



Term of Reference (TOR)

Environmental and Social Safeguard Consultant

The WWF Indonesia Plastic Smart Cities Project seeks a consultant to develop an **Environmental and Social Mitigation Framework (ESMF) for WWF Indonesia' Ciliwung Landscape – focus on Microplastic and Pollution Mapping**.

Location: WWF Indonesia' Ciliwung Landscape is the following:

- (1) Kabupaten Bogor, Provinsi Jawa Barat
- (2) Kota Bogor, Provinsi Jawa Barat
- (3) Kota Depok, Provinsi Jawa Barat
- (4) Daerah Khusus Jakarta

Name: Environmental and Social Mitigation Framework (ESMF) for WWF Indonesia' Ciliwung Landscape – focus on Microplastic and Pollution Mapping
Title: Environmental and Social Safeguard Consultant
Start date: 20 July , 2025
Duration: 60 days
Deliverables: See Table Beilow

Project Background

The recognition and respect for human rights are integral to conservation efforts, biodiversity resource protection, and sustainable development. Statement of principles and organization values related with human rights have been formally adopted by the organization and are being implemented, including through the development of this Ciliwung landscape-based protection program.

A safeguard screening identified key risks that require careful management. Chief among these is plastic pollution, stemming from mismanaged waste and leakage, which contributes to river water contamination and microplastic presence. Communities, particularly those residing along the Ciliwung River, must be aware of these issues and actively engaged in risk mitigation. This Environmental and Social Management Framework (ESMF) was developed in response to safeguard screening recommendations and provides targeted, measurable actions to address the identified risks.

The Ciliwung landscape in Indonesia, covering 36,118 hectares across parts of the Ciliwung watershed within the administrative areas of Jakarta, Depok, and Bogor cities, presents a complex and dynamic environment shaped by a confluence of environmental, socio-cultural, socio-economic, and politico-legal factors. WWF's engagement in this landscape dates back to 2009, evolving to address key conservation and development challenges.

The Ciliwung landscape faces significant environmental challenges driven by human activities. Main threats include conversion and degradation of land and key ecosystems through illegal and inappropriate land use change, including encroachment and infrastructure development. Manufacturers near the river also discharge industrial waste, rendering the water unsuitable for drinking water processing. Key environmental issues directly affecting local livelihoods and wellbeing include continued land use change, water pollution leading to health crises and economic losses during floods, the escalating impacts of climate change resulting in increased rainfall intensity or a decrease in rainfall intensity and frequent, devastating floods, drought and the presence of invasive species threatening native biodiversity.

The uncontrolled growth artificial land use including settlements, industrial areas, and others infrastructures along the watershed, malfunction of canals, population growth, lack of solid waste management system in the area, and community behaviour led the a lot of plastics waste leak into the water bodies. Pollution from solid and liquid waste, originating from both domestic and industrial sources, severely impacts the river. An estimated 7,000 tons of waste are littered into the Ciliwung River daily, with only about 25% removed, significantly contributing to plastic waste in the ocean. Manufacturers near the river also discharge industrial waste, rendering the water unsuitable for drinking water processing.

Cordova, et al., (2024) reported the mean of debris found was 32.79 ± 15.38 items/m² with a weight of 106.00 ± 50.23 g/m². Plastic debris accounted for over 50 % of all litter items identified and represents 55 % by weight, signifying a significantly high prevalence compared to global studies examining litter along riverbanks. Most of the plastics found originated from Single-use applications and were predominantly made from Styrofoam.

Ciliwung watershed spans two provinces and ten regencies/cities, home to a diverse population totaling approximately 24,968,232 people as of 2020. The socioeconomic condition is diverse from the upstream to the downstream. WWF Indonesia through Plastic Smart Cities program has been working to tackling plastic pollution in the three cities including Jakarta, Depok, and Bogor since 2020 until now with the main activities including policy advocacy, education to reduce the plastic production, improving plastic waste collection, and supporting recycling activities in collaboration with various local partners and the local government.

In order to identify the microplastic pollution, PSC WWF ID is conducting then and assessment and mapping in Ciliwung landscape and the area of subgrantee who operate shredding and melting machines. The aim of the study is to identify the impact and potential risk of the PSC project activities in the landscape. The study will be focused on the microplastic pollution, and the potential polluters located within the landscape.

Objectives:

Under the Plastic Smart Cities Project, WWF Indonesia seeks an Environmental and Social Safeguards Consultant to **develop Environmental and Social Mitigation Framework for the Ciliwung Landscape.**

The objective of this assignment to support Plastic Smart Cities Project – WWF Indonesia teams in the preparation and the formulation of the ESMF for Ciliwung Landscape. Under this assignment, mitigation measures will be identified and developed based on the results of the existing social and environmental screening for Ciliwung Landscape where the potential negative environmental and social risks related to both current and future activities within the landscape have been identified. The consultant will lead the research, consultation, etc and be responsible for the identification of suitable mitigation measures and the ESMF plans for the Ciliwung Landscape.

