# Appendix 2: Full Project Proposal Template (once the EoI is shortlisted)

**(1) Summary page**

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| |  |  | | --- | --- | |  | **Mekong-ROK Cooperation Fund (MKCF)**  **Project Proposal** | | |
| **Project Classification (check all that applies and underline the most key area)** | |
| □ Culture and Tourism  ☒ Human Resources Development  □ Agriculture and Rural Development  □ Infrastructure  ☒ Information and Communication Technology (ICT)  ☒ Environment  □ Non-traditional Security Challenges | |
| **Project Title** | |
| Mapping the plastic litter leaking into the waterways of Mekong countries and providing innovative solutions for efficient waste management. | |
| **Brief Description of the Project** | |
| Southeast Asia region possessed the exacerbating plastic waste in the open environment for the last decades. This project addresses the complex issue of plastic waste and aims to contribute to the system of plastic leakage monitoring with the inclusivity of science, technology, and innovation. Our working scope is to engage all stakeholders (public, private, academic, NGOs, and governments) to support plastic waste management at the national and regional levels. Our project scope is limited to promoting and incubating sustainable solutions through plastic leakage prevention, plastic waste detection and monitoring, and plastic waste collection. The project is expected to support proper waste management and conduct the standard in plastic waste monitoring framework at the city level. | |
| **Country / Region** | |
| Thailand, Vietnam, Lao PDR, and Cambodia | |
| **Budget** | |
| Total budget (USD): 609,106 USD  Total budget requested from MKCF (USD): 609,106 USD  Total contribution if any including from third parties (USD): N/A | |
| **Proponent** | |
| Name | Prof. Shobhakar Dhakal |
| Address | **Asian Institute of Technology**  58 Moo 9, Phahonyothin Road, Khlong Nueng, Khlong Luang District, Pathum Thani 12120 |
| **Date of Submission** | 04/08/2023 |

