Performance Verification Guideline

Project on Partnership for Tackling Riverine Plastic Waste Pollution

1. Background

Plastic pollution jeopardizes Indonesia's biodiversity by physically invading the habitat of species and microplastics are contaminating water, soil and air. The vital role of biodiversity in the country has been degraded by pollution, including mismanaged plastics which also cause the fatalities among animals through ingestion or entanglement and threatening endangered species. Research by Jambeck in 2015 found the contribution of Indonesia' marine plastic waste with output ranging from 0.48 to 1.29 million tons, placed Indonesia as world's second-largest contributor to marine plastic waste after China. Among the key sources of marine plastic debris in Indonesia include inadequate waste management infrastructure, improper disposal practices, littering, lack of public awareness, and the mismanage plastic waste that leakages to ocean through rivers. Furthermore, coastal tourism, aquaculture, and fishing activities also have their contribution to plastic pollution (Cordova and Nurhati, 2019). A study by Lourens J.J. Meijer (2021) shows that the highest contributors to plastic pollution are not the countries producing or consuming the most. The highest polluters are countries that, due to their conformation, coastline, rainfall and inadequate waste management systems, are carrying more plastic to the sea through their polluted rivers.

In response to these environmental challenges, the Indonesian government has taken proactive measures, implementing a national action plan to address marine debris. This plan encompasses crucial actions such as enhancing waste disposal infrastructure, promoting recycling, raising public awareness, and stakeholder engagement. Indonesia's commitment to tackling environmental issues is further exemplified by Presidential Regulation Number 83 of 2018, which supports the implementation of "*Action Plan on Marine Plastic Debris 2017-2025*". This regulation sets an ambitious target of reducing marine plastic debris by 70% before 2025. As of 2023, Indonesia has achieved a 41.68% of marine plastic reduction from 615,674.63 tons in 2018 to 359,061.02 tons. There are various on-the-ground actions undertaken by the Indonesian government to reduce marine plastic waste; and additionally, the potential circularity of green economy in Indonesia also supports to gear up the economic activities at micro, small and medium level through the plastic waste management (processing and recycling).

Recognizing the gravity of the global issue of marine debris and its detrimental effects on rivers and oceans, the Governments of UAE and Indonesia have partnered to reduce plastic waste leakage into the ocean. The Project on Partnership for Tackling Riverine Plastic Waste Pollution is funded by Clean Rivers (*the Donor*), in partnership with UNDP Indonesia, under the umbrella of Erth Zayed Philanthropies', advancing the UAE's commitment to environmental stewardship and community empowerment. The initiative's primary focus is on preventing waste leakages in rivers and marine waste collection, preventing it from reaching the oceans.

This Performance Grant implementation is part of the project implementation. Anchored in UNDP performance-based grant model introduced in January 2018, implementation of Performance Grant activity is expected to mobilize the collaboration among stakeholders and community groups to advance the integrated riverine plastic waste management within selected locations. Through this framework approach, the project strengthens multi-stakeholder engagement and empowers local actors to co-create more effective and sustainable waste management systems.

The performance-based grant defines the detailed performance indicator as the payment is contingent solely made upon the achievement of the specific and pre-agreed results. By linking to measurable key performance indicators, the performance grant ensures that Implementing Partners (IPs) are held accountable for delivering tangible results.

2. Introduction to Guideline

This Performance Verification Guideline describes the key elements and procedural steps for verifying the achievement of agreed performance level in riverine plastic waste management projects. This guideline is part of the Performance Grant Agreement between the participating Implementing Partner (IP) and the United Nations Development Programme (UNDP). UNDP and IP recognize only the elements defined and described within this guideline document as the basis for performance verification.

The performance grant is expected to deliver the target that has been earmarked previously by its milestone, based on project design and allocation that accepted to implement the riverine plastic reduction activities within the location. The guideline establishes five key performance indicators (KPIs) as the measurable framework for assessing outcomes in riverine plastic waste interventions:
1. effective mobilization and setup of riverine plastic waste interception mechanisms;
2. systematic river debris clean-up and removal from river channels;
3. efficient processing and recycling of plastic waste;
4. community engagement to prevent the waste from entering river system; and
5. inclusive participation of gender groups and informal waste pickers.

These KPIs represent the core operational focus of the PBP during the first implementation cycle, with the potential for review and refinement in subsequent cycles should further indicators be deemed necessary by the UNDP and IP.

Each KPI is accompanied by performances' Qualitative Indicators and the corresponding Social and Environmental aspect:

- **Qualitative indicators** are the overall indicators to assess the overall implementation quality by the Implementing Partner to address the agreed KPI results. Observation on the quality of performance also applies the measure on technical performance such as the volume of waste intercepted, tonnage of plastic processed, frequency of community engagement activities, and evidence of recycling outcomes.

- **Social and environmental aspect** sets the conditions to ensure that implementation activities attend the aspect on social inclusion and environmental safeguard (e.g., waste spill prevention, community consultation, safe recycling steps, worker protection, community group involvement and zero-tolerance on child labour).

- **Milestone for result** refers to the predefined implementation period within the **milestone of every 3 or 6 months** to deliver the specific project activities that linked to KPIs. The milestone is structured in Annex B Result Framework of the agreement upon accepted proposal that being attached as Annex A Project Document.

This document includes: a summary of the performance verification methodology; detailed descriptions of the five KPIs; the method, including results verification procedures and a risk-based sampling approach; the calculation of performance-based payment entitlements; the approach for presenting findings and reporting; and the annexes relevant for implementation and monitoring.

Benchmarks

The growing demand for credible, performance-based environmental financing requires a verification framework that can ensure transparency and clear attribution of achieved results from project

activities. In this project context, the project design encompasses community engagement, waste recycling, and structured intervention aimed at catalyzing the behavior change to prevent the mismanage plastic waste from entering the river stream. To address the modality, benchmarking is essential to guide the technical dimension of this guideline[1].

The structure emerges with emphasis on pre-defined baselines, measurable indicators, verification steps, and stakeholder inclusion. Whether the focus is on plastic diversion, behavioural change, or ecosystem protection, the principle in this guideline is converged for verifiable, scalable and sustainable project approaches. This structure enables the performance indicators to adapt to diverse local contexts while maintaining alignment with the referenced parameters. This will also enable the interoperability across implementers and key-stakeholder across the country in the future.

The integration of internationally recognized benchmarks such as the OECD-DAC evaluation criteria, UNEP's plastic waste management guidelines, and ISO 14064 verification standards responds directly to the core challenge of verifying performance in results-based environmental projects.

Design of the performance grant by the selected Implementing partner reflects these principles in their project structure and targets. Thus, the incorporates KPI will be based for baselines, targets, and validation methods. The performance is directly linked for grant disbursement, contingent upon verified results. Indicators included in this guideline (such as volume of plastic intercepted, household participations, off-taker engagement, etc) are framed to meet both project framework and environmental accountability aspects.

Looking ahead, this approach is expected to strengthen implementation and support future blended financing schemes by providing credible performance evidence. The framework not only meets donor requirements for field-level accountability, but also lays the foundation for long-term sustainability, enabling the support from local government, community participation, and private sector to co-own and contribute in the solutions to riverine plastic pollution through verified and performance-driven models.

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[1] "Plastic Program Guide", VERRA Plastic Credit Standard, 2021

3.   Summary of the Performance Verification Guideline

The main objective of this guideline is to provide a neutral and impartial performance-verification according to the agreed milestones, validate if the agreed results have been achieved or not, as well as to provide recommendations to UNDP to issue the grant payment to the Implementing Partner.

With reference to a neutral guideline of ISO 17029:2019 and/or ISO 14065:2020, the development of this guideline and its associated Key Performance Indicators (KPIs) has been jointly consulted and agreed upon by UNDP, subject-matter experts, academic institutions, and local government representatives. Concept and proposal from Implementing Partner adopt the Key Parameter Indicator as reference.

A verification team will be engaged to carry out the performance verification. UNDP will assign the verification team to verify how the Implementing Partner meets all the required QIs and follow the social-environmental aspect.

The level of verification attested is described in the context of reasonable assessment with its objective to provide the affirmative attestation of conformance with the assigned criteria for each of KPIs. The scope and methodology of this assessment will be agreed upon by all Parties at the outset of the Proposal and formalized within the Grant Agreement.

Qualitative materiality

A qualitative material error can occur when prescriptive KPI criteria and the requirement is not met. Likewise, if the IP fails to submit the required reporting, it will represent as qualitative material error. Any errors in the reporting of information described as "Results" in the agreed targets will be considered material. Only material errors pertaining to specific requirements not being met would result in a nonconformity finding.

A qualitative material error may also occur when a deficiency in a quality system is identified. For example, inconsistencies found by the assessor suggest a deficiency in the reporting instrument, monitoring or data collection system and which could have implication to quantitative information in the report.

For this assessment, several validation checks will be conducted specifically agreed by parties. For example, the validation on process of waste segregation and recycling, which the number of recycled volumes is missing on record. Parties could arrange agreement to confirm the process and assess the materiality with certain steps such as record from off-taker or other documentation representative.

If the assessor finds that there are discrepancies, this may signal an area of potential improvement to the quality system by the Implementing Partner. In such case, the assessment might document a case that assessment would issue an observational finding indicating this area of improvement.

Quantitative materiality

A quantitative materiality threshold is set by the numeric cap of the cumulative error for the statement of achieved Results. A 10% materiality threshold will apply to any over or under estimation of quantitative parameters (e.g., volume of removed river debris, volume of collected household waste to prevent it from entering river, number of reduced indiscriminate dumping, etc.). This threshold level of 10% is generally considered an authoritative rule in many types of assessments, based upon expert knowledge, and it has been agreed by parties.

For quantitative parameters, discrepancies will be identified and quantified by the assessment based on reconfirmation with implementing partner, for each agreed upon KPI and based upon the methodology employed by the implementing partner that outlined in the agreed proposal. Quantitative materiality will be independently verified for each KPI as a percentage error with the following step on reconfirmation:
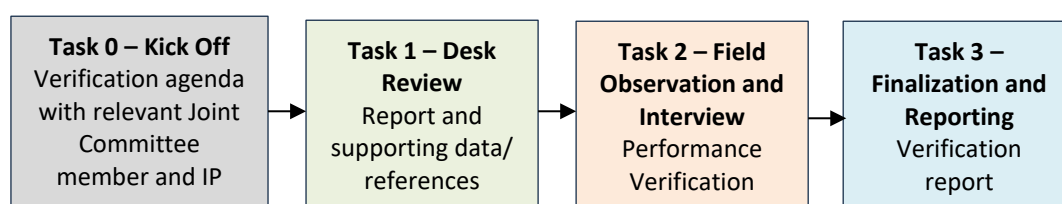
- The first is to recalculate the percentage value from datasets or reference documents that are provided by the IP. For example, if the preliminary information of recycled plastic waste is missing, the IP may submit dataset with alternate references such as data from Off-Taker and assessor will reconfirm the number directly from the dataset.
- The second check subject to the quantitative materiality assessment is retracing from a selected sample which likes treatment of original data. In the case, if the data provided cannot be transferred/or, transmitted due to certain confidentiality or access issue, UNDP and IP will arrange a technical meeting with relevant stakeholders to address the issue. Whenever assessor finds inconsistencies that result in a material misstatement in the reported Results, assessor may add one more group or single treatment of additional sample to assure the Results find its conformity (e.g., accepted or not). These validation approaches for each KPI are further described in Section of detailed validation for each KPIs.

