Combating Marine Plastic Litter in Cambodia

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Final Evaluation, August - November 2023

Final Report
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This report was prepared by **Mr. Peder Bisbjerg**, International Consultant (pedergregersbisbjerg@hotmail.com) and he would like to express gratitude and appreciation to all the stakeholders they met and interviewed. Their contributions were most appreciated, and the facts and opinions they provided constitute an essential input to this evaluation.

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Unless otherwise stated, the pictures are taken by Peder Bisbjerg.

DISCLAIMER

This report is the work of independent consultants and does not necessarily represent the views, or policy, or intentions of the UNDP, the Embassy of Japan or other stakeholders referred to in this report.

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Acronyms and Abbreviations

ADB	Asian Development Bank
CE	Circular Economy
COVID-19	Coronavirus disease of 2019
EPR	Extended Producer Responsibility
GIZ	German Development Cooperation
MEF	Ministry of Economy and Finance
MISTI	Ministry of Industry, Science, Technology, and Innovation
MoE	Ministry of Environment
MSW	Municipal Solid Waste
NGO	Non-Governmental Organisation
OECD/DAC	Organisation for Economic Co-operation and Development's Development Assistance Committee
PA	Priority Area (used in *Circular Economy National Strategy)*
PDoE	Provincial Department of Environment
PMU	Project Management Unit
PPE	Personal Protection Equipment
PPP	Public Private Partnerships
PRO	Producer Responsibility Organisation
RO	Reverse Osmosis
SDGs	Sustainable Development Goals
SO	Strategy Objective (used in *Circular Economy National Strategy)*
STEMEOC	Science, Technology, Engineering and Mathematics Education Organization for Cambodia
SUP	Single Use Plastic
TBD	To Be Determined
TOR	Terms of Reference
UNDP	United Nations Development Programme.
UNEG	United Nations Evaluation Group
USD	United States Dollars
VPR	Verified Plastic Recovery
WB	World Bank

1 Executive Summary

The three-year project *Combating Marine Plastic Litter in Cambodia* will be completed in January 2024. The project's aim is to initiate the transition to a circular economy for Cambodia, targeting plastic pollution on land and at sea. It promotes waste avoidance, reuse and recycling through regulatory measures and is to pilot schemes such as extended producer responsibility. The project had five components which focussed on developing regulations; awareness raising; implementation of measures in target areas; development of business models for plastic recycling; and knowledge sharing.

Evaluation Guidelines where the project's performance was considered in accordance with the OECD/DAC evaluation criteria in terms of Relevance, Effectiveness, Efficiency and Sustainability. The evaluation findings can be summarised as follows:

This project was found to be well-managed and successful. It has achieved its objective of laying the foundations for a transition to the circular economy in Cambodia. The project can be judged as follows:

Relevance – The project is highly relevant to the priorities of the Government of Cambodia, Embassy of Japan and the UNDP.

Effectiveness – All project activities were completed, with the preparation of plastic management legislation, a Roadmap for Cambodia on EPR, introducing plastic management in local *Solid Waste Management Plans,* making a guide for minimising the plastic usage in the hospitality sector, and the distribution of 97 water dispensers.

A great emphasis was placed on awareness raising and the project reached a surprisingly large audience using social media in an astute matter. The project communicated well with all stakeholders, especially decision makers, and today proper plastic management is a high priority for the government of Cambodia, and a *Sub-Decree on Plastic Management* is pending.

The project handed out 160 sets of three bins, where the bins were intended to be used for source separated waste. The evaluation found no evidence that any of these bins were used as intended, and the supplied bins serve little purpose, at least in the context of promoting the 4Rs and encouraging source separation.

Finally, more direct efforts to develop or demonstrate circular economy models would have been desirable, this could have been greater efforts in working directly with authorities and private companies on design bans, taxes/levies on plastic products, to pilot EPR PPPs, or to develop performance guidelines and standards.

Efficiency – The project was implemented in a competent manner, despite the COVID-19 pandemic. The PMU was efficient in conducting a wide array of activities over a three-year period. The Project Board met on regular intervals and served to guide the project's efforts toward key decision makers.

The project design could have included some capacity building at the provincial level. The Project Document seemingly overestimates the resources available at the PDoE level.

Sustainability – The project reached a wide audience with its training and awareness activities, so today there is a much greater knowledge regarding plastic pollution and the

urgency to address this issue. The new Minister of Environment is cognisant of the matter and has mentioned the topic in public several times, indicating that the management of plastics is a priority. The *Sub-Decree on Plastic Management* is pending, but hereafter there will be a wide range of actions to define (bans on certain plastics, EPR for specific products, taxes, duties and levies on plastics, etc.), each of which will require directives guidelines, and implementation.

The RO water filters that were supplied to schools are sustainable and will be well taken care of.

Crosscutting Issues - The project fulfilled all the Embassy of Japan and UNDP intentions in terms of gender equality, human rights, social concerns and protection of the environment.

Conclusion - This project addresses an urgent environmental concern that is a high priority. The project raised awareness with decision makers and ensured that the *Sub-Decree on Plastic Management* was developed and it is now pending approval. This decree, together with the *Circular Economy National Strategy,* will guide Cambodia's transition to proper management of plastics.

The project was both innovative and efficient in its awareness raising and provided 97 water dispensers to schools and universities that are very popular. It would have been advantageous if the project has done more piloting/ demonstration of business solutions for plastic waste recycling under Output 4.

The project is well aligned with the goals of all stakeholders and has laid the foundations for Cambodia's transition to a circular economy. The project has made good use of its financial resources and the PMU was very diligent in raising awareness about plastic pollution and informing about the measures that must be taken.

The project is rated as follows using the quality assessment rating scale from the *UNDP Evaluation Guidelines*. The definition of the assigned rating can be found in Annex I of this report.

Evaluation Criteria	Value
Relevance	HS
Efficiency	S
Effectiveness	S
Sustainability	S
Crosscutting Issues	S

This is considered a good outcome for the project. It is **strongly recommended** that the support to assist Cambodia transition to a circular economy be continued. Recommendations for the key priorities to be addressed in an ensuing phase of this project is provided in section 6.2.

Recommendations - This project has laid a strong foundation for the introduction of circular economy in Cambodia, but further steps are essential before larger elements of a circular economy can be achieved. The existing efforts should be scaled up, the capacity

development within the MoE and PDoE should be continued and the collaboration with recycling business entrepreneurs should be maintained. The most essential actions would be to:

- The *Sub-Decree on Plastic Management* advocates circular economy and is expected to propose actions such as prohibition on certain products, the option of taxing plastics, measures to minimise plastic quantities, promote recycling and their proper disposal. Many interventions advocated in the *Sub-Decree* take time to implement and preparations can start immediately. This applies to bans on selected single use plastics, import duties imposed on certain types of plastics, requirements to plastic type coding to facilitate recycling, the preparation of regulations governing packaging, and MOE demands for annual reporting on plastics.
- One or more voluntary schemes can be implemented for distributors of plastic products where the companies recover waste plastic materials. The "Verified Plastic Recovery" mechanism/ certified plastic credit system tested by Tontoton can be used, or some variation thereof. Here the plastic materials would be collected by waste pickers and a predetermined fee would be paid per kg to the scavengers. Some of the collected plastic could be recycled, and the non-recyclable plastic could be used as fuel, or as a building material, or if that is not possible, safely disposed of in a landfill. Many companied could be certified for the collection and safe disposal of waste plastic under a VPR scheme. The strategy would be to gradually impose quotas for plastic recovery on all importers, manufacturers and distributers of plastic materials. The logic being that if a company is responsible for distributing 100 tonnes per year of plastic in its products and their packaging, the company should be responsible for recovering the same quantity of material.
- Implementation of plastic avoidance, reduce and recycling schemes for hospitality, beverage, or other industries. Hotels can be encouraged (or obliged) to have green policies, and encouraged through Green Certification and similar schemes. Many hotels in Cambodia are already promoting themselves as "Travel Sustainable" on some websites. For example, on the web based reservation site "Booking.com" all Cambodian hotels already have a (self-assessed) green score. Beverage industries should implement take-back schemes, deposit-refund systems and work to reduce their environmental footprint. Plastic beverage containers can be phased out, redesigned to facilitate recycling, glass can replace plastic and there can be a deposit on each container. Seeing as these industries distribute products to all corners of the country, reverse logistics will relatively easily allow for the empty containers return to their point of origin.

Implementing the pending *Sub-Decree on Plastic Management* will require the development of directives, guidelines and other tools to help the enactment of the various measures in the decree. Ensuring that the import, manufacturing and distribution of goods implements elements of the circular economy are essential to encourage the minimisation and recovery of plastics in the manufacturing and service sectors. This should be accomplished through the implementation of the legislate tools provided in the *Sub-Decree* and using tested methods such as the Verified Plastic Recovery" mechanism.

2 Introduction

The realisation of the project *Combating Marine Plastic Litter in Cambodia* started in January 2021 and will be completed in January 2024. The implementation is by the UNDP in partnership with the Ministry of Environment (MoE) with financial assistance provided by the Embassy of Japan. The project's overall objective "**is to realize a circular economy model that will promote sustainable consumption and production of plastic in Cambodia**."

This is to be achieved by preventing and minimising plastic waste pollution on land and in the ocean through the promotion of an 4R framework. The project is to develop policies and regulations, raise awareness, and support the reduction of plastic waste, and the introduction and promotion of new technologies such as recycling and plastic alternatives. These goals will be achieved through the following five project outputs:

1. Key enabling policies and regulations developed and implemented to promote 4Rs.
2. Improved awareness about the plastic pollution and its solutions among citizens and the private sector through environmental education and awareness-raising activities.
3. Plastic waste reduced in target cities through education and private sector-led best practices and innovations.
4. Priority business models for plastic recycling and alternatives supported and tested.
5. Best practices disseminated and shared.

The first output is the identification of areas that need additional regulations to promote circular economy and associated activities such as single-use plastic regulations, Extended Producer Responsibility (EPR) and take-back deposit schemes. Hereafter such regulations and business activities are to be developed and implemented, focussed on actions like bans on plastic straws and/or single use toiletries in hotels, and/or single use plastic.

The second output is focussed on awareness raising about plastic pollution for citizens and the private sector. This includes the development of awareness raising materials and campaigns for schools on the plastic crisis and the importance of separation of waste to enable recycling. The project is to encourage and assist in minimising the role of single use plastic products in coffee shops, malls, grocery stores, hotels, and the garment industry.

The third output calls for the establishment of 80 plastic-free schools and providing these with the necessary equipment. A second activity is to reduce the quantity of plastic waste in Phnom Penh, Siem Reap, and Sihanoukville, where the focus is on the reduction, sorting, and recycling of plastic waste.

The fourth output aims to identify and pilot solutions that recycle plastic or provide alternatives to plastic products. This could be interventions such as design bans on non-essential plastic products; taxes/levies on plastic products, and public private EPR partnerships.

Finally, the project is to share and disseminate the project results and the identified best practices both nationally and internationally.

Structure of this report
This report follows the structure and content requirements of the UNDP guidelines for project evaluation and mostly follows the outline set out in the Terms of Reference. The two sections suggested in the TOR:

- Evaluation Scope and Objective (1 page)
- Evaluation Approach and Methods (1 page)

Have been combined to a single section "Evaluation Objective, Approach and Methodology." Furthermore, the table of progress against indicators have been moved to the Findings section and are listed for each output, rather than being part of the report's conclusion. Section 3 of this report explains the purpose of the evaluation, and provides the evaluation methodology and application. The next section of this evaluation report covers the Findings, where the project's achievements are held against the Outputs foreseen in the Project Document, this assessment of the project's performance is made in terms of the OECD/DAC evaluation criteria of Relevance, Effectiveness, Efficiency and Sustainability. A final subsection has been added to the Findings, where the crosscutting issues of gender, social inclusiveness, human rights and environmental protection are discussed. The last two sections draw together the Conclusions and Recommendations made during the evaluation.

3 Evaluation Objective, Approach and Methodology

This section describes the objective of the evaluation, and the methodology that was used in the planning and execution of the final project evaluation.

3.1 Purpose of the Final Project Evaluation

The Final Evaluation of the project *Combating Marine Plastic Litter* was carried out according to the *UNDP Evaluation Guidelines* (revised June 2021) and the task's Terms of Reference (TOR).

Under the *UNDP Evaluation Guidelines,* the aim of the Final Evaluation is to provide a systematic and comprehensive review and appraisal of the performance of the project by assessing its design, processes of implementation, achievement relative to its objectives. Under this overarching aim, its objectives are i) strengthen learning within the UNDP and among stakeholders to support better decision making; ii) to promote accountability and transparency, strengthening the ability of stakeholders to hold UNDP accountable for its development contributions; and iii) generally to generate empirical knowledge about what has worked, what has not, and why, to help managers and other stakeholders make informed decisions. All United Nations entities promote gender equality, human rights and disability concerns, these interconnected issues must be incorporated into any evaluation of the organisation's projects.

A UNDP Project Evaluation's specific objectives are to appraise the project implementation arrangements and the achievements of outputs, as well as to assess the project's outputs in the context of their contribution to broader developmental goals. Here, the project evaluation is to provide advice on possible improvements, on how an initiative can be continued or scaled up, and on the project's sustainability and replicability. In this

evaluation, the TOR request that the project's performance be considered in according to the OECD/DAC [1] evaluation criteria in terms of Relevance, Effectiveness, Efficiency and Sustainability.

Against this background, and as per the TOR, the purpose of this evaluation specifically was twofold – learning and steering, since it assesses and presents the achievements of project results, conclusions and lesson learned including appropriate recommendations for effective implementation of future interventions that can be further integrated into the UNDP Cambodia Environmental portfolio to move the adaptation process forward. The TOR request that recommendations be given for potential future initiatives to minimise plastic consumption and plastic waste pollution.

Since both the United Nations and the Embassy of Japan promote environmental protection, gender equality, social issues, human rights and disability concerns, the evaluation also covers the degree to which this cross-cutting issues were addressed during project design and implementation.

To conclude, this report is an independent examination of the project, assessing its results in terms of relevance, effectiveness, efficiency, sustainability, and crosscutting issues such as gender, environment, and human rights. This report endeavours to provide recommendations on lessons learnt and how the project's achievements can be duplicated, scaled-up or otherwise put to use. It is also anticipated that the recommendations from this evaluation will help identify relevant areas of strategic intervention for UNDP in supporting the country to address the plastic issue for next programming cycle 2024 – 2029.

3.2 Methodological Approach

The Project Evaluation follows the directions given in the Terms of Reference (Annex J) and the *UNDP Evaluation Guidelines*. These two documents provide the basis for the evaluation framework, which in turn underpins and guides the overall approach. In projects implemented by UNDP, the Embassy of Japan relies on the partner's evaluation and has no requirements to its execution.

For the appraisal the Evaluation Questions given in the Terms of Reference were used, these are structured following the selected OECD-DAC criteria (relevance, efficiency, effectiveness, sustainability). The questions forms the evaluation framework that can be found in Annex A.

An Evaluation Matrix was developed during the inception period and is used to track the project progress against set indicators, it can be found in Annex B. The Project Document's Results Framework provides indicators and targets for both project outputs over the project duration. The results framework work covers the individual outputs; the indicators, the baseline and end of project target, and finally the proposed means of verification. This is

[1] The Organisation for Economic Co-operation and Development's Development Assistance Committee (OECD/DAC) is a forum to discuss issues surrounding aid, development and poverty reduction in developing countries.

an excellent tool to compare expectations with the actual results, the matrix can be found in Annex C.

The project design was developed using Theory of Change where a logical framework analysis approach is used. First, the desired long-term goals are identified, and the analysis then works back from these to identify all the conditions (Outputs) that must be in place for the goals to occur. By identifying all required conditions that are necessary for a successful impact, the Theory of Change assessment ensures that there are no flaws in the project design. This evaluation examines the project design.

The evaluation was conducted in an ethical manner, in terms of providing an independent judgement, being transparent about the purpose of the project evaluation and offering confidentiality to those interviewed.

Crosscutting Issues
Both the United Nations [2] emphasise crosscutting issues such as human rights and gender equality on all their projects. These issues must be closely scrutinised during project design, implementation and evaluation. The UN guidance document requires that human rights and gender equality be examined in two dimensions during an evaluation:

- To what extent the intervention was guided by the UN's organisational and system-wide objectives on the issues and whether the objectives were achieved; and
- To what human rights and gender equality were integrated into the project's implementation.

3.3 Data Collection and Analysis Tools

All relevant documentation (see Annex G) was received from the PMU in a prompt manner, and these were analysed in a desk review. This was accompanied by stakeholder consultations in the form of structured and semi-structured interviews (a list of questions can be found in Annex E), and site visits. The Evaluator strived to incorporate crosscutting elements into all stages of the project appraisal.

Interviews and visits were carried out in Phnom Penh, Sihanoukville and Siem Reap, but the project activities in Kep + Kampot Provinces were not visited. A representative sample of project stakeholders and activities were met or visited. This included all key stakeholders, and visit to 19 sites with project activities, whereof 11 were recipients of water fountains. The project also worked with hotels, restaurants, shops and tourism businesses to implement measure to reduce plastic quantities, but this was in the form of workshops and there were no activities to visit. The Evaluator did manage to meet with two of the winners of the *Innovation Challenge on Alternatives.*

[2] *Integrating Human Rights and Gender Equality in Evaluations,* UNEG Guidance Document (August 2014) Quote below from page 4.

4 Findings

This section covers the observations of the Evaluator, where the project's achievements are held against the Outputs foreseen in the Project Document. The project's performance as assessed following the OECD/DAC evaluation criteria of Relevance, Effectiveness, Efficiency and Sustainability. A final subsection has been added to this part, where the crosscutting issues of gender, social inclusiveness, human rights, and environmental protection are discussed.

4.1 Relevance

This subsection discusses the relevance of the project within its international and national context. The project's objective is help attain a circular economy model that promotes a sustainable consumption and production of plastic in Cambodia through waste avoidance, and minimising plastic waste pollution through promotion of a 4R framework. Firstly, it will be examined whether the project's goals meet the needs and priorities of the Government of Cambodia and the participating national institutions, Secondly, the project's alignment with the strategies of both the Embassy of Japan and the United Nations are explored.

Cambodia's *Sustainable Development Goals Framework* [3] set as its first target for ensuring environmental sustainability that sustainable development must be integrated into national policies and that environmental loss must be reduced. These priorities are reflected in the *National Environment Strategy and Action Plan 2016-2023* which reaffirms the Royal Government of Cambodia's commitment to sustainable development and poverty reduction. In this strategy environmental and natural resources sustainability issues have a central place within the national development framework. Sustainable development, green growth, climate change, environment and biodiversity are seen as essential for the present and future economic growth, food, energy and water security, and poverty reduction in the country.

Combatting marine plastic and enacting a circular economy is well aligned with the Government's objective of achieving environmentally sustainable economic development. The country's commitment to a sustainable development approach is also reflected in its support of the UN Sustainable Development Goals (SDG). The project's key partner is the National Council for Sustainable Development, the entity responsible for achieving these objectives.

Therefore, this project's priorities are well reflected in the national priorities. Cambodia's *National Environment Strategy and Action Plan 2016-2023* prioritise green growth and climate change, and this project directly contributes to the execution of the *National Environmental Strategy* and to the nation's endeavours to achieve a sustainable development. The *Circular Economy National Strategy and Action Plan (2021-2035)* that

[3] *Royal Government of Cambodia: Cambodian Sustainable Development Goals (CSDGs) Framework (2016-2030)* (Approved 2018)

the project helped develop with the MoE and SIDA outlines the steps needs and provides a roadmap for Cambodia's transition from a linear to a circular economy.

The project is aligned with the Japanese Foreign Ministry's twenty thematic cooperation strategies that include Environmental Management, Climate Change, Private Sector Development, and Gender & Development, all themes that form part of this project. In Cambodia, one of Embassy of Japan programme priorities is sustainable environmental development, which aligns well with this project's subject matter.

