of mercury-free medical devices, and to lay the foundation for market acceptance and growth for mercury-free devices in medical facilities, in order to meet associated phase-out deadlines under the Minamata Convention on Mercury. The Project is composed by four (4) Components that are designed to address the barriers that need to be overcome so the Objective can be achieved:

1. *Component 1* - Integrated policy, regulatory framework, quality standards, fiscal tools, action plans and associated capacities were achieved, to support the phase out of mercury-containing medical thermometers and sphygmomanometers under the Minamata Convention
2. *Component 2* - Demonstration of technology transfer and investment for (i) supporting enterprises in phasing out the production of mercury-containing medical devices; (ii) the application of mercury-free devices in medical facilities, and (iii) enhanced knowledge base for the risk assessment and sound management of obsolete mercury devices, contaminated materials/wastes, and contaminated areas on premises completed.

#### *Component 3* - Development of long-term guidance and tools for the sound management of obsolete mercury-containing medical thermometers and sphygmomanometers, and mercury-contaminated areas accomplished

1. *Component 4* - Knowledge Sharing & Management, Monitoring and Evaluation established and implemented

The anticipated risks and impacts of the Project, as identified during the SESP Screening, are of minor to medium magnitude, few in number, temporary, site-specific and reversible, and can be avoided, managed and/or mitigated with pertinent and proven measures. In addition, a series of Plans and procedures are embedded in the Project´s design so they greatly reduce the likelihood that the Project will cause substantial or high negative environmental and social impacts. Hence, the SESP holds the overall categorization of “Moderate”.

In this regard, the main environmental and social concerns raised by the Project are associated with the implementation of demonstration interventions, at industrial level, in particular at manufacturing enterprises, and the application of associated strategies, tools, guidance and plans developed to support those interventions, all of which are included in Components 2 and 3. Specifically, the following interventions are the source of environmental and social concerns:

1. The refurbishment or replacement of existing production lines at demonstration manufacturing enterprises.
2. The management of mercury waste at demonstration manufacturing enterprises.
3. The inventory and potential cleanup or remediation of primary and secondary contaminated sites associated with demonstration manufacturing enterprises.
4. The management of mercury waste at demonstration health care facilities.

An ESMF is applicable when an operation includes activities that are not fully defined and their exact areas of implementation are not clearly identified before the project implementation is initiated: this is the case for the demonstration interventions included in the Project´s Components 2 and 3, as these were only pre-select during the Project preparation phase (PPG), being that further details on the implementation of these interventions will be defined during the project implementation.

Therefore, this ESMF outlines the processes that will be undertaken during the project implementation phase covering additional assessment of potential impacts and identification and development of appropriate risk management measures for:

1. The locations of the facilities that will be finally selected and the socio-environmental characteristics of the areas where they are sited;
2. The production processes currently in use at the facilities, and potential social and environmental issues associated with them, such as management of mercury waste, site contamination, occupational health and safety risks, etc.; and
3. The alternative production technologies that will be utilized. Regarding proposed interventions at medical facilities, these facilities have not been selected and the details of the corresponding interventions will also have to be defined in the Project implementation phase.

This ESMF will follow three steps:

Step 1 - Environmental and Social Screening:

These will be applied only to the interventions listed in Section 5.1[[1]](#footnote-1), at the demonstration production enterprises that result finally selected to participate in the Project. The specific details of those interventions or the locations of the pilot enterprises are not known by the project initiation and, further, their likely environmental and social risks are not being addressed by the measures already included in the Project design;

The instrument to apply in the screening of interventions at demonstration production enterprises is an Environmental and Social Audit (ESA) focused on environmental, and occupational and community health and safety risks at each facility. The Annex I to this ESMF provides guidance for the preparation of an ESA.

Finally, an ESA is required at each potential manufacturing facility because the enforcement of compliance with Minamata Convention requirements by these facilities has been overlooked until recently in China, as opposed to other manufacturers of mercury-added products, such as batteries and fluorescent lamps (Lin, Yan et al., 2017, p. 678). Furthermore, an ESA is necessary in view of the likely volumes of mercury waste to be managed and disposed of by these facilities, coupled with the likely obsolesce of existing production equipment at candidate demonstration manufacturing facilities.

Step 2 - Preparation of Targeted Environmental and Social Plans:

The responsibilities for the preparation of each of the targeted environmental and social plans required for the demonstration production facilities, as a result of the implementation of the Environmental and Social Screening step, as well as for the preparation of the plan for the Environmentally Sound Management (ESM) of mercury waste at demonstration medical facilities, will follow the procedures outlined in Section 5.1.2 as follows:

1. Site-Specific Occupational Health and Safety Plans (OHSPs).
2. Site-Specific Spill Prevention and Management Plan (SPMP) for wastes resulting from the replacement/refurbishment of existing production lines at demonstration manufacturing facilities
3. Plan for the environmentally sound management of mercury waste at demonstration manufacturing facilities[[2]](#footnote-2)
4. Plan for the management of interim storage areas at demonstration manufacturing facilities.[[3]](#footnote-3)
5. Plan for the cleanup of contaminated sites and/or plan for the remediation of contaminated sites associated with demonstration manufacturing facilities.
6. Plan for the ESM of mercury waste at demonstration medical facilities.[[4]](#footnote-4)

Given that the Project design already includes the conduct of a series of studies, the performance of risk assessments, the development of risk management plans, and the provision of guidance and capacity building in some of the areas covered by the required environmental and social plans (e.g., ESM of mercury waste, interim storage of mercury waste, inventory of contaminated sites, etc.), all of which will be carried out by Consultants hired by the Project, the Risk monitoring consultant should provide feedback to both the Consultants developing the plans and the Project Consultants, in order to ensure that there is a certain degree of coherence and consistency between the contents of deliverables covering similar topics (e.g., the specific plan for the ESM of mercury waste at each production enterprise and the general guidelines for the preparation of plans for the ESM of mercury waste).

Step 3 - Environmental and Social Monitoring.

The last step of the ESMF process consists of monitoring of the implementation of the targeted environmental and social plans developed in the previous step. The institutional and regulatory framework for environmental and social management in China have been described in Chapter 3.0, and the monitoring, inspection, supervision and enforcement responsibilities and duties assigned to the public entities involved in the implementation of the Project in that framework.

Reporting on progress and issues in the ESMF implementation will be documented in the project progress reports and project implementation reports (PIRs). The targeted environmental and social plan(s) will specify their own monitoring and evaluation parameters. The Risk monitoring consultant and Project Manager will be responsible for implementation and compiling reports on the ESMF implementation, until the targeted environmental and social plan(s) is in place. Key issues will be presented to the respective Project Board during the PSC meeting, as required.

Finally, a Grievance Redress Mechanism (GRM) will provide a formal avenue for affected individuals or communities to engage with the Project implementers or sponsors on issues of concern or unaddressed environmental and social impacts. It aims to manage and satisfactorily respond to the complaints of individuals or groups of people regarding the environmental and social performance of the Project. The GRM process will be managed by a Grievance Redress Committee (GRC). None of the members of the Committee shall have a conflict of interest involving any complaint lodged. The Committee should have female representation. The suggested composition of the Committee is, at a minimum:

1. a member of the top management of the PMU, such as the Project Manager or the Technical Advisor;
2. the Risk monitoring consultant, who will be in charge of the operational and administrative aspects of the GRC;
3. a member of the management of FECO;
4. a representative from the corresponding provincial or local Ecology and Environment authority where the complaint originates; and
5. a representative from UNDP-China.

The GRM comprises the following four stages: i) reception; ii) investigation and inquiry; iii) response; and iv) follow up and close out; and will produce monthly and quarterly reports on the status of processing of all complaints and concerns received using the format provided in Annex IV.

# 1.0 INTRODUCTION

This report develops the Environmental and Social Management Framework (ESMF) for the Project “Demonstration of Phase-Out of Mercury-Containing Medical Thermometers and Sphygmomanometers, and Promoting the Application of Mercury-Free Alternatives in Medical Facilities in China”. “An ESMF is an instrument that examines potential risks and impacts when a project consists of a series of sub-projects/activities or subsequent implementation of policies, plans, programmes (PPP) that cannot be fully assessed until the details of the PPP and/or activities have been identified (often later in the project cycle). The ESMF sets out the principles, rules, guidelines and procedures to ensure the social and environmental risks and impacts of the forthcoming but as yet unspecified activities are fully identified (screened) and assessed, and that management measures are in place prior to implementation of the relevant activities with potential social and environmental risks and impacts. It contains measures for estimating and budgeting the costs of such measures, and information on responsibilities for addressing project risks and impacts” (UNDP, 2020, p. 5).

This document consists of six chapters:

1. The Introduction.
2. Chapter 2. provides a description of the Project in terms of: (i) duration, execution modality and budget; (ii) objective, indicators and components; and (iii) governance and management arrangements.
3. Chapter 3. summarizes the institutional, legal and regulatory framework for environmental (including hazardous substances and waste), social, and occupational health and safety management pertinent to the implementation, supervision and monitoring of the Project. It further explains the environmental and social safeguard requirements of the main international funding sources of the Project, the Global Environment Facility (GEF) and the United Nations Development Program (UNDP).
4. Chapter 4.discusses the likely negative environmental and social risks and impacts of the Project, their level of significance and measures to mitigate them. Further, it justifies why the overall Project risk categorization is moderate.
5. Chapter 5. provides the details of the ESMF. It explains the Project interventions to which the ESMF applies and indicates the steps included in the ESMF process. Further, this chapter describes the tools and supporting documents designed to help implement each step, as well as the institutional responsibilities in the execution of each step. Finally, this chapter details the Grievance Redress Mechanism, the Environmental and Social Training Plan, and an illustrative budget required for the management and implementation of the ESMF.
6. Chapter 6.0 summarizes the consultations held during Project preparation and their results.

# 2.0 PROJECT DESCRIPTION

This chapter provides an overview of the Project “Demonstration of Phase-Out of Mercury-Containing Medical Thermometers and Sphygmomanometers, and Promoting the Application of Mercury-Free Alternatives in Medical Facilities in China” in terms of, respectively: (i) duration, execution modality and budget; (ii) objective, indicators and components; and (iii) governance and management arrangements.

## 2.1 Duration, Execution Modality and Budget

The duration of the Project is 60 months, with originally planned start and end dates of, correspondingly, 13 January 2022 and 12 January 2027. The modality of execution is National Implementation Modality.

The Project budget is USD 128,000,000, comprising USD 16,000,000 from the GEF Trust Fund administered by UNDP, and USD 112,000,000 in co-financing from the Government of China, the private sector, UNDP and other sources.

## 2.2 Objective, Indicators and Components

The following three subsections describe, correspondingly, the Project objective, the objective indicators and the Project components.

### 2.2.1 Project Objective

The objective of the Project is to establish the enabling environment to accelerate the transfer to the production of mercury-free medical devices, and to lay the foundation for market acceptance and growth for mercury-free devices in medical facilities, in order to meet associated phase-out deadlines under the Minamata Convention on Mercury.

### 2.2.2 Objective Indicators

These are the following:

* Through demonstration at four (4) selected mercury-containing thermometers manufacturers and two (2) mercury-containing sphygmomanometers manufacturers, completely stop their production lines, reducing mercury consumption, production and sales to zero, eliminating the consumption of 75 metric tons of mercury on completion of the demonstration projects by 31 December 2025.
* Facilitated by technology transformation and national replication program, completely phase out by 31 December 2025 the consumption of mercury by the eighteen (18) enterprises manufacturing mercury-containing thermometers and mercury consumed by the five (5) enterprises manufacturing mercury-containing sphygmomanometers.
* Mercury-free medical devices promoted in at least six (6) demonstration medical facilities, staff trained to use and maintain mercury-free medical devices.
* Environmental sound management of mercury on interim mercury storage, mercury-containing waste and mercury contaminated areas at the demonstration production facilities and medical facilities implemented.

### 2.2.3 Project Components

There are four Project components, which are detailed in the following four subsections in terms of the barriers they are designed to overcome and the strategy to achieve this, as well as their respective outcomes, outputs and activities.

#### 2.2.3.1 Component 1. Integrated policy, regulatory framework, quality standards, fiscal tools, action plans and associated capacities were achieved, to support the phase out of mercury-containing medical thermometers and sphygmomanometers under the Minamata Convention

This component will address the policy and regulatory barriers as it will systematically evaluate measures (including administrative, legal, financial and economic instruments, etc.) to phase-out the production of mercury-containing medical thermometers and sphygmomanometers in enterprises and promote the introduction and use of mercury-free medical devices in medical facilities.

The component will develop and implement an integrated approach consisting of policy and regulatory measures, quality standards, fiscal tools and associated capacities to meet the requirements of the Minamata Convention. Activities under this component will help strengthen regulatory and institutional baseline levels of effort under the National Plan in expanding beyond an initial “siloed policy review and amendment exercise”, and providing opportunity for integration between different public sector entities and broader consultation amongst private and public partners.

A cross-ministerial cooperation mechanism will be established to jointly oversee the assessment and review of the policy, regulations, tools, action plans and guidelines required to improve the regulatory framework. In case of need to develop/update specific regulations/standards, and in coordination with appropriate private sector partners and other stakeholders such as civil society, the mechanism will provide the proper guidance to the project team on these activities.

Proposals on policy and regulatory frameworks on chemical management and on the use of mercury-free products will be developed to update regulatory measures and strengthen management capacity. These activities will be accompanied by capacity-building programs geared to relevant officers in charge of the monitoring, supervision, regulation and enforcement of the phase-out of mercury in the production of medical thermometers and sphygmomanometers.

A collaboration mechanism will also be established with the World Health Organization (WHO) to ensure incorporation of international best practices, assessment of international standards and experiences on monitoring and management systems that can facilitate the smooth implementation of demonstration phase-out of mercury, particularly in the medical facilities.

Finally, this component will also promote consultations with relevant stakeholders to develop appropriate frameworks on green procurement standards and action plans to phase-in mercury-free medical devices at medical facilities, as well as to creative fiscal or revenue generating tools to support the long-term phase-out of mercury from the medical device production sector, and to cover any initial cost increases related to procurement of non-mercury devices by key medical facilities.

The outcomes, and corresponding outputs and activities of this component, are the following:

***Outcome 1.1***: Cross ministerial cooperation established to jointly develop and implement the necessary policy, regulations, tools, action plans and guidelines, in coordination with appropriate private sector partners, to phase out the production and consumption of mercury-containing medical devices, to reduce the use of primary mercury in medical devices, to manage waste of obsolete devices, and to promote the uptake of mercury-free medical devices.

**Output 1.1**: Inter-Ministerial Committee established (e.g., Environment, Health, Industry, etc.) to support the execution of China’s National Plan for the Implementation of the Minamata Convention and take actions to address the identified policy and enforcement capacity gaps between national regulatory policies and the Convention’s legal requirements for Parties, and to look at modalities for linking mercury consumption reductions from this sector into the primary mining plans within the National Plan for the Implementation of the Minamata Convention, to avoid redirection of phased out consumption to other sectors.

*Activity 1.1.1*:

* Coordinate with relevant ministries to establish the Inter-ministerial Committee.
* Develop an implementation action plan to formulate proposals and training plan to improve the capacity of national policy and enforcement effectiveness, including management capacity of inspection officers etc., in meeting compliance of Minamata Convention obligations.
* Examine linkage of mercury consumption in the production of medical devices and overall national mercury consumption as it relates to national mining production, and establish monitoring measure to ensure sustainable reduction of mercury consumption achieved through phase out in mercury-containing medical devices.

**Output 1.2**: Proposal on policy and regulatory frameworks on chemical management, supervision and law enforcement, standards for inspection and maintenance of mercury-free products, and rules on the use of mercury-free products are developed or updated and capacity-building programs updated or developed to support the monitoring, supervision, regulation and enforcement of the phase-out of mercury in the production of medical thermometers and sphygmomanometers, by collaborating with World Health Organization (WHO) to ensure incorporation of international best practice and experience.

*Activity 1.2.1*: Develop proposals to update relevant policies, regulations, standards and monitoring and management systems that will support and facilitate the smooth implementation of demonstration phase-out of mercury in the production of mercury-containing medical devices to enable China to fulfill the necessary requirements and ensure compliance of the Convention.

**Output 1.3**: Proposals on green procurement standards and action plans developed to promote the application of and grow the market for mercury-free medical thermometers and sphygmomanometers in medical facilities.

*Activity 1.3.1*: Consultations with relevant stakeholders to develop proposals on policy and regulatory frameworks, green procurement standards and action plan to facilitate promoting the wide application of mercury-free medical devices at medical facilities.

**Output 1.4**: Green Finance Framework developed and mercury-free devices procurement subsidization scheme created.

*Activity 1.4.1*: Interact with technical experts and relevant stakeholders to develop a Green Finance Framework to encourage green financing.

*Activity 1.4.2*: Support green procurement practices, develop guides and model specifications for acquisition of mercury-free medical thermometers and sphygmomanometers.

*Activity 1.4.3*: Provide information and other data to feed Components 2 and 4 related to capacity building and awareness activities geared towards awareness and capacity building at medical facilities.

#### 2.2.3.2 Component 2. Demonstration of technology transfer and investment for (i) supporting enterprises in phasing out the production of mercury-containing medical devices; (ii) the application of mercury-free devices in medical facilities, and (iii) enhanced knowledge base for the risk assessment and sound management of obsolete mercury devices, contaminated materials/wastes, and contaminated areas on premises completed

Components 2 and 3 complement each other and will be implemented in a coordinated manner to help addressing the technical barriers identified during the design of the Project.

The Project includes demonstration activities at facilities that manufacture mercury-containing medical thermometers and sphygmomanometers, as well as at medical institutions, as elaborated next.

**(i) Manufacturing Level Demonstration Projects**

Component 2 will focus on generating the evidence base for real time replication and provision of the necessary technology transfer and investment support to enable the conversion of the manufacturing from mercury-containing medical thermometers and sphygmomanometers to mercury-free alternatives. This will be achieved through demonstration activities at the selected production facilities:

* Four (4) of the top 10 producers of mercury-containing thermometers, and
* Two (2) producers of mercury-containing sphygmomanometers

Most of the demonstration enterprises were established in the years of 1960s and 1970s, having a well-established structure and production lines that required costly conversion to mercury-free production. The four (4) potential demonstration enterprises are located in industrial parks, with the other two located some 100-500 meters away from mixed urban (including industrial) and cultivated land. The mercury consumption of the four selected mercury-containing medical thermometer producers all exceeded 30 metric tons in 2019, representing over 60% of the sector consumption, their production capacity represents 60% of the sector output, and all have certain technical reserves for the production of mercury-free alternatives.

Manufacturing enterprises of mercury-containing sphygmomanometer are located in Jiangsu Province and Shanghai with most of them located in industrial parks while the others are close to residential areas or farmlands, with residents or farmland located about 50 meters from the factory site. The two (2) selected mercury-containing sphygmomanometers producers include the top mercury consumption enterprise and the other a small consuming enterprise and their combined production exceeded more than 70% of the sector output and 70% of the sector mercury consumption. These selected demonstration producers will carry out technology transfer according to their own situation.

Manufacturing Level Demonstration Projects will:

* Encourage demonstration enterprises of mercury-containing medical devices to gradually reduce mercury consumption in mercury devices production and sales and shut down the production lines by December 31, 2025; lead the whole industry in phasing out the use of mercury and to ensure achievement of the goal of the Minamata Convention. In implementing the demonstration activities, enterprises plan to phase out mercury-containing equipment, and plan to improve mercury-free producing capacity by changing the original mercury-containing production lines into mercury-free ones or installing new manufacturing equipment;
* Promote Research and Development (R&D), production and marketing of mercury-free alternatives;
* Adhere to environmentally sound management of mercury; organize or participate in themed training; promote gender equality, etc.; and
* Share achievements and experiences of the demonstration with other enterprises.

Through the demonstration interventions, an incentive mechanism will be established and an assessment to determine the cost and various mercury-free technology options will be completed for each demonstration manufacturing enterprise. In addition, issues of on-premises contamination and significant stores of mercury (containing) waste to be disposed of, if any, are considered critical as some enterprises are located in industrial-mixed areas densely populated or close to farmland areas, in which any potential contamination from mercury can result in considerable impacts to environmental and human health.

In this regard, the demonstrations will provide a unique opportunity to pilot mitigation mechanisms and safe handling activities (at least one facility will be selected depending on the findings for prioritization). Ultimately, this will provide critical information for upscale through China’s National Plan.

Main activities of the mercury Environmentally Sound Management (ESM) demonstration in the thermometer and sphygmomanometer producers will include: (i): establish mercury phase-out and ESM plan; (ii) create inventory of mercury contamination sites and facilities; (iii) collection and storage of mercury concerned, including providing guidance on mercury waste cleanup and handling linked to risk assessment (RA) procedures development for mercury contaminated sites and risk management (RM) strategies guidance for mercury contaminated sites; and (iii) development of sustainable ESM strategies for mercury and mercury-contained/contaminated wastes and recommendations for contaminated sites.

**(ii) Consumer Level Demonstration Projects**

This project component will also promote the demonstration of the uptake of mercury-free alternatives in at least 6 medical institutions in one (1) to two (2) different demonstration locations covering different size categories (tertiary, secondary- and primary-grade) and types. The Project pays particular attention to those facilities located in remote and/or poor areas in order to ensure that there is appropriate representation of facilities to mirror China’s overall profile of medical facilities. This selection strategy is critical, so that the evidence gathered from piloting is relevant, and can be captured and up-scaled post project in the overarching National Plan.

The documented experience from all demonstration medical institutions will be shared and promoted to more medical institutions locally and nationally to promote wider use of mercury-free alternatives and ensure environmental sound management of mercury wastes. Besides, the research and study on promoting mercury-free alternatives will feed the Components 1 and 4 in order to help to develop a more environmentally sound strategy for the health care sector.

The correct use of mercury-free alternatives, including their routine internal and external calibration, required capacity building for the accurate calibration of mercury-free alternatives, and activities like collection and storage of mercury concerned, mercury waste cleanup and handling, mercury waste transport and disposal and risk analysis (RA) of mercury contaminated areas and sustainable ESM of mercury waste and contaminated sites, will be supported by the Project. The demonstration interventions also aim to train medical staff to correctly use mercury-free thermometers and sphygmomanometers and soundly manage obsolete mercury-containing medical thermometers and sphygmomanometers. Demonstration outcomes will be captured and shared in awareness and training materials and guidance documents for long term, post-GEF-funded project, and the replication process.