**(2) Full Proposal Format**

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|  | **Mekong-ROK Cooperation Fund (MKCF)**  **Project Proposal** | | | | | |
| **Project Information** | | | | | | |
| 1.1. Project Title | Mapping the plastic litter leaking into the waterways of Mekong countries and providing innovative solutions for efficient waste management. | | | | | |
| 1.2. Country (s) / Region | Thailand, Vietnam, Lao PDR, and Cambodia | | | | | |
| 1.3. Date of Submission | 04/08/2023 | | | | | |
| 1.4. Proponent Contact Details | | | | | | |
| Contact person, position  Organization  Email address  Telephone number  Mailing address | - Dr. Kittiphon Boonma, Research Specialist  - Asian Institute of Technology  - kboonma@ait.asia  - +66 61 541 5481  - P.O. Box 4, 58 Moo 9, KM. 42, Phahonyothin Road, Khlong Nueng, Khlong Luang District, Pathum Thani 12120. Thailand | | | | | |
| 1.5. Project Area (check all that applies and underline the most key area) | | | | | | |
| □ Culture and Tourism  ☒ Human Resources Development  □ Agriculture and Rural Development  □ Infrastructure  ☒ Information and Communication Technology (ICT)  ☒ Environment  □ Non-traditional Security Challenges | | | | | | |
| **Project Milestone** | | | | | | |
| Estimated implementation start date  Estimated implementation end date  Project duration | | 01/03/2024  01/05/2026  2 years 3 months | | | | |
| **Description of Financial Elements** | | | | | | |
| Project cost (USD) | Contribution (USD) if any | | Total Project Cost (USD) | | | |
| 609,106 USD |  | | 609,106 USD | | | |
| **General description of organization (***approx. 500 words)* | | | | | | |
| The Asian Institute of Technology (AIT) is an autonomous, international institute established in 1959 to meet the growing need for higher education in Asia. AIT promotes technological change and development in the region through pioneering action-oriented research approaches, offering state-of-art multidisciplinary programs, and innovative research in partnership with the industries for sustainable growth of the region. AIT ranks 15th in the world in the prestigious Times Higher Education (THE) Impact Rankings in 2021 for its contributions to ending poverty, in line with the United Nations Sustainable Development Goals, SDG1 – No Poverty.  Plastic pollution is becoming a major environmental problem worldwide. AIT has implemented several projects and capacity-building programs on plastic leakage mapping and developing technological solutions to detect and monitor plastic litter. Through the partnership with the United Nations Environment Program (UNEP), AIT has produced:   1. a Geographic Information System (GIS) platform that includes digital monitoring tools such as mobile applications, waste heatmap, and AI-enabled CCTV to visualize plastic leakage data and pathways, 2. a region-based approach to plastic pollution assessment and monitoring in rivers in Asia to be utilized by local, national, and regional authorities, and 3. Plastic Leakage Pathways: models and stories of plastic litter entering waterways and rivers over the past four years (2019 – 2023).   AIT has developed a plastic detection and monitoring system using computer vision and artificial intelligence called ‘*pLitter*’ ([plitter.org](https://plitter.org/)). AIT also worked with local municipalities in Thailand, Lao PDR, Cambodia, Vietnam, Indonesia, and Myanmar to map plastic leakage. Through this project, AIT intends to mitigate plastic pollution through actions on the ground in the Mekong region by engaging local partners active in this area. | | | | | | |
| **Project background and justification** *(approx. 500 words)* | | | | | | |
| Southeast Asia is one of the most developing regions and is accused of being the new hotspot source of marine debris. Through the implementation of the Bangkok Declaration on Combating Marine Debris in the ASEAN Region and the ASEAN Framework of Action on Marine Debris, the strengthening cooperation has been made under the ASEAN-Republic of Korea Plan of Action to Implement the Joint Vision Statement for Peace, Prosperity, and Partnership (2021 – 2025). Under this agreement, supplementary activities have been emphasized to explore the possible development of a regional plan of action and guidelines for combating marine plastic debris.  With the focus on the problem in Mekong countries, the harmonized solutions at the regional level are still not being addressed. Although the intervening solutions have been developed globally, the integration among the solutions still poses less effectiveness. The solutions were addressed in specific cases in each country, yet the action plan standard is still not in place. For example, most of the study sites were implemented in several projects, yet the outcome will be differed and conclude the redundancy actions.  In context of monitoring, plastic waste which exacerbated by the current trends and business are compiled not in the one-roof solution. The standardization of the method has not been applied yet the implementation is needed to the global-scale policy approach.  We proposed a technical working arrangement focusing on the integrative approach and replicable throughout the region, emphasizing the detection, mitigation, and prevention of plastic leakage. | | | | | | |
| **Problems (to be addressed)** *(approx. 300 words)* | | | | | | |
| Through several working experiences in plastic waste management issues, we have identified gaps and inefficiencies based on the previous plastic-leakage-related works AIT carried out in Mekong countries (Thailand, Vietnam, Lao PDR, Cambodia, and Myanmar). The gaps found in the local waste management bodies operating on a Business as Usual (BaU) basis, which written as follows along with the possibility of the solutions can be addressed.   1. An increasing amount of plastic leakage could expose vulnerable local communities to catastrophic threats, such as floods from waterway blockage or slope failure in open dumpsites, aggravated by climate change impacts. 2. Regional/local policymakers lack scientific evidence to ensure adequate evidence-based plastic pollution mitigation measures. 3. No harmonized and standardized methodologies for data collection and monitoring in the local, national, and region are also currently highlighted in the Intergovernmental Negotiating Committee (INC) discussion to develop international legally binding instruments on plastic pollution. 4. Several global initiatives have been calling for regional and local task forces to tackle the issues related to plastic pollution, but cities in the Mekong region are lagging.   With the implementation of Science, Technology, and Information (STI) which applied to the framework on the plastic waste leakage monitoring, the core of the issue can be addressed. The improvement will be provided with the collaboration among the stakeholders in the local context. | | | | | | |
| **Project Objective (***approx. 500 words)* | | | | | | |
| The general objective of this project is to **implement Science, Technology, and Innovation (STI) solutions focused on the plastic leakage problem in the Mekong countries**.  The project will engage all stakeholders (public, private, academics, NGOs, and governments) to support plastic waste management at national and regional levels. By leveraging STI and bringing together private and public sectors, it aims to address identified problems and promote sustainable solutions.   1. **Plastic Leakage Prevention Objectives:**  |  |  | | --- | --- | | **Short-term goals** (within project timeline) | **Long-term goals** | | * To identify the main sources and pathways of plastic leakage in project areas. * To raise awareness and educate the public about the impact of plastic pollution on the environment and public health. * To promote the adoption of sustainable practices and technologies to reduce plastic waste and improve waste management. * To promote circular economy models and innovative solutions to prevent plastic waste at the source. | * To incorporate the model/methodologies into the national and regional plastic action plans as a long-term and a sustainable methodology applicable for all Mekong countries. * Advocate for policy changes that promote sustainable plastic waste management, such as extended producer responsibility or bans on non-recyclable plastics. |  1. **Plastic Waste Detection and Monitoring Objectives:**  |  |  | | --- | --- | | **Short-term goals** (within project timeline) | **Long-term goals** | | * To develop a database for recording and analysing data on plastic waste, including its sources and composition. * To implement AIT’s plastic-waste remote sensing technologies and innovations (artificial intelligence/machine learning algorithms, and computer vision) which has previously been sustainably installed in Mekong countries. * To facilitate regional collaboration and knowledge-sharing on best practices for plastic waste detection and monitoring. | * To use the data collected from plastic waste monitoring to inform policy and management decisions related to plastic pollution. * To promote transparency and accountability in plastic waste management and governance. * To contribute towards harmonizing and standardizing methodologies for data collection and monitoring in the local, national and region (aligning with INC development plan). |  1. **Plastic Waste Collection Objectives:**  |  |  | | --- | --- | | **Short-term goals** (within project timeline) | **Long-term goals** | | * To establish a network of collection points for plastic waste, such as clean-up stations or community drop-off locations. * To pilot community-based waste management schemes for plastic waste in selected areas of the Mekong countries. * To conduct training and capacity-building activities for local communities to promote proper plastic waste disposal and management. | * To achieve universal access to safe and environmentally sound plastic waste collection and disposal services in the Mekong countries. * To establish a sustainable and circular economy for plastic waste management, including collection, sorting, recycling, and disposal. * To create green jobs and promote social inclusion through plastic waste management activities. |   This project contributes to three of the seven MKCF priority sectors.  Sector (2) Human Resources Development, through activities such as technical capacity building, public and youth education, and training of community volunteers.  Sector (5) Information and Communication Technology (ICT), through the implementation of replicable plastic leakage monitoring framework and technology, and the development of a comprehensive monitoring system for the region.  Sector (6) Environment, through the overarching goal of reducing plastic litter leakage into the rivers.  We would also like to anchor the project in the ‘Mekong-Republic of Korea Cooperation Plan of Action (POA) 2021-2025’ in the following priority areas:  - 2.11 Science, Technology, and Innovation (2.11.1, 2.11.3)  - 3.2 Environment (3.2.1, 3.2.3, 3.2.4, 3.2.6)  - 3.7 Youth and People-to-People Exchange (3.7.2, 3.7.4). | | | | | | |
| **Project Description (***approx. 500 words)* | | | | | | |
| The purpose of this project is to enhance the collection coverage of plastic waste leaking into the environment. It aims to foster collaboration among stakeholders and develop a cohesive strategy combining science, technology, and implementation. The primary focus of the project is twofold: first, to address existing plastic leakage within the waste management system, and second, to combat the illegal disposal of plastic waste.  The project encompasses several key solutions. Firstly, it will conduct an initial assessment of the current state of plastic leakage to gain a comprehensive understanding of the issue. This assessment will serve as a basis for identifying immediate actions that can be taken to minimize plastic leakage and its adverse effects on the environment.  Furthermore, the project will offer support to build the capacity of local communities in handling plastic waste. Empowering these communities will enable them to actively participate in waste management initiatives and contribute to reducing plastic leakage.  An essential aspect of the project is to facilitate collaboration among local stakeholders and encourage the sharing of knowledge regarding best practices for plastic waste detection and monitoring. By leveraging collective expertise, the project aims to enhance plastic waste management practices in the long run. This includes harmonizing and standardizing methodologies for monitoring plastic waste to ensure effective collection from the environment.  The project not only focuses on developing a framework but also takes practical steps towards its implementation. It aims to establish a network of collection points for plastic waste, providing clean-up stations to encourage direct action based on scientific data. These collection points will serve as crucial hubs for gathering and managing plastic waste more efficiently.  The overarching goal of the project is to create a sustainable and collaborative approach to tackle plastic leakage in the environment. By integrating scientific knowledge, advanced technologies, and active community participation, the project strives to achieve significant progress in reducing plastic waste and its environmental impact.  In conclusion, this project represents a comprehensive and ambitious effort to address the critical issue of plastic waste leakage. By bringing together stakeholders, leveraging science and technology, and promoting local engagement, it aims to make substantial advancements in plastic waste management. The establishment of collection points and clean-up stations will provide tangible measures to combat plastic pollution and safeguard the environment for future generations. Through this collaborative endeavour, the project seeks to set a precedent for effective plastic waste management globally. | | | | | | |
| **Regional nature of the project** *(with the maximum length of approx. 300 words)* | | | | | | |
| **Issue No. 1**: The region faces a vulnerable waste management system characterized by insufficient collection coverage, open dumpsites, fly-tipping, and limited recycling options.  Activities to address the issue:   * Create awareness among respective municipalities about the need for a plastic littering and fly-tipping mitigation program. * Conduct assessments of the current waste management systems to identify gaps and challenges, and develop action plans to improve waste collection coverage, reduce littering, and increase recycling options. * Collaborate with local governments to implement community-based waste management systems, including recycling centers and composting facilities, to minimize plastic waste leakage.   **Issue No. 2**: The lack of human capacities and budget hinders efforts to tackle plastic pollution and capture relevant data for science-based policy development.  Activities to address the issue:   * Develop and deliver training programs on plastic pollution and its impacts for local stakeholders. * Provide technical assistance and support to enable local researchers to conduct plastic pollution research, including mapping and monitoring plastic leakage. * Establish a regional database and information-sharing platform for plastic pollution data to facilitate science-based policy development. * Conduct training and capacity building for waste workers to assess municipal solid waste management conditions.   **Issue No. 3**: Limited stakeholder engagement from the private sector, community, and academia hampers waste management improvement and plastic pollution reduction.  Activities to address the issue:   * Collaborate with private sector companies to develop sustainable business models that reduce plastic waste and promote circular economy approaches. * Engage with local communities to raise awareness about the impacts of plastic pollution and promote behaviour change campaigns to minimize littering. * Foster partnerships with academic institutions to support research, education, and innovation in plastic waste reduction and management.   Promoting cooperation among the Mekong countries through:   * **Information sharing**: The project can provide valuable data on the sources, types, and distribution of plastic waste, as well as water quality (dissolved organics, pH, Oxygen level). The methodologies and information can be shared among the Mekong countries to help identify regional trends and prioritize actions to address plastic pollution. * **Capacity building**: The project can also help to build capacity among the Mekong countries by sharing technical expertise and best practices and providing training on plastic waste management and reduction strategies. * **Policy coordination**: By sharing information and building capacity, the project can help to coordinate policy efforts among the Mekong countries. * **Community engagement**: By involving people from different countries and backgrounds, the project can promote cross-border collaboration and build a shared sense of responsibility for protecting the Mekong River and its ecosystems.   The project aims to adopt the following institutional arrangements:   * Establishing a project coordination committee to review project progress, share information, and coordinate activities. * Conducting regular communication and consultation to seek input and feedback on project design, implementation, and evaluation.   The project will share project data and resources with partner organizations to support their own efforts to address plastic pollution. | | | | | | |
| **Partnership with organization (s) in Mekong countries and RoK** *(approx. 300 words)* | | | | | | |
| *Explain how institutional arrangements will be adopted in the project to collaborate with partner organizations (s) in the Mekong countries and RoK (if any)*  *Describe the project activities that will be conducted jointly with the Mekong and/or RoK partner organization (s)*  Partner organizations from the Mekong countries.   |  |  | | --- | --- | | Thailand  (Target city: Bangkok) | * Environmental Research Institute of Chulalongkorn University (ERIC) – In-country coordinator * TerraCycle Foundation Thailand – Litter trap | | Vietnam (Target city: Can Tho) | * Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE) – In-country coordinator * GreenHub – Public/youth outreach education, waste management expert * ClearRivers – Litter trap | | Cambodia  (Target city: Phnom Penh) | * COMPOSTED – In-country coordinator. * Royal University of Phnom Penh – Local technical support | | Lao PDR  (Target city: Vientiane) | * National University of Laos – In-country coordinator | | | | | | | |
| **Target beneficiaries and Project Coverage (***approx. 300 words)* | | | | | | |
| The proposed project directly benefits local communities, NGOs, and government agencies. These stakeholders will receive training and support, empowering them to actively participate in waste management activities. Local communities will experience reduced plastic pollution and improved waste management practices, leading to cleaner environments. NGOs will be equipped with enhanced capabilities to work with local communities’ address plastic pollution through awareness creation and capacity building, while the government agencies facilitate an enabling environment by brining effective policies and ensure sustainability.  Indirectly, the project will benefit both terrestrial and aquatic ecosystems in and around the Mekong waterways. Less plastic pollution will minimize harm caused to these two ecosystems and ensure healthier habitats. Local economies will also be benefitted, as cleaner waterways can enhance tourism, fisheries, and agriculture sectors, benefiting communities whose livelihoods depend on these sectors.  On a broader scale, the project's impact extends to regional and global levels. By addressing plastic pollution at its source, the project contributes to the global effort to combat marine plastic pollution, benefiting marine ecosystems worldwide. Additionally, the promotion of effective waste management policies, practices and public awareness campaigns will create a sustainable environment for future generations, safeguarding their well-being and quality of life.  Through these direct and indirect beneficiaries, the proposed project's comprehensive approach aims to bring positive, long lasting impacts to the Mekong countries' waterways and beyond, fostering environmental conservation and sustainable practices for a cleaner and healthier world . | | | | | | |
| **Value Add for the MKCF Involvement/ Potential (***approx. 300 words)* | | | | | | |
| The MKCF involvement is critical for the proposed project due to several key reasons:   1. **Financial Support**: The MKCF's financial backing is crucial for the successful implementation of the project. Plastic pollution has got attention in last few years and not much data and information are available, particularly for the Mekong region. Funding is required to gather data on level of plastic pollution and distribution, analyse the data to understand the extent of the problem, develop and deploy waste management solutions, establish a robust monitoring and evaluation system, and organize capacity-building activities. The MKCF's support ensures the project's feasibility and sustainability. 2. **Regional Cooperation and Expertise**: The MKCF fosters cooperation among the Mekong countries and the Republic of Korea. The project's regional approach aligns perfectly with MKCF’s mission, facilitating cross-border collaboration and knowledge sharing. The MKCF's interests in regional development and environmental conservation be adequately address by drawing upon best practices and expertise form each participating country and lessons learned from them. 3. **Advocacy and Policy Influence**: The involvement of the MKCF can help in framing suitable policies and brining waste management rules and regulations. By aligning the project's objectives with the MKCF’s priorities, the project will gain credibility and garner increased support from policymakers. The MKCF's advocacy efforts can ensure that the project's solutions are integrated into existing policies, contributing to long-term sustainable practices. 4. **Strengthening International Partnerships**: The MKCF's involvement can enhance the international cooperation among the Mekong countries and the Republic of Korea. As the project addresses a shared environmental concern, it provides a platform for fostering stronger ties and collaborative efforts among the stakeholders. This partnership can extend beyond the project's duration and lead to future joint initiatives for sustainable development. For example, a partnership between MI and ECOS Norway can help the PIA to expand our work to more pilot locations in the future.   The project has significant potential to contribute to the achievement of the MKCF's objectives:   1. **Environmental Conservation**: The project's primary focus on mapping plastic litter and implementing waste management solutions directly aligns with the MKCF's goal of environmental conservation and sustainability. By reducing plastic pollution in the Mekong waterways, the project contributes to preserving the region's valuable ecosystems and protecting marine life. 2. **Sustainable Development**: The project's emphasis on capacity building, community involvement, and public awareness campaigns promotes sustainable development in the Mekong countries. By creating awareness and empowering local communities and stakeholders with knowledge and skills, the project fosters a sense of ownership and responsibility for environmental protection. 3. **Strengthening Regional Cooperation**: As a joint effort among the Mekong countries and the Republic of Korea, the project embodies the spirit of regional cooperation promoted by the MKCF. The collaboration fosters mutual understanding and joint problem-solving, strengthening ties in the region. 4. **Long-Term Impact**: The project's multi-faceted approach, including policy advocacy and sustainable financing, ensures long-term impact beyond the project's duration. The adoption of efficient waste management practices and policy integration will continue to benefit the environment and communities well after the project's completion. | | | | | | |
| **Project Sustainability** *(approx.300 words)* | | | | | | |
| The project will prioritize long-term sustainability through various strategies.  Capacity building will empower local communities, NGOs, and government agencies on plastic waste management, recycling, and sustainability, enabling them to continue efforts independently after the project's completion.  Knowledge sharing and collaboration will involve partnerships among local organizations, universities, and research institutions, promoting open documentation of findings and innovative solutions for others to learn from and build upon.  Policy advocacy aims to engage policymakers in integrating efficient waste management practices into existing regulations, ensuring government support and enforcement even after the project completion.  Community ownership fosters a sense of responsibility by involving local communities in decision-making, tailoring solutions to their needs for sustainability.  Sustainable financing will be explored by developing a long-term funding strategy, bringing policies along with financial support from the governments, exploring partnerships with other donors, seeking corporate sponsorships, and establishing revenue streams through waste recycling initiatives to continue project activities independently.  Monitoring and evaluation will assess the project's impacts over time, identifying challenges, successes, and areas for improvement, allowing for necessary adjustments and refinements.  Public awareness creation and education will be achieved through continuous campaigns emphasizing responsible waste management, educating the public about the harmful effects of plastic pollution, and promoting sustainable practices for lasting behavioural change.  Incorporating these strategies into the project's design ensures long-term sustainability, leaving a positive impact on reducing plastic litter in Mekong waterways. By empowering stakeholders, sharing knowledge, advocating for policy changes, fostering community ownership, securing sustainable financing, and creating public awareness, the project will be well-positioned to achieve its objectives beyond the initial support from the MKCF. Through these efforts, the project will contribute to a cleaner environment and a more sustainable future for the Mekong countries and their populations. | | | | | | |
| **Management Arrangements** *(approx. 500 words)* | | | | | | |
| Project management structure  The project will be run by the project personnel, which consists of the project manager, project coordinator, and finance assistant. We aim to invite several international consultants as the experts who support the central work of the project and national consultants under the country coordinators. The countries implemented as the Mekong country partners.  In the monitoring framework of this project, the following items will be regularly monitored to ensure the project is on track:   * Annual Work Plan (Progress on Activities) * Results Resource Framework (progress on indicators) * Budget (financial monitoring) * Risk Log   The project personnel will be directly reported to the MKCF secretariat and MoFA on delivering the report and progress report. Therefore, we also align with the monitoring and reporting schedule for monthly and quarterly reports to the secretariat.  Implementation arrangement  We assigned each country coordinator to incorporate with the Mekong countries partner in this project. The responsibilities of the country or national coordinator for each nation are as follows:   * Oversee the implementation of the plastic leakage mapping and monitoring project in the country, ensuring that project objectives are achieved on time and within budget. * Coordinate with local project partners, stakeholders, and government agencies to ensure the successful implementation of the project activities. * Develop and implement strategies for effective communication, outreach, and engagement with project stakeholders and the public. * Provide technical guidance and support to the project team, including the project manager and technical experts. * Monitor and evaluate the project's progress, and prepare reports on achievements, challenges, and lessons learned. * Ensure compliance with project implementation and reporting requirements.   The country coordinator will be closely working and reporting to the project personnel.  Human resources  In this project, we include several consultants and experts who will work and report closely to the project personnel.   * Institutional/firms   + Geoinformatics Center of the Asian Insititute of Technology (GIC-AIT)   + Environmental Research Institute of Chulalongkorn University (ERIC)   + Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE)   + The Environmental Education and Recycling Organization (COMPOSTED)   + GreenHub Vietnam   + Terracycle Foundation Thailand   + Clear Rivers * Individual   + Ms.Souvanna Phengsisomboun, National University of Laos   + Dr. Spoann Vin, Royal University of Phnom Penh   The detail of the responsibility of each consultant and expert is referred to in *Appendix 5.* | | | | | | |
| **Outcomes, Outputs, Activities, and Inputs at Project level** | | | | | | |
| Expected Result | Indicator | Means of Verification | | Target | | Remarks |
| Mid-term | Final |
| Project outcomes | | | | | | |
| **1. Scientific knowledge creation**  AIT's STI solutions as a methodology to evaluate and monitor the potential plastic leakage from local waste management workflow | Incorporation of AIT's STI solutions in Regional Plastic Pollution Monitoring Protocols. | MRC (Science) documentation confirming the adoption of AIT's STI solutions in the developed protocols. | | Final | |  |
| **2. Capacity Development, Stakeholder Involvement, and Outreach** | * National and local officers in project sites develop their capacities to monitor and assess the plastic leakage with technical solutions transferred by the project (Capacity Development) * Multi-stakeholder task forces/working groups in each city to address littering in canals and rivers with clear targets and action plans are established. (Stakeholder involvement) | * Training records and assessments demonstrating improved monitoring and assessment skills. * Documentation confirming the formation of task forces/working groups and approved action plans. | | Mid-term | |  |
| **3. Science-based policy development and implementation** | Acceleration of Science-based Policy Development for national and local governments. | Documentation showing the adoption and implementation of science-based policies by national and local governments. | | Final | |  |
| Project outputs (that contribute to outcomes) | | | | | | |
| 1.1 Local-scale map of plastic leakages | Number of plastic leakage hotspots identified and mapped. | GIS data with plastic leakage hotspot locations and corresponding reports. | | Mid-term | |  |
| 1.2 Local-scale maps of plastic waste accumulation in the waterways | Visual representation of the extent and distribution of plastic waste in waterways. | GIS-generated plastic waste concentration maps. | | Mid-term | |  |
| 1.3 Installation of AI-enabled CCTVs for plastic detection in the waterways. | Number of AI-enabled CCTVs installed and operational. | Documentation and records of the installation process and functioning CCTVs. | | Mid-term | |  |
| 2.1 Capacity building to local technical team, government workers, or NGOs | Number of participants trained in waste management and plastic detection technologies. | Training attendance records and feedback from participants. | | Final | |  |
| 2.2 The establishment of community-based littering/fly-tipping surveillance. | Number of community-based surveillance initiatives set up. | Records of established surveillance systems and their implementation in communities. | | Mid-term | |  |
| 2.3 Empower local volunteers and youth on plastic separation and end-of-life management. | Number of trained volunteers and youth citizens. | Training records and feedback from participants | | Final | |  |
| 2.4 GIS dashboard with updated project outputs | Accessibility and functionality of the dashboard. | Verification of the functioning dashboard and its regular updating. | | Mid-term | |  |
| 2.5 Cross-border data sharing on plastic leakage information | Number of instances of cross-border data sharing. | Records of data-sharing agreements and shared information with relevant stakeholders. | | Final | |  |
| 2.6 Sharing of educational courses and materials designed during the project (in-city, in-country, between project countries) | Number of educational courses and materials shared. | Documentation of shared educational materials and feedback from recipients. | | Final | |  |
| 3.1 Disseminate project reports containing ground implementation findings to local stakeholders to inform policymaking and planning efforts. | Number of project reports shared with local stakeholders. | Copies of shared project reports and records of stakeholder engagement. | | Final | |  |
| 3.2 Monitoring and evaluation of national efforts to reduce plastic litter leakage into the selected rivers in Thailand, Vietnam, Cambodia, and Lao PDR. | Evaluation reports on the effectiveness of national efforts in reducing plastic litter leakage. | Monitoring and evaluation reports showing the progress and impact of national initiatives. | | Final | |  |
| Activities | Description | | | | | |
| **Output 1**. Plastic Leakage Prevention (Before leakage activity), | The prevention of plastic leakage compiled from the identification from the initial situation of the existing management into the capacity building to the waste workers. Details of the activity are described as follows: (Stakeholder involvement and Responsibility)   * **A1.**Develop partnerships with local businesses and organizations to implement plastic reduction measures * **A2.** Conduct a survey to assess consumer behaviour and attitudes towards plastic use in a specific community. * **A3.** Design and conduct educational and awareness-raising activities targeting the public * **A4.** Carry out relevant capacity building for the ground survey. Carry out plastic waste flow analysis and plastic leakage hotspot mapping * **A5.** Outreach activities in waste segregation. * **A6.** Training district officers on zero-waste and plastic circularity, action plan development, and project evaluation. | | | | | |
| **Output 2**. Plastic waste detection and monitoring methodology for the Mekong region is elaborated. Output 2 | Continuing the effort to address plastic waste detection and monitoring, this stage, we are focusing on enhancing the tool's effectiveness and promoting a participatory approach through the following implementation:   * **B1**. Review the existing monitoring programme and methodology * **B2**. Develop a database for recording and analysis data on plastic waste * **B3**. Carry out the related technical capacity building to local technical partners for the AI plastic detection system. * **B4**. Set up monitoring equipment along the canals/rivers + continuous monitroing * **B5**. Establish partnerships with local schools, community groups, and businesses to monitor and collect plastic waste in the project areas. * **B6**. Consult with the MRC on how to incorporate the project's methodologies into regional/national/local programme. | | | | | |
| **Output 3**. Plastic waste collection (Post leakage activity) | In compliance on delivering the outcomes for the frameworks in monitoring, the optimization on collecting plastic in the environment included after the information gathered. The collection will be conducted in strategic actions, which describe as follows: (Intervention)   * **C1**. Establish a network of collection points for plastic waste, such as clean-up stations or community drop-off, and public education * **C2**. Working with local district offices and pilot communities to improve waste collection system and infrastructure. * **C3**. Organize upcycling workshops using recycled plastics from the clean-up activities. * **C4**. Set up waste banks in local schools and provide monthly management coaching. | | | | | |
| **Output 4.** Organised the evaluation workshop for the pilot implementation groups for sharing outputs and learning/working expereience, and lessons learned from the actual applications. | * **D1**. Hybrid Forum to reflect and synthesis the project activities including consultation for policy recommentation for capacity building activities. * **D2**. End of term evaluation | | | | | |