The project contributes to achievement of the following Targets under the United Nations Sustainable Development Goals (SDG): [4]

SDG # 5: Achieve gender equality and empower all women and girls

Target 5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life

SDG # 6: Ensure availability and sustainable management of water and sanitation for all

Target 6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all

Target 6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

SDG # 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix

SDG # 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Target 8.3: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services

Target 8.4: Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead

[4] See https://sdgs.un.org/goals

SDG # 12: Ensure sustainable consumption and production patterns

Target 12.1: Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries

Target 12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

Target 12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

Target 12.6: Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

Target 12.7: Promote public procurement practices that are sustainable, in accordance with national policies and priorities

Indicators

Target 12.8: By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

SDG # 13: Take urgent action to combat climate change and its impacts

Target 13.2: Integrate climate change measures into national policies, strategies and planning

Target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

SDG # 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Target 14.1: By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

As can be seen above, the project is directly contributing to addressing the United Nation's SDGs and relevant in ensuring the ultimate objective, "peace and prosperity for people and the planet."

The United Nations commitment to resilient development is also reflected in the UNDP country strategy. The UNDP *Country Programme Document for Cambodia (2019-2023)* reflects the UN's SDGs, in this programme two of the objectives are "equitable and green economic growth" and "climate adaptation and mitigation." One of the priorities is "to promote a green, circular economy through sustainable waste management, sustainable

transport management, improved energy efficiency, and the adoption of clean energy" and a second priority is to "leverage private sector investment for scalable climate initiatives and a circular economy." It can therefore be concluded that the project is very much in line with UNDP's Country Programme for Cambodia.

Two project evaluation questions under *Relevance* "To what extent is the project contributing to the theory of change for the country programme outputs and Outputs and relevant to the achievement of the SDGs in Cambodia?" and "To what extent are the objectives, activities, and approaches of the project addressing gender equality, and leaving no one behind (LNOB) strategy?" These questions are judged to belong under *Efficiency* and *Crosscutting Issues,* as they do not pertain to *Relevance* in the Evaluator's opinion. The responses to these two questions are found in sections 4.3 and 4.5.

4.2 Effectiveness

A fundamental measure of a project's progress is to review its Outputs to date and assess the progress against the milestones and indicators anticipated during the project planning phase. In the following the project's progress and its activities are evaluated. This section evaluates each of the Outputs. For each Output, the text below will first provide a summary of the component's objective. Thereafter, the progress will be presented, followed by a discussion of the status at the time of the evaluation and any observations.

Output 1: Key enabling policies and regulations developed and implemented to promote 4Rs and the use of multi-use plastic, recycling, and plastic alternatives

The purpose of this output is to develop and implement a "circular economy strategy and action plans" enabling policies and regulations to be developed and implemented to promote 4Rs regulations for the waste hierarchy or, in other words, to promote the circular economy. The project activities under Output 1 are discussed in more detail below.

Activity 1.1: Research on policy and regulatory gaps and solutions

This activity was to update a draft plastic roadmap in order to identify priority regulations and actions to be supported by activity 1.2. The project helped develop a *Circular Economy National Strategy and Action Plan (2021-2035)* with the MoE and SIDA, this strategy was launched in June 2021. The CE strategy outlines the vision, mission, strategies, and roadmap to enable Cambodia to transition from a linear to a circular economy. Specific priority measures related to plastic management include improving product designs, minimisation of single-use plastic (SUP) production and use, sustainable consumption, reuse and repair, recycling, and energy recovery.

The *Circular Economy National Strategy* identifies waste management as an essential target for circular economy initiatives, though several other sectors are targeted, such as sustainable energy and energy efficiency, green transport, and eco-industrial parks. The plan has five Strategy Objectives:

- SO1: Increase Efficient Use of Raw Materials, and Promote Sustainable Design, Production, Remanufacturing and Distribution;
- SO2: Promote Sustainable Consumption and Effective Reuse and Repair;
- SO3: Enhance Waste Collection and Recycling;

- SO4: Ensure Effective Management of Residual Waste; and
- SO5: Enhance Crosscutting Stakeholder Engagement, Awareness and Capacity Building

The strategy stresses the importance of following the waste hierarchy, starting with Waste Prevention, and going through Reuse and Repair, Recycling, Energy Recovery, to the least favourable option of Waste Disposal. Within plastics and waste management, the key priority areas are:

- The promotion of alternatives to single use plastic, as well as the drafting and enacting of regulations on these items.
- Increase reusable and sustainable packaging and reduce SUP packaging in the distribution and delivery services.
- Develop and support production using recycled materials. This sector covers plastics, composting of organic waste, and other reprocessing.
- Implementation of extended producer schemes and take-back programmes.
- Strengthen fee collection for waste collection services and the promotion of source separation.
- Encourage waste-to-energy schemes and improved waste disposal.

Hence the *Circular Economy National Strategy* is comprehensive and many of the intervention areas are within waste management and improved management of plastics.

Activity 1.2: Development and implementation of regulations/guidelines to promote 4Rs and alternative businesses

To support the implementation of the *Circular Economy National Strategy,* the project developed and implemented regulatory measures in support of the reduction of plastic and increase in recycling and alternatives. This work was done in collaboration with the MoE Solid Waste Management Department. Here the project produced the following two documents:

Sub-Decree on Plastic Management

The *Sub-Decree on Plastic Management* introduces circular economy measures for plastic products, works to avoid and minimise plastic waste, and promotes plastic recycling and environmentally correct handling of plastics. The *Sub-Decree* is to encourage Extended Producer Responsibility (EPR) schemes and Green Procurement. Some of the programmes that can be foreseen under such a regulation are:

- Procedures that require distributors of plastic products to also recover plastic waste. This can be through some form of EPR, deposit schemes and/or taxes on the plastics used.
- Guidelines to reduce plastic waste from specific industries, for example distributors of beverages or the hospitality sector. Requirements to the beverage industry would be measures such as EPR, bottle reuse or taxes. The hospitality sector could be encouraged or required not to provide single use water bottles, soaps, and shampoos, and other similar measures. Hence, refillable containers would be used for water, soap and shampoo.

- Some plastic products can be banned, for example single use plastic bags and/or styrofoam plates and cups. Industries can be encouraged to find suitable substitutes for these plastic products.
- Other than research to find substitutes for plastic, it is also essential that there is policy development and research into minimising the quantities of plastic waste and optimising its reuse or disposal.

The change in government in August 2023 delayed the approval of the *Sub-Decree on Plastic Management*. The new Minister of Environmental has several times mentioned the importance of combatting plastic pollution and announced in September 2023 a 100 day campaign where one of the elements was avoiding the use of plastic products within Cambodian schools. It seems certain that this *Sub-Decree* will become law within months.

EPR Roadmap for plastics

The *Extended Producer Responsibility - Recommendations for Cambodia* report developed by the project outlines key objectives, actors, and instruments for introducing EPR in Cambodia. The report recommends a gradual transition from "Voluntary EPR" to a "Mandatory EPR." The voluntary phase, up till 2025, focuses on waste reduction and collection. Here the recommendations are initial bans on non-essential SUPs, the introduction of economic measures, and the piloting of different measures targeting both recyclable and non-recyclable plastics. These actions would phase out non-essential products such as straws, cups, cutlery and expanded polystyrene, introduce taxes/levies on certain plastic products, raise awareness and EPR public private partnerships, encourage large corporates to show social responsibility, and to establish Producer Responsibility Organisations (PRO).

The mandatory phase, from 2026 onwards, would fully implement bans on non-essential products; design and implement official roles and responsibilities of the government, private sector, PROs, and the informal waste sector under EPR. The government would enforce regulations, EPR instruments and performance standards. The *Roadmap* proposes possible pilot schemes, such as waste segregation in borey communities (undertaken by this project, see section Activity 4.2 in this section), collection of recyclable/ non-recyclable plastic for recycling and for use as fuel (waste-to-energy) (undertaken by Tontoton, a company that worked with the project, again see section 4.2), using plastic in asphalt production, and promoting take-back schemes and the production a food-grade packaging. The *Roadmap* includes a case study on EPR in Vietnam covering the transition from voluntary to mandatory EPR in that country.

Activity 1.3: Facilitation of meetings and inter-ministerial discussions on plastic waste

The project organised regular inter-ministerial meetings on sustainable consumption and production to facilitate the adoption of CE and plastic approaches by line ministries. The project also organised a study tour to Vietnam for officers from MoE, MEF and MISTI, so that the participants could learn how Vietnam had transitioned from voluntary to mandatory EPR. This was followed-up by a technical meeting on EPR.

The project was also active organising and participating in workshops and forums, as detailed under output 5.

As can be seen in Table 1 the project has achieved all targets for Output 1.

Table 1: Status for Output 1 at the time of evaluation

Output 1: Key enabling policies and regulations developed and implemented to promote 4Rs		
Indicators	**End-of Project Target**	**Status at Evaluation (explanations in text below)**
1.1. A circular economy strategy and action plan is adopted with measures to ensure gender equality and participation of vulnerable groups Measured by: 0 = drafted only, not endorsed or signed 1 = endorsed and signed	1	**1 Achieved** A *National Circular Economy Strategy and Action Plan (2021-2035)* was signed by MoE and launched on 28 June 2021.
1.2. Number of enabling regulatory measures developed and implemented in support of the reduction of plastic and increase in recycling and alternatives Measured by number (cumulative)	3	**3 Achieved** Sub-Decree on Plastic Management has been submitted to the Council of Ministers. One draft guideline was developed for the Sub-Decree's implementation For EPR, a study on the scope of the market and production chain through interviews with companies that are producing and importing recycled plastic.
1.3. Extent to which CE and plastic approaches are adopted by line ministries Measured on a three-point scale: 0= None 1= Moderate extent: Initial endorsement 2= Great extent: Priority measures are adopted	2	**2 Achieved** A policy matrix on alternatives to plastic and recycling was developed and endorsed by Prime Minister.

The *National Circular Economy Strategy and Action Plan (2021-2035)*, *Sub-Decree on Plastic Management*, and the *EPR Roadmap for Plastics* are the essential documents for the introduction of a circular economy for the management of plastics in Cambodia. These document are now in existence and they are of a good quality.

Output 2: Improved awareness about the plastic crisis and its solutions among citizens and the private sector through environmental education and awareness-raising activities

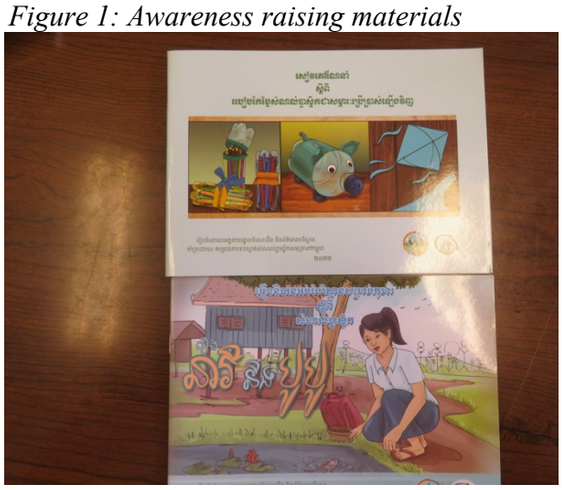
This output is to raise awareness about plastic pollution and its harmful consequences through environmental education, to create communication strategies, and to undertake other public relations and media activities.

Activity 2.1. Development of educational materials targeted at primary and secondary schools

The project developed educational and awareness raising materials for schools and universities. This included the development of educational materials for the training of teachers on plastic education and for awareness raising at universities. The educational and awareness raising tools used or handed out included story books, craft books, a regulatory book on plastic impact, reusable water bottles, signboard, posters, and stickers.

The project and Provincial Departments of Environment provided training of teachers to help them educate their students about the plastic crisis and its solutions. The project was also to develop measures for the reduction or elimination of single-use plastic in schools.

Figure 1: Awareness raising materials



Story and craft booklets

Reusable water bottles, a polo shirts and an eco-bag

Activity 2.2. Development and dissemination of awareness raising and outreach materials

Activity 2.3. Strategic communication, campaigns, and stakeholder engagement

These two activities will be described together. A communications expert prepared an awareness raising and outreach plan for the project, this plan, at the recommendation of the Project Board emphasised the use of social media for communicating, rather than more traditional means such as workshops, a project website and brochures, to convey the messages.

The awareness raising activities were implemented by the PMU and the MoE Department of Environmmental Education. To raise awareness regarding the plastic crisis and solutions, the project produced an informative brochure, a video, a poster enlightening consumers and a series of news articles (26 as of June 2023) in national news media, in local papers, and on news websites. Furthermore, a presence was established on six social media platforms: Facebook, TikTok, Twitter, LinkedIn, Instagram, and YouTube:. Out of these, TikTok was the most successful awareness raising endeavour, as this a very popular media platform among youth Cambodians. The project collaborated with Ms. Jinny Jinny, an admired TikTok influencer to produce a short video on reducing the use of plastic on holiday trips. Over 100,000 viewers reacted positively to the video.

To inform the older population, two videos were produced with influential monks who linked Buddhist belief with a clean environment, encouraging the public to appreciate the environment and cut down on plastic use.

A series of awareness raising videos (about 300 in total) and messages were instigated and distributed through social media channels informing about marine plastic, These numbers include the videos produced by the social influencers mentioned above. The project also used an MoE website and a partner website "re-Five" to inform about marine plastics.

To promote innovative approaches to awareness raising, the project organised a "#BeatPlastic" challenge where three winners received funding to raise awareness, one winner had to cancel due to implementation challenges. The two other winners were Phare Performing Social Enterprise with a behavioural change campaign by using theatre with puppets, arts, and digital media, and STEMEOC with a "Join Eco-Heroes" operation that mobilised over 1,500 "Eco-Knights" to crusade against the use of single-use plastics.

Figure 2: Awareness raising campaigns

Phare's Plastic Monster buying a beverage in a SUP container from a shopkeeper [5]

Ms. Jinny Jinny avoiding single use plastic bottles [6]

Both winners had an impact, the Phase campaign was noteworthy touting a memorable Plastic Monster (see Figure 2) that created havoc through his unabashed consumption of plastic. The Monster was used in interactive awareness raising campaigns at six schools with 1,114 children participating in two 1/2-days of activities. On the first day children were taught about the plastic crisis, did crafts, and learnt songs, these songs were then used on the second day to combat the Plastic Monster. Ten videos were produced featuring the Plastic Monster, these videos have over 730,000 views on Facebook.

Awareness raising campaigns were also conducted at the Royal University of Agriculture, the Institute of Technology of Cambodia and the Royal University of Phnom Penh, and five other universities on plastic reduction through circular economy measures. These event raised the university students' awareness on plastic pollution, and led to the inclusion

[5] Screenshot from a Phare Creative Studio Video https://pharestudio.org/project/beatplastic/

[6] Picture taken from a PMU PowerPoint presentation

of plastic waste management in their Environmental Clubs, resulting in the collection of recyclable plastic, clean-up campaigns, and the training of high school students. The overarching goal was to raise awareness and to reduce the use of SUP amongst students.

Activity 2.4. Information provision and effective support for private sector-led initiatives

The project worked closely with the private sector to encourage businesses to implement circular economy initiatives. This outreach was achieved through meetings, awareness raising materials and a dedicated website for the private sector that served as a resource of information related to plastic waste management and CE measures. To encourage the private sector to adopt and support 4R practices. "Green" certificates and letters of appreciation were awarded by the MoE to entities that promoted CE practices, recipients included businesses, pagodas, schools, NGOs, municipalities, and individuals. In total over 1,600 certificates and letters were issues in 2021 and 2022.

As can be seen in Table 2 the project has achieved all targets for Output 2.

Table 2: Status for Output 2 at the time of evaluation

Output 2: Improved awareness about the plastic crisis and its solutions among citizens and the private sector through environmental education and awareness-raising activities		
Indicators	**End-of Project Target**	**Status at Evaluation**
2.1. Number of public schools that received gender sensitive educational materials and training on the plastic crisis and solutions Siem Reap (SR), Sihanoukville (SV), Phnom Penh (PP), Koh Rong, Kep and Kampot Measured by number of schools and students (cumulative and gender disaggregated)	SR: 25 SV: 25 Koh Rong: 15 Kep + Kampot: 15	**80 Achieved** 91,257 students-47,440 female 660 teachers-364women
2.2. Number of gender sensitive awareness raising materials developed and disseminated to the public Measured by number (per year): a) Information on website b) Messages on social media c) Posters d) Videos & cartoons	Cumulative: a) 3 b) 30 c) 4 d) 3	**Achieved** a) 3 b) 433 c) 261 d) 296
2**.3. Number of people reached by awareness-raising communications on appropriate plastic waste management (gender disaggregated)** Siem Reap (SR), Sihanoukville (SV), Phnom Penh (PP)* Measured by number of people per target city (cumulative and gender disaggregated)	Social media 5 million (50 % women)	**Over 5 million - Achieved** Social media: 2021 - 1 million 2022 - 2.14 million 25 million including other partner's platform such as Niset Plastic Physical meetings: 37,000, of which 40% women

2.4. Number of best practices to reduce plastic by private sector/citizens identified and featured on circular economy platform Measured by number (cumulative and gender disaggregated)	15 (50% women-led)	**21 Achieved** A total of 21 businesses best practices are featured on the CE Leaders Platform.

The project was very active in awareness raising and reached a wide audience, especially through social media and the activities in schools and universities.

Output 3: Implementation of awareness raising and campaigns in target provinces

The project targeted three cities: Phnom Penh, Sihanoukville and Siem Reap, as well as the Kep and Kampot Provinces. The latter two provinces were not visited in the course of this evaluation. In the three cities, the project worked to raise awareness, implement solid waste management plans that introduce circular economy measures, provide schools with water dispensers and implement measures to reduce plastic waste.

Activity 3.1: Implementation of awareness raising and campaigns in target provinces (Siem Reap, Sihanoukville, Kep, Kampot and Koh Rong)

Eighty schools in the project's five target areas received water filtration systems, together with water bottles and other awareness raising materials. The logic was that with a water distribution system available at the school, the pupils will no longer need to bring or buy single-use plastics bottles and instead use a refillable bottle. These systems were distributed as follows: 16 in Phnom Penh, 21 in Sihanouk, 18 in Siem Reap, 10 in Kampot Province, 5 in Kep Province, 8 on Koh Kong, and 2 elsewhere. The Reverse Osmosis (RO) water dispensers (see Figure 3) are a greatly appreciated by the beneficiaries. The recipient schools have a total of 92,000 students and teachers, and assuming that each person previously consumed the content of 2 PET bottle per day, this corresponds to approximately 2.5 tonnes of plastic avoided per school day (an average 330 ml PET bottle weights 14 grammes).

Other than decreasing the consumption of SUP plastic bottles, the water dispensers serve for awareness raising and poorer families greatly benefit economically by not having to purchase water bottles for their child/ children. The water dispensers worked well in all schools, though for schools with several thousand pupils, more than one dispenser is clearly needed to serve all the children.

The schools all build a shelter for their water dispenser and these were completed prior to the delivery of the RO filtration system. The supplier taught the school (usually the principal) how to operate the system and there was a Telegram Group set up where schools could seek advice about the operation and maintenance of their water dispensers. The service contract with the supplier included service visits and free changes of the filters for the first year. A few schools found it difficult to replace the filters, but this was the exception.

Teachers were trained and received training materials, so that they could teach the children about plastic pollution and what measures the children and their families could take to

diminish their environmental impact. With the water dispensers, the schools could also be "plastic free." Story and craft booklets informing about the impact of plastic (see Figure 1), as well as water bottles and other materials (e.g. eco-bags) were handed out to help with the awareness raising. Given that the project had produced about 1,500 booklets and purchased 2,000 water bottles, only a few of the 91,000 students could receive such materials. Rather that handing out costly vacuum insulated flasks, providing an inexpensive reusable water bottle to each student might have had a bigger impact. There was no official awareness raising event at the schools for the handover of the RO filtration systems.

Most schools also received sets of three waste bins (see Figure 3). These are intended so that schools can source separate their waste into three fractions: Recyclables, organic waste and the balance as mixed waste. Some schools refused the bins, as they had a "no waste" policy and their students are expected to bring their waste back home. At all schools with waste bins, these bins all contained mixed waste, so the bins served little educational purpose. There are several reasons for this:

1. Most schools have vendors who sell food and drinks within the school grounds. These vendor collect all materials of value for resale, so there a few recyclable materials to be collected.
2. Separated waste is mixed together prior to collection by the city, as all waste is collected by a single vehicle, so the children have little reason to sort their waste.