The outcomes, and corresponding outputs and activities of this component, are the following:

***Outcome 2.1***: Enterprises are enabled to convert production lines as per legally mandated national phase-out planning guidelines, and to soundly manage remaining mercury, stockpiled devices and/or contaminated areas on premises resulting in the phase-out of at least 75 metric tons of mercury.

**Output 2.1**: Production of mercury-free medical thermometers and sphygmomanometers achieved and sound management of obsolete mercury and stocks of mercury devices implemented in four (4) producers of mercury-containing medical thermometers and two (2) producers of mercury-containing sphygmomanometers.

Based on the 2019 surveyed consumption of the six (6) candidate demonstration enterprises, upon signature of the execution-assistance contracts for the demonstration activities, it is expected that the quantity of the 2019 mercury consumption to be reduced at these demonstration enterprises may exceed 75 metric tons.

*Activity 2.1.1*: Based on a risk assessment of the alternative technologies that will be used taking into consideration avoiding retrenchment, demonstration activities will accelerate phase-out and production transformation to mercury-free devices, undertake relevant trainings, document demonstration experience and achievements no later than 31 December 2025; and will develop a risk management plan to reduce related social and environmental risks.

*Activity 2.1.2*: Develop plan for environmentally sound management of mercury waste and guidance actions (risk assessment) for contaminated areas.

*Activity 2.1.3*: Organize personnel training to manage technical issues in order to continuously improve the quality and convenience of use of mercury-free thermometers and sphygmomanometers.

*Activity 2.1.4*: Develop preliminary plan for gender equality and mainstreaming activities in workplace and at management level.

**Output 2.2**: Use of mercury-free devices and the sound management of obsolete mercury-containing medical thermometers and sphygmomanometers demonstrated in at least 6 medical facilities. 60% of baseline mercury-containing medical thermometers and sphygmomanometers replaced by mercury-free devices and staff capacitated to use and maintain mercury-free devices and to soundly manage obsolete mercury devices and related wastes.

*Activity 2.2.1*: Carry-on consultations with the World Health Organization (WHO), international and domestic experts to facilitate knowledge in support of experience exchanges and domestic training activities.

*Activity 2.2.2*: Develop relevant trainings to staff and medical institutions and promote knowledge and experience sharing about the replacement of mercury-containing thermometers and sphygmomanometers.

*Activity 2.2.3*: Develop relevant research/investigation to technically support introduction and adoption of mercury-free alternatives in medical facilities.

*Activity 2.2.4*: Organize and implement field activities to effectively substitute mercury-containing medical thermometers and sphygmomanometers for clinical purposes at selected medical institutions.

*Activity 2.2.5*: Develop safe disposal management plan/strategy for mercury-containing medical thermometers and sphygmomanometers.

#### 2.2.3.3 Component 3. Development of long-term guidance and tools for the sound management of obsolete mercury-containing medical thermometers and sphygmomanometers, and mercury-contaminated areas accomplished

This component will focus on the identification and prioritization process for long-term sound management of mercury-contaminated sites and obsolete mercury-containing medical thermometers and sphygmomanometers. An assessment regarding the status of potential mercury-contaminated sites in pilot enterprises (where the production of mercury-containing medical thermometers and sphygmomanometers has taken place) will be undertaken.

The risks posed due to mercury contamination in these sites will be assessed and a strategy for their risk management will be developed. As part of this project component, an assessment of risk to employees and surrounding communities working on or living close to these sites will also be conducted. This overall risk management strategy and associated guidance will serve as guidance for replication in the National Plan that can effectively link to the national strategies of disposal of mercury waste and interim storage of mercury.

As part of the private sector risk assessment that will be undertaken, the project will ensure that the interim storage facilities at the selected enterprises (Activity 2.1.1 and Activity 3.3.1) meet the Minamata Convention’s Guidelines on the environmentally sound interim storage of mercury. A Spill Prevention and Management Plan will be developed and implemented at all demonstration sites for safe handling and disposal of mercury-containing obsolete devices and safely cleanup of accidental mercury releases.

Finally, this component will also undertake a similar risk assessment in the course of development of a risk management plan related to the accumulated mercury from accidental broken mercury-containing medical thermometers and sphygmomanometers at the manufacturing facilities, and the safe handling and disposal of obsolete mercury-containing medical thermometers and sphygmomanometers in medical facilities.

The outcomes, and corresponding outputs and activities of this component, are the following:

***Outcome 3.1***: Production enterprises and medical facilities implemented appropriate strategies, tools and guidance to assure long-term sound management of mercury-containing medical devices and mercury contaminated areas.

**Output 3.1**: Guidance tools for inventory of mercury-contaminated sites at piloted enterprises producing mercury-containing medical thermometers and sphygmomanometers developed.

*Activity 3.1.1*: Develop guiding methodology and carry on model investigation on how to identify and collect data to establish inventory on mercury-contaminated sites including conducting risk assessment analysis.

**Output 3.2**: Risk management strategy, technical guidance and training materials developed for the sound management of residual mercury stocks and obsolete mercury-containing medical thermometers and sphygmomanometers at production enterprises/sites.

*Activity 3.2.1*: Identify, monitor and undertake actions that ensure sound and secure management of interim storage of mercury and mercury wastes in piloted facilities.

*Activity 3.2.2*: Develop risk management strategy, technical guidance and training materials to facilitate implementation and future replication and scale up of sound management of mercury waste, storage, and identification of contaminated sites at national level. The strategy will include measures to minimize impact on inhabitants, businesses located on land identified as contaminated.

**Output 3.3**: Risk management strategy, technical guidance and training materials developed for the sound management of obsolete mercury-containing medical thermometers and sphygmomanometers in medical facilities.

*Activity 3.3.1*: As part of the private sector risk assessment, the Project will ensure the safe handling and/or disposal of residual mercury and obsolete devices and implementation of sound management on disposal, storage of mercury-containing medical devices, and mercury waste at both the manufacturing enterprises and the medical facilities. A Spill Prevention and Management Plan will be developed and implemented for safe handling and safely cleanup of accidental mercury releases.

*Activity 3.3.2*: Develop risk management strategy, technical guidance and training materials to facilitate promotion of mercury-free medical devices.

#### 2.2.3.4 Component 4. Knowledge Sharing & Management, Monitoring and Evaluation established and implemented

Component 4 will address the educational and awareness raising barriers, it will promote experience gathering, sharing, technical exchanges, information dissemination and awareness raising among different stakeholders including the government, public and private sectors, medical personnel, civil society groups and the general public. The component will facilitate the complete phase out of production of mercury-containing medical thermometers and sphygmomanometers by 31 December 2025, and the successful promotion of wider application of mercury-free alternatives at local and national medical facilities. This project component will also ensure the smooth implementation of project activities through standard, internal periodical communication, evaluation and external review.

A Communication Strategy will be created delivering differentiated approaches for stakeholders (manufacturing enterprises, medical facilities, mercury mining enterprises, government and international agencies, etc.) and supporting the knowledge sharing and training activities in a geared and effective manner.

Knowledge Management (KM) tools will be developed and deployed to accelerate the nationwide transformation to mercury-free production of medical devices, promoting wide application of mercury-free technologies as a result of the national replication program designed and piloted under Components 1, 2 and 3. These tools will support the dissemination of experiences, lessons learned and best practices to accelerate the rollout of real-time project results and scale up.

This component will also be responsible to deploy the Gender Action Plan developed to raise awareness and empower women’s roles in sound management activitiesand promote gender sensitive approaches for the project´s KM activities that can incorporate gender equality principles and actions into environmentally sound management of mercury waste activities.

Finally, the Monitoring and Evaluation (M&E) Tools will be used as required to guarantee the best performance in project execution and monitoring, as well as to promote the adaptive management during the project lifecycle.

The outcomes, and corresponding outputs and activities of this component, are the following:

***Outcome 4.1***: Tools for knowledge sharing developed, activities and experiences about policy, technical knowledge and lessons learned for the Project shared. Disaggregated information on stakeholder’s activities and experiences under the Project gathered and fed into the M&E processes of the Project.

**Output 4.1**: Project Communication Strategy created and effective KM and M&E support delivered in differentiated approaches for stakeholders (manufacturing enterprises, medical facilities, mercury mining enterprises, government and international agencies, etc.)

*Activity 4.1.1*: Document the Project´s activities and the outputs achieved in close monitoring of Components 1, 2 and 3, and share knowledge and achievements with relevant stakeholders.

*Activity 4.1.2*: Support the replication of achievements by creating knowledge management tools that can accelerate the nationwide transformation to mercury-free production of medical devices, promoting wide application of mercury-free technologies.

*Activity 4.1.3*: Provide KM tools that can be incorporated in environmentally sound management strategies of obsolete medical devices, mercury waste and contaminated sites and support the alignment of the national replication plan to be developed with the National Plan for the Implementation of the Minamata Convention.

*Activity 4.1.4*: Carry on public awareness and general education activities to facilitate buy-in/phase-in of mercury-free medical devices.

**Output 4.2**: Awareness raised among manufacturers, medical facilities and public on sound management of chemicals; knowledge gathered and shared, as well as learning tools created and utilized periodically during the project lifecycle.

*Activity 4.2.1*: Carry out disaggregated surveys designed to measure impact before/during/after training or demonstration activities.

*Activity 4.2.2*: Regularly compile or update relevant trainings and awareness materials such as guidelines or textbooks for the use of mercury-free alternatives; and carry on awareness events for the general public et al.

*Activity 4.2.3*: Disseminate experiences, lessons learned and best practices, to accelerate production transformation, wide application of mercury-free medical devices.

*Activity 4.2.4*: Gender Action Plan developed to raise awareness and empower women’s roles in sound management activities and promote gender sensitive approaches for the project´s KM activities that can incorporate gender equality principles and actions into environmentally sound management of mercury waste activities.

**Output 4.3**: Monitoring and Evaluation Tools (GEF Project Implementation Report-PIR, Mid Term Review-MTR and Terminal Evaluation-TE), as well as Quarterly Performance Reports and Project Board Reports, budget revisions and financial control and project management tools) delivered as required and adaptive management actions implemented during the Project lifecycle.

*Activity 4.3.1*: Prepare quarterly and annual reports; support timely PIRs; carry on the monitoring and supervision efficiently and ensure smooth and timely execution of Project activities. Support the timely conduction of MTR and TE and continuously assess the Project execution performance to incorporate adaptive management practices and lessons learned into daily execution.

### 2.2.4 Governance and Management Arrangements

This section first presents an organizational chart (Chart 2.2.4) with the key actors in the implementation, management and oversight of the Project, and then summarizes their roles and responsibilities.

The **Implementing Partner** for this Project is the Foreign Environmental Cooperation Office (FECO) of the Ministry of Ecology and Environment (MEE). The Implementing Partner is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in the signed Project Document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in the Project Document. The Implementing Partner is responsible for executing the Project.

**UNDP** is accountable to the GEF for the implementation of this Project. This includes oversight of Project execution to ensure that the Project is being carried out in accordance with agreed standards and provisions. UNDP is responsible for delivering GEF project cycle management services comprising project approval and start-up, project supervision and oversight, and project completion and evaluation. UNDP is also responsible for the Project Assurance role of the Project Board/Steering Committee.

**Chart 2.2.4**

**Organizational Structure for Project Implementation**

**Implementing Partner**

***FECO***

***(Project Management Unit including NPD, PM, PA and Finance assistant.)***

**Project Board**

**Development Partners**

***UNDP***

**Project Executive**

***DDG, FECO/MEE***

**Beneficiary Representatives**

***CAMDI***

**UNDP Project Assurance**

***UNDP CO, UNDP NCE RTA and UNDP NCE PTA***

**Project Support**

***Technical Team (NTA, National Stakeholder Advisor, Project Gender Advisor and other consultants)***

**Responsible Party A**

***Demonstration Enterprises (6 candidate selected)***

**Responsible Party C**

***Local government (2), Medical Institutions (6 to be selected)***

**Responsible Party B**

***Associations, Research institutions and NGOs regarding environment management, public health, metrological verification, policy and standard, etc.***

The **Project Board** is responsible for taking corrective action as needed to ensure the Project achieves the desired results. In order to ensure UNDP’s ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case consensus cannot be reached within the Board, the UNDP Resident Representative (or their designate) will mediate to find consensus and, if this cannot be found, will take the final decision to ensure Project implementation is not unduly delayed.

**Two Project Safeguards and Environmental Sound Management Officers** will be members of the Technical Team, who will exercise the following main duties and responsibilities:

* Monitor progress in development/implementation of the Project ensuring that UNDP’s Social and Environmental Standards (SES) policy is fully met and the reporting requirements are fulfilled.
* Oversee and coordinate the implementation of all safeguard and Environmental Sound Management (ESM) related plans.
* Oversee and review the preparation of private sector risk assessment, ESM Plan and Spill Prevention Management Plan.
* Prepare technical guidelines in their areas of expertise.
* Ensure social and environmental grievances are managed effectively and transparently.
* Review the Social and Environmental Screening Procedure (SESP) annually, and update and revise corresponding risk log, and mitigation/management plans as necessary.
* Ensure full disclosure with concerned stakeholders.
* Ensure environmental and social risks are identified, avoided, mitigated and managed throughout project implementation.
* Monitor progress in implementation of the project ESM Implementation Program ensuring that targets are fully met and the reporting requirements are fulfilled.
* Review the ESM Implementation Program annually, and update and revise corresponding implementation programs as necessary.
* Contribute to the development of official guidelines for risk management strategy and environmental sound management technical guidance.
* Work with the M&E officer, Stakeholder Advisor and Gender Officer to ensure reporting, monitoring and evaluation fully address the safeguard issues of the Project.

# 3.0 INSTITUTIONAL, LEGAL AND REGULATORY FRAMEWORK[[5]](#footnote-5)

This chapter describes the institutional, legal and regulatory framework for environmental (including hazardous substances and waste), social, and occupational health and safety management pertinent to the implementation, supervision and monitoring of the Project “Demonstration of Phase-Out of Mercury-Containing Medical Thermometers and Sphygmomanometers, and Promoting the Application of Mercury-Free Alternatives in Medical Facilities in China”. It further explains the environmental and social safeguard requirements of the main international funding sources of the Project, the Global Environment Facility (GEF) and the United Nations Development Program (UNDP).

The first section identifies key national, provincial and local government entities with jurisdiction on environmental, social, and occupational health and safety risk management, and summarizes their main roles and responsibilities.

The second outlines the legal and regulatory framework for environmental management, highlighting the pertinent laws, regulations, guidelines and standards dealing with: (i) overall environmental protection; (ii) the Environmental Impact Assessment (EIA) process; (iii) the phasing out of the production, use, import and export of mercury-containing medical devices; (iv) prevention and control of pollution by hazardous waste; (v) prevention and control of soil pollution; and (vi) cleaner production.

The third summarizes the legal and regulatory framework for social risk management, underscoring the relevant laws, regulations and guidelines on: (i) resettlement and compensation; (ii) occupational health and safety, and workers’ protection; and (iii) stakeholder engagement.

The last section provides an overview of the environmental and social safeguard requirements of GEF and UNDP that the Project has to observe.

## 3.1 Institutional Framework

This section first provides an overview of the institutional framework for environmental and social risk management in China, and then summarizes the organizational arrangements for the management of the Environmental Impact Assessment (EIA) process.

### 3.1.1 Institutional Framework for Environmental and Social Risk Management

The Chinese environmental and social risk management system consists of a well-defined hierarchy of regulatory, administrative and technical institutions. At the top are: (i) the People’s Congress of the People’s Republic of China (PRC), which has the authority to pass and revise national and social environmental laws; (ii) the Ministry of Ecology and Environment (MEE, formerly the Ministry of Environmental Protection-MEP) under the State Council, which promulgates national environmental regulations, guidelines and rules; (iii) MEE either separately or jointly with the Administration of Quality Supervision, Inspection and Quarantine, which issues national environmental standards; (iv) State Administration on Work Safety (SAWS) and National Health and Family Planning Commission (NHFPC) issue regulations and rules on, respectively, occupational safety and occupational health; (v) the National Center for Disease Control and Prevention (CDC), which issues regulations and rules on, among others, occupational health standards and occupational health examinations: and (vi) the Ministry of Emergency Management (MEM), which promulgates national regulations, guidelines and rules on emergency management, including related to hazardous substances accidents.

At the next level of the hierarchy are provincial and local governments, which can issue provincial and local environmental and social regulations and guidelines consistent with the national ones. Provincial and local governments have departments in areas such as ecology and environment, occupational safety, occupational health, provincial Centers for Disease Control and Prevention (CDCs),[[6]](#footnote-6) emergency management and land administration,[[7]](#footnote-7) that deal with the implementation, monitoring and enforcement of environmental and social regulations, guidelines and standards in their respective jurisdictions.

The main responsibilities and functions of national public entities pertinent to the Project are the following:

* **Ministry of Ecology and Environment (MEE)**: oversees and coordinates environmental protection and management work nationwide. It is responsible for the establishment of basic systems for environmental protection, realization of emission reduction targets, prevention and control of environmental pollution and environmental degradation, monitoring and information disclosure on various environmental media (water, air, etc.), planning and coordination of environmental protection activities, among other wide-ranging duties.
* Within MEE, the **Foreign Environmental Cooperation Office (FECO)**, the Implementing Partner for the Project, is a national entity with a mandate to improve economic cooperation in the area of environmental protection through the management of financial assistance from international organizations. FECO mobilizes financial resources from international and bilateral sources. Since its establishment, FECO has implemented projects that protect the environment and contribute to climate change mitigation and adaptation in the agriculture, forestry, transport, energy and water resources sectors.
* The **Solid Waste and Chemicals Management Center** **(SCC)** is an agency attached to MEE. Its main responsibilities are, among others, to: (i) undertake the research and formulation of policies, regulations, plans, standards and technical specifications for risk prevention and control of solid waste, chemicals, heavy metals, etc. and pollution prevention and control; ii) carry out solid waste pollution prevention, and chemical and heavy metal environmental management related investigations, analysis and testing, technical identification, scientific research, and technical support for the implementation of relevant international conventions; (iii) undertake the technical review and administrative examination and approval of the transboundary movement of hazardous waste, the import license of solid waste, the environmental management registration of the import and export of hazardous chemicals, and the environmental management registration of new chemical substances; (iv) assist in the on-site inspection and daily supervision of environmental management of solid waste, chemicals, heavy metals, etc.; (v) undertake technical guidance and service work for local solid waste and chemical management agencies; and (vi) carry out information analysis, technical services, international exchanges, publicity and training and social consultation on environmental management of solid waste, chemicals and heavy metals.
* **State Administration on Work Safety (SAWS) and** **National Health and Family Planning Commission (NHFPC)**: are responsible for governing respectively, occupational safety and occupational health matters.
* **National Center for Disease Control and Prevention (CDC)**: is responsible for conducting studies and investigations of occupational disease control, prevention, diagnosis, treatment, surveillance and reporting.
* **Ministry of Emergency Management (MEM)**: is a central government ministry whose main duties are, among others, to: (i) supervise and manage production safety and work safety in the industrial, mining and commercial industries; and (ii) organize the preparation of the national overall emergency response plan and planning, guide all regions and departments to respond to emergencies, and promote the formulation of the emergency response plan system and plan drills.

### 3.1.2 Institutional Framework for Management of Environmental Impact Assessment (EIA) Process

The management of the EIA process rests with national, provincial and local (city and county) environmental protection authorities. At the national level, the environmental authority is MEE, which promulgates regulations, administrative decrees, technical guidelines, and environmental quality and emission standards. Within MEE, the EIA and Emission Management Department is responsible for overseeing and coordinating the implementation of the EIA process and pollutant emission permits nationwide, technically re-reviewing EIAs for projects and conducting the post-EIA follow up for projects of national interest (i.e., special projects, such as nuclear facilities and secret projects; projects approved by the State Council or by the departments authorized by the State Council), as well as projects that cross the borders of provinces, autonomous regions or municipalities. In addition, MEE’s Appraisal Center for Environment and Engineering is responsible for providing technical support, conducting EIA technical reviews, and training EIA engineers and environmental officials at the provincial and local levels.

At the provincial level, there are Ecology and Environment Departments (EEDs), which act as gatekeepers for the EIA process and pollution prevention and control in the provinces. They are often the delegated authority by MEE to review and approve EIA reports for development planning and construction projects in their jurisdictions. The local (city or county level) Ecology and Environment Bureaus (EEBs) enforce environmental laws and conduct environmental monitoring within city or county limits. Local EEBs can also be delegated the authority to approve EIA reports by the provincial EEDs. EEDs and EEBs are supported by Environmental Monitoring Stations (EMSs), which are attached to EEDs or EEBs and are responsible for carrying out environmental monitoring.

The former MEP’s Guideline on Jurisdictional Division of Review and Approval of EIAs for Construction Projects (2009) defines which construction project EIAs require the former MEP and present MEE review and approval, and which EIAs are delegated to the provincial EEDs.

## 3.2 National Legal and Regulatory Framework for Environmental Management

The legal and policy framework for environmental management in China comprises:

* Laws promulgated by the National People’s Congress and its Standing Committee.
* Administrative regulations formulated by the State Council.
* Department rules formulated by ministries and commissions under the State Council.
* Local regulations formulated by each province, autonomous region, municipalities directly under the central government, and districted cities.
* Internal regulations of the Communist Party of China, such as the Regulation for the Central Environmental Inspection.

Since the promulgation of the environmental protection law in 1979, China has gradually established a comprehensive environmental management framework. At the national level, more than 80 laws, 120 regulations and more than 1000 emission standards and technical guidelines for environmental quality, pollution control, natural resources and ecological protection have been formulated. And at the provincial and local levels, provinces and municipalities have issued a large number of environmental protection laws and regulations. Local environmental and emission standards are more stringent than national standards.

The following six subsections explain the regulatory framework for, respectively: (i) overall environmental protection; (ii) the Environmental Impact Assessment (EIA) process; (iii) the phasing out of the production, use, import and export of mercury-containing medical thermometers and sphygmomanometers; (iv) the prevention and control of pollution by hazardous waste, including mercury; (v) the prevention and control of soil pollution; and (vi) cleaner production.