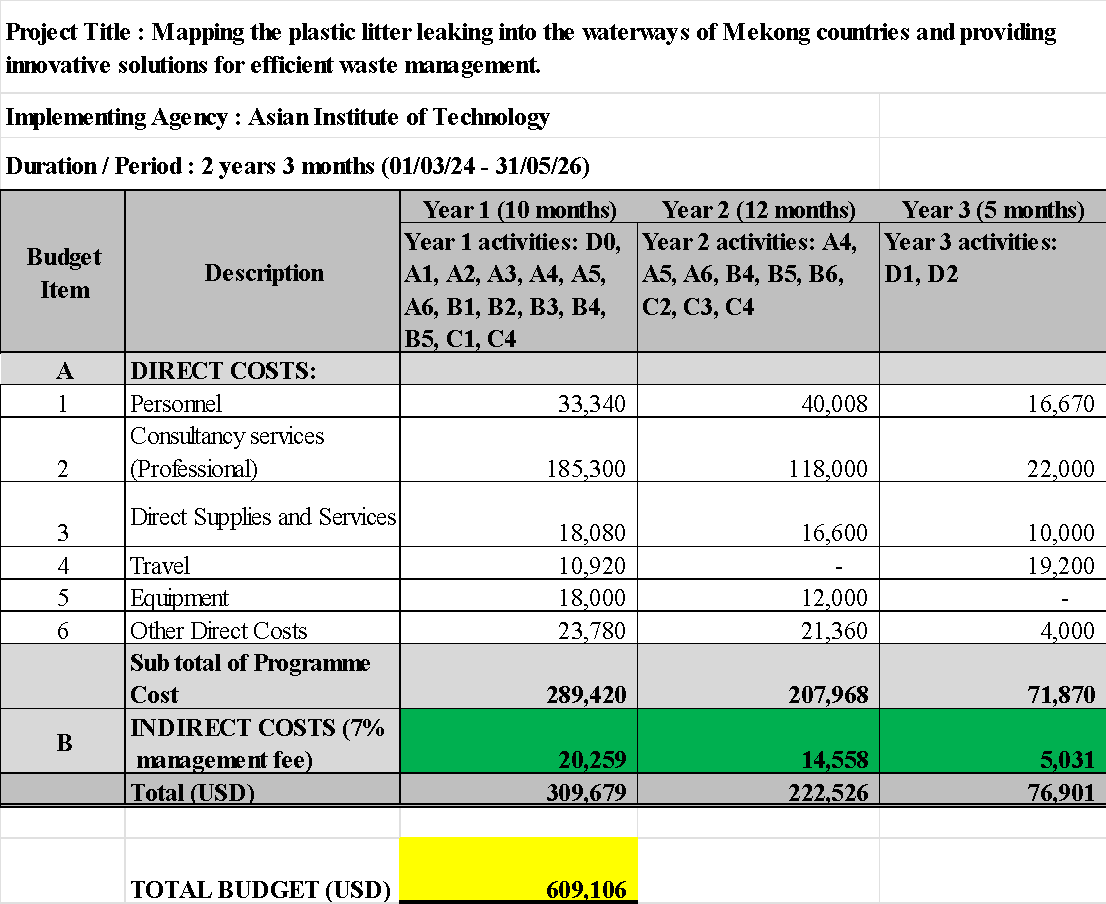
**Monitoring and Evaluation (M&E) Framework**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **HIERARCHY OF RESULTS** | **RESULT STATEMENT(S)** | **OBJECTIVELY VERIFIABLE INDICATORS (OVIs)** | **DEFINITION** | **BASELINE** | **TARGET** | **DATA SOURCE / MEANS OF VERIFICATION** | **FREQUENCY** | **RESPONSIBLE** | **REPORTING** | |
| How is it calculated? | What is the current value? | What is the target value? | How will it be measured? | How often will it be measured? | Who will measure it? | Where will it be reported? | |
| **Impacts** | Reduction of macroplastics entering the selected rivers in Thailand, Vietnam, Cambodia, and Lao PDR through the improvement of local waste management system and riverine macroplastics monitoring | Plastic Waste Prevention and Reduction Initiatives | Number of governments that have introduced innovative policies (reducing plastic waste leakage in rivers) | 0 | 4 | Official documents, reports from local, regional, and national entities | Annually | Project team and relevant authorities at local, regional, and national levels. | Annual project reports | |
| **Outcomes** | 1) Scientific knowledge creation  2) Capacity Development, Stakeholder Involvement, and Outreach  3) Science-based policy development and implementation | Incorporation of AIT's STI solutions in Regional Plastic Pollution Monitoring Protocols. | MRC (Science) documentation confirming the adoption of AIT's STI solutions in the developed protocols. | 0 | 2 | Project reports, official documents, and records from local, regional, and national entities. | Quarterly and annually | Project Implementation Team, in collaboration with relevant authorities at local, regional, and national levels. | Quarterly and annual project reports |
| National and local officers in project sites develop their capacities to monitor and assess the plastic leakage with technical solutions transferred by the project (Capacity Development) | Number of national or local governments that are using tools and/or new technologies provided by the project to collect data on macroplastic and microplastic leakage into water ways and rivers | 0 | 4 |
| Science-based Policy Development for national and local governments. | Number of policies developed by governments for reducing plastic waste leakage in selected rivers | 0 | 4 |
| **Outputs** | Plastic leakage is prevented | Quantity of macroplastics collected from high-risk areas near the riverbanks and waterways. | Total weight of plastic waste collected from targeted high-risk areas during a specific period (e.g., monthly, or annually). | 20,000 kg/month | 15,000 kg/month | Project reports, official documents, and records from local, regional, and national entities. | Quarterly and annually | Project Implementation Team, in collaboration with relevant authorities at local, regional, and national levels. | Quarterly and annual project reports | |
| Plastic waste detection and monitoring methodology for the Mekong region is elaborated/established | Number of trained personnel and stakeholders capable of implementing the new detection and monitoring methodology. | Total number of individuals or organizations that have received training on the new | 0 | 200 |
| Plastic waste collection/intervention methodology is improved | Number of communities or organizations adopting the improved waste collection | Total number of communities or organizations that have adopted and implemented the new methodology. | 0 | 12 |