Figure 3: Items supplied by the project in schools

Waste bins in a school yard

Students at a water dispenser (photo by PMU)

This Evaluator is of the opinion that source separating waste when there is no segregated collection system in place is unproductive. Most humans dislike making the effort to sort waste, only to see it mixed together again at the garbage truck and acquire a distrust of such actions. Another school of thought it is important for the children (or the population) to practice sorting their waste, so that they are prepared once such a system is in place. Either way, excepting the food vendors, waste is currently not source separated at the schools and the bins are not serving as intended.

The project also distributed waste bins to local communities in connection with their awareness raising and clean-up activities. These bins are also used randomly and all hold mixed waste.

Activity 3.2: Implementation of target activities to reduce plastic waste in Sihanoukville, Siem Reap, and Phnom Penh

The project helped local authorities develop Solid Waste Management Plans in Phnom Penh, Sihanoukville and Siem Reap. This required baseline studies to determine the quantities, types, sources and main sources of plastic waste. This information helped formulate priority activities for plastic management with the provinces. These activities included training, awareness raising and clean-up events, plastic traps on waterways, monitoring of the recycling sector and promoting avoidance of single use plastic in the hospitality sector. These activities are described in the following.

The project arranged training on the plastic crisis and circular economy not only in schools and universities, but also provided training on Sub-decree No. 113 on *Solid Waste Management* for local authorities, amongst other for all twelve districts in Siem Reap. There was also training on plastics and the circular economy for the private sector, as described further down.

Together with local authorities, the project was involved in clean-up and outreach activities targeting hotspots and local communities to raise awareness and prevent plastic pollution. Two of the events took place on Earth Day with almost 5,000 participants. The pictured clean-up (Figure 4) is similar to the campaigns organised by the project and shows the activity in one Seam Reap ward. The pictured clean-up campaign was organised by the Ministry of Tourism and was nationwide. Here, a stretch of main road was cleaned by the students from two high schools and community members, afterwards there were awareness raising activities and a parade. Similar campaigns are organised by the MoE and local authorities, and the project supported some of these events.

Figure 4: Project city activities

Plastic trap in Sihanoukville

Clean-up campaign in Siem Reap (not organised by the project)

The project was part of a larger effort on Koh Rong, an island off Sihanoukville in the Gulf of Thailand. The action was organised by the Koh Rong Environmental Conservation

Association. Here the was training on waste management and on plastic avoidance in the hospitality sector, provision of informative signboards and waste bins, and a large beach clean-up. Almost 500 people consisting of local authorities, community members, teachers, students, informal waste collectors, and the private sector participated.

In Sihanoukville and Siem Reap the project provided the Provincial Departments of Environment (PDoE) with plastic traps that were installed on Sihanoukville streams, the Siem Reap River, and on Tonlé Sap. Each PDoE also received two motor boats to enable them to empty these traps. The results are somewhat jumbled:

1. In Sihanoukville the plastic traps have come under the Department of Water Resources, as they are responsible for waterways. This department lacks the resources to empty and maintain these barriers. When visited, one of the three plastic traps was broken, and the two other traps were overflowing with plastic (Figure 4).
2. The Sihanoukville plastic traps did not seem in locations that required a boat to empty them and the two received boats were used by Park Rangers for patrol duties and for collecting plastic.
3. The plastic traps (nets) on the Siem Reap River caught 99% water plants and only a few plastic items, as the area upstream of the traps is uninhabited. The local garbage company used one of the two boats received to empty the traps, they expressed concern about the operating costs, especially if there should be no project support.
4. The plastic traps and boat on Tonlé Sap was not visited. There the traps should be catching lots of plastic and the fourth boat is used to empty them.

When placed in the correct location and emptied on a regular basis, plastic traps work well. The traps in Sihanoukville do catch plastic but the PDoE did not have the means to empty them. Therefore, the responsibility for the traps was passed the Department of Water Resources, who equally lack the ability to operate the traps. The institutional and financial aspects should have been considered more carefully in Sihanoukville. The traps under the Siem Reap PDoE are working, but the nets on the Siem Reap River serve little purpose, as the is very little plastic to catch.

As a result of the projects work in Siem Reap, the PDoE now monitors the recycling sector. The roughly 100 businesses that buy, sort and resell recyclable materials such as plastic bottles, cardboard and metals now report to the authorities. Hence, the PDoE is informed on the quantities of materials that each business handles and on the identity of the buyers of the bulked up goods. The PDoE also does inspections of these facilities. For the PDoE, this monitoring serves two purposes. Firstly, this ensures that these businesses to not accept waste materials from Thailand. Secondly, the supervision allows for control of the environmental standards and provides a knowledge of the quantity of material that flows through this sector.

The project prepared a *Guide to reducing plastic waste in hotels* and provided training to tourism businesses on the implementation of circular economy practices and avoiding the use of single-use plastic. A total of 65 business entities, mostly in the tourism sector, have committed to take measures on single-use plastic items and the promote recycling. At the time of the evaluation, the project had not undertaken a follow-up to assess how many of

the businesses had actually introduced the recommended practices. The hotel where the Evaluator stayed in Siem Reap used refillable containers for soap and shampoo, and provided drinking water in recappable (flip top) bottles. The hospitality sector is a large consumer of single use plastic and a transition to environmentally sustainable practices is essential. This transition should be relatively easy, as switching to refillable containers and other green practices often save the businesses money over the longer term. In this context, it can be noted that some departments within the MoE were using water pitchers rather than offering guests PET water bottles, and the same applied to the Siem Reap PDoE.

In Sihanoukville the project is involved in a pilot project to charge a fee on plastic bags in supermarkets, thereby aiming to reduce their use.

Table 1: Status for Output 3 at the time of evaluation

Output 3: Plastic waste reduced in target cities through education and private sector-led best practices and innovations		
Indicators	**End-of Project Target**	**Status at Evaluation**
3.1. Number of cities/urban centres with operational Solid Waste Management Plans	3	**On-track** PNP and SHV with operational SWM 12 districts of SR developed SWM plans
3.2. Extent to which priority measures for plastic waste are integrated in city plans with measures to ensure gender equality and participation of vulnerable groups Siem Reap (SR), Sihanoukville (SV), Phnom Penh (PP)* Measured on a three-point scale: 0= None 1= Moderate extent: Initial set of policy measures are proposed 2= Great extent: Agreed set of measures receive Government endorsement	SR: 2 SV: 2 PP: 2	**On-track** SRP: (integrated into 12 district plan and identify the plastic free zone) SHV: (identify the plastic free zone + clean beach without plastic) PNH: (identify the plastic free zone+ plastic segregation at Borey)
3.3. Number of public schools with reduction measures for single-use plastic items adopted Siem Reap (SR), Sihanoukville (SV), Phnom Penh (PP), Koh Rong, Kep and Kampot Measured by number of schools and students (cumulative and gender disaggregated)	SR: 25 SV: 25 Koh Rong: 15 Kep + Kampot: 15	**Achieved** SRP: 18; SHV: 21; Koh Rong: 8; Kep: 5; Kampot: 10; PNH: 16; Other: 2 Total: 80
3.4. Volume of plastic waste reduced as a result of the above support for schools Measured by volume against baselines (note: exact targets will be defined after baseline assessments)	SR: 72 tonnes SV: 72 tonnes PP: 48 tonnes Total: 192 tonnes	**Achieved**
3.5. Number of business entities	SR: 50	**On-going**:

(primarily in the tourism sector) with measures for single-use plastic items/recycling adopted Measured by number (cumulative and if relevant gender disaggregated)	SV: 30 PP: 30	SRP: 13 SHV: 40 PNH: 12 Total: 65
3.6. Volume of plastic waste reduced as a result of the above support for business-led initiatives Measured by volume against baselines(note exact targets will be defined after baseline assessments)	SR: 13.1 tonnes SV: 7.9 tonnes PP: 7.9 tonnes Total: 28.9 tonnes	**On-going**
3.7 Number of pilots for plastic circularity Measured by number (cumulative)	1 pilot tested in SHV 1 pilot tested in PNH 3,000 tonnes	**On-track** 2,719 tonnes of plastic waste collected by Tontoton in SHV

The status for output 3 at the time of evaluation can be found in Table 3. Under 3.4 the targets have been achieved, as every school day means the avoidance of about 2.5 tonnes of PET bottle waste. Target 3.5 on the number of businesses that have taken measures to reduce SUP use and to promote recycling, 65 businesses committed to this but it is unclear whether all actually followed through. There is currently no data for target 3.6 and it may be difficult to measure. Target 3.7 is covered under Output 4.2 below.

Output 4: Priority business models for plastic recycling and alternatives supported and tested

This Outcome has two activities, one to identify possible solutions and the second activity to run pilot projects for proposed solutions.

Activity 4.1. Identification of business solutions for plastic waste recycling

To identify possible substitutes for plastics that are to be phased out, the project launched an *Innovation Challenge on Alternatives* to request innovative ideas for plastic replacements. The three winners offered solutions that, in the order they will be described below, promoted the use of refillable containers, offered non-plastic packaging, and proposed plate ware made from banana stem.

The Idea Consultancy Co. Ltd, a private company that is also involved with social good, proposed a solar powered vehicle for distribution of their "Just Good Refills." The company already sells "Just Good Refills" cleaning agents. The clients, such as large retail spaces and hotels purchase their liquid detergents and soaps from the company, and receive refills of their existing containers. The solar van was intended to cater to smaller shops and private citizens, and these would be able to connect with the van and then refill their soap or detergent containers.

The solar powered vehicle (see Figure 5) has a few shortcomings, mostly it lacks sufficient storage space and the solar panels on the roof can barely power the vehicle, so crossing

any bridge in Phnom Penh is difficult. The idea promoted, that one can purchase goods in a reusable container is fundamental to reduce consumption. This is a practice that has been growing steadily over the past twenty years in Europe and North America. Especially in Northern Europe, many shops sell liquid soaps, olive oil, nuts, and grains in a manner where the customers can bring and fill their own container in the shop.

TK&D Manufacturing is a local enterprise that produces paper cups made from rice, corn and cassava. These products are biodegradable. For the *Innovation Challenge on Alternatives* the company proposed a straw made from rice mill and paper food packaging that works as a replacement for plastic wrapping.

Figure 5: Innovation Challenge on Alternatives

"Just Good Refills" van [7]

Bowls made from banana stem

Villageworks Cambodia is an enterprise that creates employment for vulnerable and marginalized groups, it was founded in 1998. The company developed a process to produce bowls (see Figure 5) from rice straw, banana fibre and jute. The bowls are water proof, can be microwaved, are heat resistant, pass food safety tests, and are biodegradable. The current process can produce 50 to 100 bowls per day, but the company is considering an investment in manufacturing equipment so that it can produce 10,000 bowls per day, this would require an investment of 350,000 USD. The bowls are of a high quality and an excellent replacement for plastic or styrofoam bowls.

The project assessed the options for the recovery and recycling of plastic waste. Here the large amounts of plastic recovered by the informal recycling sector were taken into consideration, as well as prior experiences with plastic recycling in the Asia Pacific, and recommendations were made for four business models:

1. The implementation of source separation in four boreys (gated communities) where plastic waste is collected separately and directed to recycling operations. segregation and recycling through the engagement of borey communities in PNH: the project identified in Phnom Penh to test waste segregation, different waste collection schedules and linking sorted waste to recycling operations.

[7] Picture taken from a PMU PowerPoint presentation

2. Purchasing plastic materials from scavengers and using this as a fuel in cement kilns.
3. Eliminating single use plastics in the hospitality sector by the use of refillable water bottles, shampoo and soap containers. This action is described under Output 2.
4. Testing the feasibility of mixing plastic waste into asphalt in collaboration with IKEE Bitumen Chemical Cambodia. A test batch of plastic containing pavement was constructed at the Institute of Technology of Cambodia.

The first two options for plastic recycling are described in more detail in the following section.

Activity 4.2. Piloting and demonstration of selected business interventions

In collaboration with GIZ the project is to conduct pilot projects in 4 boreys (gated communities) in Phnom Penh in late 2023, after this evaluation had taken place. The plan is to provide a waste bin to each of approximately 2,100 household in the targeted borey communities to facilitate the separate collection of plastic waste. To ensure an effective separation of the plastic from the waste stream, awareness raising, and outreach activities are planned for the targeted borey communities. The project plans to work with the local authorities to ensure that there is a scheduled collection of the waste (this is currently a problem), and with recycling businesses, so that the collected plastic materials can be directed toward the best available option for reuse or treatment.

At the time of writing, these pilot projects are still ongoing.

Tontoton is a private enterprise specialised in the collection and recycling of plastic waste. The company targets not only recyclable plastics, but also the non-recyclable plastic that is not being collected because it has no market value, such as plastic bags, shoes, and food packaging. The company has been active in Vietnam since 2020 and in Sihanoukville, Cambodia since 2021.

The attractive feature in the approach to plastic recovery taken by Tontoton is that all plastic is accepted. Scavengers can sell recyclable plastics for 500 Riel per kg ($0.12) and non-recyclable plastic for 300 Riel per kg ($0.07) to the company. Unlike the selective recycling market, Tontoton’s approach allows companies to create a circular solution for all types of plastic waste.

Tontoton sells "Verified Plastic Recovery" (VPR) credits, these are units of one tonne of plastic that is upcycled or co-processed for energy recover. The certification is done by Zero Plastic Oceans, an NGO that wishes avoid all “Ocean Bound Plastic” and therefore has devised a scheme where scavengers are paid for the collection of any type of plastic. The records of quantities of plastic waste collected and subsequently processed form the basis for the certification. Companies can buy units of Verified Plastic Recovery to offset their plastic footprint and many companies do so. Currently one VPR, i.e. the offset for one tonne of plastic, costs around 500 USD.

For the plastic collection, Tontoton uses scavengers that are registered with the company. The benefit of this scheme for the scavengers is that the recovered materials are sold at a fixed price, and hence the scavengers are not forced to negotiate a sales price with a waste

shop. When selling their recovered materials, scavenger are frequently in a poor bargaining position and are often taken advantage of. If a scavenger refuses the offered price, they often have to carry their goods far to the next waste shop, not knowing if they will receive a better offer.

The VPR is an excellent tool that can be used to ensure that companies offset any plastic they distribute. A company that produces or supplies plastic products can be asked to offset their plastic pollution through VPRs. The company could be requested to compensate for all the plastic they distribute, or some lesser percentage. Given the large number of people who are dependent on waste picking in Cambodia for their livelihood, this is an approach that not only allows for the removal of plastic waste from the environment, but also help a vulnerable group, especially if the price paid for scrap plastic is fixed, so that the scavengers are guaranteed a set income for their goods.

The waste plastic collected by Tontoton that could not be recycled, was used as fuel in the Chip Mong Insee Cement Kiln. This is a common practice, in Europe some cement kilns substitute more than 80% of their energy consumption with non-virgin fuel such as biomass, refuse derived fuel or waste tyres, and the industry average is over 40% non-virgin fuel. With high coal prices, as was the case in the summer of 2022, cement kilns are very keen to purchase alternative fuels to lower their production costs. Burning waste, rather than virgin fuel, greatly reduces greenhouse gas emissions.

Finally, the project worked with Tontoton on an awareness raising campaign under the name “Plastic-Free Coastlines” outside Sihanoukville which reached 450 people. The campaign cleaned up beaches and also provided 2 schools with posters and waste bins.

Table 2: Status for Output 4 at the time of evaluation

Output 4: Priority business models for plastic recycling and alternatives supported and tested		
Indicators	**End-of Project Target**	**Status at Evaluation**
4.1. Number of priority business solutions identified for plastic recycling and alternatives Measured by number (cumulative)	5	**8 Achieved** The following possible business solutions were identified: • Plastic waste collection for recycling through the engagement of the informal waste sector in PNH • Plastic circularity with reverse vending machines • Turn non-recyclable plastic into energy in SHV with Tontoton. • Waste segregation pilot with boreys in PNH • Mixing plastic waste into asphalt production

		• Refilling services for hospitality sector • Using rice straws as alternatives • Using banana for packaging (e.g. plates)
4.2. Number of plastic recycling and alternative innovations that ensure inclusion of women and vulnerable groups supported and tested for replication Measured by number (cumulative and gender disaggregated)	4	**4 Achieved** • 3 winners were selected under the innovation challenge on e-commerce and implemented activities related to refilling and alternatives. • The model to mix plastic waste into asphalt production was tested

For Output 4 the project mostly focussed alternatives for plastic products and relatively less on finding "business solutions for plastic waste recycling. Table 4 provides the data given in the project's Progress Report for the 1½ year period between 1st January 2022 to 31st May 2023 (the latest report available). The winners of the *Innovation Challenge on Alternatives* are counted as some of the eight "business solutions identified for plastic recycling and alternatives" and these are also counted as three of the four "plastic recycling and alternative innovations [...] supported and tested for replication." Here the fourth achievement was a demonstration of IKEE Bitumen Chemical's experience with mixing plastics into asphalt held at the Institute of Technology of Cambodia, the technology itself was developed in Japan. The four results under Indicator 4.2 are acceptable but more could have been achieved.

The Project Document only describes the expected results with bullet point, though the four bullet points could indicate somewhat higher ambitions. Under the Output 4, the expectation of "business models for plastic recycling and alternatives supported and tested" could indicate the anticipation of more than the outcome of a competition for plastic substitutes. The competition did produce non-plastic straws, bowls and wrapping paper, as well as an electric vehicle for container refills, but more could have been achieved. The Project Document's stated result was "Piloting and demonstration of selected business interventions," as well as the descriptions found under the Indicators in Table 2 above.

Had the Project Document been more specific, the outcome could have been closer to the expectations in the 2021 *Circular Economy Strategy and Action Plan*. Some of the actions proposed in the *Strategy* are developed on the project's EPR Roadmap (*EPR Recommendations for Cambodia)*. The Roadmap offers a series of recommended interventions (in its section 4.1) that the project could have been more proactive in implementing. The suggestions for the for the voluntary phase are grouped in four main areas:

- Design bans on non-essential products
- Introduce taxes/levies on plastic products
- Develop and pilot EPR public private partnerships
- Design performance guidelines and standards

The project developed a *Guide to reducing plastic waste in hotels* and could have worked with some hotels, restaurants or perhaps a shopping mall to implement these ideas, rather than only organise workshops on the subject. Likewise, an international packaging expert could have been engaged to assist one or more local manufacturers in reducing the quantity of packaging used. The advice would be complimentary to the company and if a company should choose to implement the recommendations, there would presumably be financial savings as less material is used. There could have been collaboration with Cambodia's major plastic manufacturers to discuss phasing out certain plastics, implementing plastic type coding, or to set up a reporting system.

Hence, under Activity 4.2 more business models for plastic recycling and alternatives could have could have been identified, rather than just the three winners of *Innovation Challenge.*

Although the Project Document does foresee both international and national consultants to provide technical inputs, there may not have been sufficient input. Of the project's two major efforts, the source separation pilot project in 4 boreys is commendable, but hardly the first demonstration of source separation in Cambodia. The Tontoton collection of plastics for sale as VPR credits was the company's initiative, so technically not part of the project. The project worked with Tontoton supporting a "Plastic Free Coastline" campaign with resources for awareness raising, community meetings, posters, and clean-ups. Hence, some expert advice on how to pilot the circular economy in a practical manner could have improved the results under Output 4.

Output 5: Best practices disseminated and shared

The purpose of this output is for the project to communicate experience and lessons learnt, both nationally and internationally, and to undertake a study tour.

Activity 5.1. Documentation and dissemination of project results and best practices

Other than raising awareness, as described under Activity 2.2, the project made presentations on plastic pollution and the circular economy at several large events. The project was responsible for the organisation of the *Second* and *Third National Forums on Plastic* in Phnom Penh in 2021 and 2023 that hosted respectively 100 and 250 participants. The meetings served to share Cambodia's efforts to combat plastic pollution, to communicate successful awareness raising initiatives, and to introduce advanced circular economy models for tackling plastic pollution. At the two forums, the Cambodian Government was represented by respectively the Secretary of State and the Under Secretary of State from the Ministry of Environment.

The project made presentations at the *Waste Summit Cambodia* Conference in both 2021 and 2022. This forum is organised by the German Konrad Adenauer Foundation and brings

together line ministries, local and international businesses, non-governmental organisations, and development partners such as GIZ and UNDP.