### 3.2.1 Overarching Environmental Legislation

The most far-reaching law on pollution prevention and control, and environmental quality is the Environmental Protection Law (Trial 1979, enacted 1989 and amended 2014), which sets out key principles for the country’s pollution control system, including the “Three Simultaneities Policy”, the application of pollution levies and requirements for the EIA process. The “Three Simultaneities Policy” requires the design, construction and operation of pollution control and treatment facilities to occur simultaneously with project design, construction and operation. The implementation of this Policy was further strengthened by the following rules and regulations: (i) Opinion from the State Council on Important Tasks for Strengthening Environmental Protection (State Council Announcement 2011-35; (ii) Environmental Acceptance of Construction Projects under the “Three Simultaneities” (Trial) (MEP Announcement 2009-150); and (iii) the Regulations on Environmental Protection Management of Construction Projects (1998, amended 2017).

The Law further defines enforcement and supervision responsibilities for all levels of environmental protection authorities, imposes obligations and penalties on project developers/owners regarding pollution prevention and control, and allows for environmental public interest litigation, including through nongovernmental organizations.

The environmental inspection and enforcement of the design, installation and operation of project-specific environmental protection and control measures are regulated under the “Three Simultaneities Policy” by, among other instruments, the Measures for Environmental Supervision (MEP Decree 2012-21), the Requirement for Preparation of EIA Report Summary (MEP Announcement 2012-51) and the Opinion from the State Council on Important Tasks for Strengthening Environmental Protection (State Council Announcement 2011-35).

Environmental regulators and criminal investigation agencies can carry out administrative or criminal investigations against enterprises’ existing or potential air pollution, water pollution, soil pollution or other environmental violations. They have the power to:

* Enter facilities for the purposes of inspecting, sampling, monitoring, recording sound, shooting video or taking notes.
* Review materials of interest regarding potential violations, including production records, emission records and other materials.
* Seal up and impound the facilities and equipment responsible for pollutant discharges.
* Order the violator to rectify any non-compliances within a certain time limit.
* Make administrative penalty decisions onsite, when summary procedures apply.

Public participation and environmental information disclosure provisions are among the most significant changes introduced in the Environmental Protection Law, further supported by rules and regulations on the preparation of EIA summaries for public disclosure (Requirement for Preparation of EIA Report Summary) (MEP Announcement 2012-51), information disclosure on construction project EIAs by government (Government Information Disclosure of Construction Project EIA (Trial) (MEP Announcement No. 103, 2013), method for public participation in environmental protection (Measures for Public Participation in Environmental Impact Assessment (MEP Decree 2015-35, amended 2018), and technical guidelines dealing with public participation in EIAs.

For grievance redress, a hotline number (12369) was established in March 2011 at each level of environmental protection authority throughout the country for receiving and resolving environmental complaints, in accordance with the Management Measures for Operation of the Environmental Complaint Hotline (MEP Decree 2010 No. 15).

### 3.2.2 Environmental Impact Assessment (EIA) Process

The Environmental Protection Law (Trial, 1979) described in the previous subsection formally introduced the EIA into China’s legal system. It required that an EIA be approved by a competent environmental authority before commencement of any construction project, and specified the procedures and requirements for the technical review of EIA reports by authorities.

The Environmental Impact Assessment Law (2002, amended 2016 and 2018) governs the EIA process. In general, EIAs in China are classified into two categories: (i) EIAs for plans (such as new development areas and new industrial parks) and Strategic Environmental Assessments (SEAs); and (ii) EIAs for projects. The discussion in this report focuses on the latter type of EIA, given that this ESMF is designed for a specific project. In a notice promulgated by the then State Environmental Administration for Protection (SEPA), currently MEE, in 1999, a “project” includes all types of development and construction activities through fixed assets investment, which could be funded by the government, collective economic organizations, individual businesses, joint ventures or foreign capital. Article 3 of the EIA Law further stipulates that any projects with potential environmental impacts constructed in the territory of the People's Republic of China and other sea areas under the jurisdiction of the People's Republic of China shall be evaluated in accordance with this Law. Article 25 of the amended EIA Law stipulates that EIA approval is no longer a condition precedent for the approval of a project, but a condition precedent for the commencement of project construction.

Regarding the review and approval of EIAs after a project proponent/owner submits a project proposal, a decision is made by the appropriate authority with jurisdiction over the geographical area and type of project proposed, as explained in Subsection 3.1.2 above, regarding whether and which type of EIA is required. Several instruments play a role in this determination: (i) the EIA Law; ii) the Regulations on Environmental Protection Management for Construction Projects (1998, amended 2017);[[8]](#footnote-8) (iii) the Catalogue for the Classification and Administration of Environmental Impact Assessment of Construction Projects (2002, amended 2015 and 2020);[[9]](#footnote-9) (iv) the Management Guideline on EIA Categories of Construction Projects (2008, amended 2017); and (v) the Directory for the Management of Construction Project Environmental Impact Assessment Categorization (2018, amended 2021). In addition, the former MEP and MEE issued several technical guidelines for the preparation of EIAs.

The aforementioned Directory provides detailed EIA requirements for 50 sectors and 192 subsectors, and classifies EIAs for projects into three categories with different reporting requirements based on the significance of potential environmental impact due to the project nature and the environmental sensitivity of the project site, as follows:

* **Category A:** projects with significant adverse environmental impacts, for which a full EIA report is required, called Environment Impact Report (EIR).
* **Category B:** projects with adverse environmental impacts which are of a lesser degree and/or significance than those of Category A, for which a simplified tabular report is required, called Environment Impact Form (EIF).
* **Category C:** projects unlikely to have adverse environmental impacts, for which an Environmental Impact Registration Form (EIRF) is required.

Project developers/owners, institutions specialized in preparing EIAs, and public agencies responsible for reviewing and approving EIAs, may be subject to penalties for violating the 2018 EIA Law. In case a project developer/owner unlawfully starts construction without obtaining approval for its EIA documents, it is ordered to stop construction and may be fined or asked to restore the site. Fines may apply to both the project developer/owner or its legal representative, principal person in charge, directly responsible person in charge and other directly liable persons of the project developer/owner. When a specialized institution entrusted to prepare the environmental impact report or form for a project violates the relevant EIA rules, which results in serious quality issues of the EIA document it prepared, various penalties may apply, including: (i) fines; (ii) banning the entity from preparing environmental impact reports and forms, when the circumstances are serious; (iii) confiscation of any illegal income; and (iv) possible criminal liability. If any staff members of the administrative department of environmental protection or any other department seek private gains by illegal means or abuse their powers, neglecting their duties or unlawfully granting approval for an EIA, they are subject to an administrative penalty and/or criminal liability.

In the course of project construction, and depending on the applicable jurisdictional authority, MEE, the corresponding provincial Ecology and Environment Department (EED) or local Ecology and Environment Bureau (EEB), is authorized to monitor compliance with the mitigation measures included in the approved EIA and other legal environmental requirements during construction and operation of the project, which is also a requirement of the “Three Simultaneities Policy”.

Upon the completion of construction, the project owner is required to file an application with the pertinent EED or EEB for inspection and approval of the environmental protection facilities.

### 3.2.3 Phasing Out of Production, Use, Import and Export of Mercury-Containing Medical Thermometers and Sphygmomanometers

In order to meet the requirement of the Minamata Convention on Mercury, the Government of China has issued several policies and regulations related to the import and/or export and manufacture of mercury-containing medical thermometers and sphygmomanometers. In particular, in 2017 anAnnouncement of the Entry-into-Effect of Minamata Convention on Mercury (2017-85) was issued, led by the then Ministry of Environmental Protection (now the Ministry of Ecology and Environment). It clearly stated that the import and/or export of mercury-containing medical thermometers and sphygmomanometers will be banned from January 1, 2021, and that the manufacture of mercury-containing medical thermometers and sphygmomanometers will be banned from January 1, 2026.

In 2017, the then Ministry of Environmental Protection issued the National Catalogue of Environmental Protection Technology, which listed mercury-containing medical thermometers and sphygmomanometers as high-pollution and high-environmental-risk products. In 2019, the National Development and Reform Commission issued the Guiding Catalogue of Industrial Structure Adjustment (2019 version), which listed the manufacture of mercury-containing medical thermometers and sphygmomanometers after December 31, 2025 in the catalogue of phase-out. In 2020, National Medical Products Administration issued an announcement stating that the validity of the licenses for all mercury-containing medical thermometers and sphygmomanometer manufacturers should not be later than December 31, 2025.

The Ministry of Commerce, the Ministry of Ecology and Environment and the General Administration of Customs have jointly issued the Catalogue of Prohibited Imports" (the seventh batch) and the "Catalogue of Prohibited Exports (the sixth batch), clarifying that from January 1, 2021, the import and export of mercury-added products controlled by the Convention is prohibited.

Table 3.2.3a highlights the obligations and requirements established by the above regulatory framework.

**Table 3.2.3a**

**Regulatory Framework for Phase Out of Mercury-Containing Medical Thermometers and Sphygmomanometers**

|  |  |  |  |
| --- | --- | --- | --- |
| **Regulation/Guideline** | **Issuing Institution** | **Issuing Date** | **Requirements or Limits** |
| Announcement of the Entry-into-Effect of Minamata Convention on Mercury | Ministry of Environmental Protection and other 17 relative Ministries or Administrations | August 15, 2017 | The import and/or export of mercury-containing medical thermometers and sphygmomanometers will be banned from January 1, 2021 and the manufacture of mercury-containing medical thermometers and sphygmomanometers will be banned from January 1, 2026 |
| National Catalogue of Environmental Protection Technology | Former Ministry of Environmental Protection | 2013, 2014, 2015, 2017 | Mercury-containing medical thermometers and sphygmomanometers are high-pollution and high-environmental-risk products |
| Guiding Catalogue of Industrial Structure Adjustment (2019 version) | National Development and Reform Commission | September 10, 2019 | Manufacture of mercury-containing medical thermometers and sphygmomanometers after December 31, 2025 belongs to the catalogue of phase-out |
| Notice of the Comprehensive Department of National Medical Products Administration on Matters Concerning the Implementation of the Minamata Convention on Mercury | National Medical Products Administration | October 10, 2020 | The validity of the production licenses for all mercury-containing medical thermometers and sphygmomanometers should not be later than December 31, 2025 |
| Catalogue of Prohibited Imports (the seventh batch) and the Catalogue of Prohibited Exports (the sixth batch) | The Ministry of Commerce, the Ministry of Ecology and Environment, and the General Administration of Customs | December 30, 2020 | The import and export of mercury-added products controlled by the Convention is prohibited from January 1, 2021 |

In addition to the above, there are also technical standards and requirements, as well as verification periodicity, for thermometers and sphygmomanometers, as summarized in Table 3.2.3b.

**Table 3.2.3b**

**Technical Standards and Requirements for Medical Thermometers and Sphygmomanometers**

|  |  |  |  |
| --- | --- | --- | --- |
| **Standard** | **Issuing Institution** | **Issuing Date** | **Requirements** |
| GB 1588-2001 Clinical Thermometer | General Administration of Supervision, Inspection and Quarantine of the People`s Republic of China | December 4, 2001 | This national standard specifies the classification, nomenclature, requirements, test methods, inspection, labeling and other requirements for clinical glass thermometers |
| GB/T 21416-2008 Clinical Electronic Thermometer | General Administration of Supervision, Inspection and Quarantine of the People`s Republic of China and the Standardization Administration of China | January 22, 2008 | This national standard specifies the terms and definitions, requirements, test methods, inspection rules and labeling and other requirements for clinical electronic thermometer |
| GB 3053-1993 Sphygmomanometer | State Bureau of Technical Supervision | October 16, 1993 | This national standard specifies the product classification, technical requirements, test methods, acceptance rules and labeling of sphygmomanometers |
| Administration Measures of the People's Republic of China for the Compulsory Verification Ff Working Measuring Instruments | State Administration for Market Regulation | February 25, 2019 | Clinical thermometers and sphygmomanometers are required for compulsory verification |
| Verification Regulation of Clinical Thermometers(JJG 111-2019） | State Administration for Market Regulation | December 31, 2019 | Glass thermometers only need verification once and should be discarded if not accurate. The regulation applies to mercury-containing medical thermometers |
| Verification Regulation of Clinical Electronic Thermometers(JJG 1162-2019） | State Administration for Market Regulation | December 31, 2019 | The verification cycle for clinical electronic thermometers should be no more than one year |
| Verification Regulation of Infrared Ear Thermometers(JJG 1164-2019） | State Administration for Market Regulation | December 31, 2019 | The verification cycle for infrared ear thermometers should be no more than one year |
| Verification Regulation of Sphygmomanometer(JJG 270-2008） | General Administration of Supervision, Inspection and Quarantine of the People`s Republic of China | March 25, 2008 | The verification cycle for sphygmomanometer should be no more than a half year |
| Verification Regulation of Non-Invasive Automated Sphygmomanometer(JJG 692-2010） | General Administration of Supervision, Inspection and Quarantine of the People`s Republic of China | May 11, 2010 | The verification cycle for non-invasive automated sphygmomanometer is one year or shorter if necessary. It must be verified after maintenance.  |

### 3.2.4 Prevention and Control of Pollution by Hazardous Waste, Including Mercury

Chapter VI of the Law on the Prevention and Control of Environmental Pollution by Solid Waste (1995, amended in 2004, 2013, 2015, 2016 and 2020) deals with hazardous waste and establishes the following requirements:

* Hazardous waste identification signs shall be set up in accordance with regulations on the containers and packaging of hazardous wastes, as well as the facilities and places for collection, storage, transportation, utilization and disposal of hazardous wastes.
* Companies that generate hazardous wastes shall formulate a Hazardous Waste Management Plan in accordance with relevant state regulations; establish a hazardous waste management ledger, record relevant information truthfully, and report hazardous wastes to the local ecological environment authority through the national hazardous waste information management system Information on the type, amount of waste, flow direction, storage, and disposal of waste. The Hazardous Waste Management Plan shall include measures to reduce the amount of hazardous wastes produced and the harmfulness of hazardous wastes, as well as measures for the storage, utilization and disposal of hazardous wastes. The Hazardous Waste Management Plan shall be reported to the competent environmental authority where the unit generating the hazardous waste is located for the record.
* Companies that generate hazardous wastes shall store, utilize and dispose of hazardous wastes in accordance with relevant state regulations and environmental protection standards, and shall not dump or pile them up without authorization.
* Companies engaged in the business activities of collecting, storing, utilizing and disposing of hazardous wastes shall apply for a license in accordance with relevant state regulations. It is prohibited to engage in the business activities of collecting, storing, utilizing and disposing of hazardous wastes without a license or in accordance with the provisions of the license. It is prohibited to provide or entrust hazardous wastes to unlicensed un companies its or other producers and operators for collection, storage, utilization and disposal activities.
* The collection and storage of hazardous wastes shall be classified according to their characteristics. Mixed collection, storage, transportation and disposal of incompatible hazardous wastes that have not been safely disposed of are prohibited. Storage of hazardous wastes shall take protective measures that comply with national environmental protection standards. It is forbidden to mix hazardous waste with non-hazardous waste for storage. Companies engaged in the business activities of collecting, storing, utilizing, and disposing of hazardous wastes shall not store hazardous wastes for more than one year; if it is really necessary to extend the time limit, it shall be approved by the competent department of ecology and environment that issued the license.
* When transferring hazardous wastes, the electronic or paper transfer forms for hazardous wastes shall be filled out and processed in accordance with relevant state regulations. For the transfer of hazardous wastes across provinces, autonomous regions and municipalities, an application shall be made to the competent environmental authority from where the hazardous wastes are removed, and the environmental authority of the receiving geographical area shall approve the transfer.
* When transporting hazardous wastes, measures to prevent environmental pollution shall be taken, and the state regulations on the management of transport of hazardous goods shall be abided by. It is prohibited to carry hazardous wastes on the same means of transport as passengers.
* Companies that generate, collect, store, transport, utilize and dispose of hazardous wastes shall formulate preventive measures and emergency plans for accidents in accordance with the law, and report to the local environmental authorities and others responsible for the supervision of the prevention and control of environmental pollution by solid wastes. The competent environmental authority and other departments responsible for the supervision and management of the prevention and control of solid waste pollution of the environment shall conduct inspections.
* Companies that cause serious environmental pollution by hazardous wastes due to accidents or other emergencies shall immediately take effective measures to eliminate or reduce the pollution hazards to the environment, promptly notify the affected communities that may be harmed by pollution, and report to the local environmental authority and relevant departments for investigation and handling. When an accident occurs or when there is evidence to prove that hazardous wastes may seriously pollute the environment and threaten the safety of residents' lives and property, the competent environmental authority or other departments responsible for the supervision and management of the prevention and control of environmental pollution by solid wastes shall immediately inform the affected communities within its jurisdiction. The government and the relevant agencies at the next higher jurisdictional level shall report, and the government shall take effective measures to prevent or reduce the harm, and may, as necessary, order the cessation of operations that cause or may cause environmental pollution accidents.
* Before the decommissioning of facilities and sites for centralized disposal of key hazardous wastes, the operating unit shall take pollution prevention and control measures for the facilities and sites in accordance with relevant state regulations.
* It is prohibited to transfer hazardous wastes in transit through the territory of China.
* Medical wastes shall be managed in accordance with the national catalogue of hazardous wastes. Local governments at or above the county level shall strengthen the capacity building of centralized disposal of medical waste. The competent departments of health and environment at or above the county level shall strengthen the supervision and management of the collection, storage, transportation and disposal of medical waste within the scope of their respective duties, so as to prevent harm to public health and pollution of the environment. 　　Medical and health institutions shall collect the medical wastes generated by their own units according to the law, and hand them over to the centralized medical waste disposal units for disposal. Units for centralized disposal of medical waste shall collect, transport and dispose of medical waste in a timely manner. Medical and health institutions and centralized disposal units of medical wastes shall take effective measures to prevent the loss, leakage, seepage and spread of medical wastes.

In addition to the above, the MEP issued the Technical Specifications for Collection, Storage and Transportation of Hazardous Waste (HJ 2025-2012), and the Guidance on Environmental Impact Assessment of Hazardous Wastes for Construction Projects (2017). The latter mainly provides the technical requirements for EIAs.

Required hazardous waste permits are issued by competent environmental authorities within their respective jurisdictions, and comprise the following:

* Permit for pollutants discharge.
* EIA permit for the construction of projects that produce, store, use and dispose of hazardous wastes.
* Permit for collecting, storing, using or disposing of hazardous waste
* Road transport business operation permits for transporting hazardous wastes (for operational transportation) or hazardous waste road transportation permit (for non-operational transportation).
* Approval for cross-regional transportation of hazardous wastes.
* Approval for exporting hazardous wastes (to parties to the Basel Convention only).
* Hazardous waste operation permit for centralized medical waste disposal units.

Entities or individuals that violate waste-related laws or regulations can receive administrative penalties, and may also face criminal and civil liabilities.

#### 3.2.4.1 Sound Management of Waste Containing Mercury

Regarding the sound management of mercury and obsolete mercury-containing medical thermometers and sphygmomanometers, mercury waste is listed in the Directory of National Hazardous Wastes and needs to be managed based on the Law on Prevention and Control of Environmental Pollution by Solid Waste described above. The Standard for Pollution Control on Hazardous Waste Storage (GB 18597-2001), and the Technical Specifications for Collection, Storage and Transportation of Hazardous Waste (HJ 2025-2012) specify the requirements for the management of mercury waste, as summarized in Table 3.2.4.1.

**Table 3.2.4.1**

**Law/Regulation/Standard/Specification for Sound Management of Obsolete Mercury-Containing Medical Thermometers and Sphygmomanometers**

|  |  |  |  |
| --- | --- | --- | --- |
| **Law/Regulation/Standard/Specification** | **Issuing Institution** | **Issuing Date** | **Requirements**  |
| Law on Prevention and Control of Environmental Pollution by Solid Waste (revised version) | Standing Committee of the National People's Congress | April 29, 2020 | Obsolete mercury-containing medical thermometers and sphygmomanometers are hazardous waste |
| Directory of National Hazardous Wastes (revised version) | Ministry of Ecology and Environment, National Development and Reform, Ministry of Public Security, Ministry of Transport, National Health Commission | November 25, 2020 | Obsolete mercury-containing medical thermometers and sphygmomanometers are hazardous waste |
| Standard for Pollution Control on Hazardous Waste Storage (GB 18597-2001) | State Environmental Protection Agency, General Administration of Supervision, Inspection and Quarantine of the People`s Republic of China | December 28, 2001 | General requirements for hazardous waste storage, and the requirements for hazardous waste packaging, site selection, design, operation, safety protection, monitoring and closing of storage facilities |
| Technical specifications for collection, storage, transportation of hazardous waste(HJ 2025-2012) | Ministry of Environmental Protection | December 24, 2012 | Technical requirements for hazardous waste collection, storage and transportation, which is a guiding standard |
| Regulation on the Administration of Medical Wastes | State Council | March 28, 2008 | Requirements for the collection, transportation, storage, disposal, supervision and management of medical waste |
| Classified Catalogue of Medical Wastes | National Health and Family Planning Commission | June 5, 2013 | Obsolete mercury-containing medical thermometers and sphygmomanometers belong to medical wastes |

### 3.2.5 Prevention and Control of Soil Pollution

The enactment of the Law on the Prevention and Control of Soil Pollution (2018) is a major step in China’s creation of a comprehensive legal regime for preventing and cleaning up soil pollution. The following legal instruments contain general principles for avoiding and remediating soil pollution: (i) Environmental Protection Law; (ii) Land Administration Law; (iii) Measures on the Administration of Soil Pollution Prevention and Control Foundation (2020); and (v) Measures on Environmental Management of Soil for Industrial and Mining Land. In addition, the State Council and the former MEP issued a series of normative documents on the prevention and control of soil pollution such as, for instance, the Soil Pollution Prevention and Control Action Plan (2016), which included ten regulations on soil. Further, the former MEP and MEE issued a series of technical guidelines for contaminated land, technical standards and technical guidelines for industrial and mining land and agricultural land, and technical regulations for the detailed investigation of soil pollution. Finally, some provinces have issued local regulations for soil pollution prevention and control.