The results of the qualitative and quantitative materiality calculation for each KPI will be part of Assessment Report (extended as Performance Achieved). Any discrepancies identified as "material" through application of the above criteria will be treated as non-conformities in the assessment process.

Meanwhile, discrepancies that are not identified as material based on above criteria will be excluded from the final report. The qualitative and quantitative materiality as well as achievement of the minimum threshold are key elements to determine the level of Performance-Grant disbursement to the Implementing Partner.

Performance Verification Framework

The assessment process is illustrated in the figure below:

Task 0 – Kick Off	Task 1 – Desk Review	Task 2 – Field Observation and Interview	Task 3 – Finalization and Reporting
Verification agenda with relevant Joint Committee member and IP	Report and supporting data/ references	Performance Verification	Verification report

Task 0 – Kick Off

Kick-off with the relevant Joint-Committee Member at national and local level will involve the full presentation of assessment agenda. Kick off session will also clarify the basic parameters to be engaged upon the reported results in a presentation by the Implementing Partner. Assessor team, UNDP and representation of Local Government will clarify the expectations towards the assessment plan and timeline.

To commence the start of next stage, Implementing Partner will provide all relevant lists of documentation and the list of related actors in project implementation activities (including the team of Implementing Partner). Within the document list, the Implementing Partner may also propose alternative supporting data for comparison purposes, accompanied by detailed references regarding

the availability, location, and accessibility of such data. All relevant documents will be made available to the Assessor team within agreed days-time that documented in the minutes of Kick-Off meeting.

Task 1 – Desk Review

Following the kickoff meeting, Assessor will conduct the desk review of the submitted KPIs results that from Implementing Partner include all available supporting documentation and evidence pertaining to the reporting of Results. Where the achievement of KPIs is confirmed within the parameters of a desk-based exercise, the assessor will document such in the assessment Results/Performance Achieved.

Where more information is needed to clarify whether reported results have been attained, the following options may be taken:
• Identify areas of uncertainty and risks, and develop the sampling plan which allow for a more detailed verification during subsequent meeting(s) and/or the field visit
• Identify any circumstances that might compromised the feasibility and data validity in the field for the field visit
• Issue the formal request for additional information or documentation

For the risks anticipation, if any, Assessor will develop the structured table of risk (register) and the mitigation if there are specific risks to be addressed.
• **Technical risks**, such as the potential area of limited capacity by IP in monitoring and maintaining the consistency for data value and indicator
• **Social risks**, such as the potential resistance from community members or elite in the informal waste pickers that might impact the interview process or cross-check with local actor
• **Environmental risks**, such as extreme weather, long rainy season, or access constraint to check the installation and facilities that support the implementation.
• **Financial risks**, such as budget misalignment with the proposed KPI and its qualitative indicators, the actual insufficient resources to perform the activities, etc.

Prior to field verification/visit, Assessor will check these risks to ensure the verification timeline is met and recommendation report could be submitted on time.

Before the field work begins, Assessor will also develop the intended steps for data analysis. This information will also be available for the Implementing Partner.

Outcome of Desk Review are Inception Report:
• Summary of desk review which lists the findings and result of observations, and pointing out where additional information is required to assess the effectiveness of indicators
• Proposed data analysis or methodology
• Summary of risk to be anticipated in the assessment, the sampling plan and assessment plan, and/or;
• Conclusion of readiness for next stage, determining if project is ready or not for field visit. Should the unlikely situation arise, assessor would alert UNDP and Implementing Partner for substantive items and recommend the course of action.

Outcome of Task 1 will be basis for Task 2 – Field Observation and Interview. Annex xx provides the format for General outline of Inception Report, table or structure for field sampling and risk register to be completed by the Assessor.

Task 2 – Field Observation and Interview

After the desk review, Assessor will conduct a field visit to gather additional evidence necessary to reach a conclusion regarding any issues identified during the documentation assessment. The objective of the field visit and interviews is to assess IP's performance in meeting the milestones and targets set against the pre-agreed KPIs.

This section describes how assessment will conduct interviews and meet relevant personnel and stakeholders, given that in-person meetings are fundamental in the assessment process.

The field visit will include the following activities:
- On-site assessment to perform site reconnaissance.
- Review of activities in relation to the KPI Indicator and the social-environmental aspect.
- Interviews with respective actors (e.g., operators of waste treatment facilities, head of local governance such as kecamatan or kelurahan, off-takers for recycled items; head of waste bank partner; local agency) at the targeted area for field visits.
- Verify documentary data through ground-check information
- Closing meeting (preliminary results)

At the end of the field visit, a closing meeting will be held. The purpose of the closing meeting will be for the assessor to present their findings and observations, including providing positive feedback, and discussing next steps in the process.

General recommendations for field data collection include the following:

- Enough time should be planned between desk review and field data collection, ensuring that the field data collection plan is informed by the preliminary findings of task 1 and is presented in the inception report.
- Determine field data collection sites based on the risk-based sampling approach, for which the findings of task 1 are essential.
- Allocate sufficient time to conduct the field data collection, including interviews. Many contingencies can heavily impact a field data collection plan that has allocated limited time.

Interviews

To guide the selection of respondents, Assessor will employ a random sampling to select participants of the project activities (presented initially by Implementing Partner in the Kick-Off meeting) based on a risk-based assessment to support credible and reliable results. Efforts will be made to engage a diverse and equitable representation of women and men across varying age groups, and to include other intersecting identities such as persons with disabilities, indigenous individuals, and other marginalized groups relevant to the project context. In group interviews, women and men may be separated into different groups as agreed upon between the interview participant and assessor team on a case-by-case basis. In addition, to help address any gender related cultural practices and potential inequalities present in communities, both male and female field interviewers will be available to conduct interviews and any focus group discussions in the field.

Informants will be selected from list of actors and stakeholders that work closely or relevant to project implementation activities. The selection process will involve UNDP and the Head of Environment Agency to provide feedback on the list of key informants.
- The relevant project staff will represent the identified teams or actors as outline in the sources of data for each KPIs. In the case of absence representation by the expected team/actor, assessor will arrange interview after field visit.
- Third parties to the implementation project will represent the feedback from communities, off-takers, and/or other relevant individual/group that recommended in report of Task -1 Desk Review.

Given the socio-economic context, these arrangements are adequately considered the social and gender representation, especially when undertaking the interviews:
- When conducting interviews with local stakeholders, enough time should be allocated to develop a good understanding of critical issues, considering language and cultural barriers that might influence the time needed for the interviews, and for field data collection more generally.

- Foster a safe space for open discussions, which may include separate timings to meet with local stakeholders i.e., local communities.
- As field work involves interviewing women and men, it is recommended that the field team uses a gender-responsive approach. This can include, but is not limited to: setting up assessor team with women and men, with ideally having both a female and male interviewer present to speak to interviewees; conducting women-only interviews; organizing interviews around times and locations suitable for women, helping with childcare, etc.
- To ensure that behavioral changes can be effectively observed, interviews with participating local communities will consider a balanced composition between those community members who have previously participated in community waste management initiatives such as waste banks, and those who have not.
- To overcome language barriers, it is recommended that presence of translator or the hired facilitator during the assessment process that speak local language also be a woman. Having a female interviewer and interpreter present can help increase the likelihood that women can be interviewed and be comfortable sharing their opinions, and that men in communities feel comfortable having them to do so.
- Once the overall field data collection sites are selected, careful consideration should be given to determine the specific locations and timing for field data collection, including for interviews, to ensure that these are aligned to the community's timing, also considering gender-responsive engagement approaches as mentioned above.

Task 3 – Data analysis

Assessor will conduct the final assessment of the KPIs to confirm the field performance in meeting the objectives, as well as deliverables of activity outputs. Besides the confirmation of the performance level, the analysis will also recommend a comprehensive list of outstanding issues or findings that have been identified as part of the assessment process.

The data analysis will follow (at least) the structured approach as:

a. Data triangulation process, where data triangulation will validate the reported results, using the result of desk review, and field observation to ensure consistency.

b. Quantitative analysis, by using a suitable dataset or standardized measurement that being collected from the sample to counterfactual the reported results.

c. Qualitative analysis, which applied for processing the interview transcript, narrative data from sampling or submitted report. Assessor will utilize the suitable qualitative analysis software to support the result.

On findings, the treatment of reporting by Assessor will be presented with clear identification process that has concrete parameter for corrective or remedial action. The recommendation of findings and the actions must be also presented to provide the opportunity for Implementing Partner (IP) to respond. Assessor will communicate the findings and recommendations to UNDP who will communicate the documentation to Implementing Partner. UNDP and Implementing Partner will agree on period for responding. Evaluation to respond will be carried forward by Assessor.

There are three types of assessment on findings (and the respond):

Non-Conformity Report (NCR)

It indicates the specific element/part of activities that acknowledged as qualitative quantitative material findings to the minimum threshold that required for the agreed output or result. UNDP will request the Assessor to recommend action to findings based on the observation such as the availability of documentation and sampling. It will be at UNDP's discretion whether findings or observations in these non-conformities or material discrepancies is mandatory to be addressed by

Implementing Partner. This finding only be closed by Assessor if there is evidence indicating that the identified discrepancy has been corrected or recommended by UNDP.

New Information Request (NIR)

If there is insufficient information to decide regarding conformity or materiality, a New Information Request (NIR) will be issued by the Assessor to the Implementing Partner. Once the responses are received, the IA will evaluate the submission and determine whether the additional information submitted is sufficient or if additional findings are required to be issued.

Observation

As for the findings that are observation type, it shows one or more of the following but is not limited to:
- Areas where there are immaterial discrepancies between the observations, data testing results and/or professional judgment of the IA with the information reported or used.
- Areas where the expert judgement of the IA suggests that there are opportunities for improvement in the areas included in the scope of assessment.
- Qualitative material errors could result in observations regarding the potential deficiencies in the existing quality system programme.
- An area that may become a nonconformity in the future.

The IA will work with UNDP and IP to answer any remaining questions, resolve any findings, and seek clarification through email or conference calls.

Task 4 – Finalization and Reporting

Assessor will provide an independent report to conclude the recommendation from verification processes. The report should describe how this performance verification guideline was followed in the process, provide all sorted documentation from each step of the process, draw the conclusion on the overall performance level and suggest recommendations to minimize critical findings during the next milestone assessment process.