The project also joined and made two presentations at the *11th Regional 3R and Circular Economy Forum in Asia and the Pacific* which took place in February 2023 in Siem Reap, and contributed with a presentation at the *Green Business Forum on Pioneering Innovation for a sustainable future* in Phnom Penh.

Activity 5.2. Learning and dissemination of best practices at workshops/international conferences

The project's TOR call for a study tour to Japan but the outcome was a trip to Vietnam to learn from Vietnam's experiences with introducing circular economy, extended producer responsibility and plastic recycling over the past ten years. This choice is logical, as Vietnam is a country similar to Cambodia, it is ahead in implementing circular economy measures and therefore has valuable experience to share. Officers from MoE, MEF and MISTI participated in the study tour, and upon their return, a technical meeting on EPR was held to discuss how Cambodia best transitions to a circular economy.

The project participated in UNDP webinars, both in a global session on plastics and in an online learning seminar hosted by UNDP India where about 30 Cambodian stakeholders were provided with guidance on how to best engage large companies to work with informal waste-pickers in plastic waste collection and recycling under EPR.

Table 3: Status for Output 5 at the time of evaluation

Output 5: Best practices disseminated and shared		
Indicators	**End-of Project Target**	**Status at Evaluation**
5.1 Number of gender sensitive communication materials disseminated on the project best practice to increase local knowledge sharing Measured by number (per year) a) Project report b) Project brief c) Social media posts d) Newspaper articles	Cumulative: a) 3 b) 2 c) 9 d) 3	**Achieved** Cumulative: a) 3 b) 4 c) 569 d) 26
5.2 Number of events organized and/or attended to disseminate project achievements and increase international knowledge sharing Measured by number (per year)and number of participants	Cumulative: 4	**Achieved** Cumulative: 11

As can be seen from Table 5 the project was diligent in sharing experiences and best practices through written documentation, as well as by participating in national and international events.

4.3 Efficiency

Below the project design and success of its implementation will be examined. This will cover the consistency of the project design, the theory of change, whether the management structure and resources outlined in the Project Document were sufficient for producing the anticipated results, and finally if the PMU and Project Board operated in a proficient manner.

Project Design

The Project Document describes the purpose of the project as a reduction in the quantities of plastic waste within Cambodia. Two preconditions are stated as essential to achieving this objective:

- There must be a policy and regulatory framework in place. Here the *Circular Economy Strategy and Action Plan* developed by MoE, SIDA, and UNDP in 2020 is considered as the blueprint. This strategy outlines the vision, mission and goals, and provides a strategic approach for Cambodia to transition to a circular economy. This is a comprehensive plan and it is described in section 4.2 of this report under Activity 1.1. The plans provides strategic objectives, prioritises interventions in term of short, medium and long-term actions, and is a roadmap for an evolution to a circular economy. To implement this strategy regulatory instruments are essential for the establishment of EPR schemes, import duties, levies and taxes on plastics, banning of single use plastic .
- The second precondition is that is foreseen in the Project Document is improved awareness among all stakeholders:
    - The private sector must understand the existing situation and the opportunities in shifting their businesses towards a circular economy. They must be informed of all any expectations in terms of new packaging regulations, take-back schemes, alternative products, EPR, container deposit schemes, and financial duties. Likewise, they will be part of the decision making process and be part of pilot project to find long-term solutions.
    - The public must be made aware of the pollution and harm caused by plastic and be dissuaded in their dependence on plastic. The citizens must be willing to incur costs and use materials that are less convenient to protect their surroundings.
    - Waste pickers recover very large quantities of materials from MSW for recycling, so they must be informed of any changes that will impact them.
    - NGOs are key partners in providing contact with communities, raising awareness and facilitating the implementation of schemes.

The Project Document foresees that once the policies and regulations, and that the stakeholders are aware of the crisis and the changes needed; there will be a behavioural change toward a circular economy. The joint efforts of all stakeholders will lead toward a

circular economy where less plastic is consumed and where the levels of recycling are increased.

One precondition that could be added as a precondition for achieving the objective is strengthening the capabilities of the authorities at the national and local level. Many elements of a circular economy requires development and implementation of directives and guidelines. This requires enforcement and monitoring from all level of government. Supervision and reporting is also important, so capacity building at the national and local levels may be necessary.

Project Document

The Project Document is very brief in defining the Outputs (the word "Outcome" is not used in the document!) and the activities associated with these. Expanded description of the anticipated outputs and activities could have guided the PMU, especially for their understanding of what was expected under Output 4.

Management Arrangements

The project is being implemented using the National Implementation Modality as per UNDP's procedures. The project is managed through a small Project Management Unit, consisting of a National Project Coordinator, an Administrative Assistant and a Finance Assistant. All members of the PMU were recruited on a competitive basis. The National Project Coordinator has overall responsibility for the implementation of project activities and the achievement of planned project outputs and reports to the UNDP Country Office. The Administrative Assistant provides management support. The Finance Assistant provides accounting and administration support to the National Project Coordinator.

All major project decisions are taken in close cooperation with the key stakeholders and approved by the Project Board. Senior Beneficiaries represented on the Project Board are the MoE, Ministry of Interior, the National Council for Sustainable Development, Embassy of Japan, and UNDP.

The project faced a challenging start, as the COVID-19 pandemic broke out just as the project started. This hindered the collaboration with local public authorities, contractors, and beneficiaries.

The evaluation found that the PMU and UNDP have fulfilled their obligations in reporting on the project's progress, keeping minutes of Board Meetings, minutes of field visits, and so forth.

Resources spent were related to achieved outputs. Generally, the efficiency is assessed as high by the Evaluator, all activities were conducted in a financially efficient manner.

Project Budget

The project has a budget of just over $3 million as can be seen in Table 6. The largest expenditures were for Output 3 which include equipment such as RO filtration systems for educational institutions and waste bins for various project activities. Twenty percent of the project expenditures are for project management, which is reasonable.

Table 6: Project budget in USD and expenditure at the time of evaluation

Outputs	FY 2021	FY 2022	FY 2023*	Total	Budget	Spent
Output 1	87,030.75	98,408.97	82,931.21	268,370.93	295,104.38	91%
Output 2	147,921.53	230,777.47	127,472.28	506,171.28	562,160.96	90%
Output 3	229,227.97	392,245.70	351,898.96	973,372.63	1,082,590.33	90%
Output 4	87,938.01	131,308.20	196,759.99	416,006.20	523,390.73	79%
Output 5	17,848.79	22,901.24	25,312.99	66,063.02	69,632.30	95%
Project Management	190,528.97	200,360.28	138,068.99	528,958.24	628,475.60	84%
Total	**760,496.02**	**1,076,001.86**	**922,444.42**	**2,758,942.30**	**3,161,354.29**	**87%**

*Note: *For 2023, the expenditures cover from 01 January to 31 October 2023*

By the end of October 2023, 87% of the budget had been spent. The project has been highly efficient in terms of the number of activities and people it has reached whilst keeping within budget.

Risk Mitigation

The Project Document foresaw risks in terms of the government staff capacity not being fully available for programme implementation or that government agencies would not cooperate and coordinate activities effectively. This was never the case and the project was smoothly implemented.

For the first year of the project, the COVID-19 pandemic hindered project activities, especially field missions, workshops, and meetings. This meant that the implementation of many activities in the target provinces such as outreach activities, clean-up campaigns and installation of water dispensers and waste bins effectively started in 2022.

There was concern that the private sector would not cooperate and coordinate activities effectively. Here the basic concern was innovations identified by the project through pilot projects in collaboration with the private sector would subsequently be scaled up by the private sector. This could have been EPR or container deposit schemes that were implemented and managed by businesses. No such scale efforts took place and hence the private sector's willingness to cooperate was never tested. This absence of large scale schemes for plastic recovery also mitigated any concerns of depriving women or vulnerable people of a livelihood, as no scavengers stood to lose their income due to new circular economy schemes. As discussed in section 4.5, no project activities put vulnerable people at risk.

4.4 Sustainability

It is generally considered essential that the results achieved by the project are sustained after completion. This section examines the extent to which the project helped put in place the conditions likely to address the drivers, overcome the barriers and ensure the long-term sustainability of the project's intended goals.

The project has laid the foundation for Cambodia's transition to a circular economy as laid out in the *Circular Economy National Strategy and Action Plan (2021-2035)* through awareness raising amongst key decisionmakers and the development of the *Sub-Decree*

on Plastic Management. The project's main achievement is the pending *Sub-Decree on Plastic Management* that offers the tools to manage plastics, these must now be implemented. The measures available to manage plastics will include EPR schemes, Green Procurement, measures to minimise or ban plastics, and control through taxes. Therefore, it is vital that the efforts to transition Cambodia to a circular economy be continued.

The project awareness raising, especially through social media, reached a wide audience. These efforts to inform citizens must be continued and also connected to specific rollout of programmes within plastic management, such as plastic bags bans or EPR schemes. Likewise, the collaboration with the private sector must be maintained and strengthen, as most interventions are based on systems such as EPR, container deposit schemes and packaging requirements that must be implemented and managed by businesses.

The RO water filters installed in schools are sustainable. The systems are popular and serve most staff and pupils with their daily water requirements. The operating costs are affordable for the schools and the management.

The plastic traps on waterways are technically a sound solution, but care must be taken in both selecting their location and ensuring that the institutional arrangements and resources are in place for their continued operation and maintenance. This was not always the case on this project.

The *Innovation Challenge on Alternatives* found some promising ideas. TK&D Manufacturing already produced paper cups made from rice, corn and cassava, so for that company it was more of an expansion of their product line and showcasing of their plastic free products. The biodegradable bowls produced by Villageworks are very promising and user-friendly, they constitute an excellent alternative to styrofoam bowls. The company is considering finding an investor for a full-scale production line.

The solar powered vehicle proposed and built by the Idea Consultancy Co. Ltd may not have been an overwhelming success technically, as it lacked sufficient storage space and could barely travel around flat Phnom Penh. The proposed concept, that large and small consumers purchase their products, in this case liquid cleaner, by refilling their own containers is fundamental. If single use packaging is no longer used for a range of products, large quantities of plastic packaging will no longer be needed. Some shops in both Europe and North America already sell products such as nuts, grains, olive oils and soaps in a manner where the customer brings his or her recipient(s) to the shop. As Cambodia moves toward a greener economy, this concept is important and the solar powered distribution vehicle selected by the *Innovation Challenge on Alternatives* was an excellent manner of raising awareness around this technical solution to reducing the use of packaging.

Overall, the project has laid the foundations for implementing a circular economy for plastics in Cambodia. The PMU and the Project Board have done well to implement a wide array of activities and actions over a 3-year period and within budget. The essential means, such as key strategies and awareness key stakeholders, are now in place. This is

reflected in the very recent *Pentagon Strategy* [8] where fostering a circular economy is one of the national priorities. The Project Board effectively guided the project, ensure good communication across ministries and with provincial authorities. The PMU could have been pushed a little more to engage with the private sector in promoting EPR schemes, be this for avoidance of single use plastics, beverage containers, take-back schemes or improved packaging. Such activities must be central in the next phase(s) of the project. Overall, the PMU did very well, laying a solid basis for the implementation of the developed strategies for managing plastics in Cambodia.

4.5 Crosscutting Issues

Crosscutting issues such as gender equality, human rights, social concerns and protection of the environment are fundamental to both JICA's Global Agenda and UNDP projects. In this case, the improvement of the environment is the project's primary objective, but all these topics must be closely monitored throughout the project cycle.

Environmental sustainability

The project objectives contribute to the transition a circular economy and the goal is improved management of plastic waste. The pending *Sub-Decree on Plastic Management* will restrict the use of certain plastics, ensure that more plastic waste is collected for reuse and these actions will decrease greenhouse gas emissions. All actions taken by the project promote environmentally friendly practices and combat climate change.

Gender equality and poverty

In SE Asia, informal workers scavenge recyclable materials from the waste stream and sell these to earn their livelihood. About 20% of the waste stream by weight is recovered, consisting mostly of plastic, cardboard, paper, glass (in some countries) and metals. The waste pickers who do this are predominantly women, often from ethnic minorities, and some are children. The waste pickers face a number of challenges and risks:

- Working with waste is unhygienic and leads to health issues, especially respiratory diseases;
- There are a number of occupational health and safety issues, especially from cutting and sharp objects in the waste, and from traffic at night;
- A scavenger is in a poor bargaining position when selling their goods. The price offered may be low, but carrying all the collected materials to the next waste shop is unattractive to a tired hungry person on a hot day; and
- Exposure to gender-based violence.

When a government introduces circular economy, the flow of waste will gradually change. In this case, where plastics are targeted, the quantity of plastics that can be recovered by scavengers will gradually decrease, effecting their income. Those planning the next phases of introducing plastic management to Cambodia are aware of this, and are proposing measures that will support or better the livelihood of scavengers.

[8] *Pentagonal Strategy-Phase I for Growth, Employment, Equity, Efficiency and Sustainability: Building the Foundation Towards Realizing the Cambodia Vision 2050* by the Royal Government of Cambodia (August 2023)

The project worked with Tontoton (see section 4.2 Activity 4.2) on the collection of recyclable and non-recyclable plastics in connection with Tontoton's sale of "Verified Plastic Recovery" (VPR) credits. Only scavengers that are registered with the company can sell plastic to them. For the scavengers, this scheme has the advantage that the recovered materials are sold at a fixed price, and this guarantees a certain income. A second advantage to waste pickers is that all plastics can be sold to the VPR scheme, so there are more materials to collect and sell.

If developed to a countrywide scheme, where registered scavengers sell to a networks of VPR accredited waste buyers, a basic social and health service could probably be incorporated for the participating scavengers.

The Project Document design stresses the importance of mainstream gender and equality issues. Some project indicators at the output levels are gender sensitive. The project collected sex-disaggregated data across the activities and reported them. For the indicators 2.4, 3.5 and 4.2 the project did not report sex-disaggregated data, perhaps it was unrealistic to collect data in these instances. The PMU's project focus within gender and cross-cutting issues was limited to tallying the number of males and females in schools that received water dispensers, in workshops and other activities. In this regard, the collected data shows a consistent practice of ensuring gender equality and focusing on women. The collection of this data was not essential, but as the implementation of plastic management initiatives move forward, it will be essential to carefully consider the livelihood of waste pickers in terms of their revenue, health and safety.

The project's major effort was the distribution of water dispensers to 80 educational institutions. Here there was an unfortunate bias to the more affluent urban schools, as poorer rural schools do not have an adequate water supply that is suited for the RO water filters. Hence, other than awareness raising, the project did little to address marginalisation, inequalities, and gender equality.

People with disabilities

One of the winners of the *Innovation Challenge on Alternatives* was Villageworks Cambodia, a company that employs people with disability and help them to become professionals by training and providing skills in handcraft and workmanship. The company works with over 60 staff, an additional 30 homeworkers, and 300 artisans who supply the company. The company recycles 30 tonnes of bags annually, recrafting these into handbags and other forms of craft. Should the company scale-up their production of biodegradable bowls, the *Innovation Challenge* winner, many rural jobs will be created for those who will supply rice straw, banana fibre and jute to the company.

The project only significant direct outcome is the introduction of RO filtration systems in 80 educational institutions, as this both prevents 2.5 tonnes of plastic waste per school day and represents a cost saving for poor families. The pending introduction of the *Sub-Decree on Plastic Management* should initiate a wide range of actions such as plastics bans, EPR for specific products, taxes, duties and levies on plastics, etc. which should have a much larger environmental impact and during the introduction of these schemes it is essential to safeguard the livelihood of the vulnerable who are waste pickers or otherwise affected by the programmes.

5 Conclusions

This project was found to be well-managed and successful. It has achieved its objective of laying the foundations for a transition to the circular economy in Cambodia. The project can be judged as follows:

Relevance – The project's is highly relevant to the priorities of the Government of Cambodia, Embassy of Japan and the UNDP. The project aligns very well with the strategies and requirements of all stakeholders.

Effectiveness – The project met or exceeded most indicators and targets. A great emphasis was places on awareness raising and the project reached a surprisingly large audience using social media in an astute matter. The project communicated well with all stakeholders, especially decision makers, and today proper plastic management is a high priority for the government of Cambodia, and a *Sub-Decree on Plastic Management* is pending.

All project activities were completed, with the preparation of plastic management legislation, a Roadmap for Cambodia on EPR, introducing plastic management in local *Solid Waste Management Plans,* making a guide for minimising the plastic usage in the hospitality sector, and the distribution of water dispensers to 80 educational institutions.

There was a significant project focus on suppling water dispensers to schools and universities and on raising awareness in educational institutions. These are laudable efforts, the RO filtration systems donated to schools are a social good and greatly diminish the quantity of PET bottles used by students. The project did not seize the equipment handovers as an opportunity for awareness raising activities.

The project handed out 160 sets of three bins, where the bins were intended to be used for source separated waste. The evaluation found no evidence that any of these bins were used as intended, and the supplied bins serve little purpose, at least in the context of promoting the 4Rs and encouraging source separation.

Finally, more direct efforts to develop or demonstrate circular economy models would have been desirable, this could have been working directly with authorities and private companies on design bans, taxes/levies on plastic products, to pilot EPR PPPs, or to develop performance guidelines and standards.

Efficiency – The project was implemented in a competent manner, despite the COVID-19 pandemic. The PMU was efficient in conducting a wide array of activities over a three-year period. The Project Board met on regular intervals and served to guide the project's efforts toward key decision makers.

The project design could have included some capacity building at the provincial level. The Project Document seemingly overestimates the resources available at the PDoE level. It is likely that capacity building will be required in the next phases of implementing the circular economy, especially at the provincial and local level.

The Project Document is very detailed on many aspects, but the description of the expected project activities is limited to 3½ pages and only described in bullet points. Hence, the expectations for Output 4 could be misunderstood. If the intentions were that Output 4 should be more directed toward business models for plastic recycling, rather than determining local sources for non-plastic alternatives for straws and bowls, more clarity in the document would have helped.

Sustainability – The project reached a wide audience with its training and awareness activities, so today there is a much greater knowledge regarding plastic pollution and the urgency to address this issue. The new Minister of Environment is cognisant of the matter and has mentioned the topic in public several times, indicating that the management of plastics is a priority. The *Sub-Decree on Plastic Management* is pending, but hereafter there will be a wide range of actions to define (bans on certain plastics, EPR for specific products, taxes, duties and levies on plastics, etc.), each of which will require directives guidelines, and implementation.

The RO water filters that were supplied to schools are sustainable and will be well taken care of.

Some of the plastic traps for waterways provided by the project faced operational challenges. In Sihanoukville the local authorities do not have the capacity to operate the traps. The traps located on the Siem Reap River catch almost no plastic, as there are no settlements upstream and hence no waste in the water. The plastic traps on Tonlé Sap may be working as intended.

Crosscutting Issues - The project fulfilled all the Embassy of Japan and UNDP intentions in terms of gender equality, human rights, social concerns and protection of the environment.

Wrap-up - This project addresses an urgent environmental concern that is a high priority. The project raised awareness with decision makers and ensured that the *Sub-Decree on Plastic Management* was developed and is pending approval. This decree, together with the *Circular Economy National Strategy,* will guide Cambodia's transition to proper management of plastics.

The project was both innovative and efficient in its awareness raising and provided 97 water dispensers to schools and universities that are very popular. It would have been advantageous if the project has done more piloting/ demonstration of business solutions for plastic waste recycling under Output 4.

The project is well aligned with the goals of all stakeholders and has laid the foundations for Cambodia's transition to a circular economy. The project has made good use of its financial resources and the PMU was very diligent in raising awareness about plastic pollution and informing about the measures that must be taken.

Using the *UNDP Evaluation Guidelines* quality assessment rating scale of the OECD DAC Evaluation Criteria, it is the Evaluator's judgement that the project scores as indicated in Table 7 below. This is considered a good outcome for the project.

Table 7: Project assessment rating

Evaluation Criteria	Value
Relevance	HS
Efficiency	S
Effectiveness	S
Sustainability	S
Crosscutting Issues	S

6 Recommendations

6.1 Lessons Learnt

The project was well implemented and achieved the planned outputs, there were a few matters that should be considered when implementing a continuance of this project.