For enterprises in China, the Law sets out various obligations. Manufacturing and operating companies and land use rights holders must take effective measures to prevent and reduce soil pollution and bear liability for soil pollution they cause. If any survey, monitoring or inspection indicates potential pollution of construction land, the land use right holder will be required to investigate the status of soil pollution. If the investigation reveals pollution in excess of relevant standards, the party responsible for the pollution and the land use right holder must complete and file a risk assessment report on the soil pollution. Based on their review of the risk assessment report, the authorities may include the plot in a list of construction land subject to soil pollution risk management and control and remediation, in which case the party responsible for the soil pollution must take measures to manage and control soil pollution risks. If remediation is required, the polluter must prepare a remediation plan, which also covers prevention and cleaning up of polluted groundwater. Once completed, the polluter must engage an independent entity to evaluate the results of its risk management, and control and remediation measures. Moreover, enterprises in certain highly polluting industries will be listed by government authorities as entities subject to substantial supervision and must carry out advanced investigations of soil pollution where there is a change in the use of, or transfer of, land used for production.

The Law specifies that the polluter is primarily responsible for managing and controlling soil pollution risks and remediating polluted soil. However, where it is impossible to identify the party responsible for the soil pollution, the land use right holder must undertake the risk management, and clean up and remediation of the land. The law requires the Ministry of Environment and Ecology (MEE), together with related authorities, to undertake actions for determining the party responsible for soil pollution in cases where it is uncertain or under dispute.

The Law also sets out the tasks and responsibilities of government authorities in controlling and regulating soil pollution. While MEE will be primarily responsible for supervising and administering soil pollution work, other authorities, such as the Ministry of Natural Resources and the Ministry of Agriculture and Rural Affairs will also play a role. The Law requires them to establish a soil environmental information platform, include soil pollution prevention and control in their economic development and environmental protection plans, and establish a soil environmental monitoring system. Local government officials will be held accountable for prevention and cleaning up of soil pollution.

The Law requires the development of a system of comprehensive standards for implementing soil pollution control and prevention. MEE is required to establish national standards for soil pollution risk control according to soil contamination status, public health risks and ecological risks. Local governments are authorized to develop additional, stricter standards. These will be mandatory standards.

Anyone who violates relevant laws and regulations on contaminated land can incur administrative penalties and, in some cases, criminal penalties. In addition, if the party liable for soil pollution or the land use right holder, does not perform its duties concerning the investigation, assessment, risk management and remediation of soil pollution, the regulators can commission a third party to perform those duties, and can then recover any of the costs incurred from the relevant liable party/land use right holder.

### 3.2.6 Cleaner Production

The Cleaner Production Promotion Law (2002, amended 2012) provides for improvements in the utilization, production, implementation of processes, technologies and equipment to reduce pollution, improve resource utilization efficiency, limit prevent or avoid pollution and polluting discharges in the course of production.

The first paragraph of Article 19 stipulates that: "Enterprises should adopt the following cleaner production measures in the process of conducting technical transformation: using non-toxic, harmless or low-toxic, low-damaged raw materials, replacement of toxicity, and serious raw materials”. Article 27 establishes that enterprises that use toxic, harmful raw materials or enterprises that discharge toxic, harmful substances in production, should implement mandatory cleaner production audit.

The Interim Measures for Cleaner Production Audit (2016) establishes the requirements, scope, procedures and organizational management of audits involving mercury waste.

The Profile Cleaner Production Audit Procedure (2005) contains the provisions of the enterprise cleaning production audit procedures related to toxic and hazardous substances.

## 3.3 National Legal and Regulatory Framework for Social Risk Management

This section discusses Chinese laws and regulations for the management of social risks in the following three areas, respectively: (i) resettlement and compensation; (ii) occupational health and safety, and workers’ protection; and (iii) stakeholder engagement.

### 3.3.1 Resettlement and Compensation

China has a long history of establishing and implementing laws and regulations associated with displacement and resettlement, many of which have been associated with hydroelectric projects. The National Construction Land Acquisition Measures, promulgated in 1953, was the first statute on land acquisition, demolition, displacement and resettlement. The Measures outlined the principles and procedures for land acquisition and set the standards for payment of compensation for acquired land, serving as the basis for the subsequent Land Administration Law described below.

China has established a complete legal framework and policy system for Land Acquisition (LA), House Demolition (HD), resettlement and compensation. Rural LA and HD are mainly based on the Land Administration Law (1986, amended in 1988, 1998, 2004 and 2019), provincial implementation measures of the Land Administration Law, and relevant compensation and resettlement standards. Urban HD is based mainly on the Regulations on the Expropriation of Houses on State-Owned Land and Compensation (2011).

The Land Administration Law has unified rural and urban LA and HD practices to a great extent. The Law: (i) defines the scope of LA for public interest projects; (ii) strengthens the upfront risk management of LA, and information disclosure and public participation during LA and HD; and (iii) requires that an agreement be signed with the land owner and the holder of the land use right before land approval for a project, and that compensation and resettlement funds be arranged in advance of displacement. The Law requires that LA compensation rates be based on Block Comprehensive Land Price, which will be adjusted or promulgated again at least every 3 years. Fair and reasonable compensation should be granted to those affected by LA, and the former living standard of land-expropriated occupants should not be diminished. Accordingly, the Law will protect the rights, interests and livelihoods of affected persons more comprehensively.

The administration and implementa­tion of resettlement policy are essentially decentralized. Under the decentralized model of resettlement administration and management, provinces issue their own administrative standards within the guidelines of national regulations. Different provinces and even different counties apply different standards of compensation. County governments set the multiplication figure for the compensation of the loss of physical structures, land and productive assets within the range of the national standard.

### 3.3.2 Occupational Health and Safety, and Workers’ Protection

Chinese laws, regulations and policies have comprehensive provisions on, among others, occupational health and safety, child labor, discrimination, forced labor, working hours and minimum wage. The country has established a system of laws, regulations and industry standards to protect workers’ health and safety, including state laws and regulations, local regulations and bylaws, and health and safety standards for different industries. Employers must establish a sound occupational health and safety system, and reduce occupational hazards.

The following subsections highlighted relevant provisions of, correspondingly: (i) the Work Safety Law; (ii) the Production Safety Law; and (iii) laws and regulations on workers’ protection.

#### 3.3.2.1 Work Safety Law (2002, amended in 2009, 2014, and 2021)

This Law seeks to, among other aspects, reinforce work safety, prevent and reduce work accidents, and protect the safety of people's lives and property. It is applicable to entities engaged in production and other business activities, which are referred to as “business entities” in the Law.

The articles of the Work Safety Law of particular interest for the Project are the following:

1. **Article 21**. The main responsible person of a production and operation entity shall have the following duties for the work safety of the entity:
* Establishing, improving and implementing the work safety responsibility system for all employees of the entity and strengthening construction of work safety standardization.
* Organizing the formulation and implementation of work safety rules and systems and operating procedures of the entity.
* Organizing the formulation and implementation of work safety education and training plan of the entity.
* Guaranteeing the effective implementation of the entity’s input in work safety.
* Organizing the establishment and implementation of a dual prevention mechanism consisting of graded management and control of safety risks and examination and control of potential risks, supervising, promoting and inspecting the work safety of the entity, and eliminating the potential risk of work safety accidents in a timely manner.
* Organizing the formulation and implementation of an emergency rescue plan for work safety accidents of the entity.
* Reporting a work safety accident in a timely and truthful manner.
1. **Article 24**. An entity engaged in manufacturing, marketing, or storing or loading and unloading of hazardous substances shall establish a work safety management body or have full-time work safety management personnel.
2. **Article 28.** Business entities shall provide their employees with work safety education and training to ensure that their employees have necessary work safety knowledge, are familiar with the relevant work safety policies and rules and safe operating procedures, possess the safe operating skills for their respective posts, know the emergency response measures for accidents, and are informed of their rights and obligations in work safety.
3. **Article 40**. Business entities shall register and maintain files for major hazard installations, conduct regular monitoring, assessment and control, prepare emergency response plans, and inform employees and relevant personnel of measures to be taken in case of emergency.
A production and operation entity shall file the sources of major danger and related safety measures and emergency measures with the emergency management authority and relevant authorities of the local people’s government in accordance with relevant provisions issued by the state. The emergency management authority and relevant authorities of the local people’s government shall realize information sharing through relevant information systems.
4. **Article 45**. Business entities must provide their employees with labor protection products meeting the national or industry standards, and supervise and educate their employees on wearing or using such products in accordance with the rules of use.
5. **Article 62**. A local people’s government at or above the county level shall, according to the work safety condition within its administrative region, organize the relevant departments to conduct strict inspections of business entities with greater risks of serious work safety accidents within the administrative region according to their respective functions.
6. **Article 65**. The emergency management authorities and other departments with work safety regulatory functions shall conduct agency law enforcement on work safety according to the law, and conduct supervisory inspection on the compliance of business entities with laws, regulations, and national standards or industry standards related to work safety, by exercising the following powers:
* Entering business entities to conduct inspection, review relevant materials, and gather information from the relevant entities and persons.
* Redressing on the spot, or requiring correction within a specified period, of any violations of the law in work safety discovered during inspection; and for acts subject to administrative punishment according to the law, making administrative punishment decisions in accordance with this Law and other relevant laws and administrative regulations.
* Ordering immediate elimination of any hidden risks of accidents discovered during inspections; ordering evacuation of workers from dangerous areas and ordering suspension of production or business, or suspension of use of relevant facilities and equipment if safety cannot be guaranteed before or during the elimination of any hidden risk of a serious accident; and allowing resumption of production or business or use upon examination after elimination of the hidden risk of a serious accident.
* Seizing or impounding any facilities, equipment and devices which do not meet the national or industry standards for work safety protection, as determined based on evidence or hazardous substances illegally produced, stored, used, marketed or transported; seizing the work sites where hazardous substances are illegally produced, stored, used or marketed; and making corrective decisions according to the law.
1. **Article 78**. An authority charged with the duty of supervision and administration of work safety shall establish a database of information on work safety violations to truthfully record information on work safety violations by production and operation entities and their relevant employees; and if the circumstances of a violation by a production and operation entity and its related employees are serious, the authority charged with the duty of supervision and administration of work safety shall promptly make an announcement to the public, and notify the industry authorities, investment authorities, natural resources authorities, ecology and environment authorities, securities regulatory institutions and relevant financial institutions. The relevant authorities and institutions shall take such measures as increasing the frequency of law enforcement inspections, suspending project approval, raising relevant insurance premium rates, imposing an industry or occupation ban, and other joint disciplinary measures against the production and operation entity and its relevant employees that commit violations and publish the penalties.
2. **Article 82**. Entities manufacturing, marketing or storing hazardous substances and entities engaged in mining, metal smelting, urban rail transit operations, or building construction shall establish emergency rescue units.

#### 3.3.2.2 Production Safety Law (2002, amended 2009)

This Law seeks to strengthen the supervision and administration of production safety, prevent and reduce safety accidents, and defend the safety of life and property of communities. It is applicable to entities that are engaged in production and business operation activities, which are referred to as “production and business operation entities” in the Law.

The following articles of this Law are particularly pertinent to the Project:

1. **Article 17**. The main persons in charge of the production and business operation entities shall have the following duties and responsibilities regarding the production safety of their own entity:
* Establishing and perfecting the system of responsibility relating to production safety.
* Organizing the formulation of rules of safe production and operational rules of the entity.
* Ensuring the effective execution of input in production safety.
* Overseeing and inspecting the work of production safety of the entity and eliminating in a timely manner the potential production safety accidents.
* Organizing the formulation and execution of plans for emergency rescue and relief of production safety accidents of the entity.
* Reporting production safety accidents truthfully and in a timely manner.
1. **Article 19**. Entities engaged in the production, selling and storage of hazardous substances shall establish a unit for production safety or have fulltime personnel for the administration of production safety.
2. **Article 21**. Production and business operation entities shall offer education and training programs to employees regarding production safety so as to ensure that the employees have the necessary knowledge of production safety, know the relevant regulations and rules for safe production and the rules for safe operation, and master the skills for safe operation in their respective positions. No employee who has not passed the education and training programs regarding production safety may start to work at his position.
3. **Article 32**. Production, business operation, transportation, storage and use of any hazardous substances or disposal of hazardous substances shall be subject to the examination and approval as well as the supervision and administration of relevant administrative departments, according to the provisions of relevant laws and regulations, national standards or industrial standards. For the production, business operation, transportation, storage and use of any hazardous substance or disposal of any hazardous substance by any production and business operation entity, the entity shall execute the provisions of relevant laws and regulations as well as the national standards or industrial standards, and establish specialized safety administration rules, take reliable safety measures, and accept the supervision lawfully carried out by relevant administrative departments.
4. **Article 33**. Production and business operation entities shall have archivist files for substantial hazardous sources, make regular checks, appraisals, supervisions and controls, make emergency plans, and inform the employees and other relevant people of the emergency measures that should be taken under emergent circumstances. The production and business operation entities shall report, according to the relevant provisions of the state, substantial hazardous sources in their possession and the corresponding safety measures and emergency measures to the administrative department and other relevant departments of the local people's government in charge of the supervision and administration of production safety for archivist purposes.
5. **Article 37**. Production and business operation entities shall provide labor protection articles that meet the national standards or industrial standards to their employees, supervise and educate them to wear or use these articles according to the prescribed rules.
6. **Article 38**. The persons in charge of the production safety of the production and business operation entities shall conduct regular inspections over the production safety of the entities concerned by taking the specificities of business operation of the entities into consideration. The safety problems that are found out in the inspections shall be dealt with immediately; if they cannot deal with the problems, they shall report to the relevant persons­ in­ charge of the entities in good time. Records shall be taken of the inspections and the handling of the problems.
7. **Article 56**. A government department responsible for the supervision and administration of production safety shall supervise and inspect according to relevant laws and regulations concerning production safety and the national or industrial standards by the production and business operation entities, and shall have the following duties and functions:
* To make inspections at the production and business operation entities, gather relevant materials, and inquire relevant entities and persons.
* To correct the acts violating the statutory provisions of law discovered in the inspections or demand their correction within a prescribed time limit; to make decisions of administrative penalties according to the provisions of the present law and other relevant laws and regulations to those acts that shall be subject to administrative penalties according to law.
* If it finds any potential accident in its inspections, it shall order them to be eliminated without delay. If safety cannot be guaranteed before a serious potential accident is eliminated or in the process of elimination, it shall order the employees at work to leave the dangerous areas, and order that the business operation or production or use be suspended or terminated. The production or business operation or use may not be resumed until the serious potential accident has been eliminated and approval has been obtained upon examination.
* Shall be entitled to seal up or stop the facilities, equipment and apparatuses that are believed as not meeting the national or industrial standards for guaranteeing production safety. The supervision and inspection may not affect the normal production and business operation activities of the inspected entities.

#### 3.3.2.3 Laws and Regulations on Workers’ Protection

Legal protections afforded to workers include: (i) employers are prohibited from recruiting minors under 16 years; (ii) female and underage workers (16-18 years) are subject to special protection; (iii) laborers should not be discriminated against based on ethnic group, race, gender or religion; (iv) women enjoy the same employment rights as men; (v) specific laws protect women’s labor rights, including the prohibition of sexual harassment; and (vi) forced labor is prohibited.

The national laws and regulations on workers’ protection are:

* Labor Law (Amended 2018).
* Occupation Disease Prevention and Control Law (Amended 2018).
* Regulations on Labor Protection in Workplaces with Toxic Substances (2002).
* Provisions of the State Council on Working Hours of Workers and Staff (1995).
* Emergency Incident Response Law (2007).
* Labor Contract Law (Amended 2012).
* Regulations on the Implementation of the Labor Contract Law (2008).
* Special Rules on Labor Protection of Female Employees (2012).
* Interim Provisions on Payment of Wages (1995).
* Social Insurance Law (Amended 2018).
* Law on the Protection of Minors (Amended 2020).
* Law on the Protection of Disabled Persons (Amended 2018).
* Labor Dispute Mediation and Arbitration Law (2007).
* Labor Union Law (Amended 2009).

### 3.3.3 Stakeholder Engagement

Laws and regulations require that adequate information disclosure and public participation be conducted during EIA, LA and resettlement, and policy planning and making processes.

In addition to the laws, regulations and guidelines that encourage and protect stakeholder engagement in environmental protection and management issues described in Subsection 3.2.1 above, the following legislation and guidelines promote stakeholder engagement and information access in relation to resettlement and general public affairs:

* Land Administration Law (2020).
* Standard Guidelines for Grass-Root Government Affairs Disclosure for the Acquisition of Rural Collective Land (2019).
* Opinions on Comprehensively Promoting Government Affairs Disclosure (2016).

## 3.4 GEF and UNDP Safeguard Requirements

Both of the main international funding sources of the Project “Demonstration of Phase-Out of Mercury-Containing Medical Thermometers and Sphygmomanometers, and Promoting the Application of Mercury-Free Alternatives in Medical Facilities in China”, the Global Environment Facility (GEF) and the United Nations Development Program (UNDP), have rigorous environmental and social safeguard requirements that proposed projects must meet in order to qualify to receive funding.

In the case of the GEF, those requirements are contained in the Policy on Environmental and Social Safeguards (GEF, 2019a), which became effective on July 1, 2019, superseding the previous Policy on Agency Minimum Standards on Environmental and Social Safeguards (GEF, 2015).

The GEF Policy on Environmental and Social Safeguards sets out the following nine Minimum Standards for the policies, procedures, systems and capabilities on environmental and social management of the agencies implementing and executing GEF-funded projects and programs: (i) Environmental and Social Assessment, Management and Monitoring; (ii) Accountability, Grievance and Conflict Resolution; (iii) Biodiversity Conservation and the Sustainable Management of Living Natural Resources; (iv) Restrictions on Land Use and Involuntary Resettlement; (v) Indigenous Peoples; (vi) Cultural Heritage; (vii) Resource Efficiency and Pollution Prevention; (viii) Labor and Working Conditions; and (ix) Community Health, Safety and Security.

In addition to the above, the agencies implementing and executing GEF-funded projects and programs must ensure compliance with the following GEF policies and standards: (i) Policy on Stakeholder Engagement; (ii) Policy on Gender Equality; and (iii) Minimum Fiduciary Standards for GEF Partner Agencies.

In 2019, UNDP updated its Social and Environmental Standards (SES) (UNDP, 2019a) and its accompanying Social and Environmental Screening Procedure (SESP) (Ibid, 2019b). In addition, UNDP has produced a series of guidance notes to support the implementation of the SES (e.g., Guidance Note: Social and Environmental Assessment and Management; Guidance Note: Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management; etc.) and maintains a dedicated website with resources on the SES at: https://info.undp.org/sites/bpps/SES\_Toolkit/default.aspx.

The GEF assessed in 2019 the extent to which the then applicable 2016 version of UNDP’s SES and other relevant policies, procedures, guidelines and systems complied with the GEF’s Minimum Standards set out in the Policies on Environmental and Social Safeguards, Gender Equality and Stakeholder Engagement, finding that UNDP met all requirements and therefore is compliant with all the minimum standards contained in the aforementioned GEF Policies (GEF, 2019b, pp. 17-18, and pp. 72-75).[[10]](#footnote-10)

The above means that as long as the Project “Demonstration of Phase-Out of Mercury-Containing Medical Thermometers and Sphygmomanometers, and Promoting the Application of Mercury-Free Alternatives in Medical Facilities in China” observes the requirements of UNDP’s SES and its associated SESP, the Project will also be in observance of GEF’s environmental, social and gender safeguard requirements.

Figure 3.4 shows the key elements of UNDP’s SES. As shown in this figure, screening and categorization of projects is one of the key policy delivery requirements. UNDP’s SESP fulfills this requirement, and provides policy guidance and tools to design and implement quality projects and to address the requirements of UNDP’s SES.

The objectives of the SESP are to:

* + integrate the SES Programming Principles in order to maximize social and environmental opportunities and benefits and strengthen social and environmental sustainability;
	+ identify potential social and environmental risks and their significance;
	+ determine the project's risk category (Low, Moderate, Substantial, High); and
	+ determine the level of social and environmental assessment and management required to address potential risks and impacts.

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**Figure 3.4. Key Elements of UNDP’s Social and Environmental Standards (SES)**



**Source**: UNDP, 2019a, p. 4.

# 4.0 POTENTIAL ADVERSE ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS, AND MITIGATION

This chapter discusses the likely environmental and social risks and impacts of the Project, their level of significance and measures to mitigate them. Further, it justifies why the overall Project risk categorization is **moderate**.

The approach applied to identifying and assessing the potential adverse risks and impacts of the Project and their level of significance, as well as to determining the overall Project risk categorization, was UNDP’s Social and Environmental Screening Procedure (SESP) (UNDP, 2019b). The tool employed to operationalize the SESP was its accompanying Social and Environmental Screening Template which, once completed, became the Social and Environmental Screening Report containing the results of the screening exercise for the Project. The Social and Environmental Screening Report is an annex to the Project Document.

The anticipated risks and impacts are of minor to medium magnitude, few in number, temporary, site-specific and reversible, and can be avoided, managed and/or mitigated with pertinent and proven measures, as elaborated in this chapter and Chapter 5.0, which contains the details of the Environmental and Social Management Framework (ESMF) for the Project.

The four Project components include some activities that pose null to negligible risks, since they involve: (i) the conduct of studies and research;[[11]](#footnote-11) (ii) the development of guidelines, strategies, policies, regulations and plans;[[12]](#footnote-12) (iii) the provision of technical training and capacity building;[[13]](#footnote-13) (iv) the holding of meetings and the implementation of consultations;[[14]](#footnote-14) and (v) the creation of digital platforms and tools for monitoring, tracking and reporting, exchange of experiences, and generation of content.[[15]](#footnote-15)

In effect, all of these activities will take place mostly in already existing building structures and their implementation will only marginally increase both the already existing demand for public services and other resources (water, electricity, communication, office supplies, etc.), and the amount of liquid and solid domestic wastes already generated at the facilities where the activities will take place. Further, the Project will assist in the implementation of these activities only in aspects such as the selection, hiring and funding of technical experts that will deliver training and capacity building programs, the payment of professional services of consultants hired to conduct studies and research, the acquisition of office supplies for meetings and capacity building sessions, and the like.

