Anexo III
ARCAL 2024/2025

Regional Project Concept Template

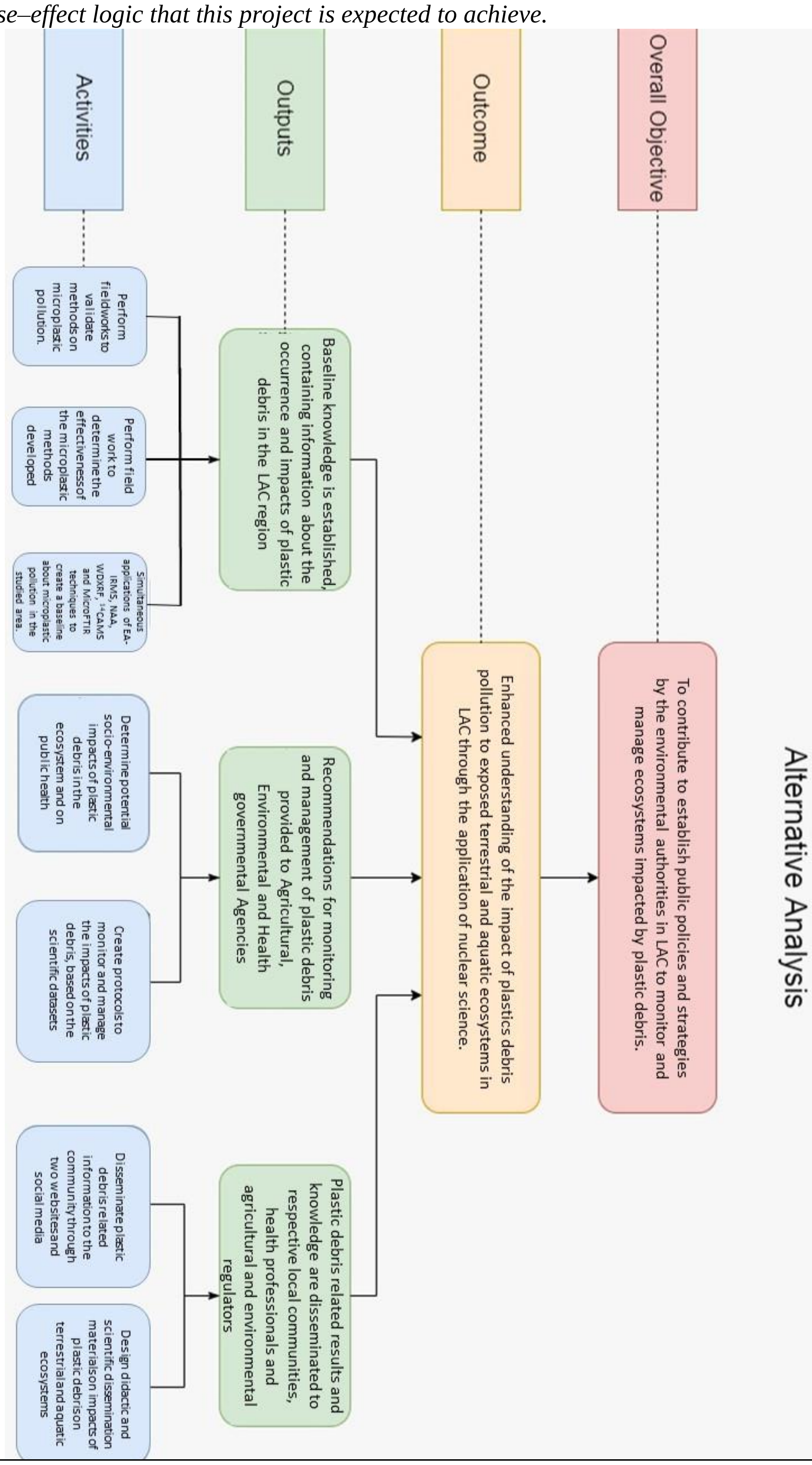
Region:	América Latina y Caribe		
Regional/Cooperative agreement (if applicable)	ARCAL	**Priority no. given by regional/cooperative agreement** (for concepts proposed under the auspices of regional cooperative agreements)	
Title	Applying nuclear, stable isotope and correlated techniques to assess the impact of plastic debris in terrestrial and aquatic ecosystems		
Field of activity	M3 and M4		
Names and contact details of project counterparts and counterpart institutions **(starting with the main counterpart)**	**Brasil:** UFF - Roberto Meigikos dos Anjos, Universidade Federal Fluminense; Niterói, RJ, e-mail: meigikos@mail.if.uff.br. **Brasil:** IEAPM - Ricardo Coutinho, Instituto de Estudos do Mar Almirante Paulo Moreira, RJ, e-mail: rcoutinhosa@yahoo.com; **Brasil:** IPEN/CNEN - Cibele Bruno Zamboni, Instituto de Pesquisa Energéticas e Nucleares, SP, e-mail: czamboni@ipen.br **Brasil:** CRCN-NE/CNEN - Elvis Joacir De França, Centro Regional de Ciências Nucleares do Nordeste, PE, e-mail: ejfranca@cnen.gov.br **Argentina:** Ricardo Hugo Velasco, Universidad Nacional de San Luis –UNSL, Tel. 266 4422803; e-mail: hvelasco@unsl.edu.ar **Belize**: ebarrientos@ub.edu.bz **Bolivia:** Ruben Callisaya Bautista, Instituto Boliviano de Ciencia y Tecnología Nuclear - Ciencia y Tecnología Nuclear (IBTEN, e-mail: rcallisaya@ibten.gob.bo **Chile**: Benjamín Alvaro Manuel Suárez Isla, Laboratorio de Toxinas Marinas; Instituto de Ciencias Biomédicas, Universidad de Chile, e-mail: bamsuarez@gmail.com **Chile:** Osvaldo Salazar, 1Departamento de Ingeniería y Suelos, Facultad de Ciencias Agronómicas, Universidad de Chile, osalazar@uchile.cl **Colombia:** Andres Hernandez, Universidad Antonio Nariño Colombia, andres.hernandez@uan.edu.co **Costa Rica:** Juan Salvador Chin Pampillo, Centro de Investigación en Contaminación Ambiental - CICA, Universidad de Costa Rica, juan.chin.pampillo@gmail.com. **Costa Rica:** Juan Guillermo Sagot Valverde, Centro de Investigación en Ciencias del Mar y Limnología (CIMAR), Universidad de Costa Rica. juan.sagot@ucr.ac.cr **Cuba: Cuba:** José Luis Peralta Vital, Centro de Protección e Higiene de las Radiaciones (CPHR). Email: peralta@cphr.edu.cu; cphrperalta@ceniai.inf.cu **Ecuador**: Omar Alonso Suárez Oquendo, Ministerio de Electricidad y Energía Renovable, Subsecretaria de Control, Investigación y Aplicaciones Nucleares, Dirección Nacional de Seguridad Nuclear y Ambiente, omar.suarez@meer.gob.ec **El Salvador:** Oscar Amaya Monterrosa, Escuela de Física; Universidad de El Salvador, San Salvador. Email: Oscar Amaya Monterrosa		

	Guatemala: Carlos Mazariegos-Ortíza, Centro de Estudios del Mar y Acuicultura, Universidad de San Carlos de Guatemala, Ciudad Universitaria, zona 12, Guatemala. E-mail: cmazao@hotmail.com **Haití:** Donald Joseph, Ministerio de Agricultura, de recursos naturales de desarrollo rural, e-mail: donald_445@hotmail.com **Honduras:** Tirza Carolina Contreras Galeano. Empresa Nacional de Energía Eléctrica. El Cajón. Santa Cruz de Yojoa; tirza.contreras@gmail.com. **México:** Sergio de los Santos-Villalobos, Instituto