- The Project Document could be clearer about its expectations to pilot/ demonstration activities under Output 4. It seems that the project could have achieved more in terms of developing/ testing/ demonstrating plastic management techniques in collaboration with the private sector. This could range from performance standards to discussions on taxes/ duties/ levies on plastic products, and over container deposit schemes to other forms of extended producer responsibility schemes.
- The project distributed 160 sets of three waste bins waste bins to schools and local authorities. None of those seen during this evaluation were functioning as intended. Several schools stated that they had refused to receive bins, as they had a 'no-waste" policy on school grounds and the pupils were to bring their waste back home. Other schools had bins, but food stall staff recovered all recyclable materials, and the bins, such as those shown in Figure 3, contained small amounts of mixed waste. The bins seen is city streets received larger quantities of waste, but again the waste was unsorted. Source separation is challenging to implement, especially when the bins are communal. In this case the waste bins were distributed with little thought to the overall purpose and the outcome was thereafter. For the pilot project in the four boreys, the bins for plastic materials will be with individual households and awareness raising campaigns are planned, so the likelihood of success is much higher.
- The project could have been more pro-active in considering the responsibilities and capabilities of recipient organisations.
    - Some of the plastic traps installed on streams in Sihanoukville and Siem Reap clearly serve a purpose (see section 4.2). Unfortunately, the responsibility for the emptying and upkeep of the plastic traps was not defined and the plastic traps ended under the responsibility of the local Departments of Water Resources in Sihanoukville. The traps on the Siem Reap River are poorly located, and there are concerns that the authorities in both provinces may lack the resources to operate these plastic traps over the longer-term.
    - Most schools that benefitted from a RO water fountain encountered no difficulties. These schools followed the manufacturer's instructions, purchased clean filters as needed and asked questions in the project's Telegram Group when advice was sought. A few schools, clearly also institutionally weaker in other areas, had not understood that their water fountain came with a service contract, and had no idea how to obtain clean filters or where to seek support. Hence, the project's support was amply sufficient for most schools, but there were clearly a few institutions that should have received more training or some form of follow-up calls or visits.
- As noted earlier, the provision of water filter to schools has a significant impact in terms of raising awareness, reducing the usage of single use plastic bottles and supporting poor families through the provision of free water. If such an activity should be repeated, the following should be considered:

- The handing over of a RO water fountain is a big event is a primary school and a perfect opportunity for awareness raising. Therefore, one or more educational activities should take place in conjunction with the happening.
- The project purchased and handed out some vacuum insulated water flasks, these are costly and therefore very few reached the children. Perhaps each child could be provided with an inexpensive water bottle, that would give a sense of ownership. The bottles could be inscribed with each child's name.
- The project produced a lot of educational materials for primary and secondary schools (see section 4.2). It is this reviewer's opinion that the effort and costs of producing some of these materials outweighs their learning purpose, so while reusable canvas bags probably have a reasonable value for money, the effort and cost of preparing educational story and craft booklets probably outweighs their effect. A more general observation is that the Ministry of Education could consider enlarging the environmental curriculum for primary and secondary schools, so that topics such as climate change, pollution and endangered species are touched upon;

6.2 Next Steps

This project has laid a strong foundation for the introduction of circular economy in Cambodia, but further steps are essential before larger elements of a circular economy can be achieved. The existing efforts should be scaled up, the capacity development within the MoE and PDoE should be continued and the collaboration with recycling business entrepreneurs should be maintained. The current intervention structure using the National Implementation Modality has worked well and is recommended for any continuation of the project, with the National Council for Sustainable Development, the Ministry of Environment, and the Ministry of Interior as the key implementation partners. The transition to a circular economy for plastics management is a lengthy process that may well take 10 years, the interventions for each priority area can be divided into projects of a shorter duration targeting specific issues such as the promotion of alternatives to single use plastic, reusable and sustainable packaging, enhanced recycling of plastics, EPR schemes and improved recycling for MSW. The interventions suggested below all come under what is likely to be imposed the *Sub-Decree on Plastic Management* once this document is approved, and all the actions are interlinked and can consequently be combined.

The draft *Sub-Decree on Plastic Management* advocates circular economy and will (most likely) propose actions such as prohibition on certain products, the option of taxing plastics, measures to minimise plastic quantities, promote recycling and their proper disposal. The *Sub-Decree* will almost certainly encourage schemes such as EPR and Green Procurement. The following are the recommendations for basic actions that can be taken over the coming years. These activities can be initiated prior to the *Sub-Decree's* approval.

<u>Implement key plastic management actions in *Sub-Decree*</u>
Many interventions that are most likely advocated in the *Sub-Decree* take time to implement and preparations can start immediately. This applies to bans on selected single use plastics, import duties imposed on certain types of plastics, requirements to plastic

type coding to facilitate recycling, the preparation of regulations governing packaging, and MoE demands for annual reporting on plastics.

Some of the project's on-going activities could be upscaled and work could start to help companies transitioning to environmentally friendly alternatives to plastic products, this can be encouraged through subsidies, green certification, or breaks on custom duties and taxes.

Plastic recovery for distributors of plastic products

The requirements that distributors of plastic products recover waste plastic materials can initially be a voluntary scheme that subsequently becomes mandatory. Here there would be an obligation that for certain types of plastic usage, for example plastic packaging, plastic beverage containers and plastic objects that can easily be substituted with other materials (e.g. plastic chairs or plastic cups). For these materials it would be compulsory that for every tonne of plastic distributed, the responsible company must ensure that a certain quantity of plastic is recovered. Hence, for every tonne of plastic packaging or PET bottles distributed, the requirement could be that 30% or 100% of this quantity be recovered. The approach currently used by Tontoton, where the waste pickers are paid for any type of collected waste is recommended. This can become a mandatory scheme, but initially it could be voluntary and the participating companies could be rewarded by some form of green certification.

The “Verified Plastic Recovery” mechanism/ certified plastic credit system tested by Tontoton can be used, or some variation thereof. Here the plastic materials would be collected by waste pickers and a predetermined fee would be paid per kg to the scavengers. Some of the collected plastic could be recycled, and the non-recyclable plastic could be used as fuel, or as a building material, or if that is not possible, safely disposed of in a landfill. Many companied could be certified for the collection and safe disposal of waste plastic under a VPR scheme.

The strategy would be to gradually impose quotas for plastic recovery on all importers, manufacturers and distributers of plastic materials. The logic being that if a company is responsible for distributing 100 tonnes per year of plastic in its products and their packaging, the company should be responsible for recovering the same quantity of material.

Reduce and recycling schemes for hospitality, beverage, or other industries

The hospitality industry, especially hotels, tend to have a lot of single use products. The earlier efforts that developed the *Guide to reducing plastic waste in hotels* should be continued. Hotels can be encouraged (or obliged) to have green policies, and encouraged through Green Certification and similar schemes. Many hotels in Cambodia are already promoting themselves as "Travel Sustainable" on some websites. For example, on the web based reservation site "Booking.com" all Cambodian hotels already have a (self-assessed) green score.

Beverage industries should implement take-back schemes, deposit-refund systems and work to reduce their environmental footprint. Plastic beverage containers can be phased out, redesigned to facilitate recycling, glass can replace plastic and there can be a deposit on each container. Seeing as these industries distribute products to all corners of the

country, reverse logistics will relatively easily allow for the empty containers return to their point of origin.

A ban or a fee can gradually be imposed within the retail industry, reducing the utilisation of single use plastic bags. Likewise, green procurement and EPR schemes can be encouraged, and the government can deliver some form of "Green Certificates" to deserving businesses.

Encourage the development of substitutes for plastic products

The transition from single use plastic bags to Eco-bags was gradual in Europe. A combination of a ban on single use plastic bags and a gradually more prohibitive fee for reusable bags incited shoppers to bring their own bags. Such a transition should be measured, starting will large supermarkets and gradually spreading throughout the retail sector. Tools include a levy charge on single use items, measures to reduce the quantities of packaging, container refill schemes and raising public awareness.

Some plastic products, such as styrofoam food containers should gradually be banned. It is essential that substitutes are available, so it is important that research and development is encouraged, as was the case for Villageworks' banana stem food bowls. Likewise, studies must be conducted to minimise the quantities of packaging used for products. Self-evidently, duties on plastic products, just as requirements that waste plastic be taken back, will ensure that producers focus on minimising their plastic usage to reduce their operating costs.

Promote research into disposal methods for non-recyclable plastics

Where possible waste plastic should be reprocessed and reused in a new plastic product. There will always be plastic that cannot be recycled, and there has been research to use these waste plastic as a building material or a road surface material. Such project are laudable but should be carefully assessed from an environmental point of view. If plastic is used in roads, it is essential that these road building materials do not release plastic into the surroundings at some stage of their life cycle.

Tontoton collaborated with the Chip Mong Insee Cement Plant, so that waste plastic that was collected under the “Verified Plastic Recovery” mechanism and that could not be recycled, was used as a fuel in the cement plant. One kg of plastic can replace approximately two kilos of coal, reducing the consumption of virgin fuel and hence greenhouse gas emissions. With high coal prices, co-processing a substitute fuel such as plastic offers great saving in the production costs, so in such periods it should be possible to sell the recovered plastic as fuel.

Encourage pilot and up-scale PPP on plastic recovery

The project is conducting pilot projects in 4 boreys (gated communities) in late 2023 where the aim is to establish collaboration between the boreys, public authorities and the waste collection company to ensure plastic recovery. The outcome should be plastic circularity, where source separation allows for the separate collection of the plastic materials and where the recovered plastic is transported to recycling businesses.

In Cambodia, Sub-Decree 113 on Urban Waste and Solid Waste Management already mandates source segregation to forward the recovery and recycling of materials such as plastic, paper and glass. Based on the results from the pilot projects in 4 boreys, the borey

waste management system could be adjusted to optimise the recovery and recycling of plastic. The system proposed for the pilot projects is to supply each household with an additional bin for plastic, and to ensure that these bins are emptied by a dedicated vehicle and hence the recyclable materials do not become contaminated by contact with the mixed waste. The recovered plastics would be transported to recycling facilities.

If successful in the pilot, the separate collection of plastic can be expanded to more waste generators, this could target not only boreys but also, as examples, apartment blocks or commercial centres. A second method to expand the system would be to also collect other recyclable materials, such as paper, cardboard, glass and metals. These are also dry wastes and could also be collected in the same bin as plastics and subsequently the recyclables would be separated prior to the individual processing of each material.

Closing Remarks

Implementing the upcoming *Sub-Decree on Plastic Management* will require the development of directives, guidelines and other tools to help the enactment of the various measures in the decree. The project has raised the awareness, and as stated in this report the new Minister of Environment is keen to move forward and the key tools are in place for improved management of plastics. The *National Circular Economy Strategy and Action Plan* was launched in June 2021 by the NCSD and the MoE (see section 4.2, Output 4.1) and the recent *Pentagon Strategy* issued by the Government in August 2023 identifies the strategic visions, missions, and objectives necessary to achieve the country's national development plan. In the *Pentagon Strategy,* one of the priorities is "promoting circular economy."Ensuring that the import, manufacturing and distribution of goods implements elements of the circular economy are essential to encourage the minimisation and recovery of plastics in the manufacturing and service sectors. This should be accomplished through the implementation of the legislate tools provided in the *Sub-Decree* and using tested methods such as the Verified Plastic Recovery" mechanism.

Some actions are already ongoing, for example all Cambodian hotels listed on "Booking.com" have a "Travel Sustainable" rating, and the owners are probably aware that many younger Western travellers will prefer a hotel that takes measures to protect the environment. Furthermore, in the hotel business, some sustainable measures such as using refillable containers for soap and shampoo, are likely to be less costly than single use items. Such efforts centring on green procurement and minimising the impact of plastic must be guided, so that similar measures are taken throughout the service sector.

Annex A. Evaluation Framework

The Terms of Reference, as well as UNDP's Evaluation Guidelines, provide the basis for the evaluation framework, which in turn underpins and guides the whole approach. The Evaluation Questions given in the Terms of Reference (section 4 of the TOR) are structured following the standard OECD-DAC criteria (relevance, effectiveness, efficiency, sustainability). The questions from the Terms of Reference, can be found in the table below.

Key evaluation questions	Guiding sub-questions
RELEVANCE/COHERENCE	
To assess the relevance of the Combatting Marine Plastic Litter project's strategies, design, and implementation arrangements for improving awareness raising and formulating laws and regulations to tackle plastic pollution issues. • How relevant was the project to the needs and priorities of Cambodia and the participating institutions? • To what extent was the project in line with country programme outputs and Outputs, UNDP Strategic Plan and the SDGs?	○ To what extent were the project's interventions in line with national development priorities, country programme outputs, and Outputs through promoting the 4Rs – Refuse, Reduce, Reuse, and Recycle – the framework to prevent and minimize plastic waste pollution on land and in the ocean in Cambodia? ○ To what extent is the project contributing to the theory of change for the country programme outputs and Outputs and relevant to the achievement of the SDGs in Cambodia? ○ To what extent were the methods, activities, and outputs aligned with the overall objectives and goals of the project? ○ To what extent has the project contributed to improving the laws and regulations formulation related to plastic waste management issues? ○ To what extent has the project contributed to improving awareness raising among youth, beneficiaries and public related to on plastic waste management issue? ○ To what extent has the project contributed to the reduction of plastic waste in the target provinces and communities? ○ To what extent are the objectives, activities, and approaches of the project addressing gender equality, and leaving no one behind (LNOB) strategy?
EFFECTIVENESS	
Assessing how effective was the Combatting Marine Plastic Litter project was in achieving the	○ To what extent were the Combatting Marine Plastic Litter project's governance structures, in particular

Key evaluation questions	Guiding sub-questions
objectives (outputs and Outputs) using the project's result framework as a basis. • How well has the project performed? • Has the project done the right things? • Has the project done things right, with good value for money?	the project executive board, effective in facilitating smooth implementation? o To what extent were the objectives achieved /are likely to be achieved by the end of the project? o To what extent have lessons learned from what works well and less well been used to improve and adjust project implementation? o What were the major factors influencing the achievement or non-achievement of the objectives? o To what extent has the project been effective in managing partnerships to enhance optimal results? o To what extent has the project's intervention forged new or strengthened partnerships among different stakeholders (government agencies, private sectors, development partners, civil societies, youth group, and other relevant practitioners, etc.)? o In which areas does the project have the greatest achievement? Why and what were the supporting factors? How can the project build on or expand these achievements? o To what extent have the project beneficiaries been engaged in the project implementation? o To what extent have the project's interventions addressed gender equality issues in its implementations? o Based on Gender and LNOB principles – how gender and other vulnerable groups were catered for in the project and how did the project ensure that these groups were not sidelined/the pre-exiting vulnerabilities were not exuberated by the project implementation? o How were the voices and opinions of the beneficiaries gathered and used during the course of the project?
EFFICIENCY	
As far as possible, the evaluation will compare the benefits of the Combatting Marine Plastic Litter project with the budget to assess the overall efficiency of the project. The evaluation will provide practical recommendations regarding how to improve efficiencies in future plastic waste management-related projects.	o To what extent was the project management structure as outlined in the project document efficient in generating the expected results? o Have resources (funds, human resources, times, expertise, etc.) been allocated strategically to achieve Outputs? o Assess Value for Money against the budget and comparison to the increased volume of plastic consumption in the project target area and in Cambodia?

Key evaluation questions	Guiding sub-questions
• To what extent was the management structure outlined in the project document efficient to generate the expected results? • To what extent were the resources used to address inequalities in general, and gender issues in particular?	○ To what extent have resources been used efficiently? Have activities and the strategies been cost-effective? ○ To what extent have project funds, activities, and outputs been delivered promptly? ○ To what extent have Combatting Marine Plastic Litter project's interventions fostered financial or technical leverage from other stakeholders (Government institutions, development partners, private sector, civil society)? ○ To what extent were resources dedicated to the most marginalized and vulnerable of the target group, the informal group in terms of gender, age, and social security?
SUSTAINABILITY	
The evaluation will assess how the project achievements contribute to sustainability by engaging appropriate Government, non-Government, and other relevant stakeholders. • To what extent the achieved results will sustain after the completion of the project? • To what extent has the project helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long term objectives?	○ To what extent has the Combatting Marine Plastic Litter project contributed to promoting Government ownership and leadership in the implementation of 4Rs framework in Cambodia? ○ What were the institutional or policy changes resulting from the Combatting Marine Plastic Litter project's interventions? ○ What were the changes in mind set/attitude of the public in realizing their roles and contributions to tackle plastic waste management? To what extent are the benefits of the Combatting Marine Plastic Litter project likely to continue after its completion? ○ What were the major factors which influenced the sustainability of the project? ○ To what extent do the mechanism and procedures exist to allow the primary project stakeholders to carry forward the project results attained on the plastic waste management issue? ○ To what extent do the project stakeholders support the project's long-term objectives? ○ To what extent are the lesson learning and best practices being documented by the project team on a continual basis and shared with appropriate parties who could learn from the project?
HUMAN RIGHTS AND GENDER ISSUES	
To establish whether UNDP's intentions in terms of gender	○ To what extent have informal group and other disadvantaged and marginalized groups benefited from the project?

Key evaluation questions	Guiding sub-questions
equality, human rights, social concerns and protection of the environment were fulfilled. • To what extent the intervention was guided by the UN's organisational and system-wide objectives on the issues and whether the objectives were achieved; and • To what human rights and gender equality were integrated into the project's implementation.	○ To what extent have gender equality and the empowerment of women been addressed in the design, implementation, and monitoring of the project? ○ Is the gender marker assigned to this project representative of reality? ○ Were informal group and other disadvantaged and marginalized groups consulted and meaningfully involved in project planning and implementation? ○ To what extent the Covid-19 crisis has prevented or enabled project interventions to address marginalization, inequalities, and gender equality?

Annex B: Evaluation Matrix

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
Evaluation criterion: Relevance/Coherence					
1. To what extent were the project's interventions in line with national development priorities, country programme outputs, and Outputs through promoting the 4Rs – Refuse, Reduce, Reuse, and Recycle – the framework to prevent and minimize plastic waste pollution on land and in the ocean in Cambodia?	Alignment of project activities with country priorities (policies, SDGs) Direct beneficiary's support, expert opinion Country active policies and plans	Policy documents, project reports Decision makers within Ministries and UNDP, stakeholders	Review of policies and secondary sources Interviews with Ministries, UNDP, donors, PMU	Evidence of alignment of project with national and local priorities and policies	Comparative analysis of development priorities and policies.