Component 1, which involves the formulation of an integrated policy and regulatory framework, quality standards, fiscal tools and action plans, as well as associated capacity building, and Component 4, which focuses on monitoring and evaluation, and learning and knowledge management, mainly comprise the types of activities mentioned in the previous paragraph likely to have only null to negligible adverse risks.

In addition to the above, the activities under Component 2 regarding the delivery of training on alternative production technologies of mercury-free medical devices and the use of these devices in medical facilities, the development of a plan for the environmentally sound management of mercury waste and the provision of training in this area, as well as the activities under Component 3 dealing specifically with the development of long-term guidance and tools in the area of environmentally sound management of mercury waste and mercury-contaminated sites, also include to a large extent the kind of activities indicated in the penultimate paragraph.

All of the above characteristics greatly reduce the likelihood that the Project will cause substantial or high negative environmental and social impacts.

Table 4.0 describes in detail, for each Project component and its corresponding outcomes and outputs, the potential adverse risks and applicable UNDP SES Principles and Standards, the level of significance of the risks and pertinent mitigation measures. As indicated in Subsection 2.2.3.2, Chapter 2.0, Components 2 and 3 complement each other and will be implemented in a coordinated manner to help addressing the technical barriers identified during the design of the Project. Therefore, in order to avoid repetition, Table 4.0 discusses the risks posed by these two components in the rows corresponding to the outputs of Component 2, while indicating in the rows corresponding to Component 3 which of its outputs in conjunction with those of Component 2 are likely to generate the risks described for Component 2. Table 4.0 does not include Component 4, since it comprises outputs likely to generate only null to negligible negative environmental and social risks, as noted above.

**Table 4.0 Potential Adverse Environmental and Social Risks, and Mitigation Measures**

| **OUTCOMES** | **OUTPUTS** | **POTENTIAL RISKS/APPLICABLE UNDP SES PRINCIPLES AND STANDARDS** | **SIGNIFI-CANCE** | **MITIGATION MEASURES** |
| --- | --- | --- | --- | --- |
| *Component 1: Integrated policy, regulatory framework, quality standards, fiscal tools, action plans and associated capacities were achieved, to support the phase out of mercury-containing medical thermometers and sphygmomanometers under the Minamata Convention* |
| **Outcome 1.1**: Cross ministerial cooperation established to jointly develop and implement the necessary policy, regulations, tools, action plans and guidelines, in coordination with appropriate private sector partners, to phase out the production and consumption of mercury-containing medical devices, to reduce the use of primary mercury in medical devices, to manage waste of obsolete devices, and to promote the uptake of mercury-free medical devices | ***Output 1.1***: Inter-Ministerial Committee established (e.g., Environment, Health, Industry, etc.) to support the execution of China’s National Plan for the Implementation of the Minamata Convention and take actions to address the identified policy and enforcement capacity gaps between national regulatory policies and the Convention’s legal requirements for Parties, and to look at modalities for linking mercury consumption reductions from this sector into the primary mining plans within the National Plan for the Implementation of the Minamata Convention, to avoid redirection of phased out consumption to other sectors.***Output 1.2***: Proposal on policy and regulatory frameworks on chemical management, supervision and law enforcement, standards for inspection and maintenance of mercury-free products, and rules on the use of mercury-free products are developed or updated and capacity-building programs updated or developed to support the monitoring, supervision, regulation and enforcement of the phase-out of mercury in the production of medical thermometers and sphygmomanometers, by collaborating with World Health Organization (WHO) to ensure incorporation of international best practice and experience. | **Duty bearers and other relevant stakeholders may fall short of capacities to meet their obligations in the Project dealing with the development of new coordination and regulatory mechanisms**China has an important regulatory framework consisting of laws, guidelines and voluntary standards in relation to mercury management and use of mercury-based products. In addition, government officials undergo regular training and are aware of the existing regulatory instruments.The Project proposes the development of a complementary and streamlined set of instruments as part of Component 1, thus the public officials responsible for enforcing these instruments at mercury-containing medical device industries slated for mercury phase out, will require adequate further capacity building to be delivered by the Project in order to implement them properly. Principle: Human Rights (P.2) | **Low** | Component 1, Activity 1.1.1 and Activity 1.2.1 will support the training needs assessment and develop a targeted training plan to ensure that the relevant officials receive adequate training to understand their new extended responsibilities arising from the improved policy and regulatory frameworks developed by the Project in terms of new legislation, guidelines and mandatory standards. Although this risk is low, the project will undertake these activities as incremental support resulting from the improved policy and regulatory frameworks. |
| **Inadequate participation of women in consultations, policy decision making and design of modalities for capacity building in uptake of non-mercury technologies and safe management and disposal of obsolete mercury devices**The Gender Analysis conducted during the Project preparation phase found that, in the mercury-containing thermometer production enterprises and the surveyed medical facilities, gender disparities related to the application of medical devices mainly exist in areas of knowledge, employment and involvement in decision-making. For example, in medical establishments there was a disproportionate number of women in the area of nursing in particular, and fair representation amongst the cleaning staff. In addition, at the enterprises visited, the majority of workers for production of mercury-containing thermometers were women, as were over a half of workers for the mercury-containing sphygmomanometers.Without adequate and appropriate consideration of gender gaps and taking effective gender-responsive measures in the design and implementation of the Project, women would continue to have limited participation, and limited access to training, decision making, and other benefits and services.Principle: Gender Equality and Women’s Empowerment (P.10) | **Moderate** | The Gender Action Plan developed for the Project addresses potential risks and includes measures to mainstream gender in all Project components, with specific focus on encouraging women representation in the following:* Inter-ministerial committee for National Implementation Plan.
* Development of policy and regulatory frameworks, quality control standards, monitoring and management systems, and capacity-building programs.
* Capacity building of medical staff to use and maintain mercury-free devices, and to soundly manage obsolete mercury devices and related wastes.
* Cooperation with WHO to share knowledge about the replacement of mercury thermometers and sphygmomanometers in health care.
* Training on sound management of residual mercury stocks and obsolete mercury containing devices, and the remediation of contaminated sites on production sites and in medical facilities.
 |
| ***Output 1.3***: Proposals on green procurement standards and action plans developed to promote the application of and grow the market for mercury-free medical thermometers and sphygmomanometers in medical facilities.***Output 1.4***: Green Finance Framework developed and mercury-free devices procurement subsidization scheme created. | **Small or medium-sized manufacturers and health care facilities are not involved in decision-making regarding development of policy and regulatory frameworks and green procurement standards, and do not have equal access to financing through the Green Finance Framework**If not aware of these potential financing instruments, small and medium sized manufacturers may not be able to feasibly convert their manufacturing process to become mercury-free and health facilities will not be incentivized to switch to mercury-free thermometers and sphygmomanometers. These entities might thus become marginalized and not benefit equally from the Project.Principle: Accountability (P.13, P.14) | **Moderate** | During the project preparation stage, the key stakeholders were tentatively identified first; followed by discussions with UNDP, FECO and the other Project Preparation Grant (PPG) team members for further confirmation of the key stakeholders; then by questionnaire-surveying of seven enterprises who are producing mercury-containing medical thermometers and three enterprises who are producing sphygmomanometers to understand the effective way to phase out mercury-containing production, and seventeen medical facilities in different geographical locations, that is, three municipality/autonomous region/province (hereafter provinces collectively) to understand their potentials to apply mercury-free alternatives. The process of identification and engagement of the key stakeholders and their core roles, responsibilities and interests was an iterative process during the preparation phase. It will be an on-going and adaptation management process throughout the Project cycle. Based on the consultations and surveys, the Stakeholder Engagement Plan for the Project implementation, monitoring, and evaluation was developed.Stakeholder engagement will be further undertaken during implementation to ensure fair representation of small and medium sized manufacturers of mercury medical devices who may otherwise be marginalized from participating in any financing schemes and be at a disadvantage once the final phase out of mercury device production for domestic markets commences at the end of 2025. In addition, the Project will raise the awareness of enterprises on possible green finance instruments, and to facilitate their access to government and/or private banking investments, to support quality-controlled conversion of production lines. It will also create a procurement subsidization scheme to support green procurement, application of mercury-free medical thermometers and sphygmomanometers, sound management of obsolete mercury containing devices, any related capacity building and awareness activities in medical facilities. |
| *Component 2: Demonstration of technology transfer and investment for (i) supporting enterprises in phasing out the production of mercury-containing medical devices; (ii) the application of mercury-free devices in medical facilities, and (iii) enhanced knowledge base for the risk assessment and sound management of obsolete mercury devices, contaminated materials/wastes, and contaminated areas on premises completed* |
| **Outcome 2.1**: Enterprises are enabled to convert production lines as per legally mandated national phase-out planning guidelines, and to soundly manage remaining mercury, stockpiled devices and/or contaminated areas on premises resulting in the phase-out of at least 75 metric tons of mercury | ***Output 2.1***: Production of mercury-free medical thermometers and sphygmomanometers achieved and sound management of obsolete mercury and stocks of mercury devices implemented in four (4) producers of mercury-containing medical thermometers and two (2) producers of mercury-containing sphygmomanometers | **Potential risk to enterprise viability and workers’ employment, particularly women, in the course of the transition to production of non-mercury devices**Given the fact that the Project focuses on changing production processes in plants to switch to production of non-mercury medical devices, there is some business risk for enterprises, and by extension for job security for workers. By transitioning technology out of mercury devices, it is expected that high technology devices will be used, meaning more specialized expertise (jobs) will be needed/created, while less skilled workers, the majority of whom are women, that currently work in the mercury-based lines could lose their jobs.Principle: Gender Equality and Women Empowerment (P.9).Principle: Accountability (P.13, P.14).Standard 7: Labor and Working Conditions (7.1, 7.5).**NOTE**: *These risks are also associated with Outputs 3.1 and 3.2 of Component 3* | **Moderate** | The Project is designed to help with the transition to non-mercury medical devices, since there will be mandatory end of production of mercury devices for export by the end of 2020 and complete shut- down of production for domestic markets by the end of 2025. The Project is therefore inherently addressing the risk of loss of income for businesses from the mandatory shut down of mercury device manufacture under Minamata Convention compliance implementation, by offering capacity for production of non-mercury equipment, thus preserving livelihoods. As noted in the previous row, stakeholder engagement throughout project implementation will ensure that enterprises that may be affected by the Project all benefit from this support through capacity building and awareness raising on green financing available (Activities 1.3.1 and 1.4.1). A Stakeholder Engagement Plan has been prepared for that purpose.A risk assessment will be undertaken for the alternative technologies (Activity 2.1.1) to be used, taking into consideration avoiding retrenchment. The Project will consult with trade unions or other workplace representatives over the proposed redundancies on measures to avoid or reduce redundancies, the method of selection and mitigating the effects, integrating outcomes into the final Restructuring Plan. This includes potentially training qualified existing staff on other roles or skills that may be needed at the industry. Where no viable alternatives are identified, a Restructuring Plan will be developed to reduce and mitigate adverse impacts of retrenchment on workers. At a minimum, the Restructuring Plan will include the following:* Ensuring that any collective dismissals are carried out in accordance with the provisions of national law and applicable collective agreements.
* Ensuring that the criteria for selection for redundancy are objective, fair and transparent and aim to be gender-neutral; and implement a procedure which provides individuals with the right to challenge their selection.
* Ensuring that all outstanding back pay, social security benefits and pension contributions and benefits are paid to those affected by retrenchment in a timely manner.
* In the case of large-scale redundancies, provide the UNDP with a copy of the restructuring plan in advance of any dismissals.

Activity 2.1.4 will directly address the risk that potential job loss may affect women disproportionately by developing and implementing a plan for gender equality and mainstreaming activities in the industries transitioning to the production of non-mercury medical devices.  |
| **Potential health and safety risks for workers, and generation of solid and liquid wastes, in the six pre-selected demonstration enterprises during the process of transforming existing production lines from manufacturing mercury-containing thermometers or sphygmomanometers to mercury-free alternatives, or during the dismantling of old manufacturing equipment and the installation of new equipment to produce medical devices compliant with Minamata Convention requirements**The six facilities pre-selected for the replacement or refurbishment of old production lines, which will serve to demonstrate the feasibility of new technological processes to phase out and ultimately replace mercury-containing measuring medical devices, have been in operation for a very long time, mostly since the 1960s and the 1970s. The dismantling of the old production equipment and the installation of new one, or the upgrading of the existing equipment, as well as the testing and startup procedures of the new or refurbished equipment. may pose health and safety risks to workers (e.g., slip and fall, electric shock and arc flash/arc blast, work in heights, struck by objects, etc.) that must be identified and addressed in accordance with best international practices and Chinese regulations.In addition to the above, the old equipment to be replaced or retrofitted may be contaminated with mercury in the form of droplets if proper operational and maintenance procedures were not followed in the course of production, which would pose health risks to workers. Standard 7: Labor and Working Conditions (7.1, 7.6).**NOTE**: *These risks are also associated with Outputs 3.1 and 3.2 of Component 3* | **Moderate** | The Project includes an Environmental and Social Management Framework (ESMF) (see Chapter 5.0), which is applicable when an operation includes activities that are not fully defined and their exact areas of implementation are not clearly identified, as is the case with demonstration activities at manufacturing facilities. In effect, potential demonstration facilities are at the pre-selection stage and the details of the implementation of demonstration activities will be worked out during Project execution. Therefore, crucial aspects such as the following, among others, are not well defined at present: (i) the locations of the facilities that will be finally selected and the socio-environmental characteristics of the areas where they are sited; (ii) the production processes currently in use at the facilities, and potential social and environmental issues associated with them, such as management of mercury waste, site contamination, occupational health and safety risks, etc.; and (iii) the alternative production technologies that will be utilized. The ESMF sets out the principles, rules, guidelines and procedures to ensure the social and environmental risks and impacts of the forthcoming but as yet unspecified activities are fully identified (screened) and assessed, and that management measures are in place prior to implementation of the relevant activities with potential social and environmental risks and impacts. It contains measures for estimating and budgeting the costs of such measures, and information on responsibilities for addressing project risks and impacts.Given the likely obsolesce of existing production equipment at manufacturing facilities of mercury-containing measuring medical devices, the insufficient attention given to the enforcement of compliance by these facilities with Minamata Convention requirements (please refer to next row), the likely volumes of mercury waste to be managed and disposed of by these facilities (please refer to next row), as well as the potential environmental and social risks associated with the production of mercury-containing measuring medical devices discussed in this table (occupational health and safety, mercury waste management, site contamination, etc.), each of the six participating demonstration facilities will be required to conduct an Environmental and Social Audit (ESA) to identify and address those risks. An ESA is: “…an instrument to determine the nature and extent of all environmental and social areas of concern at an existing project or activities. The audit identifies and justifies appropriate measures and actions to mitigate the areas of concern, estimates the cost of the measures and actions, and recommends a schedule for implementing them” (World Bank, 2018, pp. 18-19). The Audit will focus on environmental, and occupational and community health and safety risks at each facility. The ESMF includes guidelines for the preparation of the Environmental and Social Audit.For the occupational health and safety risks during the replacement or refurbishing of production lines, and the wastes generated during these operations, the respective contractors hiredtoperformthe retrofitting or replacement of equipment at each of the six participating demonstration facilities will be required to develop and implement, respectively, a Occupational Health and Safety Plan (OHSP), and a Spill Prevention and Management Plan (SPMP). The ESMF provides guidance for the preparation of the OHSP and the SPMP.Under Activity 2.1.1, the Project design includes the execution of a risk assessment of alternative production technologies and, based on its findings, the development of a risk management plan to reduce related social and environmental risks.  |
| **Potential health and safety risks to workers and nearby communities, and potential pollution of soil and water sources due to accidental releases (through spills) or emissions (in the form of vapor)** **during the handling, separation, collection, packaging, labelling and temporary storage of mercury waste** **generated at demonstration production enterprises, and the transport of mercury waste for its final disposal**In 2019, about 200 metric tons of mercury was consumed by 18 thermometer producers and 35 metric tons by 5 sphygmomanometer producers in China. Due to the Covid-19 pandemic, the demand in 2020 for medical devices including mercury-containing medical devices saw a significant increase. The mercury-containing measuring medical devices industry is the second largest user of mercury in China, only after the vinyl chloride monomer industry (Lin, Yan et al., 2017, p. 678). Prior to the development of the present Project, the production of mercury-containing thermometers and sphygmomanometers has not been a major concern in China’s implementation of Minamata Convention yet..The production enterprises pre-selected to participate in the demonstration of technologies to phase out mercury use in their manufacturing processes represent the main consumers of mercury for this purpose, as well as the main producers of these mercury-containing medical devices in China. In the case of mercury-containing thermometer manufacturers, the consumption of the four pre-selected enterprises all exceeded 30 metric tons in 2019, representing over 60% of sector demand, and their production capacity represents 60% of the sector output. In the case of the mercury-containing sphygmomanometer manufacturers, the two pre-selected producers include the top mercury consumption enterprise and the other a small consuming enterprise, and their combined production exceeded more than 70% of the sector output and 70% of the sector mercury consumption.There are no data available about the existing stocks of mercury waste (i.e., waste consisting of, containing or contaminated with mercury or mercury compounds) in the pre-selected facilities which, as noted above, began operations mostly in the 1960s and 1970s, but the above figures give a hint of the potential magnitude of mercury waste that might have been generated in the demonstration enterprises and that will have to be managed in an environmentally sound manner. Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management (1.7).Standard 3: Community Health, Safety and Security (3.5).Standard 7: Labor and Working Conditions (7.6).Standard 8: Pollution Prevention and Resource Efficiency (8.2, 8.3, 8.4).**NOTE**: *These risks are also associated with Outputs 3.1 and 3.2 of Component 3* | **Moderate** | The Environmental and Social Audit (ESA) to be conducted at each of the final demonstration facilities will include an examination of waste management practices, risks and mitigation. Given that the Project design already includes the conduct of risk assessments of mercury waste and contaminated areas at demonstration enterprises, to be performed by consultants hired by the Project, it is recommended that, as far as feasible, these risks assessments be coordinated with the implementation of the ESAs at each facility, so as to make efficient use of resources. The ESA will provide inputs into and receive feedback from the following Project activities: * Activity 2.1.2: Develop plan for environmentally sound management of mercury waste and guidance actions (risk assessment) for contaminated areas.
* Activity 3.2.1: Identify, monitor and undertake actions that ensure sound and secure management of interim storage of mercury and mercury wastes in piloted facilities.
* Activity 3.2.2: Develop risk management strategy, technical guidance and training materials to facilitate implementation and future replication and scale up of sound management of mercury waste, storage, and identification of contaminated sites at national level. The strategy will include measures to minimize impact on inhabitants, businesses located on land identified as contaminated.
* Activity 3.3.1: As part of the private sector risk assessment, the Project will ensure the safe handling and/or disposal of residual mercury and obsolete devices and implementation of sound management on disposal, storage of mercury-containing medical devices, and mercury waste at both the manufacturing enterprises and the medical facilities. A Spill Prevention and Management Plan will be developed and implemented for safe handling and safely cleanup of accidental mercury releases.

The Project Management Unit (PMU) will ensure that mercury waste is managed in an environmentally sound manner, including interim storage areas, in the six piloted facilities, according to national laws and regulations, and refer to the best international practices reflected in the following documents: (i) UNEP. 2015. *Practical Sourcebook on Mercury Waste Storage and Disposal* (available at: https://www.unep.org/resources/report/practical-sourcebook-mercury-waste-storage-and-disposal-2015); and (ii) Ibid. 2021. *Technical Guidelines on the Environmentally Sound Management of Wastes Consisting of, Containing or Contaminated with Mercury or Mercury Compounds* (available at: https://www.mercuryconvention.org/en/documents/basel-convention-technical-guidelines-environmentally-sound-management-wastes-0). The following sources contain best management practices in, respectively, environmental and human health risk assessment: (i) *The OECD Environmental Risk Assessment Toolkit: Tools for Environmental Risk Assessment and Management, 2019*. Available at: https://www.oecd.org/env/ehs/risk-assessment/environmental-risk-assessment-toolkit.htm; and (ii) *WHO Human Health Risk Assessment Toolkit: Chemical Hazards. Second Edition, 2021*. Available at: https://www.who.int/publications/i/item/9789240035720. |
| **Potential health and safety risks to workers and nearby communities, and potential pollution of soil and water sources from contaminated sites at the demonstration facilities, resulting from the manufacturing of mercury-added products and the storage of mercury and mercury waste, with the possibility of associated secondary contaminated sites because of run-off, leaching or migration from the primary sites at the production facilities. In addition, potential health and safety risks to workers during the inventory of likely contaminated sites and, if contamination is found, during the cleanup or remediation of those sites. Further, if secondary contaminated sites are detected, potential need to compensate affected property owners, in addition to the cleanup or remediation of those sites** The four potential demonstration producers of mercury-containing thermometers are located in industrial parks, and the two potential demonstration manufacturers of mercury-containing sphygmomanometers are located some 100-500 meters away from mixed urban (including industrial) and cultivated land. In view of the relative proximity of the latter two manufacturers to urban and agricultural land uses, the potential run-off, leaching or migration of mercury from these facilities and the consequent creation of secondary contaminated sites should receive particular attention if they are finally selected. Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management (1.7).Standard 3: Community Health, Safety and Security (3.5).Standard 5: Displacement and Resettlement (5.2).Standard 7: Labor and Working Conditions (7.6).Standard 8: Pollution Prevention and Resource Efficiency (8.2, 8.3, 8.4).**NOTE**: *These risks are also associated with Outputs 3.1 and 3.2 of Component 3* | **Moderate** | The Environmental and Social Audit (ESA) to be conducted at each of the final demonstration facilities will include an examination of potential site contamination at each respective facility, as well as at nearby sites. As suggested above, the risk assessment of potential contaminated areas could be coordinated with the implementation of the ESA. The contractors that will conduct the inventory of potentially contaminated sites and, if required, their cleanup or remediation, will be required to prepare and implement an Occupational Health and Safety Plan (OHSP). The ESMF provides guidance for the preparation of the OHSP.The ESA will provide inputs into and receive feedback from the following Project activities: * Activity 2.1.2: Develop plan for environmentally sound management of mercury waste and guidance actions (risk assessment) for contaminated areas.
* Activity 3.1.1: Develop guiding methodology and carry on model investigation on how to identify and collect data to establish inventory on mercury-contaminated sites including conducting risk assessment analysis.
* Activity 3.2.1: Identify, monitor and undertake actions that ensure sound and secure management of interim storage of mercury and mercury wastes in piloted facilities.
* Activity 3.2.2: Develop risk management strategy, technical guidance and training materials to facilitate implementation and future replication and scale up of sound management of mercury waste, storage, and identification of contaminated sites at national level. The strategy will include measures to minimize impact on inhabitants, businesses located on land identified as contaminated.