The report should be provided in Bahasa Indonesia and English that covers the information below:
- Present the process of data analysis (e.g. process for data triangulation, quantitative analysis and the qualitative analysis) to synthesize the result.
- Quantification of the results achieved and the quantification of the extent to which criteria have not been met.
- An assurance opinion as to whether the assessment criteria have been met.
- Recommendation to UNDP regarding the calculations and the level of payment deemed relevant according to results confirmed as compared to agreed proposal, considering the minimum progress threshold, and the Payment Terms as defined in Annex of Performance Grant Agreement.
- Additional recommendations regarding potential areas of improvement for the Implementing Partner in terms of implementation of the activities for results to qualify or in the way to document them more adequately.
- Mission report for each field visit.
- Results/Performance Reporting that submitted by the Implementing Partner to certify the achievement of results eligible for terms payment of the performance-grant.
- Recognize the knowledge or practices that could be replicated in the other area.

Release of Report

During this step, the UNDP and the Implementing Partner will agree on the performance report prior to its external release.

4.   Description of Key Performance Indicators

Objectively the Quality Indicators and Social-Environmental Aspect that corresponding with every Key Performance Indicator (KPI) have been systematically established with discussion and feedback from Coordinating Ministry of Food Affairs, Local Government, respective NGOs and local champions that led the community waste charity movement. The KPIs have been calibrated to match with minimum element required to ensure effective river waste management and ensuring meaningful participation of community groups.

4.1. KPI 1. Site-level Set up and Mobilization of Riverine Plastic Interception Mechanisms

Goal: This KPI represents the initial phase of activities to ensure the effective mobilization and installation of equipment for plastic waste interception at identified sites along the river. Result of KPI validation will present the project implementation readiness and its operational integrity of site-level interventions, ensuring the strategic equipment deployment is informed by community consultation, supported by appropriate infrastructure, and embedded within inclusive governance frameworks with supervision and directives from technical agencies in the local government.

> **Result statement**: Established **#number#** community-informed installations and the operational set up of riverine waste interception, supported by mechanism for sorting, recycling.

The 1st KPI has four (4) operational indicators that collectively establish the overall functionality of interception infrastructure and the operations (day-to-day). These indicators will verify the spatial appropriateness, process of technical deployment, and showcasing the integration of riverine plastic waste clean-up from designated river segments. In addition to spatial information, community consultations will also serve to identify **HOT-SPOT** or the interception zones based on flow patterns, clogging, drainages, waste accumulation trends during rainy season, and socio-environmental risk to prevent the spillover waste disrupting the surround environment or any livelihood activities.

Subsequent indicators focus on the physical installation of interception devices and the establishment of documentation such as logbook and records. These elements must be established as a standard operation to quantify the waste recovery outputs. The records will be critical to be used by KPI-3, ensuring the traceable material flow from intercepted debris until the processed and recycled waste.

The final verification measure under KPI-1 will establish the operational presence of partner NGOs at designated river segments, with documented responsibilities for riverine plastic waste interception and monitoring. This includes formalized roles in equipment maintenance, data reporting, and coordination with local authorities.

Qualitative Indicators (QI)

QI 1.1.: Community Consultations (*at least 2 or more*) for Strategic Installation Points for Riverine Waste-Capturing Equipment

Community consultations serve as a critical entry point for identifying optimal installation sites for waste-capturing devices. The verification parameter include the number of consultations held (*at least 2 or more*), diversity of stakeholder representation (e.g., RT/RW, religious group, youth, and women collectives with the recommended gender representation of 40-50% female participant),

Being respective to female representation, the consultation will be scheduled at times accessible for women, and gender-sensitive site/location. Documented Minutes of Meeting (might also add with mapping), stakeholder attendance such as the participation of local government and representation of Ministry of Public Works (*BBWS*) must be disaggregated by gender and age, their participation on mapping the hot spot for site installation.

Verification may include signed attendance sheets, geotagged photos of proposed sites, and stakeholder feedback forms. Testimonies from community about the average condition of river surface might also be a useful information. The emphasized community participation will enhance adaptive waste management and foster long-term behavioral change, particularly in coastal and riverine contexts.

Potential Aggregates in reporting QI 1.1: Organizing participatory mapping workshops and river-walks with local resident can help to document the pinpoint process between the implementing partner and the community in identifying the high-flow zones and waste accumulation **hotspots**.

QI 1.2.: Established Baseline Number and Mobilization of Equipment/Installation for River Debris Interception

Deployment of interception equipment such as floating booms, mechanical collectors, and debris cleanup stations must be documented during the installations. Every hotspot (installation site) tagged with GPS coordinates for monitoring purposes. To promote the gender inclusiveness, Implementing Partner will have representation of women group from community to supervise the installation process and accommodate any feedback in the installation process that concern to safety (eg., involvement of women workers from informal waste pickers in the process).

The installation site also places the drainage area to mitigate the waste dripping. The installation should not impact the river surface level or hydrological flow. The documentation includes the full list and type of devices installed, handover notes from vendors and report/documentation on functionality testing. Validation involves photo documentation, commissioning reports from vendors, and record of confirmation from local environmental agencies to the installation.

To enable quantitative verification, the Implementing Partner (IP) must establish the baseline condition prior to installation. This includes the number and location of existing interception points (if any), absence of prior infrastructure, and average volume of plastic waste observed in the river stream that could utilize the current report of waste generated on a weekly or monthly basis in the area.

The baseline must be recognized by the local government and serve as the reference point for evaluating installation effectiveness. In the implementation activities, IP should be clearly stated, such as: "Three interception installations are fully functional within the milestone period, each with a minimum capacity of 1 tonne/week," or "≥70% of intercepted waste is transferred to sorting or recycling facilities".

Potential Aggregates in reporting QI 1.2.: To prove the effective process on transporting waste from water to pick-up stations, the installation should be complemented by personnel or trained community members, ensuring redundancy during the peak of waste flowing to waterways.

QI 1.3.: Setup the Procedure for Documentation of Removed River Waste Volume and Composition

Establish a mechanism to document/record the volume of riverine debris remove from the river stream. This mechanism has documentation or record that put in place the data collection frequency, volume metrics quantified in kg/m^3. Record also put traceability protocol from pickup site to processing facility, and add the photo logs, GPS and coded logs for record and dashboard presentation.

To ensure inclusive and equitable implementation, one of the data elements will support the gender-disaggregated labor data to track participation in waste collection and sorting activities. This supports the transparency in labor contributions across the intervention.

Potential Aggregates in reporting QI 1.3.: Monitoring or alert systems could be added to notify the team of Implementing Partner of overflow events or equipment malfunctions. These documentations should be centralized in data repositories that are accessible to local authorities.

QI 1.4.: Establish the Arrangement for Waste Sorting and Recycling

Implementing Partner will establish sorting and recycling facility either through mobilization of equipment, and/or formal agreements with Local Government to scale up the facilities of existing TPS3R or partnership with recycling facilities. All removed debris will be diverted appropriately to this sorting facility, NOT for sending the waste directly to landfill. Mechanisms for sorting and recycling also acknowledge the participation of other facilities such as waste bank. However, non-recyclables might be routed to landfill facilities under formal agreements and specific record/documentation.

Parameters include the number of sorting stations operational, adequate capacity to process the volume of collected river debris, and signed MoUs/Agreement with local government, or waste bank, etc. Implementing partner will also channel the value material to local processing or informal recycling ecosystem whenever possible to support the micro, small and informal enterprises to strengthen the circular outcomes.

Validation steps may involve site inspection reports, waste flow tracking sheets, and collaborative governance documentation.

Potential Aggregates in reporting QI 1.4.: Design for sorting stations and material flows could be agreed with local government and/or existing recycling center/facilities that already operate in the area. Gender-responsive measures must be embedded as mandatory requirements to ensure equitable and safe working conditions, eg., a separate rest area between male/female, fair wage structure and accessible facilities.

Associated Social-Environmental Aspect (SEA)

SEA 1.1.: Participatory, Inclusive and Informed Equipment Sitting

Community consultations delivers the identification of high-yield interception zones based on hydro and water flow, intersections and accumulated debris sites. Community consultation will engage all relevant groups in the community including the informal waste workers to present community usage patterns alongside the riverbanks. This participatory mapping process strengthens procedural legitimacy and reduces social resistance to infrastructure deployment.

Set up and mobilization must consider the ecological sensitivity e.g., typology of riverbanks and the socio-technical capacity of local operators. The placement should avoid disrupting aquatic habitats or trigger exacerbating erosion in high-flow zones. Implementing partner will consult the process of installation with the respective local agency to follow certain checklist, including the monitoring on environmental aspects. Socially, the engagement of local team to identify the day-to-day operational function of installed equipment will also support the Implementing Partner to upkeep the participation of local community.

Procedure to integrate a preventive procedure during the removal of river debris will be ensured to mitigate pollution from device overflow or mismanaged river waste transfer. This preventive procedure also implies the emergency process to secure the installation, and/or respond to situation when the installation collapses due to major incident.

SEA 1.2.: Promote the Transparent Record on The Polluted Plastic Waste Sources

Reliable data on waste volume and composition will support the Implementing Partner to report on social accountability and environmental traceability of the polluted riverine plastic waste sources (*e.g., river plastic audit*). Among the community members, Implementing Partner also initiate the mechanism to invite individual or groups to monitors with contribute to data collection e.g., mobile-phone reporting, or sharing photo-tagged documentation to build the accountability at local level.

SEA 1.3.: Socially Inclusive Arrangement in Waste Sorting and Recycling

The coordination or collaboration of sorting and treatment facilities (e.g., TPS3R with local government or Waste Bank with local community group) will provide livelihood opportunities altogether with participation of informal waste pickers in the process. For target capacity (in metric M^3 or tonnes) of waste processed and recycled for organics and plastics will directly reduce the dependency to landfill and minimize the risks of leachate when waste is transferred to landfill. MOU or agreement with TPS3R or Waste Bank must include provisions for safe handling, residual or unrecyclable waste transfer to landfill.

4.2. KPI 2. Site Clean-up and Removal of Intercepted Riverine Plastic Waste

Goal: This KPI will ensure all riverine plastic and debris clean-up activities are carried out environmentally responsible and adhere the operational procedure which has been set up by the Implementing Partner. Indicators emphasize the fulfilment of procedures, efficiency in operations, and established mechanisms to trace and document the waste flow. Proper implementation will minimize environmental risks such as water contamination or secondary leakages and improve the traceability and accountability from riverine waste removal processes.

> **Result statement**: Volume # riverine debris removed efficiently with minimizing secondary leakages, mobilized adequate personnel, and proper documentation.

The 2nd KPI underscores the implementation of effective river debris clean-up and removal that follows the step which are established by the Implementing Partner. Four associated indicators collectively reinforce the procedural integrity, efficiency, and accountability of field operations from initial interception at river hotspots to final delivery at sorting facilities. By embedding these indicators into routine monitoring, the project safeguards against inadvertent contamination, ensures resource optimization, and strengthens the credibility of plastic credit issuance through verifiable waste flow records.

Related to process of preliminary drying and rapid on-site sorting to reduce water content and streamline downstream processing, clean up and removal processes should proactively anticipate potential secondary pollution and make sure occupational safety is fulfilled for waste workers or volunteers. The cleanup and removal process should minimize disturbance to river ecosystems.