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
2. To what extent is the project contributing to the theory of change for the country programme outputs and Outputs and relevant to the achievement of the SDGs in Cambodia?	Project Outputs Achievement of SDG goals Validity of the Theory of Change assumptions in the ProDoc	UN Strategic documents, ProDoc, project reports, project minutes, deliverables UNDP staff, project Board members, experts, stakeholders. Project Outputs	Document review Meetings Site visits	Evidence of results/outputs consistency with Output/impact	Assessment of the project Outputs against the Project Document
3. To what extent were the methods, activities, and outputs aligned with the overall objectives and goals of the project?	Project Outputs Baseline situation versus current status	Project documents, PMU and project Board members Project results in the field	Document review Meetings Site visits	Evidence project achieved expected Output, outputs, targets within the anticipated timeframe	Assessment of the project Outputs against the Project Document

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
4. To what extent has the project contributed to improving the laws and regulations formulation related to plastic waste management issues?	Progress of laws and regulations in the legislative process Project results	Project Documents Ministries and local authorities Results in the field	Document review Meetings Site visits	Evidence laws and regulations have been developed, passed and implemented	Evaluation of the legislative results and their implementation against the ProDoc expectations
5. To what extent has the project contributed to improving awareness raising among youth, beneficiaries and public related to on plastic waste management issue?	Increased awareness Higher levels of materials recovery Cleanliness	Project Documents Awareness surveys Results in the field Local authorities	Document review Meetings Site visits	Circular economy in action Project results framework goals met	Analysis of project results, evaluation of stakeholder buy-in
6. To what extent has the project contributed to the reduction of plastic waste in the target provinces and communities?	Plastic management programmes in place Avoidance of plastic use Cleanliness	Results in the field Local authorities Stakeholders Project Documents	Site visits Meetings Document review	Plastic avoidance and recycling programmes Improved cleanliness Results framework goals met	Evaluation of the plastic management system from source to reuse or disposal

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
7. To what extent are the objectives, activities, and approaches of the project addressing gender equality, and leaving no one behind (LNOB) strategy?	Inclusive stakeholder meetings Effort to reach out and include vulnerable people	Minutes of meetings PMU, stakeholders, beneficiaries	Site visits Meetings Document review	Effort to include vulnerable in project activities and protect their interests Evidence of resource allocation towards gender inequality and the vulnerable	Identify proactive efforts in include, heed and assist vulnerable people or groups
Evaluation criterion: Effectiveness					
1. To what extent were the Combatting Marine Plastic Litter project's governance structures, in particular the project executive board, effective in facilitating smooth implementation?	Project progress smoothly Challenges rapidly and efficiently resolved	Project Reports Minutes of Board meetings Board members PMU Stakeholders	Document review Meetings	Evidence the project achieved expected Output, outputs, project fulfilment against set targets	Assess measures taken by the Project Board and other decision makers to resolve any difficulties faced by project

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
2. To what extent were the objectives achieved /are likely to be achieved by the end of the project?	Results of project to date	Project documents, Project results in the field Stakeholders Experts	Document reviews Site visits Interviews	Proof that the project is meeting its milestones	Crosscheck project progress against expectation in ProDoc
3. To what extent have lessons learned from what works well and less well been used to improve and adjust project implementation?	Adaptative management Reflections on lessons learnt	PMU Project Board National and local authorities Experts	Meetings Document review	Evidence of willingness to implement activities gradually and adapt to challenges	Analyse instances where the project faced difficulties and how it adapted
4. What were the major factors influencing the achievement or non-achievement of the objectives?	Impact of outside factors such a pandemic, economic crisis, shift in leadership or policy	Project reports PMU and Project Board members Stakeholders	Document review Interviews	Project is on target to achieve objectives	Comparative analysis Evaluation of adaptation to any outside impacts

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
5. To what extent has the project been effective in managing partnerships to enhance optimal results?	Close collaboration with counterparts and development partners	Project reports PMU and Project Board members Development partners and NGOs	Document review Interviews	Close collaboration with partner projects, national and local authorities, and NGOs	Comparative analysis of collaborative efforts
6. To what extent has the project's intervention forged new or strengthened partnerships among different stakeholders (government agencies, private sectors, development partners, civil societies, youth group, and other relevant practitioners, etc.)?	Close cooperation between stakeholders Holistic approach by all parties	Project reports PMU and Project Board members Authorities, private sector, development partners and NGOs	Document review Interviews	Close collaboration with national and local authorities, private sector, and NGOs	Comparative analysis of symbiotic efforts
7. In which areas does the project have the greatest achievement? Why and what were the supporting factors? How can the project build on or expand these achievements?	Activities where the project met or exceeded the expectations of the ProDoc	Project reports PMU and Project Board members Stakeholders Field visits	Document review Interviews Site visits	ProDoc exceeded	Compilation and evaluation of project Outputs

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
8. To what extent have the project beneficiaries been engaged in the project implementation?	Beneficiary commitment Project ownership	Project documents Meeting and workshop minutes Beneficiaries Project sites	Review of reports Interviews Field visits	Beneficiaries own and care for project	Establish degree of beneficiary ownership
9. To what extent have the project's interventions addressed gender equality issues in its implementations?	Gender equality is integrated into project design, as well as all phases of project implementation	Project documents Meeting and workshop minutes Beneficiaries	Review of reports Interviews	Proactive measures taken to ensure gender equality at all stages of the project	Compilation of gender data for project activities
10. Based on Gender and LNOB principles – how gender and other vulnerable groups were catered for in the project and how did the project ensure that these groups were not sidelined /the pre-exiting vulnerabilities were not exuberated by the project implementation?	Gender equality is integrated into project design, as well as all phases of project implementation	Project documents Meeting and workshop minutes Beneficiaries	Review of reports Interviews	Proactive measures taken to ensure gender equality at all stages of the project Instances where the project benefited vulnerable groups	Compilation of gender data for project activities

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
11. How were the voices and opinions of the beneficiaries gathered and used during the course of the project?	Opinions and recommendations of stakeholders considered in project execution	Project reports Minutes of meeting and workshops PMU Beneficiaries	Review of reports Interviews	Input from beneficiaries incorporated into the project products	Evaluation of the project performance in terms of inclusiveness
Evaluation criterion: Efficiency					
1. To what extent was the project management structure as outlined in the project document efficient in generating the expected results?	Efficient PMU Supportive and guiding project Board Project successful	Project reports, Minutes of Board meetings Stakeholders	Document review Interviews	Effective project implementation Prompt decision making Adaptive management measures applied	Examination of instances where the project faced unexpected circumstances
2. Have resources (funds, human resources, times, expertise, etc.) been allocated strategically to achieve Outputs?	Good use of human and financial resources	Progress reports Meetings with PMU, stakeholders, project experts Project sites	Document review Interviews Site visits	Project activities had a positive and lasting Output. No wastage	Assessment of project Outputs in relation to the resources expended

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
3. Assess Value for Money against the budget and comparison to the increased volume of plastic consumption in the project target area and in Cambodia?	Plastic use avoided Used plastic recovered Level of awareness	Project reporting and budgets PMU, local authorities and stakeholders Project sites	Document review Interviews Site visits	Less plastic used Plastic recycled Decreased littering Replication of measures elsewhere	Circular economy assessment of the impact of the project measures
4. To what extent have resources been used efficiently? Have activities and the strategies been cost-effective?	Good use of resources	Progress reports Meetings with PMU, stakeholders, project experts Project sites	Document review Interviews Site visits	Project activities had a positive and lasting Output. No wastage	Assessment of project Outputs in relation to the resources expended
5. To what extent have project funds, activities, and outputs been delivered promptly?	Project on schedule Timely completion of activities	Project reports PMU, project Board, national and local authorities, stakeholders	Document review Interviews	On-schedule project	Project status alignment with the project plan in ProDoc

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
6. To what extent have Combatting Marine Plastic Litter project's interventions fostered financial or technical leverage from other stakeholders (Government institutions, development partners, private sector, civil society)?	Project activities replicated Project referenced Project products (awareness materials, guidelines, etc.) used elsewhere	Project Documents Information from stakeholders PMU Project Board	Interviews Document review	Replication of Outputs elsewhere Presence of information materials on internet, in institutions, on internet, etc.)	Determination of instances where project Outputs are replicated or used
7. To what extent were resources dedicated to the most marginalized and vulnerable of the target group, the informal group in terms of gender, age, and social security?	Vulnerable people or groups are empowered in project activities	NGOs, CSOs, and vulnerable people PMU, stakeholders and local authorities Project reports	Interviews Document review (Site visits)	Proactive efforts to include marginalised people and groups Vulnerable groups empowered	Identification of cases where vulnerable are empowered
Evaluation criterion: Sustainability					
1. To what extent has the Combatting Marine Plastic Litter project contributed to promoting Government ownership and leadership in the implementation of 4Rs framework in Cambodia?	Government included circular economy in their decision making Funds allocated to 4R policies	Ministries Project Board PMU	Interviews	Strengthening of policies promoted by project Replication of activities	Analysis of MoE promotion of circular economy activities

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
2. What were the institutional or policy changes resulting from the Combatting Marine Plastic Litter project's interventions?	Circular economy promoted Increased knowledge in ministries and with development aid projects	Ministries Project Board PMU Development partners	Interviews	Focussed policies and strategies Circular economy prioritised in national and local policy	Analysis of MoE promotion of circular economy activities
3. What were the changes in mind set/attitude of the public in realizing their roles and contributions to tackle plastic waste management? To what extent are the benefits of the Combatting Marine Plastic Litter project likely to continue after its completion?	Aware public Buy-in for project activities Financial sustainability	Project documents PMU, Local authorities, NGOs. CSOs Beneficiaries	Interviews Document review	Aware public recycling plastic Operational projects	Estimation of the success of the project measures

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
4. What were the major factors which influenced the sustainability of the project?	National and local government support for measure Financial viability Population's attitude	National and local authorities, Project Board, PMU, NGOs, citizens	Interviews	Financially durable activities Buy-in Activities beneficial to community	Assessment of outputs and their sustainability
5. To what extent do the mechanism and procedures exist to allow the primary project stakeholders to carry forward the project results attained on the plastic waste management issue?	Measures taken to raise awareness and help replicate measures Awareness materials and guidelines available	Project documents National and local authorities PMU and project Board	Interviews Document review	Circular economy policies are a priority at both national and regional level Activities included in national strategies and budgets	Assessment of MoE priorities and support for 4R

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
6. To what extent do the project stakeholders support the project's long-term objectives?	Support at national and local level NGO and development partner buy-in Population's attitude	National and local authorities Project Board, PMU, NGOs, citizens Project sites	Interviews Site visits	Authorities' support for measures Activities beneficial to community and has their buy-in	Assessment of government and public support
7. To what extent are the lesson learning and best practices being documented by the project team on a continual basis and shared with appropriate parties who could learn from the project?	Project results disseminated Replication of activities	Project documents, websites, conferences, publications Training materials National and local authorities Project Board, PMU	Review of available document and webpages Interviews	Project is sharing experiences Project is raising awareness	Evaluation of project visibility and quality of disseminated materials. Interest of project partners and NGOs
Evaluation criterion: Human Rights and Gender Issues					

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
1. To what extent have informal group and other disadvantaged and marginalized groups benefited from the project?	Affirmative Output for members of vulnerable groups Raised awareness	Project documents, websites, awareness and training materials CSOs, NGOs and citizens Project Board, PMU	Document review Interviews	Evidence of resource allocation Gender and vulnerability perspectives in awareness and education materials	Identification of cases where vulnerable are empowered
2. To what extent have gender equality and the empowerment of women been addressed in the design, implementation, and monitoring of the project?	The project prioritises gender equality and the vulnerable	Project documents, websites, awareness and training materials CSOs, NGOs and citizens Project Board, PMU	Document review Interviews	Women empowered Awareness and educational materials cover gender issues	Substantiation of empowered women

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
3. Is the gender marker assigned to this project representative of reality?	Project is gender sensitive Alignment with gender standards in planning, procurement, and management of the project	Project documents (appraisals, country recommendations, implementation reports) PMU and Project Experts CSOs and NGOs Project beneficiaries	Document review Interviews	Evidence of resource allocation towards gender inequality	Determine whether project Outputs for gender equality match the ProDoc' goals
4. Were informal group and other disadvantaged and marginalized groups consulted and meaningfully involved in project planning and implementation?	Affirmative Output for members of vulnerable groups Raised awareness	Project documents, awareness and training materials CSOs, NGOs and citizens Project Board, PMU	Document review Interviews	Evidence of resource allocation Disadvantaged and marginalized perspectives found in awareness and education materials	Identification of cases where vulnerable groups are empowered

Evaluation question	Indicators	Data Sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis
5. To what extent the Covid-19 crisis has prevented or enabled project interventions to address marginalization, inequalities, and gender equality?	Pandemic had a positive or negative impact on the participation of some groups	Project documents, minutes of meetings and workshops CSOs, NGOs and citizens Project Board, PMU	Document review Interviews	The pandemic did not prevent certain vulnerable groups from participating in project activities.	Assess if all could participate in project training and other activities

Annex C: Results Framework from Project Document

Expected Outputs	Output Indicators	Baseline 2020	Target 2023	Data Collection Methods
Output 1 Key enabling policies and regulations developed and implemented to promote 4Rs	**1.1. A circular economy strategy and action plan is adopted** with measures to ensure gender equality and participation of vulnerable groups Measured by: 0 = drafted only, not endorsed or signed 1 = endorsed and signed	0	1	Reviews of documents
	1.2. Number of enabling regulatory measures developed and implemented in support of the reduction of plastic and increase in recycling and alternatives Measured by number (cumulative)	0	3	Reviews of pilot documents and field monitoring
	1.3. Extent to which CE and plastic approaches are adopted by line ministries Measured on a three-point scale: 0= None 1= Moderate extent: Initial endorsement 2= Great extent: Priority measures are adopted	0	2	Reviews of documents
Output 2 Improved awareness about plastic crisis and its solutions	**2.1. Number of public schools that received gender sensitive educational materials** and training on the plastic crisis and solutions Siem Reap (SR), Sihanoukville (SV), Phnom Penh (PP), Koh Rong, Kep and Kampot	0	SR: 25 SV: 25 Koh Rong: 15	Document reviews Field monitoring

Expected Outputs	Output Indicators	Baseline 2020	Target 2023	Data Collection Methods
among citizens and the private sector through gender sensitive environmental education and awareness- raising activities	Measured by number of schools and students (cumulative and gender disaggregated)		Kep + Kampot: 15	
	2.2 **Number of gender sensitive awareness raising materials developed** and disseminated to the public Measured by number (per year): a) Information on website b) Messages on social media c) Posters d) Videos & cartoons	0	a) 3 b) 12 c) 1 d) 1	Document reviews
	2.3. **Number of people reached by awareness-raising communications** on appropriate plastic waste management (gender disaggregated) Siem Reap (SR), Sihanoukville (SV), Phnom Penh (PP)* Measured by number of people per target city (cumulative and gender disaggregated)	0	Social media 5 million (50 % women)	Document reviews
	2.4. **Number of best practices to reduce plastic** by private sector/citizens identified and featured on circular economy platform Measured by number (cumulative and gender disaggregated)	0	15 (50% women-led)	Website review
Output 3 Plastic waste volume reduced in	3.1. **Number of cities/urban centres with operational Solid Waste Management Plans**	0	3	Reviews of documents, meeting minutes

Expected Outputs	Output Indicators	Baseline 2020	Target 2023	Data Collection Methods
target cities compared to Business as Usual	3.2. **Extent to which priority measures for plastic waste** are integrated in city plans with measures to ensure gender equality and participation of vulnerable groups Siem Reap (SR), Sihanoukville (SV), Phnom Penh (PP)* Measured on a three-point scale: 0= None 1= Moderate extent: Initial set of policy measures are proposed 2= Great extent: Agreed set of measures receive Government endorsement	0	SR: 2 SV: 2 PP: 2	Reviews of documents, meeting minutes
	3.3. **Number of public schools with reduction measures for single-use plastic items adopted** Siem Reap (SR), Sihanoukville (SV), Phnom Penh (PP), Koh Rong, Kep and Kampot Measured by number of schools and students (cumulative and gender disaggregated)	0	SR: 25 SV: 25 Koh Rong: 15 Kep + Kampot: 15	Reviews of documents Field monitoring
	3.4. **Volume of plastic waste reduced** as a result of the above support for schools Measured by volume against baselines (note: exact targets will be defined after baseline assessments)	NA	SR: 72 tonnes SV: 72 tonnes PP: 48 tonnes Total: 192 tonnes	Document reviews Field monitoring
	3.5. **Number of business entities** (primarily in the tourism sector) with measures for single-use plastic items/recycling adopted	0	SR: 50 SV: 30 PP: 30	Reviews of documents, meeting minutes

Expected Outputs	Output Indicators	Baseline 2020	Target 2023	Data Collection Methods
	Measured by number (cumulative and if relevant gender disaggregated)			
	3.6. **Volume of plastic waste reduced** as a result of the above support for business-led initiatives Measured by volume against baselines (note exact targets will be defined after baseline assessments)	0	SR: 13.1 tonnes SV: 7.9 tonnes PP: 7.9 tonnes Total: 28.9 tonnes	Reviews of documents Field monitoring
Output 4 **Priority business models for plastic recycling and alternatives supported and tested**	4.1. **Number of priority business solutions** identified for plastic recycling and alternatives Measured by number (cumulative)	0	15	Reviews of documents
	4.2. **Number of plastic recycling and alternative innovations** that ensure inclusion of women and vulnerable groups supported and tested for replication Measured by number (cumulative and gender disaggregated)	0	4	Reviews of documents
Output 5 **Best practices disseminated and shared**	5.1 **Number of gender sensitive communication materials disseminated** on the project best practice to increase local knowledge sharing Measured by number (per year) a) Project report b) Project brief c) Social media posts	0	a) 1 b) 1 c) 3 d) 1	Reviews of documents

Expected Outputs	Output Indicators	Baseline 2020	Target 2023	Data Collection Methods
	d) Newspaper articles			
	5.2 **Number of events organized and/or attended** to disseminate project achievements and increase international knowledge sharing Measured by number (per year)and number of participants (gender disaggregated)	0	1	Reviews of documents, meeting minutes

Annex D: Progress against the indicators set in the Results Framework

Green means achieved, yellow means on-going and red not achieved

Output 1

Output 1: Key enabling policies and regulations developed and implemented to promote 4Rs		
Indicators	**End-of Project Target**	**Status at Evaluation (explanations in text below)**
1.1. A circular economy strategy and action plan is adopted with measures to ensure gender equality and participation of vulnerable groups Measured by: 0 = drafted only, not endorsed or signed 1 = endorsed and signed	1	**1** A National Circular Economy Strategy and Action Plan (2021-2035) was signed by MoE and launched on 28 June 2021.
1.2. Number of enabling regulatory measures developed and implemented in support of the reduction of plastic and increase in recycling and alternatives Measured by number (cumulative)	3	**3** Sub-Decree on xxx has been submitted to the Council of Ministers. One draft guideline was developed for the Sub-Decree's implementation For EPR, a study on the scope of the market and production chain through interviews with companies that are producing and importing recycled plastic. = "economic measures"?
1.3. Extent to which CE and plastic approaches are adopted by line ministries Measured on a three-point scale: 0= None 1= Moderate extent: Initial endorsement 2= Great extent: Priority measures are adopted	2	**2** A policy matrix on alternatives to plastic and recycling was developed and endorsed by Prime Minister.