The PMU will ensure that the analysis of site contamination and, if any site is found to be contaminated, its management according to national laws and regulations, and referring to the best international practices contained in the following source: UNEP. 2019. *Guidance on the Management of Contaminated Sites*. Available at: https://www.mercuryconvention.org/sites/default/files/documents/forms\_and\_guidance\_document/Guidance\_Contaminated\_Sites\_EN.pdf. |
| ***Output 2.2***: Use of mercury-free devices and the sound management of obsolete mercury-containing medical thermometers and sphygmomanometers demonstrated in at least 6 medical facilities. 60% of baseline mercury-containing medical thermometers and sphygmomanometers replaced by mercury-free devices and staff capacitated to use and maintain mercury-free devices and to soundly manage obsolete mercury devices and related wastes | **Potential health risks to workers at demonstration medical facilities (medical, nursing, technical and administrative staff, and laborers), as well as to patients and visitors, due to accidental releases (through spills,) emissions (in the form of vapor) or dermal contact resulting from the breakage of mercury-containing measuring medical devices during their use, or during the handling, separation, collection, packaging, labelling and temporary storage of used or damaged devices**Standard 3: Community Health, Safety and Security (3.5).Standard 7: Labor and Working Conditions (7.6).Standard 8: Pollution Prevention and Resource Efficiency (8.2, 8.4).**NOTE**: *These risks are also associated with Output 3.3 of Component 3* | **Moderate** | As is the case with demonstration manufacturing facilities, the six medical facilities where the piloting of the replacement of mercury-containing thermometers and sphygmomanometers will take place have not been selected and the details of the corresponding interventions will be defined in the Project implementation phase; hence the need for the present ESMF.The Project design includes the following activities to accomplish the ESM of medical mercury waste at piloted health care establishments:* *Activity 2.2.5*: Develop safe disposal management plan/strategy for mercury-containing medical thermometers and sphygmomanometers (under Output 2.2: Use of mercury-free devices and the sound management of obsolete mercury-containing medical thermometers and sphygmomanometers demonstrated in at least 6 medical facilities. 60% of baseline mercury-containing medical thermometers and sphygmomanometers replaced by mercury-free devices and staff capacitated to use and maintain mercury-free devices and to soundly manage obsolete mercury devices and related wastes).
* *Activity 3.3.1*: As part of the private sector risk assessment, the Project will ensure the safe handling and/or disposal of residual mercury and obsolete devices and implementation of sound management on disposal, storage of mercury-containing medical devices, and mercury waste at both the manufacturing enterprises and the medical facilities. A Spill Prevention and Management Plan will be developed and implemented for safe handling and safely cleanup of accidental mercury releases.

The Project Management Unit (PMU) will ensure that mercury waste is managed in an environmentally sound manner, including interim storage areas, in the six demonstration medical facilities, according to national laws and regulations, and referring to the best international practices reflected in the following document: UNDP/GEF. 2010. *Guidance on the Cleanup, Temporary or Intermediate Storage, and Transport of Mercury Waste from Healthcare Facilities*. Available at: https://www.undp.org/publications/cleanup-storage-and-transport-mercury-waste-healthcare-facilities. |
| *Component 3: Development of long-term guidance and tools for the sound management of obsolete mercury-containing medical thermometers and sphygmomanometers, and mercury-contaminated areas accomplished* |
| **Outcome 3.1**: Production enterprises and medical facilities implemented appropriate strategies, tools and guidance to assure long-term sound management of mercury-containing medical devices and mercury contaminated areas | **Output 3.1**: Guidance tools for inventory of mercury-contaminated sites at piloted enterprises producing mercury-containing medical thermometers and sphygmomanometers developed***Output 3.2***: Risk management strategy, technical guidance and training materials developed for the sound management of residual mercury stocks and obsolete mercury-containing medical thermometers and sphygmomanometers at production enterprises/sites | The risks noted above for Output 2.1 of Component 2 are also associated with Outputs 3.1 and 3.2. For details, please refer to the row above corresponding to the risks posed by Output 2.1 |  |  |
| ***Output 3.3***: Risk management strategy, technical guidance and training materials developed for the sound management of obsolete mercury-containing medical thermometers and sphygmomanometers in medical facilities. | The risks noted above for Output 2.2 of Component 2 are also associated with Output 3.3. For details, please refer to the row above corresponding to the risks posed by Output 2.2 |  |  |

The overall SES Project risk categorization is moderate.[[16]](#footnote-16) The basis for this categorization is that the level of significance of the following adverse risks is likely to be moderate:

1. **Inadequate participation of women in consultations, policy decision making and design of modalities for capacity building in uptake of non-mercury technologies and safe management and disposal of obsolete mercury devices**: The Gender Analysis conducted during the Project preparation phase found that, in the mercury-containing thermometer production enterprises and the surveyed medical facilities, gender disparities related to the application of medical devices mainly exist in areas of knowledge, employment and involvement in decision-making. For example, in medical establishments there was a disproportionate number of women in the area of nursing in particular, and fair representation amongst the cleaning staff. In addition, at the enterprises visited, the majority of workers for production of mercury-containing thermometers were women, as were over a half of workers for the mercury-containing sphygmomanometers.

Without adequate and appropriate consideration of gender gaps and taking effective gender-responsive measures in the design and implementation of the Project, women would continue to have limited participation, and limited access to training, decision making, and other benefits and services.

1. **Small or medium-sized manufacturers and health care facilities are not involved in decision-making regarding development of policy and regulatory frameworks and green procurement standards, and do not have equal access to financing through the Green Finance Framework**: If not aware of these potential financing instruments, small and medium-sized manufacturers may not be able to feasibly convert their manufacturing process to become mercury-free and health facilities will not be incentivized to switch to mercury-free thermometers and sphygmomanometers. These entities might thus become marginalized and not benefit equally from the Project.
2. **Potential risk to enterprise viability and workers’ employment, particularly women, in the course of the transition to production of non-mercury devices**: Given the fact that the Project focuses on changing production processes in plants to switch to production of non-mercury medical devices, there is some business risk for enterprises, and by extension for job security for workers. By transitioning technology out of mercury devices, it is expected that high technology devices will be used, meaning more specialized expertise (jobs) will be needed/created, while less skilled workers, the majority of whom are women, that currently work in the mercury-based lines could lose their jobs.
3. **Potential health and safety risks for workers in the six pre-selected demonstration enterprises during the process of transforming existing production lines from manufacturing mercury-containing thermometers or sphygmomanometers to mercury-free alternatives, or during the dismantling of old manufacturing equipment and the installation of new equipment to produce medical devices compliant with Minamata Convention requirements**: The six facilities pre-selected for the replacement or refurbishment of old production lines, which will serve to demonstrate the feasibility of new technological processes to phase out and ultimately replace mercury-containing measuring medical devices, have been in operation for a very long time, mostly since the 1960s and the 1970s. The dismantling of the old production equipment and the installation of new one, or the upgrading of the existing equipment, as well as the testing and startup procedures of the new or refurbished equipment. may pose health and safety risks to workers (e.g., slip and fall, electric shock and arc flash/arc blast, work in heights, struck by objects, etc.) that must be identified and addressed in accordance with best international practices and Chinese regulations.
4. **Potential health and safety risks to workers and nearby communities, and potential pollution of soil and water sources due to accidental releases (through spills) or emissions (in the form of vapor)** **during the handling, separation, collection, packaging, labelling and temporary storage of mercury waste** **generated at demonstration production enterprises, and the transport of mercury waste for its final disposal**: In 2019, about 200 metric tons of mercury was consumed by 18 thermometer producers and 35 metric tons by 5 sphygmomanometer producers in China. Due to the Covid-19 pandemic, the demand in 2020 for medical devices including mercury-containing medical devices saw a significant increase. The mercury-containing measuring medical devices industry is the second largest user of mercury in China, only after the vinyl chloride monomer industry (Lin, Yan et al., 2017, p. 678). Prior to the development of the present Project, the production of mercury-containing thermometers and sphygmomanometers has not been a major concern in China’s implementation of Minamata Convention yet, because of a 5-years exemption. The production enterprises pre-selected to participate in the demonstration of technologies to phase out mercury use in their manufacturing processes represent the main consumers of mercury for this purpose, as well as the main producers of these mercury-containing medical devices in China. In the case of mercury-containing thermometer manufacturers, the consumption of the four pre-selected enterprises all exceeded 30 metric tons in 2019, representing over 60% of sector demand, and their production capacity represents 60% of the sector output. In the case of the mercury-containing sphygmomanometer manufacturers, the two pre-selected producers include the top mercury consumption enterprise and the other a small consuming enterprise, and their combined production exceeded more than 70% of the sector output and 70% of the sector mercury consumption.

There are no data available about the existing stocks of mercury waste (i.e., waste consisting of, containing or contaminated with mercury or mercury compounds) in the pre-selected facilities which, as noted above, began operations mostly in the 1960s and 1970s, but the above figures give a hint of the potential magnitude of mercury waste that might have been generated in the demonstration enterprises and that will have to be managed in an environmentally sound manner.

1. **Potential health and safety risks to workers and nearby communities, and potential pollution of soil and water sources from contaminated sites at the demonstration facilities, resulting from the manufacturing of mercury-added products and the storage of mercury and mercury waste, with the possibility of associated secondary contaminated sites because of run-off, leaching or migration from the primary sites at the production facilities. In addition, potential health and safety risks to workers during the inventory of likely contaminated sites and, if contamination is found, during the cleanup or remediation of those sites. Further, if secondary contaminated sites are detected, potential need to compensate affected property owners, in addition to the cleanup or remediation of those sites**: The four potential demonstration producers of mercury-containing thermometers are located in industrial parks, and the two potential demonstration manufacturers of mercury-containing sphygmomanometers are located some 100-500 meters away from mixed urban (including industrial) and cultivated land. In view of the relative proximity of the latter two manufacturers to urban and agricultural land uses, the potential run-off, leaching or migration of mercury from these facilities and the consequent creation of secondary contaminated sites should receive particular attention in they are finally selected.
2. **Potential health risks to workers at demonstration medical facilities (medical, nursing, technical and administrative staff, and laborers), as well as to patients and visitors, due to accidental releases (through spills,) emissions (in the form of vapor) or dermal contact resulting from the breakage of mercury-containing measuring medical devices during their use, or during the handling, separation, collection, packaging, labelling and temporary storage of used or damaged devices**.

Table 4.0 evidences that the main environmental and social concerns raised by the Project are associated with the implementation of demonstration interventions, in particular at manufacturing enterprises, and the application of associated strategies, tools, guidance and plans developed to support those interventions, all of which are included in Components 2 and 3. Specifically, the following interventions are the source of environmental and social concerns:

* The refurbishment or replacement of existing production lines at demonstration manufacturing enterprises.
* The management of mercury waste at demonstration manufacturing enterprises.
* The inventory and potential cleanup or remediation of primary and secondary contaminated sites associated with demonstration manufacturing enterprises.
* The management of mercury waste at demonstration health care facilities.

Table 4.0 evidences that most mitigation measures for anticipated risks and impacts are included in the Project design in the form of:

* Establishment of an Inter-Ministerial Committee with participation of pertinent institutions to coordinate collaborative efforts within the public sector and with the private sector in the development and implementation of cohesive and updated policies, regulations, tools, action plans and guidelines to phase out the production and consumption of mercury-containing medical devices, manage mercury waste and promote the uptake of mercury-free medical devices.
* Adoption of best international practices in the monitoring, supervision, regulation and enforcement of the phase-out of mercury in the production and use of medical thermometers and sphygmomanometers by collaborating with the World Health Organization, and provision of extensive training to pertinent public officials in the execution of their responsibilities in these areas.
* Development of a green finance framework and a mercury-free device procurement subsidization scheme, in order to promote the application of and grow the market for mercury-free medical thermometers and sphygmomanometers in medical facilities.
* Mainstreaming gender in all Project components by implementing the Gender Action Plan already prepared.
* Implementation of robust consultation and participation in decision making related to Project activities of all stakeholders during Project formulation, implementation and monitoring, including women, in accordance with the Stakeholder Engagement Plan.
* Piloting productive technology alternatives in the manufacturing of mercury-free measuring medical devices in six production enterprises in operation and piloting the use of these devices in six existing medical establishments, so as to replicate and scale up successful experiences and lessons learned.
* Formulation of a Restructuring Plan to reduce and mitigate the potential adverse impacts of retrenchment on workers due to the adoption of new production technologies in manufacturing facilities.
* Preparation of a risk management strategy, technical guidance and training materials for the environmentally sound management of mercury waste and the conduct of inventories of mercury-contaminated sites at demonstration production enterprises, and the environmentally sound management of mercury waste at demonstration medical facilities, and delivery of training in these areas.
* Promotion of investigations to technically support the introduction and adoption of mercury-free alternatives in medical facilities, and new technological processes in the production of mercury-free medical devices in manufacturing enterprises, as well as provision of training and promotion of knowledge sharing in these areas.

Table 4.0 identifies the need for an Environmental and Social Management Framework (ESMF), which is applicable when an operation includes activities that are not fully defined and their exact areas of implementation are not clearly identified, as is the case with the demonstration interventions included in the Project, in order to address and manage the risks posed by those activities. In effect, in relation to proposed interventions at demonstration manufacturing facilities, these facilities are at the pre-selection stage and the details of the implementation of demonstration interventions will be worked out during Project execution. Therefore, crucial aspects such as the following, among others, are not well defined at present: (i) the locations of the facilities that will be finally selected and the socio-environmental characteristics of the areas where they are sited; (ii) the production processes currently in use at the facilities, and potential social and environmental issues associated with them, such as management of mercury waste, site contamination, occupational health and safety risks, etc.; and (iii) the alternative production technologies that will be utilized. Regarding proposed interventions at medical facilities, these facilities have not been selected and the details of the corresponding interventions will also have to be defined in the Project implementation phase.

# 5.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

“An ESMF is an instrument that examines potential risks and impacts when a project consists of a series of sub-projects/activities or subsequent implementation of policies, plans, programmes (PPP) that cannot be fully assessed until the details of the PPP and/or activities have been identified (often later in the project cycle). The ESMF sets out the principles, rules, guidelines and procedures to ensure the social and environmental risks and impacts of the forthcoming but as yet unspecified activities are fully identified (screened) and assessed, and that management measures are in place prior to implementation of the relevant activities with potential social and environmental risks and impacts. It contains measures for estimating and budgeting the costs of such measures, and information on responsibilities for addressing project risks and impacts” (UNDP, 2020a, p. 5).

This chapter develops the ESMF for the Project “Demonstration of Phase-Out of Mercury-Containing Medical Thermometers and Sphygmomanometers, and Promoting the Application of Mercury-Free Alternatives in Medical Facilities in China”. It builds upon previous content presented throughout this report in the chapters on: (i) the description of the Project (Chapter 2.0); (ii) the institutional, legal and regulatory framework for environmental (including hazardous substances and waste), social, and occupational health and safety management in China, as well as the environmental and social safeguard requirements of UNDP and GEF (Chapter 3.0); and (iii) the analysis of the potential environmental and social risks and impacts of the Project (Chapter 4.0). The consideration of this content ensures that the ESMF is tailor-made to the characteristics of the Project, the specific institutional and regulatory framework of the country, the environmental and social requirements of UNDP and GEF, and the Project’s anticipated environmental and social risks and impacts. Further, the analysis conducted in Chapter 4.0 facilitates the structuring of the ESMF in terms of potential risks and impacts, as well as their management measures and strategies.

This chapter consists of four sections. Section 5.1 first explains the Project interventions to which the ESMF applies and indicates the steps included in the ESMF process. Next, this Section describes the tools and supporting documents designed to help implement each step, as well as the institutional responsibilities in the execution of each step in three subsections that correspond with the following steps that comprise the ESMF process: (i) Environmental and Social Screening; (ii) Preparation of Environmental and Social Plans; and (iii) Environmental and Social Monitoring.

Section 5.2 explains the Grievance Redress Mechanism to address concerns or unaddressed impacts regarding the environmental and social performance of the Project.

Section 5.3 describes the Environmental and Social Training Plan proposed to develop and enhance the environmental and social management capacity of the Project Implementing Partner and Responsible Parties.

Section 5.4 presents an illustrative budget for the management and implementation of the ESMF.

## 5.1 ESMF PROCESS AND STEPS

Based on the analysis of potential environmental and social risks and impacts of the Project conducted in Chapter 4.0, only the following interventions will undergo further environmental and social assessment under the ESMF process:

* The refurbishment or replacement of existing production lines at demonstration manufacturing enterprises.
* The management of mercury waste at demonstration manufacturing enterprises.
* The inventory and potential cleanup and/or remediation of primary and secondary contaminated sites associated with demonstration manufacturing enterprises.
* The management of mercury waste at demonstration health care facilities.

The implementation of the above demonstration interventions, and the application of associated strategies, tools, guidance and plans developed to support those interventions, are included in Components 2 and 3.

All of the activities included in Components 1 and 4, as well as the activities under Component 2 dealing with the delivery of training and under Component 3 regarding the development of long-term guidance and tools, will not be subject to additional environmental and social assessment because they pose null to negligible negative risks. This is so because these activities involve: (i) the conduct of studies and research; (ii) the development of guidelines, strategies, policies, regulations and plans; (iii) the provision of technical training and capacity building; (iv) the holding of meetings and the implementation of consultations; and (v) the creation of digital platforms and tools for monitoring, tracking and reporting, exchange of experiences, and generation of content.

The implementation of the ESMF process will start with the confirmation of the final selection of any of the six production enterprises and/or any of the six health care facilities that will participate in the demonstrations. The final selection of the participating production and medical facilities will follow the procedure established during the Project preparation phase, as described in the Project Document.

The ESMF process comprises the following three steps:

1. Environmental and Social Screening.
2. Preparation of Targeted Environmental and Social Plans.
3. Environmental and Social Monitoring.

The next three subsections detail, respectively, the tools and supporting documents designed to help implement each of the above steps, as well as the institutional responsibilities in the execution of each step.

### 5.1.1 Environmental and Social Screening

This step will apply only to the interventions listed in Section 5.1[[17]](#footnote-17) at the demonstration production enterprises that result finally selected to participate in the Project, because the specific details of those interventions or the locations of the pilot enterprises are not known and, further, their likely environmental and social risks will not be addressed by the measures already included in the Project design;[[18]](#footnote-18) therefore, these risks require specific assessment at each particular selected enterprise/location. These risks, identified in Chapter 4.0, and the proposed interventions likely to generate them, are the following:

* Potential health and safety risks for workers, and generation of solid and liquid wastes, in the demonstration enterprises during the process of transforming existing production lines from manufacturing mercury-containing thermometers or sphygmomanometers to mercury-free alternatives, or during the dismantling of old manufacturing equipment and the installation of new equipment to produce medical devices compliant with Minamata Convention requirements.
* Potential health and safety risks to workers and nearby communities, and potential pollution of soil and water sources due to accidental releases (through spills) or emissions (in the form of vapor) during the handling, separation, collection, packaging, labelling and temporary storage of mercury waste generated at demonstration production enterprises, and the transport of mercury waste for its final disposal.
* Potential health and safety risks to workers and nearby communities, and potential pollution of soil and water sources from contaminated sites at the demonstration facilities, resulting from the manufacturing of mercury-added products and the storage of mercury and mercury waste, with the possibility of associated secondary contaminated sites because of run-off, leaching or migration from the primary sites at the production facilities. In addition, potential health and safety risks to workers during the inventory of likely contaminated sites and, if contamination is found, during the cleanup or remediation of those sites.

The instrument to apply in the screening of interventions at demonstration production enterprises is an Environmental and Social Audit (ESA) focused on environmental, and occupational and community health and safety risks at each facility. An ESA is: “…an instrument to determine the nature and extent of all environmental and social areas of concern at an existing project or activities. The audit identifies and justifies appropriate measures and actions to mitigate the areas of concern, estimates the cost of the measures and actions, and recommends a schedule for implementing them” (World Bank, 2018, pp. 18-19). Annex I provides guidance for the preparation of an ESA.

An ESA is required at each potential manufacturing facility because the production of mercury-containing thermometers and sphygmomanometers has not been a major concern in China’s implementation of Minamata Convention yet, because of a 5-year exemption, as opposed to other manufacturers of mercury-added products, such as batteries and fluorescent lamps (Lin, Yan et al., 2017, p. 678). An ESA is necessary in view of the likely volumes of mercury waste to be managed and disposed of by these facilities, coupled with the likely obsolesce of existing production equipment at candidate demonstration manufacturing facilities.

The production enterprises pre-selected to participate in the demonstration of technologies to phase out mercury use in their manufacturing processes represent the main consumers of mercury for this purpose, as well as the main producers of these mercury-containing medical devices in China. In the case of mercury-containing thermometer manufacturers, the consumption of the four pre-selected enterprises all exceeded 30 metric tons in 2019, representing over 60% of sector demand, and their production capacity represents 60% of the sector output. In the case of the mercury-containing sphygmomanometer manufacturers, the two pre-selected producers include the top mercury consumption enterprise and the other a small consuming enterprise, and their combined production exceeded more than 70% of the sector output and 70% of the sector mercury consumption.

As the Project design already includes the conduct of risk assessments of mercury waste management and contaminated areas at each demonstration production facility, to be performed by consultants hired by the Project, it is recommended to coordinate the performance of the risk assessment and the ESA at each facility, as far as this is feasible and so as to make efficient use of resources.

The Risk monitoring consultant[[19]](#footnote-19) is responsible for the preparation of the Terms of Reference (TOR) for the ESA for each facility. The draft TOR will be reviewed by the National Technical Advisor, with a final sign off by the Project Manager, and will be forwarded to UNDP for its No-Objection.

The Risk monitoring consultant will review progress reports and the draft ESA for each facility. In the review of each draft report, the Risk monitoring consultant will consult with and obtain the technical opinion of the consultants who subject to this area. The Risk monitoring consultant will consolidate the comments and recommendations received from each of these entities, and send them to the respective consultants for incorporation into the final ESAs. The National Technical Advisor will review each final ESA, with a final sign off by the Project Manager. Each final ESA will be forwarded to UNDP for its No-Objection.