Tecnológico de Sonora, Departamento de Ciencias Agronómicas y Veterinarias, dlsantosv@gmail.com **Nicaragua:** Katia Lily Montenegro Rayo**,** Universidad Nacional Autonoma de Nicaragua, Centro de Investigación y Recursos Acuáticos de Nicaragua. katia.montenegro@cira.unan.edu.ni **Panamá:** Denise Delvalle de Borrero, Centro de Investigaciones Hidráulicas e Hidrotécnicas (CIHH), Universidad Tecnológica de Panamá. denise.borrero@utp.ac.pa **Paraguay:** Claudia Avalos, Centro Multidisciplinario de Investigaciones Tecnológicas CEMIT, cavalos@rec.una.py **Paraguay:** Carlos Andrés Leguizamón Rojas. Universidad Nacional de Asunción. Campus UNA, San Lorenzo. Paraguay, email: carlos.leguizamon@agr.una.py **República Dominicana:** J. Felipe Ditrén Flores. Director de Asuntos Ambientales y Cambio Climático. Ministerio de Energía y Minas de la República Dominicana. fditren@mem.gob.do **Uruguay**: Juan Pablo Lozoya, Centro Universitario Regional del Este (CURE) Universidad de la República (UDELAR), jlozoya@cure.edu.uy **Uruguay:** Verónica Berriel, vberriel@fagro.edu.uy Centro de Aplicaciones Nucleares en Agricultura Sostenible (CATNAS) Facultad de Agronomía. Garzón 809 1er Piso. Montevideo. vberriel@fagro.edu.uy **Venezuela:** Oly Dominguez, Universidad central de Venezuela, Tel. 58 212 605 31 89, email: dominguchi@gmail.com **Venezuela:** Hervet Jegat. CIDIAT Universidad de los Andes Parque La Isla Mérida. Tel:00584147440575; hjegat@gmail.com.
Analysis of regional Gap/problems/needs	*Give an in-depth analysis of the major problems/needs to be addressed by the project, as well as of their causes and effects; and explain how these are linked to regional development plans or frameworks (or equivalent). Refer to past efforts made in addressing these problems/needs, if any, and explain how the current project proposal builds upon them.* *Attach any supporting documents (e.g. texts of regional development plans).* Amid the exacerbated effects of anthropic activities and climate change (such as overfishing, microbial and chemical pollution, sewage, marine litter, oil spill, eutrophication, rising temperatures and CO_2 concentrations), plastic fragments with micrometric dimensions can now be found in all the places. It is estimated that 80% of marine litter, consisting mainly of plastic debris, is related to inadequate management of solid waste and causes environmental and socioeconomic damage in the medium and long term. According to the 2030 Agenda adopted by the United Nations (UN), microplastic pollution has become an environmental problem of global proportions, which pose challenges to its control. It is necessary, therefore, to substantially reduce the levels of microplastic pollution in order to meet its