Green means achieved, yellow means on-going and red not achieved

Output 2

Output 2: Improved awareness about the plastic crisis and its solutions among citizens and the private sector through environmental education and awareness-raising activities		
Indicators	**End-of Project Target**	**Status at Evaluation**
2.1. Number of public schools that received gender sensitive educational materials and training on the plastic crisis and solutions Siem Reap (SR), Sihanoukville (SV), Phnom Penh (PP), Koh Kong, Kep and Kampot Measured by number of schools and students (cumulative and gender disaggregated)	SR: 25 SV: 25 Koh Kong: 15 Kep+Kampot: 15	**80** 91,257 students-47,440 women 660 teachers-364women
2.2. → Number of gender sensitive awareness raising materials developed and disseminated to the public Measured by number (per year): a) Information on website b) Messages on social media c) Posters d) Videos & cartoons	Cumulative: a) 3 b) 30 c) 4 d) 3	**a) 3** **b) 433** **c) 261** **d) 296**
2.3. Number of people reached by awareness-raising communications on appropriate plastic waste management (gender disaggregated) Siem Reap (SR), Sihanoukville (SV), Phnom Penh (PP)* Measured by number of people per target city (cumulative and gender disaggregated)	Social media 5 million (50 % women)	**Over 5 million** Social media: • → 2021 - 1 million • → 2022 - 2.14 million • → 25 million including other partner's platform such as Nisst Plastic Physical meetings: • → 37,000, of which 40% women
2.4. Number of best practices to reduce plastic by private sector/citizens identified and featured on circular economy platform Measured by number (cumulative and gender disaggregated)	15 (50% women-led)	**21** A total of 21 businesses best practices are featured on the CE Leaders Platform. (xxxx women led)

Green means achieved, yellow means on-going and red not achieved

Output 3

Output 3: Plastic waste reduced in target cities through education and private sector-led best practices and innovations		
Indicators	**End-of Project Target**	**Status at Evaluation**
3.1. Number of cities/urban centres with operational Solid Waste Management Plans	3	On-track PNP and SHV with operational SWM 12 districts of SR developed SWM plans
3.2. Extent to which priority measures for plastic waste are integrated in city plans with measures to ensure gender equality and participation of vulnerable groups Siem Reap (SR), Sihanoukville (SV), Phnom Penh (PP)* Measured on a three-point scale: 0= None 1= Moderate extent: Initial set of policy measures are proposed 2= Great extent: Agreed set of measures receive Government endorsement	SR: 2 SV: 2 PP: 2	On-track SRP: (integrated into 12 district plan and identify the plastic free zone) SHV: (identify the plastic free zone + clean beach without plastic) PNH: (identify the plastic free zone+ plastic segregation at Borey)
3.3. Number of public schools with reduction measures for single-use plastic items adopted Siem Reap (SR), Sihanoukville (SV), Phnom Penh (PP), Koh Rong, Kep and Kampot Measured by number of schools and students (cumulative and gender disaggregated)	SR: 25 SV: 25 Koh Rong: 15 Kep+Kampot: 15	SRP: 18 SHV: 21 KK: 8 Kep: 5 Kampot: 10 PNH: 16 Other: 2 Total: 80
3.4. Volume of plastic waste reduced as a result of the above support for schools Measured by volume against baselines (note: exact targets will be defined after baseline assessments)	SR: 72 tons SV: 72 tons PP: 48 tons Total: 192tons	On-going Result: 25.02 Tons (2022) Result: 124.43 Tons (early 2023) Total: 149,45 Tons
3.5. Number of business entities (primarily in the tourism sector) with measures for single-use plastic items/recycling adopted Measured by number (cumulative and if relevant gender disaggregated)	SR: 50 SV: 30 PP: 30	Achieved: SRP: 13 SHV: 40 PNH: 12 Total: 65 Need to check if they implemented measures
3.6. Volume of plastic waste reduced as a result of the above support for business-led initiatives Measured by volume against baselines (note exact targets will be defined after baseline assessments)	SR: 13.1 tons SV: 7.9 tons PP: 7.9 tons Total: 28.9 tons	On-going
3.7 Number of pilots for plastic circularity Measured by number (cumulative)	1 pilot tested in SHV 1 pilot tested in PNH 3,000 tons	On-track 2,719 tons of plastic waste collected by Tontoton in SHV

Green means achieved, yellow means on-going and red not achieved

Output 4

Output 4: Priority business models for plastic recycling and alternatives supported and tested		
Indicators	**End-of Project Target**	**Status at Evaluation**
4.1. Number of priority business solutions identified for plastic recycling and alternatives Measured by number (cumulative)	ProDoc: 15 2023 Progress Report: 5	**8** The following possible business solutions were identified: • Plastic waste collection for recycling through the engagement of the informal waste sector in PNH • Plastic circularity with reverse vending machines • Turn non-recyclable plastic into energy in SHV with TONTOTON. • Waste segregation pilot with borevs in PNH • Mixing plastic waste into asphalt production • Refilling services for hospitality sector • Using rice straws as alternatives • Using banana for packaging (e.g. plates)
4.2. Number of plastic recycling and alternative innovations that ensure inclusion of women and vulnerable groups supported and tested for replication Measured by number (cumulative and gender disaggregated)	4	**4** • 3 winners were selected under the innovation challenge on e-commerce and implemented activities related to refilling and alternatives. • The model to mix plastic waste into asphalt production was tested

Green means achieved, yellow means on-going and red not achieved

Output 5

Output 5: Best practices disseminated and shared		
Indicators	**End-of Project Target**	**Status at Evaluation**
5.1 Number of gender sensitive communication materials disseminated on the project best practice to increase local knowledge sharing Measured by number (per year) a) Project report b) Project brief c) Social media posts d) Newspaper articles	Cumulative: a) 3 b) 2 c) 9 d) 3	**Achieved** Cumulative: a) 3 b) 4 c) 569 d) 26
5.2 Number of events organized and/or attended to disseminate project achievements and increase international knowledge sharing Measured by number (per year)and number of participants (gender disaggregated)	Cumulative: 4	**Achieved** Cumulative: 11

Annex E: Questions used in interviews

Note: These questions are intended mostly as a checklist to ensure that all focus areas are covered in an interview. It is not envisioned that the questions be asked in a chronological order.

1. What is your role/relationship with the project?
2. What are the main achievements of the project?
3. Do you have any recommendations as to what could have been done better or more efficiently?
4. Would there be reasons to prolong the project? If yes, why and what activities should be undertaken?
5. What steps have been taken to ensure replication of the concept?
6. Have you received awareness raising materials, guidelines, training or a grant from the project. If yes, was it helpful and did you receive all needed support from the project?
7. Did you receive equipment or other physical support through the project? If yes, does the system work? Did you receive a needed training, guidance and operating procedures? Is the system cost effective?
8. What are you doing to ensure sustainability of the project's processes and impacts?
9. Do you think that the system(s) are sustainable?
10. Who are the partners (i.e., people actively working to the same goals) on the project?
11. Who would you say *owns* the project?
12. Who are the stakeholders in the project (i.e., people that are involved in the project, either actively or passively or will be affected by the project in some way)?
13. Who are the main beneficiaries?
14. Have there been sufficient meeting and other communication regarding the project?
15. Has experience been exchanged with the other similar projects? If yes, please provide details.
16. Did the project listen to your advice/ concerns/ requests for information?
17. Who prepares the TOR for all contracting?
18. Who signs the contracts?
19. Is the project having any unexpected positive or negative impacts?
20. How has it been working with a UNDP project?
21. What are the strengths and weaknesses of the Project Document?
22. Who are the project's champions?
23. Standard issues:
    - Project Management
    - Procurement rules and efficiencies
    - UNDP training/support

- Financial audits
- Backing up data and digital information
- Team functionality
- Staff turn over
- If training is provided, how is training is now being used in job?
- Environmental issues
- Gender issues?
- Social issues?
- Human rights issues?

24. How is the project aligned to the Ministry's or Local Authority's strategies and policies?
25. How is the project aligned to the UNDP and JICA goals?
26. Has the project worked to train people and raise awareness? Who were the target groups? How is the project monitoring the Output of their efforts?
27. How has any changes in attitude and awareness affected project implementation, and how is it being used in the daily, professional lives of the target groups?

Annex F: List of persons interviewed and sites visited

#	Organisation/Institution	Relation to project	Name and position
1	Ministry of Land Management, Urban Planning and Construction	Former Co-Chair of Project Board	H.E. Vann Monyneath, Under Secretary of State
2	Ministry of Environment	Former National Project Director	H.E. Kith Chankrisna, Under Secretary of State
3	Ministry of Environment	National Project Manager	Mr. Taing Meng Eang
4	Ministry of Environment	PMU	Mr. Leang Sovichea, National Project Coordinator
	Ministry of Environment	PMU	Mr. Sam Vitya, Administrative Assistant
5	Ministry of Environment	Project Partner	Mr. Ngert Sina, Deputy Director, Department of Environmmental Education
6	Ministry of Environment	Project Partner	Ms. Seang Solheavy, Vice Chief, Department of Environmmental Education
7	Ministry of Environment	Project Partner	Mr. Mouen Sophat, Deputy Director, Department of Environmmental Education
8	Ministry of Environment	Project Partner	Mr. Dek Vimeanreaksmey, Project Officer, Solid Waste Management Department
9	Ministry of Environment	Project Partner	Ms. Sireirarana Thay, Project Admin & Finance Assistant, Solid Waste Management Department
10	Ministry of Environment	Project Partner	Ms. Chiv Kinphanath, Finance Assistant
11	Phnom Penh Department of Environment	Project Partner	Mr. Sok Kompheah, Chief of Administration
12	Phnom Penh Department of Environment	Project Partner	Mr. Khim Nora, Chief, Office of Solid Waste Management
13	Environment Department of Sihanoukville Province	Project Partner	Mr. Moeung Sopheap, Deputy Director
14	Environment Department of Sihanoukville Province	Project Partner	Mr. Hep Sokhennaro, Director of Waste Management
15	Environment Department of Sihanoukville Province	Project Partner	Ms. Koem Kanha, Officer

#	Organisation/Institution	Relation to project	Name and position
16	Environment Department of Sihanoukville Province	Project Partner	Ms. Heng Chankanha, Officer
17	Environment Department of Sihanoukville Province	Project Partner	Mr. Son Daravirth, Admin & Finance Assistant
18	Environment Department of Siem Reap Province	Project Partner	Mr. Norm Kimorn. Vice Director
19	Environment Department of Siem Reap Province	Project Partner	Mr Peach Pon, Vice Director
20	Environment Department of Siem Reap Province	Project Partner	Mr. Kem Sonine, Vice Director of Administration
21	Environment Department of Siem Reap Province	Project Partner	Ms. Loeum Sophan, Administration
22	Ministry of Interior	Project Partner	Mr. Suon Dara, Deputy Director, General Department of Administration
23	Ministry of Interior	Project Partner	Mr. Khua Rathanak, Assistant, General Department of Administration
24	Embassy of Japan, Cambodia	Source of funding	Mr. Takanori Kuribayashi, First Secretary
25	GIZ ASEAN-Team, Phnom Penh	Project Partner	Mr. Frank Jattke, Team Leader ASEAN
26	GIZ ASEAN-Team, Phnom Penh	Project Partner	Mr. Bunly Kea, Waste Management Advisor
27	Royal University of Agriculture, Phnom Penh	Beneficiary	Dr. Sophea Nhean, Vice-Dean
28	Royal University of Agriculture, Phnom Penh	Beneficiary	Mr. Situ Koemseng
29	Royal University of Agriculture, Phnom Penh	Beneficiary	Ms. Mentha, Environmental Club Leader
30	Secondary School of Fine Arts, Phnom Penh	Beneficiary	Mr Heng Kamsan, Director
31	New English School, Phnom Penh	Beneficiary	Ms. Kong Srey, Principal
32	New English School, Phnom Penh	Beneficiary	Mr. Chann Dara, Vice Principal
33	Toul Sangke Primary School, Phnom Penh	Beneficiary	Mr. Tear Rithy, Vice Principal
34	Toul Sangke Primary School, Phnom Penh	Beneficiary	Mr. Thoa Sopheap, Vice Principal

#	Organisation/Institution	Relation to project	Name and position
35	Teacher Training School for Cambodia, Sihanoukville	Beneficiary	Mr. San Sophany, Vice Principal
36	Teacher Training School for Cambodia, Sihanoukville	Beneficiary	Mr. San Ramo, Teacher trainer
37	Kamekor Secondary School, Sihanoukville	Beneficiary	Mr. Chevantay. Principal
38	Kamekor Secondary School, Sihanoukville	Beneficiary	Mr. Seng Ay, Vice Principal
39	Klang Leu Primary and Secondary School, Sihanoukville	Beneficiary	Mr. Chrock Kinyin. Principal of Primary School
40	Cambodia-Japan Friendship Sakura Secondary School, Sihanoukville	Beneficiary	Mr. Sem Roatha. Principal of Primary School
41	Cambodia-Japan Friendship Sakura Secondary School, Sihanoukville	Beneficiary	Mr. Loeung Try, Principal of Secondary School
42	Tea Banh Primary School, Siem Reap	Beneficiary	Mr. Hing Phalla, Principal
43	Tea Banh Primary School, Siem Reap	Beneficiary	Mr. Khuon Kosal, Vice Principal
44	Tea Banh Primary School, Siem Reap	Beneficiary	Mr. Him Chhun, Teacher
45	Kravann Primary School, Siem Reap	Beneficiary	Mr. Dy Sammang, Principal
46	Kravann Primary School, Siem Reap	Beneficiary	Ms. Kam Sarorn, Vice Principal
47	Wat Bo Primary School	Beneficiary	Mr. Phem Soth, Vice Principal
48	Muk Neak Primary School	Beneficiary	Ms. Loy Kim Luon, Vice Principal
49	Muk Neak Primary School	Beneficiary	Mr. Nuon Dara, Secretary to Principal
50	Villageworks, Phnom Penh	Innovation Challenge Winner	Ms Norm Bunnak, Director
51	Villageworks, Phnom Penh	Innovation Challenge Winner	Professor Pieter Perrett, Advisor
52	The Idea Consultancy, Phnom Penh	Innovation Challenge Winner	Mr. Buddhisatt Suon, Senior Manager
53	The Idea Consultancy, Phnom Penh	Innovation Challenge Winner	Ms. Yana Santiago, Communications Manager

#	Organisation/Institution	Relation to project	Name and position
54	Tontoton, Sihanoukville	Piloting plastic circularity	Mr. Barak Ekshtein, Founder & CEO
55	Tontoton, Sihanoukville	Piloting plastic circularity	Ms. Loemchou Say, Project Manager
56	Phare Creative Studio	Awareness Raising Specialists	Richard Sanviti, Development Manager
57	Phare Creative Studio	Awareness Raising Specialists	Ms. Morgane Darrasse, Communication & Marketing Consultant
58	UNDP Cambodia	Resident Representative	Ms. Alissar Chaker
59	UNDP Cambodia	Head of Results Based Management Unit	Ms. Ratana Norng
60	UNDP Cambodia	Environment Policy Specialist	Ms. Moeko Saito Jensen
61	UNDP Cambodia	Programme Analyst	Ms. Amara Bou
62	UNDP Cambodia	Project Technical Coordinator	Mr. Nac Mi
63	UNDP Cambodia	Project Assistant	Ms. Sreykhouch Kim
64	Translation during Evaluation	Translator	Mr. Seuv Try

Sites Visited

#	Site	Relation to project
1	Villageworks, Phnom Penh	Innovation Challenge winner
2	Tontoton, Sihanoukville	Piloting plastic circularity
3	Secondary School of Fine Arts, Phnom Penh	Recipient of water dispenser and awareness raising
4	New English Primary School, Phnom Penh	Recipient of water dispenser and awareness raising
5	Toul Sangke Primary School, Phnom Penh	Recipient of water dispenser and awareness raising
6	Stream between Prince Mall and Sokha Beach, Sihanoukville	Three Plastic Traps on waterway
7	Inland from Ochheuteal Beach, Sihanoukville	Three Plastic Traps on waterway

8	Canal adjacent to the mouth of the Golden River, Sihanoukville	One Plastic Trap on waterway
9	Teacher Training School for Cambodia, Sihanoukville	Recipient of water dispenser and awareness raising
10	Kamekor Secondary School, Sihanoukville	Recipient of water dispenser and awareness raising
11	Klang Leu Primary and Secondary School, Sihanoukville	Recipient of water dispenser and awareness raising
12	Cambodia-Japan Friendship Sakura Secondary School, Sihanoukville	Recipient of water dispenser and awareness raising
13	Siem Reap River	Plastic Trap Nets on waterway
14	Waste Shop # 1, Siem Ream	Buyer of goods for recycling
15	Waste Shop # 2, Siem Reap	Buyer of goods for recycling
16	Tea Banh Primary School, Siem Reap	Recipient of water dispenser and awareness raising
17	Kravann Primary School, Siem Reap	Recipient of water dispenser and awareness raising
18	Wat Bo Primary School, Siem Reap	Recipient of water dispenser and awareness raising
19	Muk Neak Primary School, Siem Reap	Recipient of water dispenser and awareness raising

Annex G: List of documents reviewed

#	Title
1	Project Document 2020
2	Project Preparation and Appraisal Documents
3	Mid-Term Project Progress Report (15 Jan 2021 - 31 July 2022)
4	Project Progress Report (1 January 2022 – 31 May 2023)
5	Annual Report 2021
6	Annual Report 2022
7	Quarterly Project Reports
8	Project Annual Work Plans
9	Minutes of Project Board Meetings
10	Guidelines, visit reports, workshop reports, training materials, action and strategic plans, project fact sheets, etc. produced by the project
11	Field Mission Reports
12	Mid-Term Review Report
13	Spot-check/audit reports
14	*Pentagonal Strategy-Phase I for Growth, Employment, Equity, Efficiency and Sustainability: Building the Foundation Towards Realizing the Cambodia Vision 2050* by the Royal Government of Cambodia (August 2023)
15	UNDP Country Programme Document for Cambodia (2019-2023)
16	UNDP *Evaluation Guidelines* (revised June 2021)
17	UNDP Quality Checklist for Evaluation Reports (2010)
18	Integrating Human Rights and Gender Equality in Evaluations, UNEG Guidance Document (August 2014)
19	Integrating Human Rights and Gender Equality in Evaluations, UNEG Guidance Document (August 2014)

Annex H: Signed UNEG Code of Conduct form

(Each UNEG member to create its own forms for signature)

Annex 2: United Nations Evaluation Group Code of Conduct for Evaluation in the UN System

Evaluation Consultants Agreement Form

To be signed by all consultants as individuals (not by or on behalf of a consultancy company) before a contract can be issued.

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Name of Consultant: PETER BISBJERG

Name of Consultancy Organisation (where relevant): _____

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at (place) on (date)

East Lansing on 1 June 2023

Signature: Peter Bisbjerg

Annex I: Quality assessment rating

Quality assessment rating scale

Code	Rubric for assigning rating		Value
HS	Highly satisfactory	All parameters were fully met and there were no shortcomings in the evaluation report	6
S	Satisfactory	All parameters were fully met with minor shortcomings in the evaluation report	5
MS	Mostly satisfactory	The parameters were partially met with some shortcomings in the evaluation report	4
MU	Mostly unsatisfactory	More than one parameter was unmet with significant shortcomings in the evaluation report	3
U	Unsatisfactory	Most parameters were not met and there were major shortcomings in the evaluation report	2
HU	Highly unsatisfactory	None of the parameters were met and there were severe shortcomings in the evaluation report	1
N/A	Not Applicable	Not Applicable unscored	unscored

Annex J: Terms of Reference

Individual Contractor

1. Assignment Information

Assignment Title:	Terminal Evaluation for the Combating Marine Plastic Litter project in Cambodia, 2021-2023 (Open for both National and International Consultant)
Cluster/Project:	Combatting Marine Plastic Litter project in Cambodia
Post Level:	Senior Specialist
Contract Type:	Individual Contractor
Duty Station:	Home-based, Phnom Penh and field visit
Expected place of travel:	Phnom Penh (10 days) and other provinces including Sihanoukville, Siem Reap, (05 days)
Contract Duration:	35 working days (18 August – 30 Nov 2023)

2. Background and Context

In Cambodia, over the last decades, a combination of rapid population growth and economic development has led to a surge in the volume of solid waste, including plastic waste. In Phnom Penh, for example, in 2021 more than 3,600 tonnes of municipal waste is generated every day. Approximately 80% of the waste is collected and disposed of at open landfills. In poor urban areas and in rural areas without waste collection services, waste is often burned in the open space. The remaining waste is disposed at informal dumpsites, on streets, or into local waterways, which carries plastic to rivers and oceans.

While most high-income countries have advanced systems for recycling and treating such plastic waste, Cambodia do not yet have adequate infrastructure, technologies, or human resources to do so. There is urgency to reduce the volume of plastic waste in Cambodia and to create an environment where waste is properly recycled or recovered.

To tackle plastic pollution, in January 2021, the Combatting Marine Plastic Litter project was introduced, implemented by the National Council for Sustainable Development (NCSD) with funding support from the Government of Japan, and with technical and financial support from the United Nations Development Programme (UNDP).

The project has sought to prevent and minimize plastic pollution on land and in the ocean through promotion of a 4R (Refuse, Reduce, Reuse, and Recycle) framework. Target provinces include Siem Reap (SRP), Sihanoukville (SHV), Phnom Penh (PNH), Kep, Kampot and Koh Kong. The project has sought to attain the following five main outputs:

1. **Policy and regulation**: Key enabling policies and regulations developed and implemented to promote 4Rs
2. **Awareness raising**: Improved awareness about the plastic crisis and its solutions among citizens and the private sector through environmental education and awareness raising
3. **Subnational implementation**: Plastic waste reduced in target cities through education, private sector-led best practices and innovation
4. **Business development**: Priority business models for plastic recycling and alternatives supported and tested
5. **Knowledge sharing:** Best practices disseminated and shared

Project brief information

Project title	Combatting Marine Plastic Litter project in Cambodia	
Atlas ID	00119646	
UNDAF/CPD Output and CPD output	Output: 2.1 & 2.3	
Country	Cambodia	
Region	Asia Pacific	
Date project document signed	15 January 2021	
Project dates	Start dates: 15 January 2021	End Dates: 15 January 2023
Project Budget	USD 3,108,851.00	
Funding Source(s)	UNDP and Embassy of Japan	
Implementing Partner	National Council for Sustainable Development (NCSD)	

3. Evaluation purpose, scope, and objective

Since the project is at the final stage of its implementation, the Terminal Evaluation exercise is planned to prepare a report that provides an independent assessment (based on the fours criterions namely relevance, effectiveness, efficiency, and sustainability) on the project's progress and results, key lessons learned, and recommendations for potential future initiatives to minimize plastic consumption and plastic waste pollution. The

exercise will also assess how the project mainstreamed gender equality and women empowerment and other cross cutting issues within its scope, its progress to date and recommend areas of improvement.

The evaluation will cover the total duration of the project since its start in 2021, covering both the national level interventions and the interventions at sub-national level, e.g., in the 5 target provinces of the project.