A diagram of a process

Description automatically generated

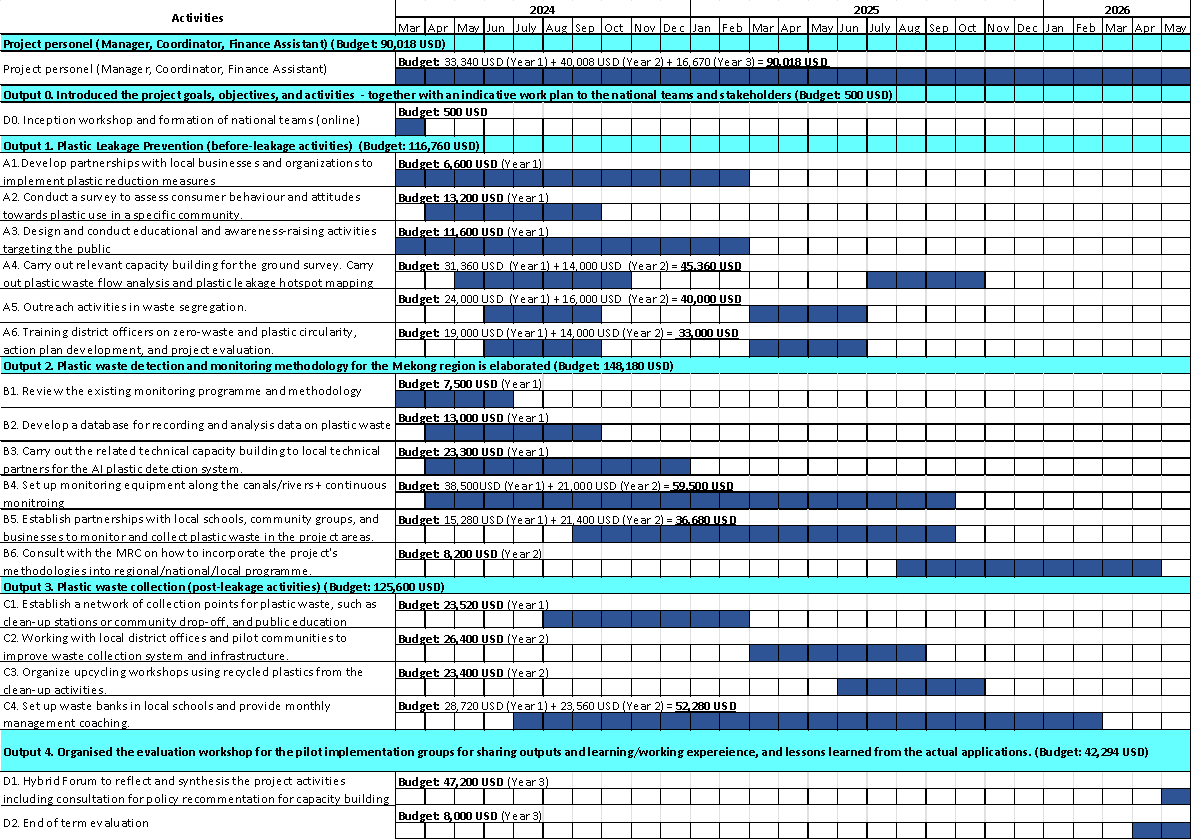
# Appendix 3: [proposal package] Indicative budget



*The budget should be presented in this section and provided in a separate Excel file (Appendix 3)*

# Appendix 4: [proposal package] Indicative Work Plan

**NB: The highlighted boxes indicate the timespan of each activity and do not directly reflect nor indicate the ‘man-month’ required for each activity.**