	Sustainable Development Goals (SDGs). It estimates that plastic debris rates could be reduced by about 40% (from 2016 to 2040) through a combination of replacing, recycling and waste management, suggesting that a reduction of about 20% by 2030 would be feasible with current and foreseeable technologies. More generally, reduction in waste and pollution would be enabled by shifts to a more circular economy and many actions taken under the Basel, Rotterdam, Stockholm and Minamata Conventions could contribute to this target. Actions to reach this target may also be linked to the proposed targets on production practices and supply chains (Target 14) and unsustainable consumption patterns (Target 15) as both issues can contribute to the generation of waste and pollution. Besides the already known negative impacts of microplastics in the ocean and their marine life, the Latin America and Caribbean (LAC) region shows an additional concern, since plastic materials have also been commonly used in agricultural activities. Soil erosion processes and the consequent loss of water quality from unsustainable agricultural activities, also contribute significantly to increase the microplastic contamination in soil, freshwater catchments and associated coastal-marine ecosystems. Common agricultural practices of discarding plastic mulching, water pipes and plastic greenhouse covers began to raise concerns. In addition, microplastics are used in the coating of seeds and fertilizer prills (for controlled-release fertilizers), as plant protection, in soil corrections, in the water retention capacity. Currently, agricultural lands are becoming the most plastic-contaminated places outside of landfills and urban spaces. The lack of sustainable land conservation practices allows microplastic contaminated soils to be removed from watersheds, carried to rivers, and deposited in water reservoirs, lakes, lagoons and coastal and oceanic habitats. However, impacts of microplastics in/from agricultural lands have largely been overlooked in the LAC. The challenges for understanding environmental impacts, effects on biota and public health go beyond the application of conventional techniques, which commonly allow determining the diversity of polymer types (sources), shapes and sizes of plastic debris. However, a few polymers can be produced from both petroleum-derived and renewable sources materials, such as bio-based raw materials like corn, sugar beets, maize, wheat and sugarcane. Although, the bio-based plastics are partially or entirely made of renewable raw materials, but they are not necessarily biodegradable. Biodegradability is dependent on the carbon molecular structures of the plastic rather than the raw materials used to make it and conventional techniques are not able to distinguish them. Additionally, microplastics can be vectors of microorganisms and contaminants, such as persistent organic pollutants (POPs), synthetic compounds resistant to degradation in the environment. Microplastics can therefore transport harmful organisms and toxic elements (including heavy metals), in addition to those already present in their chemical constitution. LAC countries still do not use advanced techniques to monitor the production process and inspect the final bio-based products derived from C4 plants, which would make easier to establish bioproduct regulation procedures. Nuclear and isotopic techniques can be successfully applied in this matter. Stable carbon isotope ratio