Qualitative Indicators (QI)

QI 2.1.: Applied Procedure in Removing the River Debris Including Step-by-Step to Reduce the Secondary Leakages

Waste workers/operator or volunteers apply the procedure with stepwise requirement on-site for preliminary drying of collected waste to reduce residual water content ("sipping water"). Whenever possible, the removal process will quickly apply rapid sorting on-site to segregate recyclables, organics, and non-recoverable prior to transport.

Parameters should be indicated based on field-level adherence to SOP, photo and document evidence of drying and sorting stations, and logbook, etc. Sampling might also be used as visual check, and turnaround time from collection to transport.

All personnel (man and women) receive equal participation on on-the-site training about SOP and safety protocol. The project should also collect the sex-disaggregated data on this training participation.

Potential Aggregates in reporting QI 2.1: Implementing Partner might also involve technical training with its field team to trials the SOP. It is essential example of how the procedures will be incorporated for compliance.

QI 2.2.: Applied mechanism to monitor or track the volume of accumulated river waste at least once every day

The **effective implementation of QI 1.3**. will be shown in this indicator. This qualitative indicator pertains to the deployment of mechanisms or procedures to monitor and document the accumulated riverine waste. The mechanism might also use calibrated volume for captured waste (e.g., electronic calculation for weight) and utilize the digital tracking system from collection site until process and recycling facility.

Validation will cross-verify between field measurements and the centralized data repositories, by also compared to temporary frequency of waste data captured.

Potential Aggregates in reporting QI 2.2: Implementing Partner could apply standard waste documentation system (manual and digital) which might also be **beneficial to be used by Local Government** to help with the reporting of total riverine waste debris removed from site. Presence of supporting tools will need **periodic calibration** as well that are made available to be shown to Assessor during validation process. This will support to enhance the transparency.

QI 2.3.: Deployed efficient number of personnel and also applied efficient techniques or mechanisms to support the riverine waste removal

Efficient number of personnel deployed with technical resources to optimize waste removal operations will **consider the time and frequency of removal cycle**. Implementing Partner will establish a riverine waste generation cycle that also presents information on the estimated volume of waste produced over a given period. This cycle considers the fluctuations of river flow that contribute to transport waste into the marine environment. The reference will use the data of waste volume collected from residential areas surrounding the river corridor. The application of best techniques such as modular passive river waste catchers might have demonstrated to ensure the efficient amount of waste intercepted in the site. Validation may include operational logs, personnel rosters, and comparative performance benchmarks across removal sites. Efficiency should be contextualized against river morphology, flow dynamics, and hotspot typologies.

Potential Aggregates in reporting QI 2.3: Like QI 2.1. arrangement, whenever possible, Implementing Partner will provide training to waste worker/operators and/or volunteer in material identification and the use of river waste collecting technique.

QI 2.4.: Maintained over 2/3 accuracy of documentation and/or logbook of waste volume

Procedure in filing and documentation should include the process of waste composition analysis. Meanwhile, for reconciled logs and reports to the achieved result of removed plastic waste from river sites, the Implementing Partner will make there are mechanism to match documentation between field clean-up and the final delivery from sorting facility (*total amount of processed, recycled and transferred to landfill for non-recyclables material*). Validation parameters include

consistency between recorded and physically verified volumes, completeness of documentation (e.g., date, location, waste type), and traceability of waste flow from source to final disposition.

Potential Aggregates in reporting QI 2.4: Reconciliation might also track the input-output ratio that might be useful to check how the MOU and Agreement (*if available*) is performed with the sorting facilities. If any established partnerships with downstream recyclers and disposal operators are made, Implementing Partner might also agree to conduct **frequent reconciliation workshops (e.g., quarterly) to reduce the potential discrepancies and smooth the verification of performance-grant process during agreed milestone with UNDP**.

Associated Social-Environmental Aspect (SEA)

SEA 2.1.: Contained the Potential Impact to Environmental Safeguard

Implementation of SOP will avoid informal handling of the collected waste. By mandating the use of safety procedure, the effective clean up and river debris removal will also incorporate gender sensitive provision such as equitable task allocation and sanitation access in the field operation. Implementing Partner will also make sure the availability of Grievance Redress Mechanism is accessible (e.g., number of whatsapp to monitor or report the clean up process).

SEA 2.2.: Waste Traceability and Participatory Oversight

A transparent documentation system with digital logbooks, dashboard, or alike will enable the participation of local stakeholders to participate in data validation and oversight. The process will support shared responsibility across actors, including riverine communities, and helps prevent exploitation or exclusion in waste valorization schemes. Data disaggregation by waste type (organic and plastics also supports targeted awareness campaigns on consumption and disposal behaviors).

SEA 2.3.: Equitable Skill Enhancement

From a social perspective, tool calibration and training provided to waste workers/operator will contribute to skill development which many of whom operate in precarious conditions, reinforcing procedural equity in material recovery operations.

SEA 2.4.: Upstream-Downstream Pollution Prevention through Transparent Plastic Waste Recovery Process

Disposal route is essential to prevent environmental leakage and ensure that non-recyclable fractions are directed properly to disposal facilities. **Activities like plastic audit might also helpful for this indicator** to safeguards against informal dumping practices and protect the residing communities near riverbanks or downstream catchments to be judged with falsified conclusion of plastic waste sources.

4.3. KPI 3. Preventing the Mismanaged Plastic Waste from Entering the River

Goal: The 3rd KPI will ensure that communities living upstream of riverine systems are actively engaged in preventing the leakages of mismanaged waste entering the waterways. The activity promotes improved awareness, reduces number of illegal dump sites within the area, and strengthens community ownership. Engagement should be culturally appropriate for every city of project site is being implemented and tailored to reach out the community while ensuring that interventions are sustained beyond the project's period.

> **Result statement**: Volume # of plastic waste prevented from entering river stream with improved behavior in plastic waste management and the community stewardship.

The KPI's strategic focus is on fostering inclusive behavioral change, enabling household-level diversion practices, and improving access to localized waste infrastructure. **These efforts are designed to reduce plastic leakage at source points, facilitate long-term stewardship through local champion and approaches that are culturally responsive. The KPI integrates social equity principles by ensuring that interventions are accessible to women group, youth by targeting non-point source pollution pathways that contribute to downstream accumulation**.

The first indicator captures shifts in community awareness and disposal behavior through education and media outreach. The second indicator quantifies household-level diversion of plastic waste via mentoring, incentives, and participation in waste banks. The third indicator measures the availability and utilization of infrastructure that intercepts plastic before it reaches riverine corridors. **Together, these indicators form a coherent composition for project engagement with the community within the area of project site for upstream river waste prevention**.

Qualitative Indicators (QI)

QI 3.1.: Behavioral Shifts and Awareness of Riverine Plastic Pollution

This indicator measures the extent to which upstream communities demonstrate increased awareness and behavioral change regarding plastic waste disposal. Activities such as school-based education, community workshops, and localized media campaigns (radio, posters, social media) are some examples for activities which are designed to shift norms around river dumping. These interventions must be linguistically and culturally tailored to reach marginalized groups, including women, youth, and persons with disabilities.

Communication materials which applied should be designed with gender-sensitive visuals, inclusive language, and appropriate timing. For household waste management, the campaign material applies to the proportional and share role of disposal practices among the family members. The behavioral change efforts leveraging the influence of community stewardship in equal aspect of men and women role in shaping community-level waste norms.

Potential Aggregates in reporting QI 3.1: Strategic engagement of local influencers/local champion, religious leaders, and youth groups as "waste ambassadors" amplifies message penetration and fosters peer accountability. Activities should be sequenced to build cognitive recognition of plastic pollution impacts, followed by participatory reflection and commitment to change. Integration with local governance structures (RT/RW, village councils) ensures legitimacy and continuity, while monitoring tools such as pre/post surveys and participatory mapping support evidence-based tracking of behavioral outcomes.

QI 3.2.: Initiated community mentoring activities at least twice a week through local champions, waste bank facilitators, and engagement programs to expand household-level plastic waste

This indicator is an attempt to record the level of household adoption and sustain plastic waste diversion. Possible activities include the structured training on proper waste segregation (organic, recyclable, and residuals) through community facilitator, waste bank operators, or local champions.

To encourage the process, individua or group participation might accept a point-based reward such as essential goods or gain access to community recognition. Additionally, households are

encouraged to participate in different initiatives such as the community-led composting for organic waste and informal recycling cooperatives for plastics. The community mentoring activities will lead to reducing the volume of waste residual, foster circularity and increase the local economic value. The mentoring activities should be inclusive, with tailored support for women-led households, persons with disabilities, and informal sector actors.

For monitoring purpose, Implementing Partner will organize a regular inspection on household waste, using the segregation compliance logs and volumetric tracking of diverted materials through waste banks or waste offtaker (*pengepul*). If the process also involves incentive provision, this monitoring will also check how the incentive distribution is log or being recorded.

Potential Aggregates in reporting QI 3.2.: Core interventions include training on 3R segregation (organic, recyclable, residual), and active participation of existing group such as waste bank operators and local champion. These activities are embedded within community mentoring or structure (RT, RW), promote peer learning and inclusion of vulnerable groups. Data capture is supported through household record, logs, and visits to report the behavioral adoption rates. Collaboration with community-led programs supported by local government further extends service coverage and outreach, ensuring equitable participation of vulnerable groups including women-led households, persons with disabilities, and informal sector actors.

QI 3.3.: Support infrastructure provisions within the specific radius of service that enable community members to prevent direct waste disposal into the river

Key activities include the installation of segregated waste bins (clearly labeled for organic, recyclable, and residual waste) at strategic community sites such as markets, schools, religious centers, and river access points. To address the legacy pollution, **removal and rehabilitation of illegal dump sites within the catchment area is prioritized**, accompanied by community sensitization and enforcement mechanisms to prevent recurrence. Numbers of reduced illegal dump site will be accounted in the validation report, and also to be monitored by Implementing Partner.

Collaboration with municipal authorities is essential to enhance collection frequency, optimize routing, and integrate community systems into formal waste management plans. All waste collected from assisted communities must be systematically recorded and documented, using standardized logbooks, tracking tools, or community-led monitoring formats. Similar to the treatments of riverine plastic waste, the amount of waste transported to sorting and recycling facilities *(KPI 4 of Volume of Plastic and Organic Waste Processed and Recycled)* will be disaggregated by waste type, source, and destination.

The program also supports the operationalization and scaling of community waste banks ("bank sampah") and informal off-taker (pengepul), which serve as decentralized hubs for plastic recovery, income generation, and behavioral change. In the scaling activities, women and equal representation is maintained (e.g., gender training, improving the service uptake, local community infrastructure intervention) to foster equitable participation.

Potential Aggregates in reporting QI 3.3.: Maintenance protocols and community stewardship mechanisms (e.g., bin monitoring) are essential to ensure functionality and prevent reversion to informal dumping. Documentation of waste volumes collected, infrastructure usage rates, and service delivery the validation process and inform the result of behavioral shifts.