# Appendix 5: TOR

**Terms of Reference**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No** | **Name** | **Organization** | **Position** | **E-mail/phone** | **Remarks** |
| Project personnel | | | | | |
| 1 | Mr. Makoto Tsukiji | AIT/THA | Project manager | tsukijimkt@gmail.com | TOR No.01 |
| 2 | Dr. Kittiphon Boonma | AIT/THA | Project coordinator | kboonma@ait.asia | TOR No.02 |
| 3 | Mr. Sinath Nop | AIT/THA | Finance assistant | sinath@ait.asia | TOR No.03 |
| International consultants | | | | | |
| 4 | Ms. Angsana Chaksan | AIT/THA | International consultant | angsana@ait.asia | TOR No.04 |
| 5 | Ms. Aprilia Nidia Rinasti | AIT/THA | International consultant | aprilianidia@ait.asia | TOR No.05 |
| 6 | Mr. Pongpol Wipasuramonton | AIT/THA | International consultant | pongpol@ait.asia | TOR No.06 |
| 7 | Mr. Nguyen Cong Hau | AIT/THA | International consultant | nchau@ait.asia | TOR No.07 |
| National consultants | | | | | |
| 8 | Environmental Research Institute of Chulalongkorn University (ERIC)\* | ERIC/THA | National consultant | sujitra20@gmail.com | TOR No.08 |
| 9 | Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE)\* | ISPONRE/VNM | National consultant | kimthuyngoc@gmail.com | TOR No.09 |
| 10 | The Environmental Education and Recycling Organization (COMPOSTED)\* | COMPOSTED/ CAM | National consultant | rithy@comped-cam.org | TOR No.10 |
| 11 | Ms.Souvanna Phengsisomboun (National University of Laos)\*\* | NUOL/LAO | National consultant | souvanna2011@gmail.com | TOR No.11 |
| 12 | Dr.Vin Spoann (Royal University of Phnom Penh  )\*\* | RUPP/CAM | National consultant | spoann.vin@gmail.com | TOR No.12 |
| 13 | GreenHub Vietnam\* | GreenHub/VNM | National consultant | hoa.tran@greenhub.org.vn | TOR No.13 |
| 14 | Clear Rivers\* | ClearRivers/VNM | National consultant | teddie@clearrivers.eu | TOR No.14 |
| 15 | Terracycle Foundation Thailand\* | TerraCycle Foundation/THA | National consultant | james.scott@terracyclefoundation.org | TOR No.15 |

\*Institutional , \*\*Individual

**TERMS OF REFERENCE OF FULL TIME PROJECT STAFF**

|  |  |
| --- | --- |
| TOR No.01 | |
| **Position** | Project Manager |
| **Duty Station** | Thailand |
| **Responsibilities** | 1. **Project planning and implementation:** The project manager will support AIT to develop a detailed project plan and timeline, and ensuring the successful implementation of all project activities, including data collection, analysis, and reporting. 2. **Stakeholder engagement:** The project manager will support AIT to engage with key stakeholders, including government agencies, NGOs, and local communities, to ensure their participation and support for the project. 3. **Budget management:** The project manager will support AIT to manage the project budget, ensuring that expenditures are within budget limits, and reporting regularly to the project sponsor. 4. **Quality control:** The project manager will support AIT to ensure that all project activities are carried out to a high standard, and that data quality is maintained throughout the project. 5. **Reporting:** The project manager will provide the verbal support to AIT and project members to prepare regular progress reports for the project sponsor and ensure that all project deliverables are completed on time and to a high standard. |
| **Requirements** | * Experience in managing international and multilateral environmental projects, especially in the Mekong countries region. * Experience working in cross-cultural or international settings, or experience working with government agencies or other stakeholders. * Communication, teamwork, problem-solving, and adaptability |
| **Date** | 03/08/2023 |

|  |  |
| --- | --- |
| TOR No.02 | |
| **Position** | Project Coordinator |
| **Duty Station** | Thailand |
| **Responsibilities** | 1. **Project planning and implementation**: The project coordinator will work closely with the project manager to develop a detailed project plan and timeline and ensure the successful implementation of all technical activities. 2. **Budget management:** manage the project budget, ensuring that expenditures are within budget limits, and reporting regularly to the project sponsor. 3. **Quality control**: The project coordinator lead will be responsible for ensuring that all technical aspects of the project are carried out to a high standard, and that data quality is maintained throughout the project. 4. **Stakeholder engagement**: The project coordinator will engage with key stakeholders, including government agencies, NGOs, and local communities, to ensure that their technical needs are being met, and to promote their participation and support for the project. 5. **Reporting**: provide regular technical reports to the project manager and contribute to the development of progress reports and other project deliverables. 6. **Monitoring and evaluation**: work closely with the project manager to monitor and evaluate project performance and ensure that project outcomes are achieved in line with project goals and objectives. |
| **Requirements** | * Ability to coordinate with different stakeholders, including partners, government agencies, and other relevant organizations. * Excellent organizational, communication, and interpersonal skills. * Communication, teamwork, problem-solving, and adaptability |
| **Date** | 03/08/2023 |

|  |  |
| --- | --- |
| TOR No.03 | |
| **Position** | Finance assistant |
| **Duty Station** | Thailand |
| **Responsibilities** | * Assist in the preparation of project budgets, financial reports, and other financial documentation as required by the project manager. * Maintain accurate financial records and ensure that all financial transactions are properly recorded and documented. * Support project staff with financial planning and budgeting. * Process payments and maintain financial records related to vendor invoices, expense claims, and other payments related to project activities. * Manage petty cash and ensure that proper records are kept. * Assist in the preparation of financial reports for internal and external stakeholders. * Ensure that all financial reporting requirements are met on time and accurately. * Support the project team in compliance with donor financial requirements. * Assist in the preparation of financial reports for audits. |
| **Requirements** | * At least 2 years of experience in financial management, preferably in a development organization or NGO. * Good knowledge of financial management principles and practices. * Excellent computer skills, especially in using financial management software. * Ability to work under pressure, prioritize tasks, and meet deadlines. * Good communication and interpersonal skills. * Attention to detail and accuracy in financial record-keeping. * Ability to work effectively in a team environment. |
| **Date** | 03/08/2023 |

**TERMS OF REFENRECE OF CONSULTANTS/EXPERTS**

|  |  |
| --- | --- |
| TOR No.04 | |
| **Position** | International consultant (WebGIS analyst) |
| **Duty Station** | Thailand |
| **Level of Effort** | 60 days |
| **Activities** | D0, B1, B2, D1 |
| **Responsibilities** | 1. Develop and design GIS dashboards:  * Use GIS software and tools to develop and design user-friendly and efficient GIS dashboards. * Create data visualizations and maps that are easy to understand and analyze. * Ensure the data is accurate, up-to-date, and presented in a meaningful way.  1. Integrate data from various sources:  * Integrate data from various sources, such as satellite imagery, remote sensors, and field observations, to develop GIS dashboards. * Use scripting and programming languages to automate data integration and analysis.  1. Maintain and update GIS dashboards:  * Ensure that the GIS dashboards are up to date with the latest data and information. * Monitor the performance of the GIS dashboards and make necessary improvements to ensure they are efficient and reliable.  1. Collaborate with other project team members:  * Collaborate with the project manager, technical lead, and other team members to ensure that the GIS dashboards meet the project requirements. * Work closely with the project team to ensure that the GIS dashboards are aligned with the project objectives and goals.  1. Provide technical support and training:  * Provide technical support to the project team and stakeholders to ensure that they can use the GIS dashboards effectively. * Provide training to the project team and stakeholders on how to use the GIS dashboards and interpret the data presented. |
| **Requirements** | * Experience in designing and implementing GIS-based projects. * Strong knowledge of GIS software and tools. * Experience in database management and analysis using relevant software and tools. * Excellent development skills to design and develop user-friendly and efficient GIS dashboards. * Ability to integrate data from various sources and present them in a meaningful way. * Familiarity with data visualization tools and techniques. |
| **Date** | 03/08/2023 |

|  |  |
| --- | --- |
| TOR No.05 | |
| **Position** | International consultant (GIS expert/analyst) |
| **Duty Station** | Thailand |
| **Level of Effort** | 60 days |
| **Activities** | D0, A4, B1, D1 |
| **Responsibilities** | * Develop and implement methods for material flow analysis of plastic waste in the project area. * Collect and analyze data related to plastic waste generation, composition, and management. * Conduct material flow analysis to identify the pathways and destinations of plastic waste, including the sources and sinks of plastic leakage. * Collaborate with the technical team to integrate the material flow analysis results with the plastic leakage mapping and monitoring system. * Provide technical support to the project team and stakeholders. * Prepare reports and presentations on the material flow analysis findings and recommendations. |
| **Requirements** | * Master’s degree in environmental science, waste management, or related fields. * Experience in conducting material flow analysis, including data collection and analysis. * Knowledge of plastic waste pollution issues and waste management practices. * Excellent communication and collaboration skills. * Ability to work in a team and under tight deadlines. * Knowledge and experience in project management is a plus. * Ability to interpret and communicate complex data and models to technical and non-technical stakeholders. |
| **Date** | 03/08/2023 |

|  |  |
| --- | --- |
| TOR No.06 | |
| **Position** | International consultant (Mechatronics Expert) |
| **Duty Station** | Thailand |
| **Level of Effort** | 60 days |
| **Activities** | D0, B3, B4, D1 |
| **Responsibilities** | * Providing technical support and assistance to project stakeholders and partners as needed. * Providing technical guidance and support to the project team in the design and implementation of the plastic detection system * Conducting field tests and evaluations of the system, and providing feedback and recommendations for improvements * Developing standard operating procedures (SOPs) and training materials for the use of the plastic detection system |
| **Requirements** | * At least a bachelor’s degree, with relevant working experience * Familiarity with relevant technologies and best practices for plastic waste management * Proficiency in 3D modelling software and CAD software * Familiarity with sensors, actuators, and control systems * Ability to interpret and communicate complex data and models to technical and non-technical stakeholders. * Strong analytical and problem-solving skills |
| **Date** | 03/08/2023 |