The ESA will establish whether or not, at each participating facility: (i) mercury waste is managed (i.e., handling, separation, collection, packaging, labelling, temporary storage, transport and final disposal) in an environmentally sound manner; (ii) there are mercury-contaminated sites and nearby secondary contaminated sites; (iii) the replacement/refurbishment plan for the production line is likely to raise health and safety risks for workers and generate large amounts of solid and liquid wastes that need to be managed; and (iv) there are any other outstanding environmental and social risks or concerns.

The above results will serve as the basis to determine the targeted plans needed to manage the risks and impacts confirmed at each specific facility. Table 5.1.1 identifies the environmental and social plans required according to the risks confirmed at each facility.

**Table 5.1.1**

**Required Targeted Environmental and Social Plans According to Risks Confirmed by Implementation of ESA at Each Demonstration Production Facility**

| **OUTCOMES** | **OUTPUTS** | **RISKS** | **RISKS CONFIRMED AT FACILITY?** | **REQUIRED ENVIRONMENTAL AND SOCIAL PLANS IF RISKS ARE CONFIRMED** |
| --- | --- | --- | --- | --- |
| **YES** | **NO** |
| **Outcome 2.1**: Enterprises are enabled to convert production lines as per legally mandated national phase-out planning guidelines, and to soundly manage remaining mercury, stockpiled devices and/or contaminated areas on premises resulting in the phase-out of at least 75 metric tons of mercury**Outcome 3.1**: Production enterprises and medical facilities implemented appropriate strategies, tools and guidance to assure long-term sound management of mercury-containing medical devices and mercury contaminated areas | ***Output 2.1***: Production of mercury-free medical thermometers and sphygmomanometers achieved and sound management of obsolete mercury and stocks of mercury devices implemented in four (4) producers of mercury-containing medical thermometers and two (2) producers of mercury-containing sphygmomanometers**Output 3.1**: Guidance tools for inventory of mercury-contaminated sites at piloted enterprises producing mercury-containing medical thermometers and sphygmomanometers developed***Output 3.2***: Risk management strategy, technical guidance and training materials developed for the sound management of residual mercury stocks and obsolete mercury-containing medical thermometers and sphygmomanometers at production enterprises/sites | Potential health and safety risks for workers, and generation of solid and liquid wastes, in the six pre-selected demonstration enterprises during the process of transforming existing production lines from manufacturing mercury-containing thermometers or sphygmomanometers to mercury-free alternatives, or during the dismantling of old manufacturing equipment and the installation of new equipment to produce medical devices compliant with Minamata Convention requirements | **X** |  | * Site-Specific Occupational Health and Safety Plan (OHSP) for the replacement/refurbishment of existing production lines.
* Site-Specific Spill Prevention and Management Plan (SPMP) for wastes resulting from the replacement/refurbishment of existing production lines.
 |
| Potential health and safety risks to workers and nearby communities, and potential pollution of soil and water sources due to accidental releases (through spills) or emissions (in the form of vapor) during the handling, separation, collection, packaging, labelling and temporary storage of mercury waste generated at demonstration production enterprises, and the transport of mercury waste for its final disposal | **X** |  | * Site-Specific Occupational Health and Safety Plan (OHSP) for the management of mercury waste.
* Plan for the environmentally sound management of mercury waste is according to national laws and regulations, and referring to the *Technical Guidelines on the Environmentally Sound Management of Wastes Consisting of, Containing or Contaminated with Mercury or Mercury Compounds* (UNEP, 2021) (available at: https://www.mercuryconvention.org/en/documents/basel-convention-technical-guidelines-environmentally-sound-management-wastes-0).
* Plan for the management of interim storage areas is according to national laws and regulations, and referring to the guidance provided in the *Practical Sourcebook on Mercury Waste Storage and Disposal* (UNEP, 2015) (available at: https://www.unep.org/resources/report/practical-sourcebook-mercury-waste-storage-and-disposal-2015).
 |
| Potential health and safety risks to workers and nearby communities, and potential pollution of soil and water sources from contaminated sites at the demonstration facilities, resulting from the manufacturing of mercury-added products and the storage of mercury and mercury waste, with the possibility of associated secondary contaminated sites because of run-off, leaching or migration from the primary sites at the production facilities. In addition, potential health and safety risks to workers during the inventory of likely contaminated sites and, if contamination is found, during the cleanup or remediation of those sites. Further, if secondary contaminated sites are detected, potential need to compensate affected property owners, in addition to the cleanup or remediation of those sites | **X** |  | * Site-Specific Occupational Health and Safety Plan (OHSP) for the inventory, and cleanup and/or remediation of contaminated sites.
* As applicable, and consistent with the *Guidance on the Management of Contaminated Sites* (UNEP, 2019) (available at: https://www.mercuryconvention.org/sites/default/files/documents/forms\_and\_guidance\_document/Guidance\_Contaminated\_Sites\_EN.pdf):
	+ Plan for the cleanup of contaminated sites and/or plan for the remediation of contaminated sites .
 |

### 5.1.2 Preparation of Targeted Environmental and Social Plans

The responsibilities for the preparation of each of the targeted environmental and social plans required for the demonstration production facilities as a result of the implementation of the Environmental and Social Screening step, as well as for the preparation of the plan for the Environmentally Sound Management (ESM) of mercury waste at demonstration medical facilities, are as follows:

1. Site-Specific Occupational Health and Safety Plans (OHSPs) (see Annex II for guidelines on the preparation of a OHSP) for:
* Replacement/refurbishment of existing production lines at demonstration manufacturing facilities: Contractor performing the replacement/refurbishment. Each manufacturing facility is responsible for the cost of replacing/refurbishing its production line.
* Management of mercury waste at demonstration manufacturing facilities: Contractor performing the environmentally sound management of mercury waste
* Inventory, and cleanup and/or remediation of contaminated sites at demonstration manufacturing facilities: Contractor performing the inventory, and Contractor performing the cleanup and/or remediation.
1. Site-Specific Plan Spill Prevention and Management Plan (SPMP) for wastes resulting from the replacement/refurbishment of existing production lines at demonstration manufacturing facilities: Risk Management consultant (under component 3)
2. Plan for the environmentally sound management of mercury waste at demonstration manufacturing facilities, according to national laws and regulations, and refer to the *Technical Guidelines on the Environmentally Sound Management of Wastes Consisting of, Containing or Contaminated with Mercury or Mercury Compounds* (UNEP, 2021):[[20]](#footnote-20) Contractor (under Component 2)
3. Plan for the management of interim storage areas at demonstration manufacturing facilities, according to national laws and regulations, and refer to the guidance provided in the *Practical Sourcebook on Mercury Waste Storage and Disposal* (UNEP, 2015):[[21]](#footnote-21) Contractor (under component 3)
4. Plan for the cleanup of contaminated sites and/or plan for the remediation of contaminated sites associated with demonstration manufacturing facilities, according to national laws and regulations, and refer to the *Guidance on the Management of Contaminated Sites* (UNEP, 2019):[[22]](#footnote-22) Contractor (under component 2&3)
5. Plan for the ESM of mercury waste at demonstration medical facilities, according to national laws and regulations, and referring to the guidance provided in the *Guidance on the Cleanup, Temporary or Intermediate Storage, and Transport of Mercury Waste from Healthcare Facilities* (UNDP/GEF, 2010):[[23]](#footnote-23) Person responsible for health and safety issues at each demonstration medical facility. Each medical facility is responsible for the cost of managing its mercury waste.

The Risk monitoring consultant is responsible for the preparation of the Terms of Reference (TOR) for each of the required targeted environmental and social plans in consultation with the institutions in related fields.

The consultations with the national agencies responsible for specific thematic domains (i.e., environment, occupational safety, occupational health, etc.) will ensure that there is consistency in the TORs as far as objectives, scope and content requirements for the plans to be prepared for each facility. All of the above final TORs will be reviewed by the National Technical Advisor, with a final sign off by the Project Manager. All final TORs will be forwarded to UNDP for its No-Objection.

Given that the Project design already includes the conduct of a series of studies, the performance of risk assessments, the development of risk management plans, and the provision of guidance and capacity building in some of the areas covered by the required environmental and social plans (e.g., ESM of mercury waste, interim storage of mercury waste, inventory of contaminated sites, etc.), all of which will be carried out by Consultants hired by the Project, the Risk Monitoring consultant should provide feedback to both the Consultants developing the plans and the Project Consultants, in order to ensure that there is a certain degree of coherence and consistency between the contents of deliverables covering similar topics (e.g., the specific plan for the ESM of mercury waste at each production enterprise and the general guidelines for the preparation of plans for the ESM of mercury waste).

### 5.1.3 Environmental and Social Monitoring

The last step of the ESMF process consists of monitoring of the implementation of the targeted environmental and social plans developed in the previous step. The institutional and regulatory framework for environmental and social management in China have been described in Chapter 3.0, and the monitoring, inspection, supervision and enforcement responsibilities and duties assigned to the public entities involved in the implementation of the Project in that framework.

Reporting on progress and issues in the ESMF implementation will be documented in the project progress reports and project implementation reports (PIRs). The targeted environmental and social plan(s) will specify their own monitoring and evaluation parameters. The Risk monitoring consultant and Project Manager will be responsible for implementation and compiling reports on the ESMF implementation, until the targeted environmental and social plan(s) is in place. Key issues will be presented to the respective Project Board during the PSC meeting, as required.

In order for the PMU to contribute to the oversight of the implementation of required environmental and social plans, it is **recommended** that the terms of reference annex to the contract arranging for the PMU to receive every year copies of their monitoring/inspection/supervision reports of participating demonstration production facilities and demonstration health care facilities located in their respective geographical areas of jurisdiction. Further, it is suggested that the work scheme/plan include the provision of the possibility of PMU staff and/or Consultants participation in joint monitoring/inspection/supervision activities with pertinent provincial and local agencies of demonstration facilities that show a suboptimal record of implementation of required plans, as evidenced by annual monitoring/inspection/supervision reports. This would allow the PMU to lend its technical support in addressing detected implementation deficiencies of plans related to insufficient technical capacity at demonstration facilities.

## 5.2 Grievance Redress Mechanism (GRM)

The Grievance Redress Mechanism (GRM) provides a formal avenue for affected individuals or communities to engage with the Project implementers or sponsors on issues of concern or unaddressed environmental and social impacts. It aims to manage and satisfactorily respond to the complaints of individuals or groups of people regarding the environmental and social performance of the Project.

The GRM defines an organizational structure, and clear and transparent procedures for the handling of complaints and concerns from receipt and registration through assessment, and to final resolution and monitoring.

Grievances and concerns may take the form of specific complaints for damages/injuries, concerns about routine Project activities, or perceived incidents or impacts. The Mechanism ensures that: (i) the basic rights and interests of every person or group affected by poor environmental performance or social management of the Project are protected; and (ii) the concerns of impacted people arising from the poor performance of the Project during the phases of implementation and operation are effectively and timely addressed. Complaints and concerns should be addressed promptly using an understandable and transparent process that is culturally appropriate and readily acceptable to all segments of affected communities, at no cost and without retribution.

Requirements for the GRM are as follows: (i) the grievance redress process must not impose any cost to those raising the complaint; (ii) concerns arising from Project implementation must be adequately addressed in a timely manner; and (iii) participation in the grievance redress process must not preclude the pursuit of legal remedies under the laws of the People’s Republic of China.

The GRM process will be managed by a Grievance Redress Committee (GRC). The suggested composition of the Committee is, at a minimum: (i) a member of the top management of the PMU, such as the Project Manager or the Technical Advisor; (ii) the Risk monitoring consultant, who will be in charge of the operational and administrative aspects of the GRC; (iii) a member of the management of FECO; (iv) a representative from the corresponding provincial or local Ecology and Environment authority where the complaint originates; and (v) a representative from UNDP-China. None of the members of the Committee should have a conflict of interest involving any complaint lodged. The Committee should have female representation.

The GRM comprises the following four stages: i) reception; ii) investigation and inquiry; iii) response; and iv) follow up and close out. Table 5.2 details the stages and corresponding steps and timeframes of the GRM for the Project, as well as the forms to use in the GRM process.

The GRM will produce monthly and quarterly reports on the status of processing of all complaints and concerns received using the format provided in Annex IV.

**Table 5.2**

**GRM Stages, Steps, Timeframes and Forms**

| **Stage** | **Step** | **Description** | **Time Frame** |
| --- | --- | --- | --- |
| Reception | Identification of complaint or concern | Complaint or concern lodged face to face or by phone; letter or email, or recorded during public/community interaction or consultation. Annex IV includes the Grievance Registration Form, which will be used to formally lodge a complaint by the affected party before the Grievance Redress Committee. | 1 Day |
| Investigation and Inquiry | Complaint or concern assessed and logged | Significance assessed and grievance recorded in the Grievance Logbook, whose format is attached in Annex IV.Significance criteria are as follows: * Level 1: one off event.
* Level 2: complaint is widespread or repeated.
* Level 3: any complaint (one off or repeated) that indicates a breach of Chinese law or provision of the ESMF.
 | 4-7 Days |
| Complaint or concern acknowledged | Acknowledgement of complaint or concern through appropriate medium. | 7-14 Days |
| Response | Development of response | * Complaint or concern assigned to appropriate party for resolution.
* Response development with input from Grievance Redress Committee and affected person or group. The Committee may decide to consult the Project Board regarding the response, in particular in complex cases.
 | 5-10Days10-14Days |
| Response signed off | Redress action approved by Grievance Redress Committee. The Grievance Decision Form, attached in Annex IV, will be used to formally record the decision of the Committee. | 4-7 Days |
| Implementation and communication of response | Redress action implemented and update of progress on resolution communicated to complainant. | 10-14Days |
| Follow Up and Close Out | Complaint response | Redress action recorded in Grievance Logbook (see Annex IV). Confirmation with complainant that complaint can be closed or determination of what follow up is necessary. | 4-7 Days |
| Close grievance | Recording of final sign off of grievance.If grievance cannot be closed, return to second step.(Complaint or concern assessed and logged) or refer to recommend third-party arbitration or resort to court of law. | 4-7 Days |

During the implementation of the different activities included in the Stakeholder Engagement Plan designed for the Project (see Chapter 6.0), ample information will be provided to stakeholders about the GRM and how to access it.

Affected stakeholders will also have access to UNDP’s Accountability Mechanism, which consists of: i) a Compliance Review to respond to claims that UNDP is not in compliance with applicable environmental and social policies; and ii) a Stakeholder Response Mechanism (SRM) that ensures individuals, peoples, and communities affected by projects have access to appropriate grievance resolution procedures for hearing and addressing project-related complaints and disputes. Affected stakeholders can ask UNDP’s Social and Environmental Compliance Unit (SECU) to pursue a compliance review examining UNDP’s compliance with UNDP social and environmental commitments, they can attempt to resolve complaints and disputes through the Stakeholder Response Mechanism, or they can ask both for compliance review and for an effort to resolve their concerns. Stakeholders will also be informed about UNDP’s Accountability Mechanism during the implementation of activities related to the Stakeholder Engagement Plan.

## 5.3 Environmental and Social Training Plan

Table 5.3 presents the Training Plan suggested to develop and enhance the environmental and social management capacity of the project stakeholders.

It is recommended that the training sessions be delivered by qualified and experienced sub-contracted Consultants, academic institutions and/or specialized NGOs, with practical experience in the respective topics. Table 5.3 specifies the topics, target audiences, timing and frequency of each training session.

**Table 5.3**

**Suggested Environmental and Social Training Plan**

| **TOPICS** | **TARGET AUDIENCES** | **TIMING** | **NUMBER OF TRAINING SESSIONS**  |
| --- | --- | --- | --- |
| * Development of Terms of Reference (TOR) for environmental and social plans associated with manufacturing of mercury-containing devices and instruments, with special reference to measuring medical devices, and use of mercury-containing thermometers and sphygmomanometers at health care facilities.
* Due diligence review of environmental and social plans.
* Monitoring of implementation of environmental and social plans.
 | * PMU
* Technical staffs of the following provincial and local agencies located in each of the two provinces with demonstration production facilities and each of the two provinces with demonstration health care facilities
* UNDP-China.
 | Year 1 of Project implementation. | One training session to be conducted at a central location (i.e., Beijing, or one of the provinces where demonstration facilities are located). |
| Assessment and management of Environmental, Social, Health and Safety (ESHS) risks and impacts of production of mercury-containing devices and instruments, with special reference to measuring medical devices, and use of mercury-containing thermometers and sphygmomanometers at health care facilities, and management of resulting mercury waste at both types of facilities:* Potential ESHS risks and impacts: occupational health and safety, community health and safety, on-site and off-site contaminated sites, storage and disposal of mercury waste, pollution of soil and water sources, etc.
* Mitigation of ESHS risks and impacts: ESM of mercury waste, cleanup and remediation of contaminated sites, environmental risk assessment, health risk assessment, etc.
 | * Manufactures of mercury-containing devices and instruments, in particular measuring medical devices, located in each of the two provinces with demonstration production facilities.
* Health care facilities located in each of the two provinces with demonstration health care facilities.
 | Year 1 of Project implementation. | One training session to be conducted at a central location (i.e., Beijing, or one of the provinces where demonstration facilities are located). |

**5.4 Illustrative Budget for ESMF Implementation**

Table 5.4 provides an illustrative budget for the management and implementation of the ESMF during the period of execution of the Project.

**Table 5.4**

**Illustrative Budget for ESMF Implementation (USD)\***

|  |  |
| --- | --- |
| **BUDGET ITEM** | **COST FOR DURATION OF PROJECT** |
| **Safeguards Consultants**  |  |
| 1 Risk monitoring consultant (8 weeks) | 15,385 |
| 1 Risk management consultant (46 weeks) | 92,308 |
| **Design and Implementation of Training Plan** |  |
| Development of TORs for targeted environmental and social plans, due diligence review of these plans and monitoring of implementation of these plans | 2,000 |
| Assessment and management of Environmental, Social, Health and Safety (ESHS) risks and impacts of production of mercury-containing devices and instruments, with special reference to measuring medical devices, and use of mercury-containing thermometers and sphygmomanometers at health care facilities, and management of resulting mercury waste at both types of facilities | 3,000 |
| **GRAND TOTAL** | **112,693** |

\*

# 6.0 STAKEHOLDER ENGAGEMENT DURING PROJECT PREPARATION[[24]](#footnote-24)

Due to the COVID-19 pandemic, the stakeholder consultations during the Project preparation phase were mainly done online or by email, via phone call, etc. During Project preparation, the PPG Team undertook the following consultations: (i) several online meetings on identifying key stakeholders, their roles, interests and responsibilities were conducted, led by FECO and UNDP; and (ii) seven mercury-containing thermometer production enterprises and three mercury-containing sphygmomanometer production enterprises were surveyed for two runs, and seventeen medical facilities were surveyed. Table 6.0 summarizes the consultations held and their results.

**Table 6.0**

**Stakeholder Engagement During Project Preparation**

| **MEANS OF ENGAGEMENT** | **OBJECTIVES** | **STAKEHOLDERS ENGAGED** | **TIMING** | **MAJOR RESULTS** |
| --- | --- | --- | --- | --- |
| First run survey of the production enterprises using questionnaire, survey outline, key informant interview. The surveyed enterprises are all private. The enterprises produced over 80% of the total mercury-containing thermometers and about 85% of the mercury-containing sphygmomanometers in China in 2019 | Collect information on production of mercury-containing and mercury-free thermometers and sphygmomanometers in the PRC, management situation of mercury stock, etc.  | * Jiangsu Yuyue Medial Equipment Co. Ltd. (Chenyu Company)
* Dong'a-hua Medical Technology Co., Ltd. (Dong’e Company)
* Anhui Fangda Medical Equipment Co., Ltd (Fangda Company)
* Hongjiang Zhengxing Medical Instrument Factory (Hongjiang Company)
* Wuxi Medical Instrument Factory Co., Ltd (Wuxi Company)
* Shaanxi medical instrument factory (Shaanxi Company)
* Jiangsu Huachen Medical Instrument Co., Ltd (Huachen Company)
* Jiangsu Yuyue Medical Equipment & Supply Co., Ltd. (Yuyue Company)
* Jiangsu Yuanyan Medical Equipment Co., Ltd. (Yuanyan Company)
 | March-June 2020 | Situation of the enterprises: productivity of mercury-containing and mercury-free medical devices, management situation of mercury stock, etc. |
| Meeting of PPG members with UNPD and FECO | * Make familiar with the PIF emphasized gender
* Achieve common and deep understanding of the project, the outcomes, objectives, the institutional arrangement, etc.
* Further identify key stakeholders
 | * UNDP
* FECO
* PPG Lead consultant
* PPG National technical consultant
* PPG Gender and stakeholder specialist
* PPG Mercury Waste Handling and Management Specialist
* PPG Industry Information, Policy and Technology Specialist
* Others
 | April 7, 2020 | * Clear understanding of the project
* identification of the key stakeholders
 |
| Second run of questionnaire survey of the enterprises | Further understand situation of enterprises producing mercury-containing thermometers and mercury-containing sphygmomanometers  | * Chenyu Company
* Dong’e Company
* Fangda Company
* Hongjiang Company
* Wuxi Company
* Shaanxi Company
* Huachen Company
* Yuyue Company
* Yuanyan Company
 | 15 Apr-15 May, 2020 | Situation of the enterprises: updated situation of production of mercury-containing and mercury-free medical devices, willingness to phase out, women and men, Han and ethnic minority workers etc. |
| Meeting of PPG members with the EA | Methods and tools developed for consultation of the key stakeholder | * FECO team
* PPG National technical consultant
* PPG Gender and stakeholder specialist
* PPG Mercury Waste Handling and Management Specialist
* PPG Industry Information, Policy and Technology Specialist
* PPG Medical Information, Policy and Technology Specialist Others
 | May 8 2020 | Finalization of survey questionnaire for surveying relevant medical facilitiesSampling and survey methods agreed |
| Questionnaire survey of medical facilities | Questionnaire and survey outline | * 25 medical facilities in Beijing City, Guangxi Zhuang Autonomous Region, Jiangxi and Jiangsu Province
 | May – July 2020 | Situation of the medical facilities: use of mercury-containing medical devices, willingness to apply mercury-free devices, women and men medical staff, etc. |
| Meeting of exchange experience on promote mercury-free products in medical institutions | Interchange experience on promoting replacement mercury-containing devices in hospital | * FECO
* Experts in medical apparatus and instruments from different hospital that has taken some actions to promote mercury-free products
* PPG project design team
 | Sep 11 2020 | Some lesson learned on promoting replacement mercury-containing devices in hospital which make for project design. |
| Progress meeting of PPG project | * Achieve common and deep understanding of the Project Document (draft), including the outcomes, objectives, the institutional arrangement, etc.
* Understanding the requirement of SESP
* Further thought to promote and popularize mercury-free products through training
 | * UNDP
* FECO
* PPG Lead consultant
* PPG International Training Specialist
* PPG SESP Specialist
* PPG National technical consultant
* PPG Gender and stakeholder specialist
* PPG Mercury Waste Handling and Management Specialist
* PPG Industry Information, Policy and Technology Specialist
* PPG Medical Information, Policy and Technology Specialist
* Others
 | Sep 21 2020 | The initial consensus reached on the Project Document |
| Meeting of technical feasibility on Galinstan-in-glass thermometers | * Further understanding the technical feasibility on exchanging mercury-containing thermometers to Galinstan-in-glass ones
 | * FECO
* CAMDI
* PPG Lead consultant
* PPG Mercury Waste Handling and Management Specialist
* R&D experts on Galinstan-in-glass thermometers
 | Jan 19 2021 | The initial consensus reached on the technical feasibility on exchanging mercury-containing thermometers to Galinstan-in-glass ones |
| Validation Workshop Meeting | * Achieve consensus on the designed activities and risk management of the Project Document by key stakeholders.
 | * UNDP
* FECO
* PPG project design team
* All the potential demonstration enterprises
* Local administration unit with the potential demonstration medical institutions within their administrative scope
* Experts from related medical institutions and scientific research institutes
* Others
 | Feb 25 2021 | The key stakeholders reach a consensus on Project Document. |

Based on the above consultations, and UNDP and GEF policies on stakeholder engagement, the Stakeholder Engagement Plan for the implementation phase of the Project was developed. This Plan is an attachment to the Project Document.