The direct target audience of this terminal evaluation are UNDP Management, the National Council for Sustainable Development (NCSD), and representatives from the Embassy of Japan in Cambodia. The report will also be shared with other relevant entities namely the Ministry of Environment (MoE) through the Project Management Unit (PMU), Ministry of Interior (MoI), and the Municipal/Provincial Department of Environment (PDoE) in the project target area such as Phnom Penh, Siem Reap, and Sihanoukville. The report will also be accessible by the public.

Below are the objectives of this exercise:

- Review and assess the overall achievements (outputs, Outputs, and impacts levels) of the Combatting Marine Plastic Litter project (in comparison with the latest approved result framework) and its contribution to UNDP's Country Programme and national priorities.
- Undertake an assessment of indicator progress vis-à-vis the targets for both outputs and Output and the proposed budget. Highlight whether indicators were suitable to measure progress and results, and suggest alternatives for future consideration.
- Assess the relevance and strategic positioning of the project to respond to the needs and challenges faced by Cambodia in tackling the issue of plastic waste management.
- Document good practices, key lessons learned, and recommendations for the potential for replicating and scaling up successful models and interventions and for future programming,
- Assess current and potential synergies and collaboration with other projects,
- Assess whether and how the project enhanced the application of a rights-based approach, gender equality and women's empowerment, and participation of other group such as youth group, private sector in tackling the waste pollution issue, and
- Assess the project's adaptability and resilience, and quality of equipment provided by the project toward the intended results.
- Identify relevant areas of strategic intervention for UNDP in supporting the country to address the plastic issue for next programming cycle 2024 – 2029.

4. Evaluation criteria and key guiding questions

In addressing the above-mentioned objectives, a final review will be conducted to ensure that the key principles of UNDP Evaluation shall be fully respected and guided by the United Nations Development Evaluation Group's Norms and Standards for Evaluation and the Organization of the Economic Cooperation Development/Development Assistance Committee (OEDC/DAC)'s Evaluation Criteria for Evaluating Development Assistance. The review will be independent, impartial, transparent, ethical, and credible based on data and evidence. She/he is expected to adhere to the following evaluation criteria:

- **Relevance/Coherence:** to assess the relevance of the Combatting Marine Plastic Litter project's strategies, design, and implementation arrangements for improving awareness raising and formulating laws and regulations to tackle plastic pollution issues.
    - To what extent were the project's interventions in line with national development priorities, country programme outputs, and Outputs through promoting the 4Rs – Refuse, Reduce, Reuse, and Recycle – the framework to prevent and minimize plastic waste pollution on land and in the ocean in Cambodia?
    - To what extent is the project contributing to the theory of change for the country programme outputs and Outputs and relevant to the achievement of the SDGs in Cambodia?
    - To what extent were the methods, activities, and outputs aligned with the overall objectives and goals of the project?
    - To what extent has the project contributed to improving the laws and regulations formulation related to plastic waste management issues?
    - To what extent has the project contributed to improving awareness raising among youth, beneficiaries and public related to on plastic waste management issue?
    - To what extent has the project contributed to the reduction of plastic waste in the target provinces and communities?
    - To what extent are the objectives, activities, and approaches of the project addressing gender equality, and leaving no one behind (LNOB) strategy?

- **Effectiveness:** to assess how effective was the Combatting Marine Plastic Litter project in achieving the objectives (outputs and Outputs) using the project's result framework as a basis.
    - To what extent were the Combatting Marine Plastic Litter project's governance structures, in particular the project executive board, effective in facilitating smooth implementation?
    - To what extent were the objectives achieved /are likely to be achieved by the end of the project?

- To what extent have lessons learned from what works well and less well been used to improve and adjust project implementation?
- What were the major factors influencing the achievement or non-achievement of the objectives?
- To what extent has the project been effective in managing partnerships to enhance optimal results?
- To what extent has the project's intervention forged new or strengthened partnerships among different stakeholders (government agencies, private sectors, development partners, civil societies, youth group, and other relevant practitioners, etc.)?
- In which areas does the project have the greatest achievement? Why and what were the supporting factors? How can the project build on or expand these achievements?
- To what extent have the project beneficiaries been engaged in the project implementation?
- To what extent have the project's interventions addressed gender equality issues in its implementations?
- Based on Gender and LNOB principles – how gender and other vulnerable groups were catered for in the project and how did the project ensure that these groups were not sidelined/the pre-exiting vulnerabilities were not exuberated by the project implementation?
- How were the voices and opinions of the beneficiaries gathered and used during the course of the project?

- **Efficiency:** to the extent possible, the evaluation will compare the benefits of the Combatting Marine Plastic Litter project with the budget to assess the overall efficiency of the project. The evaluation will provide practical recommendations regarding how to improve efficiencies in future plastic waste management-related projects.
  - To what extent was the project management structure as outlined in the project document efficient in generating the expected results?
  - Have resources (funds, human resources, times, expertise, etc.) been allocated strategically to achieve Outputs?
  - Assess Value for Money against the budget and comparison to the increased volume of plastic consumption in the project target area and in Cambodia?
  - To what extent have resources been used efficiently? Have activities s the strategies been cost-effective?
  - To what extent have project funds, activities, and outputs been delivered promptly?
  - To what extent have Combatting Marine Plastic Litter project's interventions fostered financial or technical leverage from other

stakeholders (Government institutions, development partners, private sector, civil society)?
- To what extent were resources dedicated to the most marginalized and vulnerable of the target group, the informal group in terms of gender, age, and social security?

- **Sustainability:** The evaluation will assess how the project achievements contribute to sustainability by engaging appropriate Government, non-Government, and other relevant stakeholders.
  - To what extent has the Combatting Marine Plastic Litter project contributed to promoting Government ownership and leadership in the implementation of 4Rs framework in Cambodia?
  - What were the institutional or policy changes resulting from the Combatting Marine Plastic Litter project's interventions?
  - What were the changes in mine set/attitude of the public in realizing their roles and contributions to tackle plastic waste management? To what extent are the benefits of the Combatting Marine Plastic Litter project likely to continue after its completion?
  - What were the major factors which influenced the sustainability of the project?
  - To what extent do the mechanism and procedures exist to allow the primary project stakeholders to carry forward the project results attained on the plastic waste management issue?
  - To what extent do the project stakeholders support the project's long-term objectives?
  - To what extent are the lesson learning and best practices being documented by the project team on a continual basis and shared with appropriate parties who could learn from the project?

- Human Rights and Gender Issues
  - To what extent have informal group and other disadvantaged and marginalized groups benefited from the project?
  - To what extent have gender equality and the empowerment of women been addressed in the design, implementation, and monitoring of the project?
  - Is the gender marker assigned to this project representative of reality?
  - Were informal group and other disadvantaged and marginalized groups consulted and meaningfully involved in project planning and implementation?
  - To what extent the Covid-19 crisis has prevented or enabled project interventions to address marginalization, inequalities, and gender equality?

5. Methodology

The methodology should be participatory, inclusive, and gender responsive. Evaluation should use a combination of qualitative and quantitative evaluation methods and instruments. The methodology should include sampling methods for selecting stakeholders and methods for assessing results stated in the results frameworks.

The methods shall include:

- **Desk reviews:** At the beginning of the assignment, the consultant will need to review the key documents namely the project document, project progress reports, workplans, project quality assurance reports, key project outputs, communication products, and stories about the project.

Complete list of documents to be provided will be shared once the consultant is on board.

- **Data collection**: data collection will be done in the form of:
    - Online and/or off-line surveys conducted to assess changes in lives and practices of target groups benefitting from projects.
    - Interviews with Combatting Marine Plastic Litter project teams physically or virtually, Interviews with key informants from UNDP project team, Project Management Unit (PMU), relevant colleagues of the Ministry of Environment (MoE), Ministry of Interior (MoI), Phnom Penh Department of Environment, Department of Environment in Siem Reap, Sihanoukvile, Kep, Kampot and Koh Kong.
    - Interviews with the project board and other strategic partners supporting Combatting Marine Plastic Litter project implementation.
    - Key informant interviews/consultations with beneficiaries such as teachers, students, youth, CSOs, private sectors, and the public.
- For the above interviews, the consultant will need to design a set of questions aimed for the specific interviewee category.
- For each of the target interviewees categories, the consultant will need to propose the approach/tool, e.g., semi-structure interview, focus group discussion, etc.
- Field visits to target provinces to meet with relevant government officials, teachers, students, CSOs, private sectors, and school management committees.

- Gender and human rights lens: All evaluation products need to address gender, disability, and human rights issues. Hence, the consultant will need to design the tool allowing the collection of the data to provide the evaluation from those lenses.
- The consultant can propose other approaches and multiple ways of engaging, including beneficiaries disaggregated by gender, age categories, disability, urban and rural.

All conclusions, judgments, and opinions must be qualified by evidence and not be based on perceptions.

6. Once on board, the consultant will propose the methodology in close consultation with UNDP. The final methodological approach including interview schedule, field visits, and data to be used in the evaluation should be clearly outlined in the inception report and fully discussed and agreed upon between UNDP, key stakeholders, and the evaluators.

Evaluation Deliverables

- **Evaluation Inception Report (7-10 pages):** The inception report should be completed following desk review and based on preliminary discussions with UNDP and national partners as relevant. It should detail the evaluator's understanding of what is being evaluated and why? showing how each evaluation question will be answered by way of proposed methods, sources of data, and data collection procedures. The inception report should include a proposed schedule of tasks, activities, and deliverables.. Inception report must include the detailed data collection tools and line of questions to be asked of the different stakeholders.

The updated Evaluation matrix should be included in the inception report. The evaluation matrix is a tool that evaluators create as a map and reference in planning and conducting an evaluation. It also serves as a useful tool for summarizing and visually presenting the evaluation design and methodology for discussions with stakeholders. It details evaluation questions that the evaluation will answer, data sources, data collection and analysis tools or methods appropriate for each data source, and the standard or measure by which each question will be evaluated. Below is the sample of the evaluation matrix template.

Relevant evaluation criteria	Key questions	Specific sub-questions	Data sources	Data collection methods/ tools	Indicators/ success standards	Methods for data analysis

- **Debrief of preliminary evaluation result:** following the completion of fieldwork and data collection, the consultant is expected to provide a preliminary debriefing on the findings to UNDP and key stakeholders).
- **Draft Evaluation Report (30-35 pages) excluding annexes:** The Evaluation Report should contain at least following:
    - List of Acronyms and Abbreviations (1 page)
    - Executive Summary summarizing the key findings with rating scale, and recommendation (1-2 page)
    - Introduction (1 page)
    - Evaluation Scope and Objective (1 page)
    - Evaluation Approach and Methods (1 page)
    - Evaluation Findings, Data Analysis and
    - Conclusion, including a table of progress against indicators (15-20 pages)
    - Where relevant, the report could also reflect human/best practice narrative as per the evidence collected from the field visit.
    - Recommendations, Lessons Learned (5 pages)
    - Annexes: survey/ questionnaire questions and analyses, list of contacts, other relevant information.

UNDP will coordinate with key stakeholders to review the draft evaluation report and provide consolidated comments to the evaluator within an agreed period (usually within 10 working days after receiving the document), addressing the content required (as agreed in the TOR and inception report) and quality criteria as outlined in these guidelines.

- **Evaluation report audit trail.** Comments and changes by the evaluator in response to the draft report should be kept in "track changes" by the evaluator to show how they have addressed comments in this Audit Trail Report .
- **Final Evaluation Report**: The consultant will revise the draft based on inputs provided by UNDP and project partners and submit a final report within two weeks after receiving the comments. The evaluator is expected to develop a brief power point presentation and present the evaluation results (max two times) to UNDP, project board or relevant stakeholders as suggested by the project team.
- **Powerpoint presentations for briefing and debriefing….**

#	Deliverables	Estimated Duration to complete	Target due date (Approximately)	Review and Approval Requires
1	**Output 1:** Submission of satisfactory Inception Report covering proposed methodology, timelines, etc. to deliver the assignment	5 days	8th Sept 2023	UNDP Evaluation Manager (RBM unit)
2	**Output 2:** Completion of field work exercise, and provision of presentation of preliminary findings (Evaluation Debriefing Meeting) to key stakeholders of the Combatting Marine Plastic Litter Project	15 days	29th Sep 2023	
3	**Output 3:** Completion of the draft version of the evaluation report along with a powerpoint	10 days	16th Oct 2023	
5	**Output 4:** Submission of satisfactory final evaluation report produced and PowerPoint of evaluation results incorporating comments at the quality required in compliance with the required Evaluation Report Outline and attached with Audit Trail Report	5 days	20th Nov 2023	
	Total number of days	35 days		

*Multiple reiterations may be required of the reports until the report is considered approved.

**Inception and final Report must meet IEO's Quality criteria (link below)

7. Evaluation Ethics

This evaluation will be conducted following the principles outlined in the UNEG 'Ethical Guidelines for Evaluation'. The consultant must safeguard the rights and confidentiality of information providers, interviewees, and stakeholders through measures to ensure

compliance with legal and other relevant codes governing the collection of data and reporting of data.

The consultant must also ensure the security of collected information before and after the evaluation and protocols to ensure anonymity and confidentiality of sources of information where that is expected. The information knowledge and data gathered in the evaluation process must also be solely used for the evaluation and not for other uses, with the expressed authorization of UNDP and partners.

Evaluator is responsible for ensuring the report is readable and reads well, and factoring the aspect of Gender and LNOB.

8. Institutional Arrangements

The consultant will be working under the general guidance of the Resident Representative and overall coordination by the Evaluation Manager – whose function is performed by UNDP's Cambodia's Head of Result-Based Management (RBM) unit. The deliverables will be reviewed by the Evaluation Manager who will also facilitate inputs from UNDP team, national partners, and other relevant stakeholders. Inputs will be consolidated by the Evaluation Manager and shared with the Evaluator. The deliverables are to be cleared by the Evaluation Manager to ensure evaluation objectives are met, reports are at acceptable quality standards, and relevant stakeholders are duly consulted.

Payment release will be approved upon confirmation of the deliverables by the Evaluation Manager.

UNDP Cambodia reserves the right to maintain regular communication with the consultant and to engage/visit/monitor the implementing activities where needed. The Combating Marine Plastic Litter project team and Project Management Unit team will work closely with the evaluator to facilitate the process (if needed), including providing relevant documents, identifying stakeholders and sources of information, and assisting to resolve any issues arising during the assignment period to the extent possible.

Duty Station: the duty station for this assignment is home-based with one time travel to Cambodia for the period of 15 days, expectedly in September 2023. The evaluator is expected to virtually and/or physically collect data and conduct interviews with key informants as relevant during his/her presence in Cambodia. S/he expect to stay in Phnom Penh for 10 days, and travel to the two provinces (Siem Reap and Sihanoukville) for 05 days. Once the consultant is on board, the field mission plan will be discussed and agreed between UNDP and the consultant. The daily stipend and transportation of the consultant during his/her time in Cambodia will be organized by the consultant and should be factored in the proposed budget. In the event of travelling to the provinces, the transportation to the provinces will be arranged and related cost will be covered by the UNDP project.

Duration of the Assignment: This final evaluation shall be carried out between 18th August 2023 to 30th November 2023. The consultant is expected to produce deliverables based on the timeframe set in section 6 of this terms of reference (expected outputs and deliverables).

9. Timeframe for the evaluation process

ACTIVITY	ESTIMATED # OF DAYS	DATE OF COMPLETION	PLACE	RESPONSIBLE PARTY
Phase One: Desk review and inception report				
Kick of meeting with UNDP (organized by Evaluation Manager)		21st Aug 2023	Remote/zoom	Evaluation Manager
Meeting briefing with UNDP (project manager, programme analyst, and project staff as needed)	-	1st Sept 2023	Remote/zoom	Evaluation Manager, and Project team
Sharing of the relevant documentation with the consultant	-	21st Aug 2023	Email	Project Technical Coordinator - UNDP
Briefing meeting with UNDP management team			Remote/zoom	Evaluation Manager
Desk review, Evaluation design, methodology and updated workplan including the list of stakeholders to be interviewed	5 days	Btw 21st Aug to 5th Sept 2023	Home- based	Consultant
Submission of the inception report (15 pages maximum)	-	5th Sept 2023	Email	Consultant
Comments and approval of inception report	-	8th Sept 2023	UNDP	Evaluation manager - UNDP
Phase Two: Data-collection				
Consultations and meetings, in-depth interviews, and focus groups including online or	15 days	11th – 29th Sept 2023	Meeting and Traveling	UNDP to organize with local project partners,

in person surveys for feedback				project staff, service providers, beneficiaries.
Debriefing to UNDP and key stakeholders	-	28th and/or 29th Sep 2023	UNDP office	Consultant
Phase Three: Drafting and Finalization of the Evaluation report				
Preparation of draft evaluation report (35 pages maximum excluding annexes)	10 days	16th Oct 2023	Home-based	Consultant
Draft report submission	-	16th Oct 2023		Consultant
Consolidated UNDP and stakeholder comments to the draft report	-	16th to 30th Oct 2023	UNDP	Evaluation manager and evaluation reference group
Final Debriefing after receiving comments from UNDP (TBC)	-	2nd or 3rd Nov 2023	Remote	Evaluation team and consultant
Finalization of the evaluation report incorporating additions and comments provided by project staff and UNDP country office and Power Point Presentation of key evaluation finding, and Audit Trail report	5 days	31st Oct – 3rd Nov 2023	Home- based	Consultant
Submission of the final evaluation report, Audit Trail Report, and power point presentation to UNDP country office (40 pages maximum excluding annexes)	-	20th Nov 2023	Home- based	Consultant
Estimated total days	**35 days**			

10. Minimum Qualifications of the Individual Contractor

Education	• Minimum of a master's degree or equivalent in environmental engineering, environmental science, environmental management, economics, public policy, development studies, or related field relevant to the position.
Experiences	• At least 7 years' experience designing, implementing, and evaluating development projects with UNDP, UN, or other international organizations; • Previous evaluation experience for UNDP and UN agencies projects; • Technical knowledge and experience in applying qualitative and quantitative evaluation methods, data collection, analysis, and evaluation report writing, Proven knowledge on environmental, waste management and recycling especially experience working in and knowledge of Cambodia or/and the South East Asia region is preferred;
Competencies	• Excellent analytical, evaluation and writing skills, including the capacity to produce high quality and constructive reports assessed by 2 sample reports; • Good facilitation and presentation skills; • Be client-oriented and open to feedback; • Excellent interpersonal, coordination, and planning skills. Sense of diplomacy and tact; and • Ability to carry out related activities and meetings using virtual tools or remote working arrangements; and • Computer literate (MS Office package).
Language Requirements	• Excellent written and spoken English required

11. Criteria for Evaluation of Level of Technical Compliance of Individual Contractor

Please find below for transparency and information purposes the general criteria, which will be used in evaluating the acceptability and level of technical compliance of the candidates, as well as their corresponding weight.

Technical Evaluation Criteria	**Obtainable Score**
Minimum of a master's degree or equivalent in environmental engineering, environmental science, environmental management, economics, public policy, development studies, or related field relevant to the position.	Long-listing criteria (no score provided)
At least 7 years' experience designing, implementing, and evaluating development projects with UNDP, UN, or other international organizations;	15
Previous evaluation experience for UNDP projects is a strong asset;	15
Technical knowledge and experience in applying qualitative and quantitative evaluation methods, data collection, analysis, and evaluation report writing;	25
Proven knowledge on environmental, waste management and recycling especially experience working in and knowledge of Cambodia or/and the South East Asia region is preferred;	20
Excellent analytical, evaluation and writing skills, including the capacity to produce high quality and constructive reports assessed by 2 sample reports (at least 2 previous evaluation reports to be submitted for assessment);	15
Total Obtainable Score:	**100**

12. Payment Milestones

The consultant will be paid on a lump sum basis under the following installments.

Deliverables	**Date of Payment**	**Payment Percentage**
• Upon satisfactory completion of output #1	15th Sept 2023	10%
• Upon satisfactory completion of output #2	15th Oct 2023	40%

• Upon satisfactory completion of output #3 & 4	20th Nov 2023	50%
TOTAL		**100%**

13. Annexes to the TOR

- Project Document and Revised Result Framework
- Current CPD and UNDAF (2019 – 2023)