|  |  |
| --- | --- |
| TOR No.07 | |
| **Position** | International consultant (AI Expert) |
| **Duty Station** | Thailand |
| **Level of Effort** | 60 days |
| **Activities** | D0, B3, B4, D1 |
| **Responsibilities** | * Implement computer vision algorithms for AI-enabled CCTV. * Work with the technical team to integrate the AI-enabled CCTV system with the existing network infrastructure. * Develop and test software for the AI-enabled CCTV system. * Fine-tune the AI models and improve detection accuracy. * Provide technical support to the project team and stakeholders. * Conduct development to improve the functionality and performance of the AI-enabled CCTV system. |
| **Requirements** | * At least a bachelor in computer science, engineering, or related fields, with working experience * Experience in computer vision, image processing, and video analytics. * Strong programming skills in Python, C++, and other relevant programming languages. * Familiarity with deep learning frameworks, such as TensorFlow and Keras. * Experience in developing and implementing AI algorithms and models. * Knowledge of computer networks and protocols. * Excellent communication and collaboration skills. * Ability to work in a team and under tight deadlines. * Knowledge and experience in environmental science or waste management is a plus. |
| **Date** | 03/08/2023 |

|  |  |
| --- | --- |
| TOR No.08 | |
| **Position** | National coordinator |
| **Duty Station** | Thailand |
| **Level of Effort** | 154 days |
| **Activities** | D0, A1, A2, A3, A6, B5, B6, D1, D2 |
| **Responsibilities** | * Oversee the implementation of the plastic leakage mapping and monitoring project in the country, ensuring that project objectives are achieved on time and within budget. * Coordinate with local project partners, stakeholders, and government agencies to ensure the successful implementation of the project activities. * Develop and implement strategies for effective communication, outreach, and engagement with project stakeholders and the public. * Provide technical guidance and support to the project team, including the project manager and technical experts. * Monitor and evaluate the progress of the project, and prepare reports on project achievements, challenges, and lessons learned. * Ensure compliance with project implementation and reporting requirements. |
| **Requirements** | * Experience in project management, preferably in the environmental sector. * Knowledge of plastic waste pollution issues and the current situation in the country. * Excellent communication and coordination skills. * Experience in working with government agencies, civil society organizations, and the private sector. * Ability to work independently and under tight deadlines. * Proficiency in English and the local language. * Knowledge and experience in project monitoring and evaluation is a plus. |
| **Date** | 03/08/2023 |

|  |  |
| --- | --- |
| TOR No.09 | |
| **Position** | National coordinator |
| **Duty Station** | Vietnam |
| **Level of Effort** | 76 days |
| **Activities** | D0, A1, A6, B6, C2, D1, D2 |
| **Responsibilities** | * Oversee the implementation of the plastic leakage mapping and monitoring project in the country, ensuring that project objectives are achieved on time and within budget. * Coordinate with local project partners, stakeholders, and government agencies to ensure the successful implementation of the project activities. * Provide technical guidance and support to the project team, including the project manager and technical experts. * Monitor and evaluate the progress of the project, and prepare reports on project achievements, challenges, and lessons learned.   Ensure compliance with project implementation and reporting requirements. |
| **Requirements** | * At least 5 years of experience in project management, preferably in the environmental sector. * Knowledge of plastic waste pollution issues and the current situation in the country. * Excellent communication and coordination skills. * Experience in working with government agencies, civil society organizations, and the private sector. * Ability to work independently and under tight deadlines. * Proficiency in English and the local language. * Knowledge and experience in project monitoring and evaluation is a plus. |
| **Date** | 03/08/2023 |

|  |  |
| --- | --- |
| TOR No 10 | |
| **Position** | National coordinator |
| **Duty Station** | Cambodia |
| **Level of Effort** | 105 days |
| **Activities** | D0, A1, A2, A3, A6, C1, C2, D1, D2 |
| **Responsibilities** | * Oversee the implementation of the plastic leakage mapping and monitoring project in the country, ensuring that project objectives are achieved on time and within budget. * Coordinate with local project partners, stakeholders, and government agencies to ensure the successful implementation of the project activities. * Develop and implement strategies for effective communication, outreach, and engagement with project stakeholders and the public. * Provide technical guidance and support to the project team, including the project manager and technical experts. * Monitor and evaluate the progress of the project, and prepare reports on project achievements, challenges, and lessons learned. * Ensure compliance with project implementation and reporting requirements. |
| **Requirements** | * At least 5 years of experience in project management, preferably in the environmental sector. * Knowledge of plastic waste pollution issues and the current situation in the country. * Excellent communication and coordination skills. * Experience in working with government agencies, civil society organizations, and the private sector. * Ability to work independently and under tight deadlines. * Proficiency in English and the local language. * Knowledge and experience in project monitoring and evaluation is a plus. |
| **Date** | 03/08/2023 |

|  |  |
| --- | --- |
| TOR No.11 | |
| **Position** | National coordinator |
| **Duty Station** | Lao PDR |
| **Level of Effort** | 142 days |
| **Activities** | D0, A1,A2,A5,A6, B1, B5, B6, C3, C4, D1, D2 |
| **Responsibilities** | * Oversee the implementation of the plastic leakage mapping and monitoring project in the country, ensuring that project objectives are achieved on time and within budget. * Coordinate with local project partners, stakeholders, and government agencies to ensure the successful implementation of the project activities. * Develop and implement strategies for effective communication, outreach, and engagement with project stakeholders and the public. * Provide technical guidance and support to the project team, including the project manager and technical experts. * Monitor and evaluate the progress of the project, and prepare reports on project achievements, challenges, and lessons learned. * Ensure compliance with project implementation and reporting requirements. |
| **Requirements** | * At least 5 years of experience in project management, preferably in the environmental sector. * Knowledge of plastic waste pollution issues and the current situation in the country. * Excellent communication and coordination skills. * Experience in working with government agencies, civil society organizations, and the private sector. * Ability to work independently and under tight deadlines. * Proficiency in English and the local language. * Knowledge and experience in project monitoring and evaluation is a plus. |
| **Date** | 03/08/2023 |

|  |  |
| --- | --- |
| TOR No.12 | |
| **Position** | Local technical support |
| **Duty Station** | Cambodia |
| **Level of Effort** | 76 days |
| **Activities** | D0, A6, B5, C3, C4, D1 |
| **Responsibilities** | * Provide technical support to the project team in the implementation of the plastic leakage mapping project. * Ensure the proper functioning and maintenance of equipment and tools used in the project. * Assist the project team in collecting data and conducting field surveys. * Support the project team in data analysis and report writing. * Provide technical inputs to the development of project plans, designs, and strategies. |
| **Requirements** | * Experience in technical support and project implementation in the field of environment and natural resources management. * Knowledge of environmental monitoring techniques and tools. * Familiarity with GIS and other data analysis software. * Excellent communication skills in English and the local language. * Ability to work independently and as part of a team. * Willingness to travel to project sites and work in challenging environments. |
| **Date** | 03/08/2023 |

|  |  |
| --- | --- |
| TOR No.13 | |
| **Position** | In-Country Educator (Public Outreach and Youth Education) |
| **Duty Station** | Vietnam |
| **Level of Effort** | 90 days |
| **Activities** | D0, A1, A3, A5, B5, C1, C3, C4, D1 |
| **Responsibilities** | * Develop and implement strategies for effective communication, outreach, and engagement with project stakeholders and the public. * Design and conduct educational and awareness-raising activities targeting the public, especially youth, on plastic pollution and its impacts on the environment and human health. * Coordinate with schools and universities to integrate plastic pollution education into their curriculum and organize outreach activities. * Develop communication materials such as brochures, posters, and social media content to promote public awareness of plastic pollution issues. * Work closely with local communities, NGOs, and government agencies to enhance the public's understanding of plastic pollution and encourage community engagement in waste management initiatives. |
| **Requirements** | * Proven experience in conducting environmental education and public outreach campaigns. * Good knowledge of plastic pollution and its impacts on the environment and human health. * Persuasive communication and interpersonal skills with the ability to work with a diverse range of stakeholders. * Proficiency in local language(s) and English is desirable. * Willingness to travel within the country to conduct outreach and educational activities. |
| **Date** | 03/08/2023 |

|  |  |
| --- | --- |
| TOR No.14 | |
| **Position** | Litter collection - community works/local support |
| **Duty Station** | Vietnam |
| **Level of Effort** | 93 days |
| **Activities** | D0, A1, A2, B5, C1, C3, C4 |
| **Responsibilities** | * Collect, store, and maintain accurate and up-to-date data on plastic detection and monitoring activities. * Collaborate with other technical team members to ensure data is shared and used effectively. * Provide training and capacity building to local partners and stakeholders on litter trap installation and maintenance, as well as the recycling workflow. * Collaborate with in-country coordinator to organize a guided tour of your facility to youth groups or activity groups. |
| **Requirements** | * Strong data management and analysis skills * Ability to work collaboratively with other technical team members. * Familiarity with data sharing protocols and best practices * Commitment to ensuring data is used effectively to achieve project goals. |
| **Date** | 03/08/2023 |

|  |  |
| --- | --- |
| TOR No.15 | |
| **Position** | Litter collection - community works/local support |
| **Duty Station** | Thailand |
| **Level of Effort** | 75 days |
| **Activities** | D0, A5, B5, B6, C3, C4, D1 |
| **Responsibilities** | * Collect, store, and maintain accurate and up-to-date data on plastic detection and monitoring activities. * Collaborate with other technical team members to ensure data is shared and used effectively. * Provide training and capacity building to local partners and stakeholders on litter trap installation and maintenance, as well as the recycling workflow. * Collaborate with in-country coordinator to organize a guided tour of your facility to youth groups or activity groups. |
| **Requirements** | * Strong data management and analysis skills * Ability to work collaboratively with other technical team members. * Familiarity with data sharing protocols and best practices * Commitment to ensuring data is used effectively to achieve project goals. |
| **Date** | 03/08/2023 |

# Appendix 6: CV

A person in a suit

Description automatically generated with low confidence

**CV of Proposed Project Team (Project Manager)**

**1. Name:** Mr. MAKOTO TSUKIJI

**2. Proponent Organization:** Asian Institute of Technology, Thailand

**3. Proposed Position:** Project Manager

**4. Date of Birth:** 02 June 1971  **Citizenship:** Japan

**5. Complete personal contact details:**

Address: 55/37 Rhythm Sukhumvit 36 38 Condominium, Sukhumvit 36 38 Road, Phrakhanong, Khlongtoey, Bangkok 10110, Thailand