Scope of Works

This of ToR outlines the indicative scope and tasks which may be extended or reduced as necessary. The anticipated tasks include, but are not limited to the following:

1. Stakeholder Analysis and Engagement Plan
 - Conduct a comprehensive stakeholder analysis focused on selected locations along the Ciliwung River, especially in areas where plastic waste leakage into the water body is evident (notably in Kota Bogor, Kota Depok, and Jakarta).
 - Facilitate targeted focus group discussions and key informant interviews with informal waste workers (e.g., waste pickers) to understand their working conditions, roles in waste management, and potential impacts of project activities.
 - Develop a Stakeholder Engagement Plan (SEP) that identifies key groups, including marginalized communities and informal workers (e.g., waste pickers), and outlines strategies for meaningful participation.
2. Mapping of Microplastic Distribution and Water Quality Parameters
 - Conduct mapping of distribution and concentration of microplastics across Ciliwung(?)
 - Assess water quality parameters in accordance with *Peraturan Pemerintah Nomor 22 Tahun 2021*, with a focus on DO, COD, BOD, TDS, TSS, and pH levels
3. Identification of Microplastic Pollution Sources and Pathways
 - Identify key sources of microplastic pollution and map out their pathways across upstream, middle stream, and downstream zones of the watershed.
 - Investigate links between land use practices and the transport and accumulation of microplastic
4. Polluter Analysis
 - Analyze contributions from different polluter types, including industrial, domestic, and commercial actors.
 - Examine the operations of Plastic Smart Cities (PSC) grantees using shredding and melting machines, assessing their role in microplastic generation
5. Recommendations for Mitigation and Policy
 - Provide evidence-based recommendations for mitigating microplastic pollution.
 - Suggest actionable measures for policy development and formulate public awareness campaign strategies to address identified pollution sources.
6. Development of Environmental and Social Mitigation Framework (ESMF)
 - Collaboratively develop an ESMF with WWF Indonesia teams.



- The ESMF should include mitigation measures, monitoring mechanisms, and clear indicators for effectiveness.
- Ensure that the framework integrates stakeholder inputs and reflects WWF's safeguard standards, including grievance redress mechanisms and due diligence measures related to human rights, labor, and child safeguarding.

All tasks must align with WWF's Risk Assessment methodology, the recommendations of the Categorization Memo, and feedback from the Safeguard Task Force.

The consultant/team will be responsible for:

Methodology Design:

1. Develop sampling strategy for macro and microplastic data across selected upstream, midstream, and downstream points
2. Define protocols for sediment, water, and waste sampling (aligned with global and national standards)
3. Design a baseline study to understand socio-economic conditions of informal workers (e.g., waste pickers), including their roles, risks, and relationship to project interventions.

Field Survey and Data Collection:

1. Stakeholder analysis by conducting FGD and in-depth interview to identify relevant stakeholders in the microplastic plastic pollution of the watershed
2. In-situ sampling of sediment, surface water and groundwater at the key locations (the location for groundwater sampling will be discussed)
3. Laboratory analysis:
 - laboratory analysis for microplastic content including quantitative parameter, physical parameter, and chemical parameter
 - Water quality analysis including DO, COD, BOD, TDS, TSS, pH (refer to Peraturan Pemerintah Nomor 22 Tahun 2021 appendix 6)
4. Environmental and spatial analysis
5. Conduct participatory observations during field visits to document informal waste worker activities and contextual social risks.