Associated Social-Environmental Aspect (SEA)

SEA 3.1.: Occupational Safety Protocol and Fair Compensation

The interventions foster collective responsibility that is embedded into existing community structure and all potential institutions at local level (e.g., community groups, RT/RW, LKMD or village council, etc.). The increased awareness will reduce intentional plastic disposal into rivers, mitigating non-

point source pollution and protecting riverways biodiversity. Culturally adapted messaging ensures inclusion of marginalized groups, while behavior change contributes to upstream source reduction that is critical to minimize the downstream accumulation and microplastic formation in sediment layers.

SEA 3.2.: Household-Level Plastic Waste Diversion

From social aspect, the process of mentoring and incentive mechanisms promote peer accountability and empower informal actors, including women and youth, to participate in localized waste management models. Meanwhile, for environmental aspect, the improved segregation and composting reduce residual waste volumes will lowering the waste transported via surface runoff during precipitation events. These practices also enhance material recovery rates and reduce dependency on centralized waste infrastructure, which is often absent in peri-urban upstream areas.

SEA 3.3.: Infrastructure Access

Access provision to the utilization of waste infrastructure in upstream settlements address systemic inequities in service access while directly curbing plastic leakage into riverine corridors. However, Implementing Partner should also be aware of the risk of providing the bins to not create new illegal dumpsite in the area. Implementing partners should also consult with community groups to decide on which community site to be supported by the waste collecting facilities to prevent potential complaints. Implementing Partner should also apply the grievance mechanism to redress inquiries or complaints from community members.

4.4. KPI 4. Volume of Plastic and Organic Waste Processed and Recycled

Goal: The 4th KPI is aimed at ensuring river plastics intercepted or collected from project site/hot-spot and also the community groups are managed in a sound waste processing and recycling steps, with maximum diversion from landfill or open burning. This KPI focuses on strengthening the value chains by recycling, while also promotes the material recovery and compliance not only for plastic waste but also the organic. However, the project dully acknowledges the possibility of non-recyclable materials that need a transfer to landfill (*based on agreement with Local Agency*).

> **Result statement**: Volume # of plastic and organic waste effectively sorted and recycled through applied waste management mechanisms, and cumulative volume # diverted from sent to landfill.

This KPI processes the steps that applied for both treatment on **collected waste from river stream, and the collected household waste from community groups around the river sites to prevent it from entering the waterways**. Detail for Prevented mismanaged waste and community households is elaborated under KPI 3 (*Prevent the Mismanaged Plastic Waste from Entering the River*).

The KPI 4 manage three indicators to report the effectiveness and integrity of collected waste management systems, specifically during waste processing and recycling. The mechanism will have classification, and adequate sorting process between plastic and organic materials. The first indicator establishes the foundational activity on systematic sorting and classification of intercepted waste, classifying the plastics with distinguished transfer to proper recycling mechanism. This process will ensure the traceable downstream steps in the recycling and minimizes contamination from toxic material.

The next indicator quantifies the volume of plastic waste that enters formal recycling channels, complementing as well for process to capture the organic waste recycled in the waste treatment

facility to reduce the potential methane emissions if directly transferred to landfill. The final indicator in this KPI will aggregate the total quantity of waste diverted from landfill, integrating data from sorting, recycling, and organic processing activities to reflect overall achieved results by Implementing Partner.

Qualitative Indicators (QI)

QI 4.1.: A Through Mechanism in Sorting the Collected Waste (from river and also community) and Classify the Plastic Waste for Further Processing

Effective sorting and classification of waste is a prerequisite before organic and plastics entering the downstream recycling and material recovery process. Mechanism in waste sorting must include the process or plastic classification/polymer-specific group (e.g., PET, HDPE, LDPE, PP, PS). Other methods to segregate might also apply the criteria of plastic use.

There must be dedicated sorting tables, labeled bins, and protective gear to minimize contamination and occupational hazards. Data capture involves recording total waste volume, sorted fractions by type, and contamination levels. Validation parameters include sorting accuracy (% correctly classified items) and contained rate per stream. If access to advanced technology is limited, the use of visual classification should be regularly monitored with the presence of supervisor workers to guide the precision. Reference methodologies such as those from plastic recycling and recovery facility project could provide example to be practically applied by the Implementing Partner (without excessive investment needed) of framework in sorting mechanism.

Potential Aggregates in reporting QI 4.1: Implementing Partner may integrate the manual and semi-mechanized sorting of intercepted waste into plastics, organics, and residuals, with polymer-specific classification. Where budget constraints limit access to advanced technology, the use of visual guides and supervised sorting remains acceptable. The sorting mechanism ensures equal opportunities in operational roles, with attention to occupational safety and hygiene needs, including access to gender-sensitive facilities and protective gear. However, project will also acknowledge if manual use of visual guides will be also used in terms of budget consideration. Here, recommendation of process line up will be needed from the Environment Agency.

QI 4.2.: Total Volume of Plastic Waste Recycled

This indicator quantifies the amount of sorted plastic waste that enters formal recycling channels to diverse the waste from landfills and open burning. Implementing Partner record the recycled volume by the polymer type. If the recycle process were made through partnership with licensed recycling provider, Implementing Partner will ensure the process for data reporting from recycling system is traceable with receipt and manifest. More importantly, Implementing Partner will ensure the availability of valid certification for recycling operation.

Potential Aggregates in reporting QI 4.2: Implementing the traceable plastic aggregation and recycling system which linked to the sorting station will need support of certified recycling process. Recyclables are routed to formal facilities with documented end-use which have been standardized (e.g., pellets, extrusion, or remanufacturing) to prevent further contamination.

QI 4.3.: Total Volume of Organic Waste Recycled

Organic waste recycling supports holistic waste diversion and reduces environmental burden. Performance validated in this step is applied for recycling process that executed in the waste treatment facility. Meanwhile, KPI-4 will adopt the organic recycling that is being implemented at community groups to reduce/prevent the waste from entering the waterway. Organic fractions segregated in the facility could apply the process of composting, bio digestion, or other valorization methods. Activities include facility setup, procedure for waste worker/operator, and monitoring of

output utilization (e.g., compost used in agriculture or landscaping). Validation parameters include organic waste processed (kg/month) and the output quality (e.g., moisture content, nutrient profile.

Potential Aggregates in reporting QI 4.3: Organic fractions separated during sorting are weighed, logged, and processed into usable outputs (e.g., compost, biogas slurry), with quality control checks (e.g., moisture content). Organic recycling will also complement the total volume of reducing waste and enhancing environmental co-benefits.

QI 4.4.: Total Quantity of Waste Diverted from Disposal to the Landfill

Implementation requires tracking systems (digital or manual) that monitor waste flow from collection to destination. Activities include publishing diversion reports, maintaining recycler agreements, and validating end-of-life pathways. Data capture should include total collected waste, diverted volume, and disposal method classification. Validation parameters include diversion rate (% of total waste), verified recycler traceability logs, and reporting completeness.

Potential Aggregates in reporting QI 4.4: The total amount of diverted waste is reported with consolidated data by the total input that processed into sorting waste facility, until the amount of total recycled plastic and organic waste. Diversion metrics are calculated monthly using weight-based reconciliation with proper documentation.

Associated Social-Environmental Aspect (SEA)

SEA 4.1.: Occupational Safety Protocol and Fair Compensation

The processing facility might enable the labor opportunities for waste workers and informal waste sector to participate. Implementing partner will ensure occupational safety protocols and fair compensation is fulfilled. Proper segregation reduces leachate generation and microplastic release, especially when wet organics are separated from plastics. Implementing Partner will also encourage for better community engagement for source-level sorting before the community waste is transferred to sorting and recycling facility.

SEA 4.2.: Reduces the Environmental Load of Persistent Pollutants

Recycling processes for intercepted riverine plastics will reduce the environmental load of persistent pollutants, contamination of microplastic and curtail the downstream flows into critical biodiversity habitats. It also lowers greenhouse gas emissions compared to plastic production.

SEA 4.3.: Emissions Reduction and Ecosystem Protection

Organic recycling reduces methane emissions and nutrient runoff into river systems, improving water quality and soil health. For social aspects, organic waste processing can empower the group of waste workers/operators or volunteers to utilize compost for agriculture and additional income. Still. Inclusive training and technology transfer are important to ensure that vulnerable populations can participate with safe and controlled risk of exposure.

Diverted waste from landfills supports pollution prevention and minimizes the land use pressure for over-capacity landfill. It also reduce the leachate risk from transportation of waste to landfill.

4.5. KPI 5. Participation from Informal Waste Pickers and The Gender Aspect

Goal: The 5th KPI will bring the implementation to gender equity and social inclusion into riverine plastic waste management activities. Specifically, the KPI aims to ensure the participation of women and vulnerable groups in decision-making and implementation, safeguard the working conditions of workers, operators, and participating informal waste pickers. By embedding inclusivity principles, this

KPI strengthens community ownership, enhances social inclusiveness, and improves the sustainability of plastic waste management interventions.

> **Result statement**: Enhanced the participation of # group of informal waste pickers and women, ensuring inclusive engagement and safeguarding the labor rights.

KPI 5 serves as a foundational mechanism for embedding equity, inclusion, and labor safeguards into riverine plastic waste management systems. It recognizes that informal waste actors, particularly women, to be central to the operational success of upstream recovery efforts. By integrating gender-responsive strategies and social protection measures, KPI 5 ensures that plastic waste interventions are not only environmentally effective but also socially just, aligning with global standards on inclusive circular economy transitions and decent work in the informal sector.

The three indicators under KPI 5 operationalize this commitment through distinct but interlinked domains. Indicator 1 focuses on outreach and collaboration with existing waste collectors and aggregators, emphasizing formal engagement, occupational safety, and fair compensation. Indicator 2 addresses capacity-building for women and informal workers, promoting technical training, financial inclusion, and mentorship to strengthen their roles in the plastic value chain. Indicator 3 embeds governance safeguards such as grievance mechanisms, zero-tolerance to child labor, and transparent benefit distribution.

Qualitative Indicators (QI)

QI 5.1.: Outreach and Collaboration with Existing Waste Collectors and Aggregators

Riverine plastic waste recovery often relies on informal labor operating outside regulatory frameworks. This indicator promotes structured engagement through cooperations with the informal waste pickers groups, aggregators or off takers (pengepul), ensuring access to protective entitlements and fair compensation.

This indicator addresses the systemic exclusion of informal waste actors (particularly those operating along riverbanks). By establishing inclusive outreach and collaboration mechanisms, the project ensures that existing waste collectors and aggregators are not displaced but rather integrated into the value chain in the project implementation (*ILO guidelines on transitioning informal workers into formal economies and supports traceability in plastic recovery systems might be used as reference*).