Mobile: +66-81-015-0127

Email: tsukijimkt@gmail.com, makoto.tsukiji@un.org

**6. Education:**

* 2007 - Master of Medical Science (Epidemiology), Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Japan
* 1996 – Bachelor of Life Science, Himeji Institute of Technology (University of Hyogo), Japan

**7. Membership in Professional Associations:**

* Member of the Japan Association for International Health
* Member of the Japan Society of Travel and Health
* Member of the Japan Society of Material Cycles and Waste Management (JSMCWM)
* Member of International Working Group in JSMCWM
* Secretary General of 3R International Scientific Conference (3RINCs)
* Member of Steering Committee member of Solid Waste Management in Asia and Pacific Islands

**8. Other Trainings:**

* Training for medical representatives, (MR accredit centre, March 1999)
* Training for practical statistics (Cabinet Office, October 2009)
* JICA Training for public health (JICA, April 2010)
* Report Writing in English Course at the Talen United Nations (UN, February 2022)
* ADB training for Municipal Solid Waste Management (ADB, IGES, November 2022)

**9. Countries of Work Experience:** [in the last 10 years]

Japan, Thailand, Samoa, Australia, Guam, Cambodia, India, Vietnam, Papua New Guinea, Ethiopia, Kenya, Iraq, Indonesia

**10. Languages:** [Mother Tongue/Excellent/Good/Fair/Poor]

|  |  |  |  |
| --- | --- | --- | --- |
| **Language** | **Speaking** | **Reading** | **Writing** |
| English | Excellent | Excellent | Excellent |
| Japanese | Mother Tongue | Mother Tongue | Mother Tongue |

**11. Employment Record:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date from-to** | **Location** | **Employer organizations and reference persons** | **Position** | **Work Undertaken that Best illustrates Capability to Handle the project** |
| Oct/2016 to Present | Thailand | UN Environment Asia and the Pacific | Individual consultant | * Promotion of community Resilience Against Plastic Pollution and Climate Change in the Mekong River Basin" project * Project on ‘Promotion of Countermeasures Against Marine Plastic Litter in Southeast Asia and India (CounterMEASURE) phase II’ * Project on Environmentally Sound Management, Treatment and Technology on Plastic Waste in Asia * Project on ‘Promotion of Countermeasures Against Marine Plastic Litter in Southeast Asia and India (CounterMEASURE) phase I’ * Project formulation on ‘Promotion of action against marine plastic litter in India and Southeast Asia’ |
| Cambodia, Thailand, and Papua New Guinea | Japan International Cooperation Project (JICA) | Individual consultant | * JICA Environment Policy Adviser (Solid Waste Management) in Ministry of Environment, Cambodia * Data Collection Survey for Marine Debris Monitoring and Waste-to-Energy for Formulation of Circular Economy in Thailand * Solid waste management project in Papua New Guinea under JICA technical cooperation project |
| Thailand, Vietnam | Institute for Global Environmental Strategies (IGES) | Individual consultant | * JICA Partnership Program on Solid Waste Management Project for Promoting segregation and recycling in Da Nang City in collaboration with City of Yokohama phase II * Japan ASEAN Integration Fund (JAIF) project on “Strengthening Capacity for Marine Debris Reduction in ASEAN region through formulation of National Action Plans for A SEAN Member States and Integrated Land to Sea Policy Approach, Phase2”. * Solid waste management training for ADB officers * Gap analysis report development on green health infrastructure in Ethiopia & Kenya in collaboration with UNEP * Report development on business modality of municipal compost production and marketing approaches in Iraq * Waste management during the COVID-19 pandemic: from response to recovery * Policy Dialogue and Network Building of Multi-stakeholders on Integrated Decentralized Domestic Wastewater Management in ASEAN countries * Development of National Plastic Waste and Danau Toba Regional Waste Management Strategies and Action Plans * JICA partnership program on solid waste management project for promoting segregation and recycling in Da Nang City in collaboration with City of Yokohama Phase I |
|  | Cambodia | Okayama University | Individual Consultant | JICA Partnership program on Promotion of community participation for plastic pollution control at the community in the Tonle Sap Lake area, Cambodia |
|  | Japan | Pirika Inc. | Individual Consultant | Project on Plastic Discharge Inventory Development in Japan |
| Jun/2012 to Sep/2016 | Samoa | Japan International Cooperation Agency (JICA) | Coordinator/Aid Coordination (Jun 2012 – Sep 2016)  Deputy Chair of Pacific Region Infrastructure Facility (PRIF)/Urban Development Sector Working Group (UDSWG) (Jun 2015)  Chair of PRIF/UDSWG (Nov 2015) | * Japanese Technical   Cooperation Project for Promotion of Regional Initiative on Solid Waste  Management in Pacific Island Countries (J-PRISM) |
| Nov/2010 to May/2012 | Japan | Ministry of  Environment, the Government of Japan (MOEJ) | Section Chief | * Promoted Japanese Initiative and lessons learnt on the Sound Material Cycle Society including 3R, Resource Circulation, Material Flow and Waste Management Technology to all over the world especially for Asian countries from the aspect of the sustainable development. * Design ed and organized a series of Regional 3R Forum in Asia and the Pacific and workshops on healthcare waste in collaboration with UNCRD and UNEP respectively. |

**12. Other relevant information (e.g., Publications)**

**Selected publications**

|  |  |
| --- | --- |
| June 2022 | GIS and Remote Sensing Based Approach for Monitoring and Assessment of  Plastic Leakage and Pollution Reduction in the Lower Mekong River Basin  (Sustainability 2022, 14(13), 7879) |
| Feb 2022 | Report on Business Modality of Municipal Compost Production and Marketing  Approaches In Iraq (IGES/UNEP) |
| Nov 2021 | Greening Health Infrastructure – Rapid Assessment of Policies and Practices on Health Care Waste Management in Ethiopia and Kenya (IGES/UNEP) |
| Nov 2021 | Report on Business Modality of Municipal Compost Production and Marketing  Approaches in Iraq (IGES/UNEP) |
| Aug 2020 | Waste Management during the COVID-19 Pandemic: From Response to Recovery (IGES) |
| Jun 2020 | Study on inventory of available technologies for plastic waste towards environmentally sound management (UNEP-IETC) |
| Dec 2019 | Analysis of mismanaged plastic waste in Samoa to suggest proper waste management in Pacific Island countries (Waste Man ag Res 2019  Dec;37(12):1207 1216. Doi: 10.1177/0734242X19867391.) |

**Certification:**

I, the undersigned, certify to the best of my knowledge and belief:

|  |  |  |  |
| --- | --- | --- | --- |
|  | | Yes | No |
| i) This CV correctly describes my qualifications and my experience | | ☒ | **☐** |
| ii) I am employed by the proponent organization | | **☒** | **☐** |
| iii) I was part of the team who wrote the Expression of Interest (EOI) for this proposed project | | **☒** | ☐ |
| I certify that I have been informed by the proponent organization that it is including my CV in the EOI/proposal. I confirm that that I will be available to carry out the assignment for which my CV has been submitted, in accordance with the implementation arrangements and schedule set out in the proposal.  I understand that any willful misstatement may lead to disqualification or dismissal, and any other MKCF disciplinary action. | | | |
| Name: Makoto Tsukiji  Signature:  A black text on a white background  Description automatically generated with low confidence | Date: 4 August 2023 | | |

**CV of Proposed Project Team (Project Coordinator)**A person smiling at the camera

Description automatically generated with low confidence

**1. Name:** Dr. KITTIPHON BOONMA

**2. Proponent Organization:** Asian Institute of Technology

**3. Proposed Position:** Project Coordinator

**4. Date of Birth:** 17 November 1990 **Citizenship:** Thailand

**5. Complete personal contact details:**

Address: AIT, 58 Moo 9, Klong Nueng, Klong Luang, Pathum Thani 12120

Mobile: +66 61 541 5481

Email: kboonma@ait.asia

**6. Education:**

* 2021 – Ph.D. in Earth Science, University of Barcelona, Spain.
* 2016 – Joint M.Sc. in Applied Geophysics (IDEA League), TU Delft (The Netherlands), ETH Zürich (Switzerland), and RWTH Aachen (Germany)
* 2014 – B.Sc. Honors in Geophysics, The University of Edinburgh, United Kingdom

**7. Membership in Professional Associations:**

**8. Other Trainings:**

* The world through numerical modelling (EU-Horizon2020, Edinburgh, 2016)
* Science communication (EU-Horizon2020, Rome, 2017)
* Public outreach and youth education (EU-Horizon2020, Spain, Switzerland, 2016-2019)

**9. Countries of Work Experience:** Thailand, Vietnam, Spain, Switzerland

**10. Languages:** [Mother Tongue/Excellent/Good/Fair/Poor]

|  |  |  |  |
| --- | --- | --- | --- |
| **Language** | **Speaking** | **Reading** | **Writing** |
| English | Excellent | Excellent | Excellent |
| Thai | Mother Tongue | Excellent | Good |

**11. Employment Record:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date from-to** | **Location** | **Employer organizations and reference persons** | **Position** | **Work Undertaken that Best illustrates Capability to Handle the project** |
| Nov 2021 to present | Pathum Thani, Thailand | Asian Institute of Technology, Geoinformatics Center  Dr. Manzul Kumar Hazarika, Director-GIC  - [manzul@ait.asia-](about:blank) +6625246184 | Researcher | * Mange, coordinate, and technical lead in the development of **Python scripts for Module 1-3 for Global Agro-Ecological Zoning v4&5**/Funded by UN-FAO/50,300 USD * Coordinated Activity 4 (Implementation of the developed solutions in the selected riverine communities) under UNEP Phase 3 project on **Promotion of Community Resilience Against Plastic Pollution and Climate Change in the Mekong River Basin**/Funded by the Government of Japan/41,500 USD * Managed, coordinated, and technical lead in **Air Quality Modelling of the Al-Zour refinery, Kuwait**/Funded by Trinity Consultants Inc./7,000 USD |
| Sep 2016 to  Aug 2019 | Barcelona, Spain | Geociencias Barcelona (GEO3BCN - CSIC)  Dr. Daniel Garcia-Castellanos  [danielgc@geo3bcn.csic.es](mailto:danielgc@geo3bcn.csic.es)  Dr. Ivone Jiménez-Munt  [ivone@geo3bcn.csic.es](mailto:ivone@geo3bcn.csic.es) | Graduate Researcher | All of the activities outlined below were funded by EU Marie-Curie Training Network “SUBITOP” under the EU Horizon 2020 programme (674899-SUBITOP-H2020-MSCA-ITN-2015)   * Coordinated a collaborative research project between GEO3BCN - CSIC (Spain) and ETH Zürich (Switzerland) * Contributed to a European collaborative work on ‘Towards a Digital Twin of the Earth System: Geo-Soft-CoRe, a Geoscientific Software & Code Repository’. * Coordinated a collaboration with a high-performance computing facility in Switzerland (ETH Zürich Euler cluster). * Coordinated a collaboration with the Barcelona Supercomputing Center. * Carried out outreach activities and youth education on earth science and high-level research. * Organized and coordinated a 5-day international conference ‘TOPO-EUROPE’ in Granada, Spain. Link: <http://topoeurope2019.eu/> |

**12. Other relevant information (e.g., Publications)**

**Publications (selected)**

**Boonma, K**., García-Castellanos, D., Jiménez-Munt, I., & Gerya, T. (2023). Thermomechanical modelling of lithospheric slab tearing and its topographic response. *Frontiers in Earth Science*, *11*, 496.