Mapping and Spatial analysis

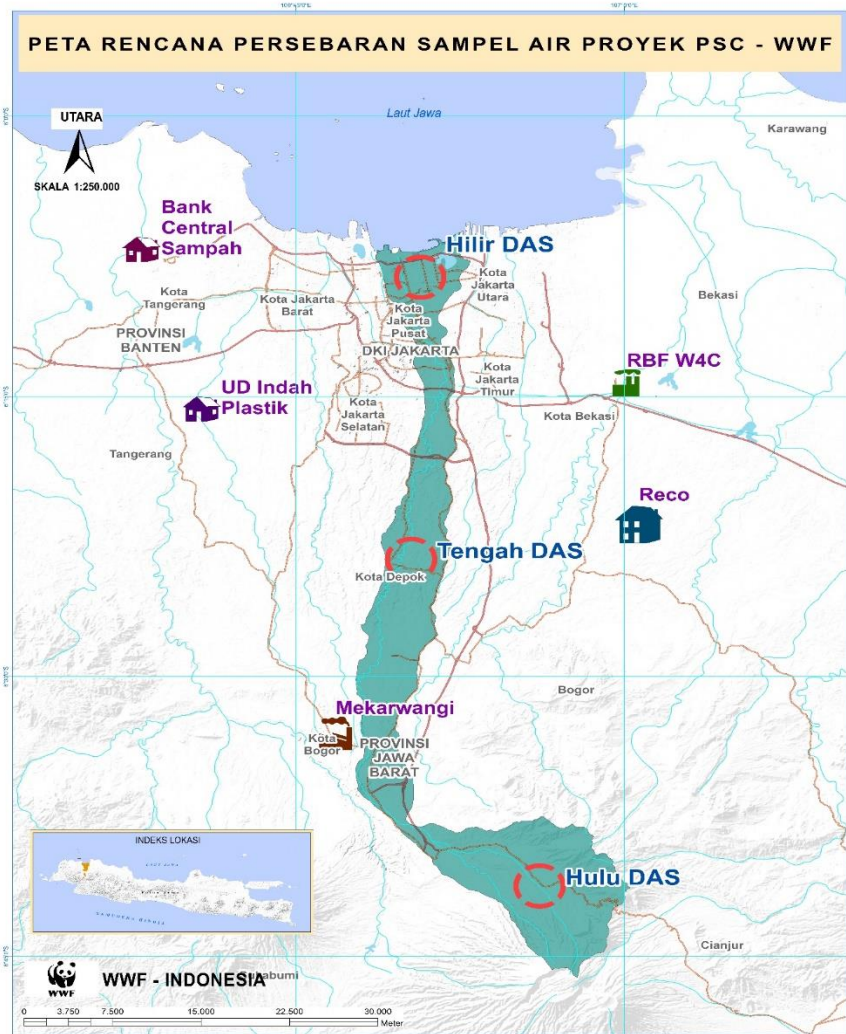
1. Develop GIS-based maps showing plastic and microplastic concentrations along the Ciliwung River.
2. Overlay pollution data with land use, population density, and known waste sources.

Expected Output

1. Environmental and Social Mitigation Framework (ESMF) Document



- A comprehensive and inclusive ESMF document that outlines mitigation measures, monitoring mechanisms, and indicators for assessing safeguard effectiveness.
 - The framework must reflect the WWF Risk Assessment methodology, incorporate findings from the Stakeholder Engagement Plan (SEP), and respond directly to the recommendations of the Ciliwung Cat Memo and the Safeguard Task Force.
2. Grievance Redress Mechanism (GRM) Framework
- A detailed and context-specific framework for the Grievance Redress Mechanism that includes procedures, institutional responsibilities, communication channels, and timelines for complaint resolution.
 - The GRM must be accessible to affected communities, particularly vulnerable and informal groups, and integrated within the broader ESMF.
3. ESMF Integration Workshop Report
- A documented report of a capacity-building and validation workshop held with WWF Indonesia staff and relevant stakeholders.
 - The workshop must include review and validation of ESMF components, alignment of safeguard expectations, and action planning for rollout



Reporting:

1. Prepare a comprehensive report with findings, data visualizations, maps, and key recommendations.
2. Providing plastics and microplastic pollution mitigation including financial analysis in each intervention
3. Present results to WWF (based on ESMF integration workshop)

Duration

Estimated implementation period: 3 months from 15 July to October 2025



Team Requirements

Firm consultant with 5 years experiences in water pollution project

Environmental scientist or hydrologist with expertise in river ecosystems

Plastic pollution and microplastic expert

Laboratory technicians experienced in polymer and particle analysis

GIS/remote sensing specialist

Community engagement and policy expert

Key Partners and Stakeholders

Ministry of Environment and Forestry (KLHK)

Local governments (Bogor, Depok, Jakarta)

Research institutions and universities

Local CSOs and watershed community groups

Private sector stakeholders (e.g., industries near the river)

Budget

IDOPA033 – 501-PSC ; MAC : 2.3C.00.1.1.4.TPLST

Submission of interest

The interested candidates are requested to submit a proposal, which must include:

- a. Covering letter
- b. Company description
- c. Relevant project references (with copies or online links, to at least two relevant projects)
- d. Proposed methodology, workplan and milestone
- e. Project team
- f. Proposed budget and timeline per activities

Along with the proposal, please also submit the documents below:

- a. CVs of key experts
- b. Legality documents (akta pendirian, akta perubahan, SK Kemenkumham terkait Akta, NPWP, SKT, SPPKP, company's bank account number)

Please send the application as an e-mail, with attachments, to procurement@wwf.id, cc: smulatsih@wwf.id. Applications will be accepted until 3th July 2025 and will be reviewed on a rolling basis. WWF reserves the right not to accept any tenders submitted.