	analysis ($\delta^{13}C$) and radiocarbon analysis allow to distinguish between plant-and petroleum-derived plastics. These techniques also make it possible to identify its geographical origin of the polymer used to make the plastic material. Neutron activation analysis (NAA) and X-ray fluorescence (XRF) spectroscopy, in turn, are efficient to identify and quantify elements and heavy metals present in microplastic debris. The use of nuclear techniques add value to this Regional Project as the information related to plastic materials and their respective debris can be used by stakeholders to manage microplastic pollutant inputs to terrestrial and aquatic systems. Additionally, this project aims to promote the improvement of regulations and policy instruments on regional and national levels with a focus on improving understanding of plastic pollutions to protect human health and related ecosystems. For instance, it is linked ODSs 14 and 15 to strengthen the efforts that LAC is making in transitioning towards a circular plastic economy where plastics are reduced, reused, and recycled more (i.e., it is based on the well-developed and recognized global model available at the Global Plastic Action Partnership - Plastic to Ocean Model).
Why should it be a regional project?	*Indicate why it is better to address these problems/needs through a regional project (as opposed to a national one).* The TC Project addresses a concern common to all Latin American and Caribbean countries: impact of plastic debris in terrestrial and aquatic systems. This matter goes beyond geopolitical borders; addressing agricultural lands, reservoirs, lakes, lagoons and coastal and oceanic habitats that area the main economic wealth-producing areas of LAC; it is transboundary phenomena because the rivers and marine currents can transport and redistribute plastic pollutants in the whole region. Although microplastics are a global threat, the negative impacts can best be addressed on a regional scale and solutions require regional facilities to efficiently address them. The high costs related to the research and implementation of Nuclear and Isotopic Techniques (NIT) in the project require coordinated activities within the region, taking advantage of already existing network capacities.
Stakeholder analysis and partnerships	*Describe the stakeholder analysis conducted, specifying all the interested or affected parties, end users, beneficiaries, sponsors and partners identified, with clearly defined roles for each entity.* **Stakeholder:** Beneficiaries and stakeholders will be governmental and non-governmental agencies committed to integrated management and sustainable development of agricultural lands, freshwater catchments and associated coastal-marine ecosystems, policy-makers, local communities, and the general population (farmers, fishermen, aquaculture producers, shrimp and shellfish farmers, mangrove forest managers, etc.), which are affected by physical alterations and unsustainable use of terrestrial and aquatic habitats. This also includes organizations dedicated to the implementation of secure food production, tourism, health professionals, environmental regulators, and people living in urban areas. The project will contribute to assisting these end-users in responding to environmental changes.