Potential Aggregates in reporting QI 5.1: Strategic engagement of local influencers/local champion, religious leaders, and youth groups as "waste ambassadors" amplifies message penetration and fosters peer accountability. Outreach activities must ensure equal inclusion of women waste pickers, with sex-disaggregated participation data used to monitor engagement. The participatory activities reflect the safe, accessible meeting space and schedule to accommodate equal participation for men and women. Activities should be sequenced to build cognitive recognition of plastic pollution impacts, followed by participatory reflection and commitment to change. Integration with local governance structures (RT/RW, village councils) ensures legitimacy and continuity, while monitoring tools such as pre/post surveys and participatory mapping support evidence-based tracking of behavioral outcomes.

QI 5.2.: Provide at least 3 capacity-building programs, including support for women's groups

This indicator strengthens technical and entrepreneurial capacities among women and informal workers, enabling upward mobility and leadership in waste recovery systems. Capacity-building must be context-specific, addressing both operational skills, health and safety and financial inclusion.

This indicator promotes technical and entrepreneurial capacity among women and informal waste pickers, enabling their transition from marginal labor roles to empowered actors within the plastic waste value chain. It supports gender-responsive programming and aligns with SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth), while reinforcing community resilience in waste governance.

Women in informal waste systems often face compounded barriers which limited their access to training or capacity building activity, financial exclusion, and underrepresentation in leadership. Targeted capacity-building addresses these gaps by equipping women with operational skills, financial tools, and mentorship pathways. This fosters inclusive innovation and strengthens the sustainability of riverine waste interventions. The activity involves women participation in technical and leadership domains, not only support functions, e.g. cross-gender mentorship, women-to-women peer mentoring and strengthens the sustainability of riverine waste interventions.

Potential Aggregates in reporting QI 5.2.: Aggregate activities under this indicator aim to strengthen the technical, financial, and leadership capacities of women and informal waste pickers engaged in riverine plastic waste management. This includes the design and delivery of modular training programs on plastic classification, safe handling, and sorting techniques tailored to riverine contexts. These programs must actively promote women's participation in technical and leadership roles through inclusive facilitation, targeted outreach, and barrier-reducing design.

Parallel initiatives may include facilitation of access to microfinance instruments, small grants for community-based enterprises, and entrepreneurship support for women-led recovery initiatives. Structured mentorship programs that link the experienced women leaders with emerging cooperative members can reinforce governance skills and promote inclusive decision-making. These activities collectively enhance operational efficiency, support gender-responsive innovation, and foster long-term sustainability of waste recovery systems. The feedback mechanisms, and outcome tracking will utilize the gender-disaggregated participation to ensure equitable impact and adaptive learning.

QI 5.3.: Actively incorporate gender aspects, informal waste pickers, zero tolerance to child labor, and increasing the participation in project activities

This indicator ensures that gender dimensions, child labor safeguards, and inclusive governance are embedded in project operations. It emphasizes leadership roles for women, grievance redress mechanisms, and transparent process for equitable share of benefit. The KPI will seek implementation of structural risks such as gendered labor hierarchies, prevent exposure to vulnerable workers, and elite capture and exposure of vulnerable workers including informal waste pickers and children to occupational hazards. By institutionalizing safeguards and transparency mechanisms, the project reinforces accountability and social justice in riverine plastic waste systems.

KPI will look at participation that go beyond numeric representation (men/women), seeking the leadership roles, and the occupational safety policies procedure for ethical engagement. Process of performance verification ensures the fair distribution of benefits and to inform adaptive strategies for inclusion. Participation metrics will go beyond numeric representation (men/women), focusing on meaningful involvement in decision-making, leadership, and governance roles. Zero-tolerance to child labor will be monitored strongly to comply with national and international standards

Potential Aggregates in reporting QI 5.3.: Promotion of women representation in leadership might limited if compared to culturally approach such as involvement of mothers group (Ibu-Ibu PKK) if compared to participation of religious groups (e.g., pengurus mesjid or religious facility administrators).

Associated Social-Environmental Aspect (SEA)

SEA 5.1.: Inclusive Participation of Informal Waste Pickers, Aggregator and Off Takers

Formal engagement or cooperation must recognize the supervision from local actors particularly to ensure any hazard or risk is mitigated. Project will provide safety training to mitigate the health risks associated with contaminated debris, while direct payment systems reduce exploitative practices and incentivize consistent recovery efforts with strong documentation and records maintained.

SEA 5.2.: Inclusive Participation of Informal Waste Pickers, Aggregator and Off Takers

Targeted capacity-building for women and informal waste pickers strengthens the social fabric of riverine communities by promoting inclusive economic participation and leadership in waste governance. For social aspect, these programs address gendered barriers to technical knowledge, financial access, and cooperative representation, enabling women to transition from subsistence roles to entrepreneurial actors within the plastic value chain. For environmental aspect, enhanced technical competencies such as material classification and safe handling improve segregation quality and reduce contamination in recovered plastics, supporting circularity and downstream processing. Access to microfinance and mentorship fosters innovation in community-based recovery models, while reinforcing adaptive capacity to seasonal waste surges and hydrological variability.

SEA 5.3.: Gender Integration, Child Labor Safeguards, and Inclusive Participation

Embedding gender-responsive safeguards and inclusive governance mechanisms in riverine plastic waste interventions ensures that social protections are not sidelined in pursuit of environmental outcomes. Promoting women's leadership and establishing grievance redress systems enhances the project accountability. The enforcement of occupational safety protocols and zero tolerance for child labor aligns with international labor standards and reduces exposure to hazardous waste environments.

5.   Description of Performance Verification Process

5.1. General Approach

Validation of reported results across all five KPIs will be conducted through independent data checks, combining desk-based reviews and targeted field verification. Evidence will be triangulated using physical, documentary, and testimonial sources to ensure accuracy, completeness, and alignment with grant disbursement criteria.

The validation will examine documents and information (Task 0 Kick Off) that provided by Implementing Partner (Task 1, Desk Review). spreadsheets and geospatial datasets to assess completeness, internal consistency, and readiness for validation. **Preliminary Desk Review** is carried out through specific evidence gathered that may include physical evidence, documentary evidence, or testimonial evidence within the report. The review will also assess whether the submitted datasets include disaggregated information relevant to five KPIs.

- Reconfirmation: Volume of reported number, activities and recycled waste. Assessors might cross checked the data or activities with relevant actors.
- Ground checking through fieldwork to assess data accuracy and reconfirm the actual operation, and proper documentation.
- Reviewing documents relevant to each KPI indicators.
- Generally attempting to detect material discrepancies by gathering different types of evidence.
- Conducting interviews with relevant parties to ascertain information.
- Validation of the existing information systems in the different programs and data verification.

a. **Reconfirmation**. Assessor conducts the confirmation to check the documentation and accuracy. Assessor will define size of sampling e.g., daily record or logbooks to overlay the number/amount of reported data.
b. **Tracing**. Assessor will check for potential errors in data consolidation, as well as potential discrepancy applied to non-calibrated instruments.
c. **Data Collection/Evidence**. Assessor will carry out ground checking data in the field. For example, hotos or collected GPS coordinates in the sites for relevant KPI implementation and analyze the match for progress/achieved result. The ground checking team will also involve field interview with local stakeholders to confirm if activities performed in the report is similar to parameter of qualitative indicator and the attention to social-environmental aspect.
d. **Interviews**. Assessor will confirm the validity with team of Implementing Partner. Assessor might also involve the relevant stakeholder (waste workers, operator or volunteer group, women group, informal waste pickers, etc) that participate in the implementation (e.g., training, cooperations with off takers, recycling centre, etc) These checks will only be subject to findings on qualitative materiality.

5.2. Detailed Results of Verification

The approach described below will be applied to determine whether the agreed results have been achieved, prior to UNDP issuing the disbursement of performance grant to Implementing Partner. The information and process presented in the following sections.

KPI 1. Site-level Set up and Mobilization of Riverine Plastic Interception Mechanisms

Means of Verification

Means of Verification must be triangulated across multiple sources e.g., field records, digital systems and stakeholder inputs to address the data sources and reliability. Documents such as MOU or agreements between Implementing Partner and the Recycling Centre might also be verified by cross-check the copies agreement archived.

Table. Means of Verification - KPI 1 (Site-level Set up and Mobilization of Riverine Plastic Interception Mechanisms)

QIs	Means of Verification	Data Source	Data Location
QI 1.1: Community consultations for Strategic Installation Points for Riverine Waste-Capturing Equipment.	Geo-tagged hotspot maps; Signed attendance sheets in the consultation; and risk profiles for hot spots.	Consultation records; GIS overlays; Photos	Project database; field reports; Minutes of consultation
QI 1.2: Established the Baseline Number and the Mobilization of Equipment/Installation for River Debris Interception.	Reports on hotspot profile and the baseline, Installation photos; Check on equipment specs; Maintenance schedule	Procurement logs; installation reports	IP's record; Report to Environment Agency
QI 1.3: Setup the Procedure for Documentation of Removed River Waste Volume and Composition.	Established daily logbooks; Utilized digital entries; Site inspection reports for supervision	Logbook templates; mobile app or dashboard (*if any*)	Field operator devices; central data repository
QI 1.4: Establish the Arrangement for Waste Sorting and Recycling.	Signed MOUs; sorting SOPs; Established mechanism to recycling coordination records between IP and the recycling centre;	IP's documentation; facility reports	IP's database; Copy of MOU/Agreement; Recycling facility logs

Table. Associated Social and Environmental Aspect (SEA) of KPI 1

SEA	Means of Verification	Data Source	Data Location
SEA 1.1: Participatory, Inclusive and Informed Equipment Sitting.	Signed attendance sheets disaggregated by gender and role; consultation minutes; photographic documentation of mapping sessions.	Community consultation records; GIS overlays; stakeholder engagement logs	Project database; IP's archives

SEA 1.2: Promote the Transparent Record on The Polluted Plastic Waste Sources.	Established SOPs for safe debris extraction to prevent the secondary leakages; training attendance sheets; established format for incident logs.	Field operation manuals; safety training records; maintenance logs	Project database; IP's archives
SEA 1.3: Socially Inclusive Arrangement in Waste Sorting and Recycling.	Signed MOUs with TPS3R/Waste Bank; sorting SOPs; attendance and payment records for informal workers; gender-disaggregated participation logs.	Facility operation records; IP's coordination or minutes report with the partner; financial transaction logs	IP's database; TPS3R archives; local government sanitation unit

Tracing

The tracing process will be carried out by Assessor if the documentation is absent on capture the consultation process. Respective information such as geo-tagging and monitoring point will also be critical to ensure the entries and record for river debris removed is detailed in treatment and volume. Assessor may also check if Implementing Partner assigns unique traceability code that links to attendance of waste worker/operator and certain site of collection zone/hot spots. Sorting stations must record segregation outcomes and transfer logs to recycling facilities, which in turn document processing outcomes and residuals.

Interview Process

Interviews are used to validate qualitative aspects of implementation, including stakeholder participation, governance effectiveness, and operational challenges. Interviews should be semi-structured, conducted with diverse actors, IP's staff, local officials (Kelurahan, RT, RW) and triangulated with field observations. Interview protocols must include consent procedures, thematic guides, and metadata tagging (e.g., location, role, date). Responses should be coded for patterns related to inclusion, safety, and environmental impact.