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**LIST OF ANNEXES**

I Guidelines for Preparation of Environmental and Social Audit (ESA)

II Guidelines for Preparation of Site-Specific Occupational Health and Safety Plan (OHSP)

III Guidelines for Preparation of Abbreviated Resettlement Action Plan (ARAP)

IV Grievance Redress Mechanism Forms

**ANNEX I**

**Guidelines for Preparation of Environmental and Social Audit (ESA)**

**Guidelines for Preparation of Environmental and Social Audit (ESA)[[25]](#footnote-25)**

This annex offers broad and flexible guidelines for the preparation of the ESAs required for the manufacturing facilities of mercury-containing thermometers or sphygmomanometers selected as demonstration sites of technologies for producing mercury-free measuring medical devices. The ESAs will specifically focus on environmental, health and safety issues associated with the manufacturing of mercury-containing thermometers or sphygmomanometers.

An ESA is required at each manufacturing facility because the production of mercury-containing thermometers and sphygmomanometers has not been a major concern in China’s implementation of Minamata Convention yet, because of a 5-year exemption, as opposed to other manufacturers of mercury-added products, such as batteries and fluorescent lamps (Lin, Yan et al., 2017, p. 678). Furthermore, an ESA is necessary in view of the likely volumes of mercury waste to be managed and disposed of by these facilities, coupled with the likely obsolesce of existing production equipment at candidate demonstration manufacturing facilities.

In effect, prior to the development of the Project “Demonstration of Phase-Out of Mercury-Containing Medical Thermometers and Sphygmomanometers, and Promoting the Application of Mercury-Free Alternatives in Medical Facilities in China”, compliance issues with the Minamata Convention in the manufacturing facilities of mercury-containing measuring medical devices, in particular thermometers and sphygmomanometers, has not been a major concern in China at the moment as mentioned above, in spite of the fact that this industrial sector is the second largest user of mercury in China,[[26]](#footnote-26) only after the vinyl chloride monomer industry (Ibid). The production enterprises pre-selected to participate in the demonstration of technologies to phase out mercury use in their manufacturing processes represent the main consumers of mercury for this purpose, as well as the main producers of these mercury-containing medical devices in China. In the case of mercury-containing thermometer manufacturers, the consumption of the four pre-selected enterprises all exceeded 30 metric tons in 2019, representing over 60% of sector demand, and their production capacity represents 60% of the sector output. In the case of the mercury-containing sphygmomanometer manufacturers, the two pre-selected producers include the top mercury consumption enterprise and the other a small consuming enterprise, and their combined production exceeded more than 70% of the sector output and 70% of the sector mercury consumption.

Further to the above, an analysis conducted recently by the Jiangsu Provincial Center for Disease Control and Prevention (CDC), and the local Occupational Health Administration in a thermometer manufacturer established in 2008 in Jiangsu Province, one of the areas where some potential demonstration enterprises are located, found that: “Small droplets of mercury contamination were obviously visible on the grounds and machines” (Xu, Yanqiong et al., 2020, p. 830). The study further found: “… heavily elevated airborne and urinary mercury levels among a massive number of workers exposed to mercury. Traditional and obsolete technology as well as inadequate protection measures for occupational hazards caused this high level of exposure. […] During production, inhalation of mercury vapor and direct contact of mercury via skin were likely the main routes of exposure” (Ibid, p. 827). Given that the six facilities pre-selected for the replacement or refurbishment of old production lines have been in operation for a very long time, mostly since the 1960s and the 1970s, it is reasonable to assume that the equipment in place will exhibit a certain level of obsolescence.

Following is the suggested content of an ESA:

1. *Executive Summary*: A concise discussion of all environmental, and occupational and community health and safety areas of concern. Possible additional summary information may include recommended mitigation measures and their priority, the cost of mitigation, and a schedule for compliance. These are sometimes made by auditors but are also sometimes left to the organization that “owns” the issues as it may be better placed to provide more accurate data. The inclusion of such information depends on the terms of reference that guide the conduct of the audit and must be agreed upon prior to conducting the audit.
2. *Scope of the Audit:* A description of what the audit focused upon (where the audit was conducted), what was audited (processes, organization, operations, etc.), when the period of performance began and ended (did the audit cover a month, a year, or all operations since inception?).
3. *Regulatory Setting:* Tabular summary of host country, local and any other applicable environmental and occupational health and safety laws, regulations, guidelines, and policies as they may directly pertain to the scope of the audit.
4. *Audit and Site Investigation Procedure:* Brief overview of the approach used to conduct the audit. A discussion of the records review, site reconnaissance, and interview activities; a description of the site sampling plan and chemical testing plan, field investigations, environmental sampling and chemical analyses and methods, if applicable.
5. *Findings and Areas of Concern:* Detailed discussion of all environmental and occupational health and safety areas of concern. The areas of concern should be discussed in terms of both existing facilities and operations and contamination or damages due to past activities, including the affected media and its quality and recommendations for further investigation and remediation, if applicable. The report may wish to consider prioritizing findings into categories: immediate action; mid-term action; and long-term action.
6. *Corrective Action Plan, Costs and Schedule*: For each area of concern, the audit report may include specifics on the appropriate corrective actions to mitigate them and why they are necessary. If so, the report should indicate priorities for action, provide estimates of the cost of implementing the corrective actions and a schedule for their implementation if this has been agreed to between the auditor and auditee. Schedules should be recommended within the context of any planned capital expenditure for the facility.
7. *Annexes:* These should include references, copies of interview forms, any details regarding the audit protocol not already included, and data obtained during the audit but not included directly above.

**ANNEX II**

**Guidelines for Preparation of Site-Specific Occupational Health and Safety Plan (OHSP)**

**Guidelines for Preparation of Site-Specific Health and**

**Safety Management Plan (OHSP)[[27]](#footnote-27)**

Following is the suggested content of a OHSP:

1. Introduction (including objectives of the OHSP).
2. Hazard Prevention and Control
3. Risk assessment (including description of risk assessment method used).
4. Prevention, protection and control measures (based on risk assessment performed):
	* 1. Personal protective equipment and clothing: safety goggles, ear plugs, work boots, dusk masks, protective clothing etc.
		2. Health and safety, and sanitary facilities, equipment, materials and personnel: first-aid kits and stations, health personnel, safe drinking water, sanitary facilities, accommodation, washing facilities, domestic waste disposal, etc.
		3. On-site safety measures and procedures to protect workers against accidents and health risks in the performance of work activities:
			+ Site security: access, safety of visitors, separation of work and rest areas, signage, etc.
			+ Over-exertion, and ergonomic injuries and illnesses (repetitive motion, manual handling, etc.).
			+ Slips and falls (due to poor housekeeping, such as excessive waste debris, loose construction materials, liquid spills, and uncontrolled use of electrical cords and ropes on the ground).
			+ Work in heights (risk of falls from elevation associated with working with ladders, etc.).
			+ Struck by objects.
			+ Confined spaces, excavations and trenches.
			+ Electric shock and arc flash/arc blast.
			+ Hazardous materials management.
			+ Handling of inflammable materials.
			+ Medical surveillance/worker health monitoring for employees that are potentially exposed to mercury.
			+ Emergency prevention, preparedness and response.
5. Health and Safety Training Program
	* 1. Provide specifics of training and instruction: topics, frequency, modalities, target audiences, instructors, training materials, etc.
		2. Potential topics:
	1. Occupational safety risks and prevention.
	2. Health risks and prevention.
	3. Use of personal protective equipment.
	4. Safe work procedures: general and specific.
6. Organization and Management
7. Organizational structure, personnel, equipment, communication and reporting requirements, accident and incident reports, and procedures and tools to verify and ensure compliance with occupational health and safety requirements.
8. Annexes
9. Annexes should be used, if necessary, to include detailed information on the specific topics of the OHSP, such as (illustrative list):
10. Accident Report forms.
11. Dangerous Occurrence forms (near misses).
12. Safety Audit Forms.
13. Safety Check List.
14. Safety Rules.
15. List of hospitals, emergency evacuation strategy and other arrangements to treat seriously injured staff.
16. List of personnel trained in first aid and their places of deployment.
17. List of first aid kits and locations where these will be held.

**ANNEX IV**

**Grievance Redress Mechanism Forms**

**Project “Demonstration of Phase-Out of Mercury-Containing Medical Thermometers and Sphygmomanometers, and Promoting the Application of Mercury-Free Alternatives in Medical Facilities in China”**

**GRIEVANCE REGISTRATION FORM**

Grievance Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Intervention Name/Code: \_\_\_\_\_\_\_\_\_\_\_ Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **General Information**Name of Grievant……………………………………….……………….….………………Email …………………………………………. Cell phone …………………....………….Address……………………………………………...……………………….……..……… |
| **Type of Grievance**Please describe the type of grievance and the problem briefly (include specific details) |
| Who or what is the source of the grievance? |
| Have you lodged the grievance previously on the same subject? |
| What do you think should be done to resolve the complaint or grievance? |
| Signature of: Grievant…………………………………….……Date………………………………………. |
| Receiver:Name………………………………………... Position……………………………………….Signature…………………………………………Date…………...………………………….. |

**Project “Demonstration of Phase-Out of Mercury-Containing Medical Thermometers and Sphygmomanometers, and Promoting the Application of Mercury-Free Alternatives in Medical Facilities in China”**

**GRIEVANCE LOGBOOK**

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| **S. No** | **Complainant’s Name, Address, Phone and E-Mail** | **Date** | **Complaints** | **Decision taken by Committee** |
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**Project “Demonstration of Phase-Out of Mercury-Containing Medical Thermometers and Sphygmomanometers, and Promoting the Application of Mercury-Free Alternatives in Medical Facilities in China”**

**GRIEVANCE DECISION FORM**

Grievance Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Intervention Name/Code: \_\_\_\_\_\_\_\_\_\_\_ Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **General Information**Name of Grievant...............................................Type of Grievance...............................................Date Grievance Lodged............................... Date Grievance Decided...................................... |
| **Committee Decision and Justification**Please describe the type of grievance, what the committee decided and how (include specific details)Discussion: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Final Decision: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| Committee Members1: Name.....................................Position................................Signature...................Date..........2: Name.....................................Position................................Signature...................Date..........3: Name.....................................Position................................Signature...................Date..........4: Name.....................................Position................................Signature...................Date..........5: Name.....................................Position................................Signature...................Date..........6: Name.....................................Position................................Signature...................Date.......... |
| Agreement of the Grievant to the above DecisionI, ……………………………………………. agree/disagree with the decision taken (please circle response).Name …………………..……………. Signature ………………..………………… Date ……………..… |

**Project “Demonstration of Phase-Out of Mercury-Containing Medical Thermometers and Sphygmomanometers, and Promoting the Application of Mercury-Free Alternatives in Medical Facilities in China”**

**GRIEVANCE REPORT FOR MONTH/QUARTER (PLEASE SPECIFY**

**MONTH/QUARTER AND YEAR)**

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| **Complaints Received (No.)** | **Complaints Discussed** | **Complaints Resolved** | **Complaints Not Resolved/Rejected** | **Complaints Pending** | **Solution Accepted by Complainants** | **Complaints Referred to Court** | **Remarks** |
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1. The other interventions listed in Section 5.1, the management of mercury waste at demonstration health care facilities, does not need screening. The measure to prevent and mitigate the risks posed by this intervention, a plan for the environmentally sound management of mercury waste, will be developed as part of the second step of the ESMF process and will be required for the six demonstration medical facilities finally selected. [↑](#footnote-ref-1)
2. Referenced by: <https://www.mercuryconvention.org/en/documents/basel-convention-technical-guidelines-environmentally-sound-management-wastes-0>. [↑](#footnote-ref-2)
3. Referenced by: <https://www.unep.org/resources/report/practical-sourcebook-mercury-waste-storage-and-disposal-2015>. [↑](#footnote-ref-3)
4. Referenced by: <https://www.undp.org/publications/cleanup-storage-and-transport-mercury-waste-healthcare-facilities> . [↑](#footnote-ref-4)
5. The sources for this chapter are the following, with some of their contents reproduced partially: (i) Cabral, J.M., 2021, pp. 39-44; (ii) China National Investment and Guaranty Corporation, 2020, pp. 6-11; (iii) Chongqing Project Management Office, January 2021, p. 35, and pp. 46-55; (iv) EnviX, Ltd., 2022; (v) GEF, 2019a; (vi) Ibid, 2019b; (vii) Qing, Wu et al., 2022, pp. 1-7, pp. 16-22, pp. 26-30 and pp. 34-35; (viii) UNDP, 2019a; (ix) Ibid, 2019b; (x) UNDP/GEF, 2021a; (xi) Ibid, 2021b; (xii) Wu, f. and Y. Chi, 2015, pp. 300-306; (xiii) Yang, Y., 2020, p. 890-895; (xiv) Yost, Nicholas C. and Zhang Xiaoke, 2017, pp. 1-4; (xv) Zhang, D. and S. Silverman, 2018; (xvi) Zhengzhou International Hub Development and Construction Co., Ltd, 2021, pp. 6-11, pp. 9-10; and (xvii) Zhou, Z, 2018, pp. 126-131. [↑](#footnote-ref-5)
6. These agencies have the technical expertise and equipment to carry out analyses of health impacts and site contamination by hazardous chemicals such as mercury. [↑](#footnote-ref-6)
7. The administration and implementa­tion of resettlement and compensation processes in China follow an essentially decentralized model, according to which provinces issue and implement their own administrative standards within the guidelines of national regulations. [↑](#footnote-ref-7)
8. The Regulations spelled out details on the EIA process, including screening and categorization, preparation and review procedures, approval authority and responsible parties, contents of an EIA Report and an EIA Form, and EIA practitioners’ qualification and certification system. [↑](#footnote-ref-8)
9. The Catalogue introduced and implemented the three forms of an EIA, namely the Environment Impact Report (EIR), the Environment Impact Form (EIF) and the Environmental Impact Registration Form (EIRF). [↑](#footnote-ref-9)
10. In a previous review, the GEF also determined that UNDP complied with the then applicable GEF safeguards policies (i.e., Policy on Agency Minimum Standards on Environmental and Social Safeguards, and Policy on Gender Mainstreaming) (GEF, 2014, pp. 4-5). [↑](#footnote-ref-10)
11. For instance: i) Component 2 includes the implementation of relevant research/investigation to technically support the introduction and adoption of mercury-free alternatives in medical facilities; and (ii) Component 3 includes the development of a guiding methodology and conduct of a model investigation on how to identify and collect data to establish an inventory of mercury-contaminated sites, including conducting a risk assessment. [↑](#footnote-ref-11)
12. Illustrative of this are the following: (i) Component 1 includes the proposal of policy and regulatory frameworks on chemical management, supervision and law enforcement, as well as green procurement standards and action plans; (ii) Component 2 includes the development of a plan for the environmentally sound management of mercury waste and guidance actions (risk assessment) for contaminated areas; and (iii) Component 3 includes the development of technical guidance and training materials to facilitate implementation and future replication and scale up of the sound management of mercury waste and the identification of contaminated sites at the national level. [↑](#footnote-ref-12)
13. An example of this is Component 2, which includes the delivery of training on alternative technologies to manufacture mercury-free thermometers and sphygmomanometers. [↑](#footnote-ref-13)
14. For instance: (i) Component 1 includes the establishment of an Inter-Ministerial Committee (e.g., Environment, Health, Industry, etc.) to support the execution of China’s National Plan for the Implementation of the Minamata Convention, among other duties, which has to hold periodic meetings. It also contemplates the implementation of consultations with relevant stakeholders to develop proposals on policy and regulatory frameworks, among other issues; and (ii) Component 2 includes consultations with the World Health Organization, and international and domestic experts to facilitate knowledge in support of experience exchanges and domestic training activities on the phase out of mercury-containing medical measuring devices. [↑](#footnote-ref-14)
15. An example of this is Component 4, which includes the development of tools for sharing knowledge, activities and experiences about policy, technical issues and lessons learned in the implementation of the Project. [↑](#footnote-ref-15)
16. “**During project implementation**, certain circumstances require the revision of the completed design-stage screening. These include, but are not limited to: (a) where new information becomes available such as through a social and environmental assessment, (b) where there are substantive changes to the project (e.g. changes in design, additional components), or (c) where changes in the project context might alter the project’s risk profile. If the revised screening results in a higher risk category then the revised SESP needs to be reviewed by the Project Board or a subsequent PAC process (and where relevant by the GEF or GCF). The project Risk Register should be updated accordingly” (UNDP, 2019b, p. 11). [↑](#footnote-ref-16)
17. The other intervention listed in Section 5.1, the management of mercury waste at demonstration health care facilities, does not need screening. The measure to prevent and mitigate the risks posed by this intervention, a plan for the environmentally sound management of mercury waste, will be developed as part of the second step of the ESMF process and will be required for the six demonstration medical facilities finally selected. [↑](#footnote-ref-17)
18. As noted in Chapter 4.0, most mitigation measures for anticipated risks and impacts are included in the Project design in the form of: (i) establishment of an Inter-Ministerial Committee with participation of pertinent institutions to coordinate collaborative efforts within the public sector and with the private sector in the development and implementation of cohesive and updated policies, regulations, tools, action plans and guidelines to phase out the production and consumption of mercury-containing medical devices, manage mercury waste and promote the uptake of mercury-free medical devices; (ii) adoption of best international practices in the monitoring, supervision, regulation and enforcement of the phase-out of mercury in the production and use of medical thermometers and sphygmomanometers by collaborating with the World Health Organization, and provision of extensive training to pertinent public officials in the execution of their responsibilities in these areas; (iii) development of a green finance framework and a mercury-free device procurement subsidization scheme, in order to promote the application of and grow the market for mercury-free medical thermometers and sphygmomanometers in medical facilities; (iv) mainstreaming gender in all Project components by implementing the Gender Action Plan already prepared; (v) implementation of robust consultation and participation in decision making related to Project activities of all stakeholders during Project formulation, implementation and monitoring, including women, in accordance with the Stakeholder Engagement Plan; (vi) piloting productive technology alternatives in the manufacturing of mercury-free measuring medical devices in six production enterprises in operation and piloting the use of these devices in six existing medical establishments, so as to replicate and scale up successful experiences and lessons learned; (vii) formulation of a Restructuring Plan to reduce and mitigate the potential adverse impacts of retrenchment on workers due to the adoption of new production technologies in manufacturing facilities; (viii) preparation of a risk management strategy, technical guidance and training materials for the environmentally sound management of mercury waste and the conduct of inventories of mercury-contaminated sites at demonstration production enterprises, and the environmentally sound management of mercury waste at demonstration medical facilities, and delivery of training in these areas; (ix) promotion of investigations to technically support the introduction and adoption of mercury-free alternatives in medical facilities, and new technological processes in the production of mercury-free medical devices in manufacturing enterprises, as well as provision of training and promotion of knowledge sharing in these areas. [↑](#footnote-ref-18)
19. The Risk morning consultant is an independent consultant under Component 2. [↑](#footnote-ref-19)
20. Available at: https://www.mercuryconvention.org/en/documents/basel-convention-technical-guidelines-environmentally-sound-management-wastes-0. [↑](#footnote-ref-20)
21. Available at: https://www.unep.org/resources/report/practical-sourcebook-mercury-waste-storage-and-disposal-2015. [↑](#footnote-ref-21)
22. [↑](#footnote-ref-22)
23. Available at: https://www.undp.org/publications/cleanup-storage-and-transport-mercury-waste-healthcare-facilities. [↑](#footnote-ref-23)
24. This chapter is based on the Project Document (UNDP/GEF, 2021a, pp. 11-116). [↑](#footnote-ref-24)
25. The main source for this annex is IFC, 2021, pp. 38-39. [↑](#footnote-ref-25)
26. In 2019, about 200 metric tons of mercury was consumed by 18 thermometer producers and 35 metric tons by 5 sphygmomanometer producers in China. Due to the Covid-19 pandemic, the demand in 2020 for medical devices including mercury-containing medical devices saw a significant increase (UNDP/GEF, 2021a, p. 41). [↑](#footnote-ref-26)
27. The source for this annex is Cabral, J.M., 2020 (modified). [↑](#footnote-ref-27)