	Therefore, this TC project will assist end-users in dealing with ecological and socioeconomic impacts by addressing two principal issues: loss and modification of terrestrial and aquatic ecosystems, including community structure and/or species composition. Stakeholders also include national institutions involved in enhancing environmental management (water and land) and coastal and marine zone protection, health surveillance, tourism activities, and centers of scientific and technological development involved in this proposal (government organizations, research institutes, universities, etc.). In order to define the roles and responsibilities of each stakeholder, the following can be highlighted: a) technical-scientific research centers and universities will be responsible for applying nuclear, isotope and related techniques as tools for monitoring, management and conservation of terrestrial and aquatic areas impacted by plastics debris and will give information on project progress at their webpages to disseminate the information. Their potential influence on project success is based on the generation of new information about monitoring and response for sustainable terrestrial and aquatic environments. b) The following stakeholders are also important, with positive influence: Public institutes linked to the conservation of biodiversity, the environment and renewable natural resources will be responsible for using the generated data to propose changes on laws and authorize fieldwork at protected areas; ministries of agriculture, fisheries and aquaculture, environment and public health will be responsible for promoting the health protection of the population through the sanitary control of freshwater and seawater users and agricultural and sea food consumptions. They will also act as an interface with policymakers. Their potential influence on project success is based on the connection to policymakers and knowledge of interest areas. c) Local communities, industries, farmers, fishermen, and aquaculture producers can improve inappropriate water and land-use practices, industrial and domestic discharge, waste discharge, leaking landfills, and the detriment of water quality. They could also encourage the use of biodegradable plastics in agriculture and in commerce in general. Their potential influence on project success is based on improving their life quality or awareness on the subject; Their potential influence on project success is based on improving their life quality or awareness on the subject; d) Municipal governments will be responsible for issuing licenses, taxes, and duties on water and land use. **Partnerships:** The main partnerships are governmental and private institutions existing in the countries involved in the TC project that are dedicated to the promotion of education, scientific and technological research and the formation of human resources for research in the country. These institutions allow the sharing of TC Project costs. In general, the governmental institutions are those linked to ministries and secretariats of education, science and technology, innovations and communications. NGOs and media outlets working on environmental issues are the great interest because they support the disseminating results to end users (decision makers, water and land users, etc.).

Overall objective (or developmental objective)	*State the objective to which the project will contribute and demonstrate its linkage with any regional or broader development goal or priority. It must be in line with the problems/needs identified.* To contribute to establish public policies and strategies by the environmental authorities in LAC to monitor and manage ecosystems impacted by plastic debris.
Analysis of objectives	*Draw up an objective tree to highlight the hierarchy of objectives as well as the cause–effect logic that this project is expected to achieve.* 

Role of nuclear technology and the IAEA	*Indicate the nuclear technique that would be used and outline why it is suitable for addressing the problems/needs in question. Is this the only available technique? Does it have a comparative advantage over non-nuclear techniques?* *What specific role is the IAEA expected to play in the project?