Sampling Strategy

Sampling must be tailored to the data type and indicator logic. For quantitative indicators (e.g., waste volume), stratified random sampling across interception zones ensures representativeness. For qualitative indicators (e.g., community consultation quality), purposive sampling of diverse stakeholder groups is recommended. Sampling frequency should align with operational cycles e.g. the daily for waste logs, monthly for sorting verification, quarterly for governance interviews. Sample size must be statistically valid for quantitative data and saturation-driven for qualitative insights.

Table. Sampling Component for KPI 1

Indicator	Sampling Type	Data Frequency	Key Criteria
Community consultation.	Purposive sampling.	One-time (set up)	Based on gender, livelihood, location

Equipment mobilization	Spot-check	Based on agreed milestone for validation	Site type, device or installation
Waste documentation	Stratified random for logbook or record sampling	Use the daily record	Pick up zone, Operator name, Time
Sorting and Recycling	Systematic	Use the monthly report	Aggregate or accumulates type of waste, material stream in the recovery facility

KPI 2. Site Clean-up and Removal of Intercepted Riverine Plastic Waste

Means of Verification

The verification relies on a multi-layered verification approach that integrates physical measurement, compositional analysis, and documentation audits. Field teams must record total volumes using calibrated weighing scales, with reconciliation sheets signed and timestamped to ensure procedural integrity. Polymer-specific breakdowns are verified through sorting sheets and facility intake logs, which must be cross-referenced with visual inspection records and photographic evidence. Geotagged collection logs provide spatial verification of hotspot categorization, while time-stamped entries allow for temporal analysis of waste composition. Informal sector contributions are validated through participation records, payment logs, and interview transcripts, ensuring that inclusion is both documented and verifiable.

Table. Means of Verification - KPI 2 (Site Clean-up and Removal of Intercepted Riverine Plastic Waste)

QIs	Means of Verification	Data Source	Data Location
QI 2.1: Applied Procedure in Removing the River Debris Including Step-by-Step to Reduce the Secondary Leakages	Calibrated weighing logs; Visual confirmation; Reconciled sheets.	Field team, operations manager	IP's record; Field logbooks
QI 2.2: Applied mechanism to monitor or track the volume of accumulated river waste.	Geotagged collection records; Mobilization of pickup routes; Site inspection report.	GIS team, field coordinator	GIS platform, hotspot registry
QI 2.3: Deployed efficient number of personnel and also applied efficient techniques or mechanisms to support	Participation logs/personnel; Payment records; Interview transcripts.	IP's finance team	Inclusion registry, payment database for waste workers/ operators

the riverine waste removal.			
QI 2.4: Maintained accurate documentation of waste volume.	Time-stamped collection logs; Seasonal logs for accumulated volume of river debris	Municipal partners; IP's field staff	IP's database; copies of database in Environment Agency; Kelurahan.

Table. Associated Social and Environmental Aspect (SEA) of KPI 2

SEA	Means of Verification	Data Source	Data Location
SEA 2.1: Contained the Potential Impact to Environmental Safeguard.	SOP adherence, spillover logs, visual inspection.	Field team, environmental officer	SOP compliance sheets, incident reports on secondary leakages, complaints
SEA 2.2: Waste Traceability and Participatory Oversight.	PPE logs, incident reports, worker interviews.	Field supervisor, workers	Safety checklist, HR records
SEA 2.3: Equitable Skill Enhancement.	Participation records; interview transcripts.	Community liaison, finance team	Inclusion registry, payment database.
SEA 2.4: Upstream-Downstream Pollution Prevention through Transparent Plastic Waste Recovery Process.	Structured interviews, perception surveys (*on the process of river debris cleanup and removal*).	Community monitors	Survey database, interview transcripts

Tracing

The tracing process under KPI 2 is designed to ensure full visibility of the waste flow from point of interception to final sorting and processing. Each collection event must be geotagged and linked to a unique identifier, such as a QR-coded sack or bin, which is tracked throughout the containment and transport stages. Transport manifests must document the movement of waste from hotspot to facility, including timestamps, and schedule for debris removal. At the facility level, intake reconciliation sheets must match field-reported volumes with actual quantities, flagging any discrepancies for review. A centralized traceability dashboard aggregates these data streams, enabling supervisors and auditors to monitor operational integrity, detect leakage risks, and validate compliance with SOPs. This system must be interoperable with field logbooks and facility databases to ensure seamless data integration and audit readiness.

Interview Process

Interviews serve as a critical validation tool for both procedural compliance and social safeguards under KPI 2. The process begins with stakeholder mapping to identify relevant actors, including collectors, community members, and facility staff. Semi-structured interview guides are tailored to each role, focusing on operational experiences, safety practices, and perceptions of environmental risk. All interviews must be conducted with informed consent and confidentiality protocols, especially when engaging informal sector workers or marginalized groups. Triangulation is essential to cross-checked against field documentation, payment records, and visual observations to ensure consistency. Interview logs should be time-stamped and stored securely, with thematic coding applied to support qualitative analysis. This approach not only validates inclusion and safety but also surfaces operational blind spots that may not be captured through quantitative data alone.

Sampling Strategy

Stratified sampling is recommended to ensure representation across geographic zones, waste types, and operational risk levels. For example, volume validation may involve sampling ≥10% of daily collection events per site, while polymer composition requires purposive sampling of mixed waste streams ≥5 kg per category per week. Randomized selection is essential for physical inspections and interviews, with sample sizes calculated based on desired confidence levels and expected variance. Temporal sampling must capture both peak and off-peak periods, including seasonal fluctuations. Validation sampling should include control samples, such as untagged sacks or informal routes, to detect anomalies and strengthen audit defensibility.

Table. Sampling Component for KPI 2

Indicator	Sampling Type	Data Frequency	Key Criteria
Applied procedure in removing river debris	Stratified purpose sampling	Use the weekly record per operational site	Select samples from varied hotspot types (e.g., upstream, midstream, downstream); include both manual and mechanized removal events
Applied mechanism to monitor or track the volume of accumulated river waste.	Stratified purposive sampling	Use the daily record during active collection periods	Include peak and off-peak accumulation days; stratify by river segment and flow rate
Deployed personnel and technique.	Random sampling	Monthly presence for waster worker/ operators; and Monthly operational report for equipment	Sample across different removal technologies (e.g., passive catchers, skimmers)
Maintained accurate documentation	Sampling for data reconciliation	Use the monthly report	Select samples with full documentation

			trail (collection log, transport manifest, intake sheet) that represent both high-volume and low-volume transfer events.

KPI 3. Preventing the Mismanaged Plastic Waste from Entering the River

Means of Verification

Means of Verification refers to the specific tools, records, and procedures used to validate the achievement of KPI 3 indicators. These include physical documentation, digital records, geo-tagged photos, community monitoring logs, and triangulated field evidence. Verification must ensure traceability, disaggregation (by gender, age, sites), and consistency with validation protocol.

Table. Means of Verification - KPI 3 (Preventing the Mismanaged Plastic Waste from Entering the River)

QIs	Means of Verification	Data Source	Data Location
QI 3.1: Behavioral Shifts and Awareness of Riverine Plastic Pollution	Attendance sheets, media analytics, pre/post surveys, FGD transcripts.	Community facilitators, media partners	IP's record; Digital M&E system
QI 3.2: Initiated community mentoring activities through local champions, waste bank facilitators, and engagement programs to expand household-level plastic waste.	Segregation audit forms, incentive logs, mentoring records, waste bank transaction sheets	Waste bank operators, Community champions	Community waste bank; Project database
QI 3.3: Support infrastructure provisions that enable community members to prevent direct waste disposal into the river.	Geo-tagged bin photos; Collection log (including municipal record); waste volume records; site inspection	Municipal partners; IP's field staff	IP's database; Kelurahan.

Table. Associated Social and Environmental Aspect (SEA) of KPI 3

SEA	Means of Verification	Data Source	Data Location
SEA 3.1: Occupational Safety Protocol and Fair Compensation.	FGD transcripts; out reach media reports.	Media partners; Facilitator report	Project database; IP's archives

SEA 3.2: Household-Level Plastic Waste Diversion.	Disaggregated household audit forms, mentoring logs.	Community champion; inclusion focal points	Community center; project database.
SEA 3.3: Infrastructure Access.	Accessibility audits, bin usage logs, feedback forms from vulnerable groups.	Field staff, inclusion monitors	Field inspection reports, digital archive

Tracing

Tracing ensures that reported outcomes are verifiable through a documented chain of evidence. For KPI 3, tracing involves linking each activity (e.g., bin installation, mentoring session) to its output (e.g., kg of waste diverted, number of households trained) and verifying through timestamped, geo-tagged, and signed records.

Interview Process

Interviews are used to validate behavioural change, inclusion outcomes, and infrastructure usage. They should be semi-structured, triangulated with observational data, and conducted with diverse stakeholders (e.g., women, youth, informal workers).

Sampling Strategy

Sampling must reflect the operational diversity of upstream communities, including settlement type, socio-economic status, and proximity to riverbanks. Sampling design varies by indicator type with behavioral indicators require stratified random sampling; infrastructure indicators require purposive sampling based on bin locations; diversion indicators require quota sampling based on household participation.

Table. Sampling Component for KPI 3

Indicator	Sampling Type	Frequency	Key Criteria
Behavioral Shift.	Stratified random sampling.	Minimum 10% of target population in the community area.	Age group, gender, school-non school population, elite – non. Elite population
Household-level Plastic waste diversion	Quota sampling	Minimum 30 households within the intervention site	Active household, volunteer group, participating induvial/group
Infrastructure Access and utilization	Purposive sampling	All bins installed + 20% from surrounding household from site.	Bin location track, accessibility

KPI 4. Volume of Plastic and Organic Waste Processed and Recycled

Means of Verification

KPI 4 validation integrates the qualitative approach with quantitative record and physical observation from intake volumes to recycled output and material recovery efficiency, checked with the specific means of verification that are applied to ensure data integrity and traceability. Beside the inspection on weighbridge logs, intake-outtake manifests, machine operations, assessor will also check the calibration record for weighted equipment.

Data point must be cross-validated against sources of its location. For plastic material classification and recycled grades, physical observation/visual sort logs serve as primary verification tools. Assessor will ensure the reported volumes in the Implementing Partner report are not only accurate but also traceable across the entire processing lifecycle.