FAO & AIT. 2023. A Python package for Agro-Ecological Zoning – User guide for PyAEZ (v 2.0.0). Rome and Bangkok. <https://doi.org/10.4060/cc4079en>

DeFelipe, I., Alcalde, J., Baykiev, E., Bernal, I., **Boonma, K**., Carbonell, R., ... & Ventosa, S. (2022). Towards a Digital Twin of the Earth System: Geo-Soft-CoRe, a Geoscientific Software & Code Repository. *Frontiers in Earth Science*, 509.

**Boonma, K**., Kumar, A., García-Castellanos, D., Jiménez-Munt, I., & Fernández, M. (2019). Lithospheric mantle buoyancy: the role of tectonic convergence and mantle composition. *Scientific reports*, *9*(1), 17953.

**Certification:**

I, the undersigned, certify to the best of my knowledge and belief:

|  |  |  |
| --- | --- | --- |
|  | Yes | No |
| i) This CV correctly describes my qualifications and my experience | ☒ | **☐** |
| ii) I am employed by the proponent organization | **☒** | **☐** |
| iii) I was part of the team who wrote the Expression of Interest (EOI) for this proposed project | **☒** | ☐ |
| I certify that I have been informed by the proponent organization that it is including my CV in the EOI/proposal. I confirm that that I will be available to carry out the assignment for which my CV has been submitted, in accordance with the implementation arrangements and schedule set out in the proposal.  I understand that any willful misstatement may lead to disqualification or dismissal, and any other MKCF disciplinary action. | | |

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|  |  |
| --- | --- |
| Name: Kittiphon Boonma  Signature: | Date: 4 August 2023 |

**CV of Proposed Project Team (Project Finance Assistant)**

**1. Name:** Mr. SINATH NOP

**2. Proponent Organization:** Asian Institute of Technology

**3. Proposed Position:** Project Finance Assistant

**4. Date of Birth:** 18 March 1986  **Citizenship:** Cambodia

**5. Complete personal contact details:**

Address: AIT, 58 Moo 9, Klong Nueng, Klong Luang, Pathum Thani 12120

Mobile: +66820848636

Email: sinath@ait.asia

**6. Education:**

* 2018 – MBA-Concentration in ASEAN Business Integration Dhurakij Pundit University, Thailand
* 2011 – Bachelor Degree of Arts, English in Thai program Phranakhon Rajabhat University, Thailand
* 2007 – The third-year student of the Department of Economics NORTON University, Cambodia

**7. Membership in Professional Associations:**

**8. Other Trainings:**

* 2011 – Student Internship to the Dean’s Office, School of Management (SOM), Asian Institute of Technology (AIT), Thailand
* 2010 – Organized the English Day Camp for primary school students, BKK
* 2008 – Training on the practice of leadership skill development, BKK
* 2008 – Attended the Dharma talks and academic conference, BKK
* 2007 – Voluntarily participated in a one-day “Youth for Communities”, Kandal province, Cambodia

**9. Countries of Work Experience:** Thailand

**10. Languages:** [Mother Tongue/Excellent/Good/Fair/Poor]

|  |  |  |  |
| --- | --- | --- | --- |
| **Language** | **Speaking** | **Reading** | **Writing** |
| Khmer  Thai  English | Mother Tongue  Excellent  Good | Mother Tongue  Excellent  Good | Mother Tongue  Good  Good |

**11. Employment Record:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date from-to** | **Location** | **Employer organizations and reference persons** | **Position** | **Work Undertaken that Best illustrates Capability to Handle the project** |
| Jan 2022 – Present | Pathum Thani, Thailand | GIC, AIT, Dr. Manzul Kumar Hazarika, Director-GIC  - [manzul@ait.asia-](about:blank) +6625246184 | Senior Administrative Officer | * TA-9554 REG: Southeast Asia Urban Services Facility (Indonesia: Support for Emergency Assistance on Rehabilitation and Reconstruction in Central Sulawesi) - Consulting Firm for Output 2: Monitoring and Evaluation of Reconstruction Efforts Enhanced (52064-001)/USD499,320/ADB/Financial management and report, contract variation and claim processing by online system. * Strengthen technical capacity of national officials to use Earth Observation (EO) data to better collect and disseminate agriculture statistics/USD130,000/FAO/Financial management and report. * Applied Geospatial and Approaches Tools for Nature-Based Solutions (NBS) in Vietnam/THB1,109,874/FAO/Financial management and report. * Promotion of Countermeasures against Marine Plastic Litter in Asia and the Pacific (CounterMEASURE II)/USD283,000/UNEP/Financial management and report. |
| Jan 2016 to Dec 2021 | Pathum Thani, Thailand | GIC, AIT, Dr. Manzul Kumar Hazarika, Director-GIC  - [manzul@ait.asia-](about:blank) +6625246184 | Administrative Officer | * Development of capacity and implementation of modelling for Future Climate Projections/USD99,750/FAO/Financial management and report. * Strengthening Afghanistan Institutions capacity for monitoring and analyzing of agriculture production systems and development of LRIMS and NAEZ/USD198,360/FAO/Financial management and report. * Development of capacity and implementation of modelling for the preparation of 30 years of downscaled data for a Climate Atlas/USD99,600/FAO/Financial management and report. * Research, consultations, and support for expert group meetings on SDG indicators and Big Data, and for the Twenty-eighth Session of the Asia and Pacific Commission on Agricultural Statistics (APCAS28)/USD105,000/FAO/Financial management and report. * Development of capacity and implementation of modelling   for the preparation of data for a Climate Atlas/USD90,050/FAO/Financial management and report.   * Development of an Agro-Ecological Zoning (AEZ) modules and routines and support for capacity development/THB5,282,005/FAO/Financial management and report. * Flood and Storm Surge Risk Assessment Tools for ADB Spatial Application Facility/USD50,400/ADB/Financial management and report and claim processing by online system. * Applying Space-Based Technology and information and Communication Technology to Strengthen Disaster Resilience/USD1,355,216/ADB/Financial management and report, claim and contract variation processing and other administrative work support to both national and international consultants. |
| Jan 2015 to Dec 2015 | Pathum Thani, Thailand | GIC, AIT, Dr. Manzul Kumar Hazarika, Director-GIC - manzul@ait.asia- +6625246184 | Assistant Administrative Officer | “CAP on a MAP” - Improving Institutional Responsiveness to Coastal Hazards through Multi-Agency Situational Awareness/USD/300,040/UN-ESCAP/Financial management and report. |

**12. Other relevant information (e.g., Publications)**

**Certification:**

I, the undersigned, certify to the best of my knowledge and belief:

|  |  |  |
| --- | --- | --- |
|  | Yes | No |
| i) This CV correctly describes my qualifications and my experience | ☒ | **☐** |
| ii) I am employed by the proponent organization | **☒** | **☐** |
| iii) I was part of the team who wrote the Expression of Interest (EOI) for this proposed project | **☒** | ☐ |
| I certify that I have been informed by the proponent organization that it is including my CV in the EOI/proposal. I confirm that that I will be available to carry out the assignment for which my CV has been submitted, in accordance with the implementation arrangements and schedule set out in the proposal.  I understand that any willful misstatement may lead to disqualification or dismissal, and any other MKCF disciplinary action. | | |

|  |  |
| --- | --- |
| Name: Sinath Nop  Signature:A blue signature on a white background  Description automatically generated with medium confidence | Date: 4 August 2023 |

**Appendix 7. Letter of Support**

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**A close-up of a letter

Description automatically generated with medium confidence**

A close-up of a letter of support

Description automatically generated with medium confidence

A close-up of a letter

Description automatically generated with medium confidence

**A picture containing text, screenshot, letter, font

Description automatically generated**

A close-up of a letter of support

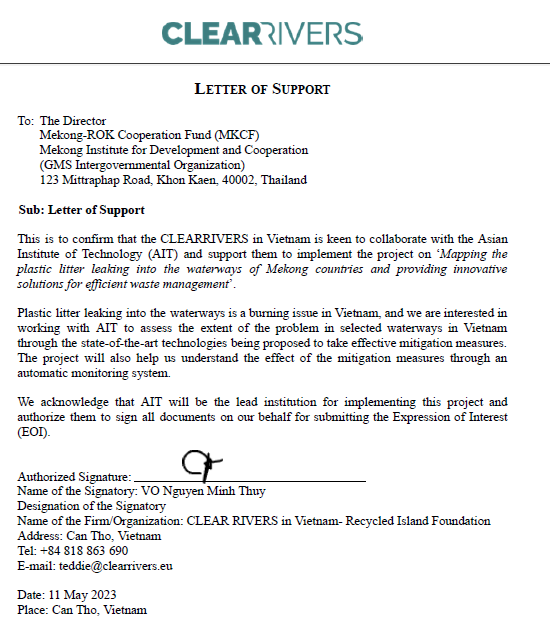
Description automatically generated

A close-up of a letter

Description automatically generated with medium confidence

A picture containing text, screenshot, font, document

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