* Conventional analytical techniques cannot work successfully as fingerprint methods due to their methodological restrictions to reveal long term or large-scale evaluations of environmental impacts on habitat and community modification. Radio- and stable isotope techniques, based on ^{14}C and ^{2}H, ^{13}C, ^{15}N, ^{18}O, ^{34}S values, have unique traceability (isotopic tracer as marker/fingerprint), accuracy, sensitivity, and specificity *attributes that make them unique* tools to understand processes and interactions in food webs, including the interlinkages between river basins and marine ecosystems. Isotopic ratios in solid, liquid and gaseous samples provide information to trace patterns, checking physiological mechanisms in organisms, flow of energy through a food chain, pollution sources, paleo diet, and nutrient cycling pathways in terrestrial and aquatic ecosystems. In the last decades, analysis of bulk stable isotope ratios (^{2}H, $\delta^{13}C$, $\delta^{15}N$, $\delta^{34}S$), by using elemental analysis coupled to an isotope ratio mass spectrometer - EA-IRMS), in biological material has proven to be a useful approach to link food sources to estuarine and coastal primary consumers. Additionally, important progress has been made with the development of gas chromatography/combustion/isotope ratio mass spectrometry (GC-C-IRMS), allowing the determination of $\delta^{13}C$ in individual organic compounds such as n-alkanes and phospholipid-derived fatty acids (PLFA). Compound specific isotope analyses (CSIA) have high resolution that minimizes the complications due to multiple sources of organic matter and the effect of selective diagenesis. On the other hand, the advent of the accelerator mass spectrometry technique allows sample analysis with tiny amounts of radiocarbon (^{14}C-AMS) and obtains, therefore, ^{14}C in PFLA. Therefore, CSIA and ^{14}C are perfect fingerprint methods and when integrated with a source partitioning mixing model can become a powerful tool to track the spatial dispersion of organic matter/sediment from freshwater catchment to coastal and marine environments. Radio- and stable isotope techniques can also be used successfully to monitor the production process of plastic materials and inspect the final bio-based products derived from both C3 and C4 plants, which would make it easier to establish bioproduct regulation procedures. Stable carbon isotope ratio analysis ($\delta^{13}C$) and radiocarbon analysis (^{14}C-AMS) allow to distinguish between plant-and petroleum-derived plastics. These techniques also make it possible to identify its geographical origin of the polymer used to make the plastic material. Therefore, they are excellent tools to assist both in the sustainable production of plastic materials and in the assessment of negative impacts when plastic debris is incorrectly disposed of in the environment.

	Neutron activation analysis (NAA), X-ray fluorescence (XRF, by using WDXRF/EDXRF techniques), in turn, allows to identify and quantify ions and heavy metals, such as As, Cd, Cu, Mn, Mo, Ni, Pb, Th, U, V, Zn, and rare earth elements present in microplastic debris. If this information is correlated with soil/sediments profiles in microplastic contaminated sites, it is possible to predict how organisms, populations, and ecosystems respond to environmental stressors by resisting and adapting to disturbances, that is, assess the resilience of terrestrial and aquatic ecosystems. Finally, the Fourier transform infrared microscope (microFTIR) technique allows the chemical characterization of microplastic samples from terrestrial and marine ecosystems, including their organisms and assessing the plastic debris contributions in their physiological disorders. In addition, its knowledge the potential damages to the marine biota health by microorganisms that use microplastic films as vectors to accumulate in marine species of different trophic levels. Therefore, an accurate assessment of the microplastic contributions is essential to assess the effects of microplastic contamination in terrestrial and aquatic environments. It is expected that the IAEA will fulfil a central role mainly by providing (1) coordination of activities with other associated and complementary IAEA projects; b) specific training to members of groups of researchers; (2) guidance through expert missions and scientific visits in the use of nuclear techniques; (3) collaboration with fellow programmes for training of young researchers in relevant institutions; (4) laboratory sample intercomparing exercises and proficiency tests; and (5) advice and assistance in the acquisition of specific equipment. The support previously received from the IAEA (BRA5059, BRA7011, BRA7012, BRA7014, RLA5064, RLA5077, RLA7022, RLA7025, and INT7019) has been fundamental in enhancing the physical and human infrastructure of the Brazilian counterpart. This has allowed the LARA, IEAPM, IPEN and CRCN/Ne to become a reference center for analyses of radio- and stable-isotopes in Latin America and the Caribbean. Today, the LARA, IEAPM, IPEN/CNEN, and CRCN-NE/CNEN support important TC projects such as BRA7012, BRA7014, RLA5076, RLA5077, and RLA7026 by using NAA, EA-IRMS, GC-C-IRMS, WDXRD, EDXRF, ^{14}C-AMS, MIRS, and microFTIR facilities. In this TC project, the Brazilian counterpart proposes to use all its physical and human infrastructure to assist others LAC counterparts to improve their technical-scientific infrastructures, in addition to performing sample analysis so that the overall objective of this proposal can be successfully achieved.