Table. Means of Verification - KPI 4 (Volume of Plastic and Organic Waste Processed and Recycled)

QIs	Means of Verification	Data Source	Data Location
QI 4.1: A Through Mechanism in Sorting the Collected Waste (*from river and also community*) and Classify the Plastic Waste for Further Processing.	Sorting SOPs, visual inspection logs, polymer classification sheets.	Field team, sorting facility staff	Sorting station logbooks, digital dashboard
QI 4.2: Volume of Plastic Waste Recycled.	Weighbridge logs, batch tracking, recycler intake/output records	Recycling facility manager	Facility Monitoring system; Dispatch records
QI 4.3: Volume of Organic Waste Recycled.	Composting logs, biodigester input/output sheets, utilization records	Community group, facility operator	Organic processing unit database
QI 4.4: Scale the Quantity of Waste Diverted from Disposal to the Landfill.	Diversion reports, reconciliation sheets, certified recycler manifests	IP's documentation; MRV officer	IP's database; Central MRV system

Table. Associated Social and Environmental Aspect (SEA) of KPI 4

SEA	Means of Verification	Data Source	Data Location
SEA 4.1: Occupational Safety Protocol and Fair Compensation.	PPE distribution logs, payment records, worker interviews.	HR team, field supervisor.	Project database; IP's archives on Safety checklist; payroll system

SEA 4.2: Reduces the Environmental Load of Persistent Pollutants.	Material recovery efficiency, leakage incident reports.	QA team; Environmental officer	Environmental monitoring report by Local Agency
SEA 4.3: Emissions Reduction and Ecosystem Protection.	Effluent test results, community feedback.	Facility operator; Community monitors	Environmental monitoring folder, stakeholder engagement; complaint record

Tracing

The tracing system ensures end-to-end visibility of waste flow since arriving in sorting and recycling facility, beginning with tagged collection units, until final output. Diversion from landfill is documented via approved manifests.

Interview Process

Interviews serve to validate operational practices and social safeguards by capturing stakeholder insights across collection, sorting, processing, and community engagement. Stratified sampling ensures representation from riverine and community actors, with semi-structured guides tailored to roles and themes such as classification accuracy, safety compliance, compensation fairness, and environmental impact. Conducted ethically with informed consent, interviews are coded thematically and triangulated with field documentation and digital records. All transcripts are securely stored with metadata for audit traceability, and discrepancies trigger targeted follow-up or corrective action.

Sampling Strategy

The sampling methodology for KPI 4 is designed to ensure representative, risk-adjusted validation across waste streams and operational contexts. Stratified purposive sampling is applied to sorting activities, capturing both riverine and community-sourced waste across varied geographic zones and material types. Systematic batch sampling is used for plastic recycling, ensuring coverage across polymer categories and processing technology used, while randomized operational sampling verifies organic waste recovery through composting and biodigestion.

For landfill diversion, reconciliation-based sampling selects waste fractions with complete documentation trails, prioritizing high-volume and high-risk batches in certain periode of reporting by Implementing Partner.

Table. Sampling Component for KPI 4

Indicator	Sampling Type	Data Frequency	Key Criteria
Sorting and Classification	Stratified purpose sampling	Use the weekly record per sorting site	Include riverine and community sources; stratify by waste type and location
Plastic Waste Recycled.	Bacth sampling	Daily batch/record during processing	Sample across polymer types and processing technologies; verify batch traceability

Organic Waste Recycled.	Random sampling	Monthly data per composting unit	Include varied input types (food, garden waste); verify output utilization logs
Waste Diverted from Landfill	Reconciled-based sampling	Monthly cross-check	Select samples with full documentation trail; include both plastic and organic fractions.

KPI 5. Participation from Informal Waste Pickers and The Gender Aspect

Means of Verification

KPI 5 will conduct verification with key documents include such as MoUs with existing waste collector or aggregators, trainings for women group and the informal waste pickers, grievance logs, and all disaggregated report on participation number by gender (men-women) and their role. Assessors will also validate the efficiency of outreach and training activities on-site, while interviews will assess the inclusion and safeguard implementation.

Table. Means of Verification - KPI 5 (Participation from Informal Waste Pickers and The Gender Aspect)

QIs	Means of Verification	Data Source	Data Location
QI 5.1: Outreach and Collaboration with Existing Waste Collectors and Aggregators.	Signed MoUs or engagement agreements; Attendance sheets from outreach sessions; Mapping of informal actors and their operational zones; Documentation of collaborative activities; availability of gender-sensitive outreach materials.	Record on cooperation; Field team outreach logs; Stakeholder mapping reports	Project database; IP's record; Local government coordination files; and Group leaders
QI 5.2: Provide Capacity-Building Programs, Including Support for Women's Groups.	Training attendance sheets disaggregated by gender and role; Gender sensitive curriculum and training materials; Training feedback	Training provider report; IP's coordination reports	Capacity-building database; IP's archives
QI 5.3: Actively Incorporate Gender Aspects, Informal Waste Pickers, Zero Tolerance to Child Labor, and Increase Participation.	Gender-sensitive grievance mechanism documentation; Child labor screening and age verification records;	Safeguards unit logs; Community liaison reports; Financial distribution records	IP's database

	Benefit-sharing documentation and transparency reports		

Table. Associated Social and Environmental Aspect (SEA) of KPI 5

SEA	Means of Verification	Data Source	Data Location
SEA 5.1: Inclusive Participation of Informal Waste Pickers, Aggregator and Off Takers.	Stakeholder mapping; Attendance sheets from outreach and training sessions; Signed engagement agreements; Documentation of collaborative planning and operational roles.	Cooperative records; Training provider documentation	Project database; IP's archives; Local coordination unit
SEA 5.2: Inclusive Participation of Informal Waste Pickers, Aggregator and Off Takers	Gender-disaggregated training records; Microfinance or grant disbursement logs; Mentorship participation tracking; Feedback surveys from women participants.	Training logs; Mentorship program documentation	IP's coordination database; Community development unit.
SEA 5.3: Gender Integration, Child Labor Safeguards, and Inclusive Participation.	Grievance logs and resolution documentation; Age verification records and school enrollment checks; Benefit-sharing documentation and transparency reports.	Cooperative governance records; Safeguards unit documentation	IP's partner systems; Local government social protection unit

Tracing

All participants, particularly informal waste pickers, women's groups, and aggregators will be assigned unique identifiers upon engagement, enabling traceability across outreach, training, governance, and benefit-sharing activities. Implementing Partner will provide a registry with log of participation and compliance.

Validation of KPI 5 requires continuity across at least three stages of engagement (continuous observation between two milestone periode) to trace status of validated performance. Non-traceable performance within these two milestone periode will be flagged for resolution prior to performance grant disbursement of KPI 5 component.

Interview Process

Semi-structured interviews will be conducted with a stratified sample of stakeholders to assess access to project activities, quality of participation, and awareness of safeguards. Interviewees will include informal waste actors, women leaders, aggregators, and safeguards focal points. Responses will be anonymized, thematically coded, and cross-referenced with field and documentary evidence. A minimum of 10% of engaged participants must be interviewed, and findings will be synthesized into a validation memo to support indicator-level conclusions.

Sampling Strategy

Sampling for KPI 5 will ensure representative and inclusive data collection across gender, role, and geography. Quantitative data (e.g., training participation) will use stratified random sampling with a minimum of 10% per stratum, while qualitative interviews will apply purposive sampling to capture diversity and edge cases. Sample sizes will be determined using standard confidence levels and margins of error, and all sampling frames and execution logs will be archived for audit and reviewed annually or as being recommended by Project Board for adaptive refinement.

Table. Sampling Component for KPI 5

Indicator	Sampling Type	Frequency	Key Criteria
Outreach and Collaboration.	Stratified random sampling.	Use the quarterly data during outreach cycles	Pick up the sample to represent the role classification (picker, aggregator, off-taker); Gender; Age; Geographic zone (urban, peri-urban, riverine)
Capacity-Building Programs	Quota sampling	Use the monthly during training implementation	Pick up the sample to represent gender-disaggregated participation; and the Recorded feedback from women participants
Incorporate Gender Aspects, Informal Waste Pickers, Zero Tolerance to Child Labor	Purposive sampling	All bins installed + 20% from surrounding household from site.	Representing gender and age verification; Governance participation; Grievance resolution records; Benefit-sharing documentation

6.   Payment Arrangement

6.1. Payments for Results Achieved to Implementing Partner

This section defines the payment mechanism linked to validated KPI performance across milestone periods of three or six months, depending on the agreement with the implementing partner. Payment for result achieved is contingent on the submission of a complete validation report, reviewed jointly with the implementing partner, and the local government.

To ensure consistency, this section outlines the minimum conformance threshold (≥90%), the calculation method for KPI achievement, and the conditions for payment approval, deferral, or partial disbursement. It also includes procedures for tracking progress between milestones, documenting remedial actions, and verifying resolution of previous findings. Payment decisions are based strictly on verified data and supervisory confirmation.

As respond to the flagged findings, upon approval from Donor to the overall validation report and its recommendation, UNDP and Implementing Partner will trace the progress of remedial action during next milestone of implementation. Whenever agreed, endorsement from local government will be also required to confirm the operational legitimacy of corrective actions taken.

Agreement on Validation Report

Pursuant to **Task 3 of Finalization and Reporting**, the final Validation Report must be jointly reviewed by UNDP and the Implementing Partner. Implementing partner will be responsible on implementation documents, and UNDP will be responsible on verification oversight. The steps for final report acceptance:

- Final review by UNDP team.
- Joint validation meeting on the final report with local government and donor representation.
- Documentation of findings and the non-conformance for follow up action and tracing by the next milestone.
- Final sign-off to report.

Minimum Threshold for Acceptable Payment for Results Achieved

To qualify the payment for results achieved, KPI must meet the minimum conformance by threshold of 90% in the assessment. This threshold will allow for a maximum 10% error (*Quantitative and Qualitative Materiality*) for margin on sampling result. The final validation report will clearly state:

- KPI's qualitative indicator within the threshold 90% will be provided with a summary of payment recommendation.
- KPI's qualitative indicator below the threshold 90% will be flagged and provided the single recommendation/action as follow up
- Single recommendation/follow up action might also be settled within agreed time for not more than 2 weeks to be included in the current payment terms.
- Whenever agreed by UNDP and the Implementing Partner, project will trace the progress of action and include the payment of the specific QI in the next term.

6.2. Sample Method for Calculating the Final KPI percentage

The final percentage of KPI score is calculated with the formula:

Final KPI Score (%) = (Number of Verified Samples / Total Samples Collected) × 100

Level of Payment for Final KPI Percentage

- For any KPI which has been validated with verified samples are free of material error, Implementing Partner will receive full payment for the KPI.

- For any KPI which has been validated with verified samples are free of material error, and are above the result framework, the Implementing Partner will receive full payment for the KPI

- For any KPI which has been validated with verified samples are free of material error, and are below the result framework, the recommendation for actions and payment will be basis to the decision by Project Board (Donor, UNDP and the National Ministry).

- For any KPI which reported with more than threshold of error (below 90%), payment only be made upon actions taken by Implementing Partner. For material discrepancy that cannot be resolved, it is UNDP discretion on the result of actions taken.

6.3. Tracing Progress Between Milestones

The assessment will ensure to trace the progress across each milestone periode (3 or 6 months) with the emphasis on:

- Completion of activities for relevant QIs.

- Resolution on previously identified findings.

- Documentation of remedial action and the outcomes.

- Update of traceability logs showing the participant engagement, compliance and benefit/ intermediary impact achieved.

6.4. Payment Approval

A package of completed performance verification report will be sent to Project Board. Final approval for payment will be advised by Donor.