Project duration	*Indicate a realistic starting date and the number of years required to complete the project. (In the case of projects expected to exceed four years, an assessment will be conducted before the end of the fourth year to decide on the validity of an additional year.)* Start of the project: January 2024 Project Completion: December 2026 Duration: 3 years

Requirements for participation	*Indicate the minimum requirements that counterpart institutions in Member States would need to meet in order to participate in this project, and how the fulfilment of these requirements will be verified.* Member states interested in participating on this project are expected to fulfil as many criteria as possible from this list: a) Technical Requirements - basic knowledge on the application of carbon stable isotope, X-ray fluorescence, and Infrared spectroscopy in environmental studies. - experience, facilities and human resources to set up field trials to assess this topic. - basic laboratory facilities and human resources to process and prepare samples (water, sediment, plastic) for analysis. - basic knowledge on the application of modeling tools for spatial distribution of pollutants. - interest in the design of protocols to monitor and manage the impacts of plastic debris, based on the scientific datasets - interest in the didactic design and scientific dissemination materials on impacts of plastic debris on terrestrial and aquatic ecosystems. - interest in the design of strategies and management plans to promote the improvement of regulations and policy instruments to mitigate the plastic pollutions and protect terrestrial and aquatic ecosystems. b) Role in the country - the subject is relevant for the country. - the institution is related to decision making in the area of manage pollutants inputs to terrestrial and aquatic systems. If not, the counterpart is able to lease with the respective institution in order to ensure their participation or collaboration with this project. -The institution or other source can provide minimum resources (operative) for the project development. c) Profile -The counterpart has previous experience in this type of projects, good communication skills and some project management experience. d) Commitment -The participant has support from its institution authorities to commit time and the needed facilities to develop the Project. The fulfillment of these requirements will be verified through scientific publications, or through participation in previous IAEA projects where these techniques have been used.
Participating Member States	*List the Member States expected to participate in this project that meet the requirements established above. Indicate the role of each Member State in the project.* *Country:* **Brasil** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Argentina** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)*

	Country: **Belize** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Bolivia** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Chile**: *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Colombia** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Costa Rica** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Cuba** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Ecuador** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **El Salvador** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Guatemala** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Haití** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Honduras** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **México** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Nicaragua** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Panamá** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Paraguay** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **República Dominicana** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)* *Country:* **Uruguay** *Role:* ☒ *Resource (providing expertise)* ☒ *Target (receiving expertise)*

<table>
<tr><td></td><td colspan="4">Country: Venezuela Role:
☒ Resource (providing expertise)
☒ Target (receiving expertise)</td></tr>
<tr><td></td><td colspan="4"></td></tr>
<tr><td rowspan="10">Funding and project budget</td><td colspan="4">Provide an estimate of the total project costs and the funding expected from each stakeholder:</td></tr>
<tr><td colspan="2"></td><td>Euro</td><td>Comment</td></tr>
<tr><td colspan="2">Government cost-sharing</td><td></td><td>(to be sent to the IAEA)</td></tr>
<tr><td colspan="2">Counterpart institution(s)</td><td>300.000</td><td>Operating equipment, and human resources</td></tr>
<tr><td colspan="2">Other partners</td><td>100.000</td><td>Who?:
PETROBRAS in Brazil/Operating equipment, and human resources</td></tr>
<tr><td rowspan="3">IAEA Technical Cooperation Fund (TCF):</td><td>Fellowships / Scientific visits / Training courses/ Workshops</td><td>600.000</td><td>2 workshops
5 training courses
3 scientific visits
2 fellowships
consumables for $\delta^{13}C$, XRF, microFTIR analysis</td></tr>
<tr><td>Experts</td><td>60.000</td><td>Expert mission for specific countries</td></tr>
<tr><td>Equipment</td><td>400.000</td><td>Small equipment and accessories for sampling, sample preparation and analysis for 20 countries</td></tr>
<tr><td colspan="2"></td><td></td><td></td></tr>
<tr><td colspan="2">TOTAL</td><td>1.460.000</td><td></td></tr>
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