



GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: FULL-SIZED PROJECT

TYPE OF TRUST FUND: GEF TRUST FUND

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PART I: Project Information

Project Title:	Addressing Invasive Alien Species threats at key marine biodiversity areas		
Country(ies):	Turkey	GEF Project ID: ¹	TBD
GEF Agency(ies):	UNDP	GEF Agency Project ID:	5733
Other Executing Partner(s):	Turkish Ministry of Forestry and Water Affairs/General Directorate of Nature Conservation and National Parks	Submission Date:	August 27, 2015
GEF Focal Area(s):	Biodiversity	Project Duration (Months)	60 months
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP <input type="checkbox"/>	
Name of parent program:	N/A	Agency Fee (\$)	317,742

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES²

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
BD-2 Program 4	GEFTF	3,344,654	12,000,000
Total Project Cost		3,344,654	12,000,000

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: To ensure resilience of marine and coastal ecosystems through strengthened capacities and investment in prevention, detection, control and management of Invasive Alien Species						
Project Component	Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Effective national policy framework on Invasive Alien Species	TA	<p>Enabling policy environment for reducing IAS threats in marine and coastal ecosystems:</p> <ul style="list-style-type: none"> • IAS of high risk to marine and coastal biodiversity prevented from entering Turkey (as measured by increased score in the GEF IAS Tracking Tool items 1 – 4). • 10% increase in funding towards marine and coastal biosecurity and ecosystem resilience support measures in Turkey (baseline to be established during PPG). • Improved control of the introduction and use of IAS in aquaculture, mariculture and fisheries (measured 	<ul style="list-style-type: none"> - Regulations on introduction, early detection, prevention and management of IAS in marine and coastal wetland ecosystems developed and submitted for adoption. - Main pathway and vectors for IAS identified. - Protocols and quarantine mechanisms consistent with bio-security requirements and international standards for IAS in marine and coastal wetland ecosystems in place - Fiscal incentives introduced for effective removal of IAS (e.g. Lion fish, Balloon fish) in marine and coastal wetland ecosystems (to encourage selective fishing and removal of IAS by fishermen) jointly with MFAL. - Regulations and standards on control, minimization and removal of IAS from ballast water developed jointly with MTMAC and put for 	GEFTF	700,000	2,800,000

¹ Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.

² When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCF](#).

		through GEF IAS TT)	<p>enforcement</p> <ul style="list-style-type: none"> - <i>Sustainability and Replication mechanism:</i> National Strategy and Action Plan on IAS in marine and coastal wetland ecosystems developed and approved to inform future actions on identifying priority habitats and species to be protected, evaluating financial and socio-economic effects of action/inaction for marine and freshwater IAS based on a thorough cost/benefit analysis. 			
2. Capacity building, knowledge and information sharing systems to address the IAS threats	T A	<p>Institutional and stakeholders capacity to understand and apply technical, legal and administrative tools enhanced to increase the prevention, eradication and control of IAS, as measured by UNDP Capacity Development Scorecard</p> <p>Improved information systems for monitoring and control of Marine IAS in marine and coastal wetland ecosystems, enable effective prevention, early detection, rapid response and management of IAS in marine and coastal wetland ecosystems as measured by relevant items of the GEF IAS Tracking Tool</p>	<p>2.1 Inter-sectoral multi-stakeholder Advisory Technical Board under Ministry of Forestry and Water Affairs (MoFWA) capacitated to deal with IAS prevention, early detection, rapid response, management and eradication.</p> <p>2.2 Information system with official list of prohibited IAS, modules on risk analysis, early warning response and monitoring for IAS in marine and coastal ecosystems is in operation at MoFWA. The system enables a comprehensive inventory and monitoring of IAS threats at the most sensitive marine and coastal habitats and species (posidonia meadows, coralligenous, sea turtles, anchovy, mussel, oyster), as well as measures to detect and prevent entry of risky IAS at key points of entry. The information platform will be hosted by the MoFWA.</p> <p>2.3 Engagement with shipping industry, and transport and customs sectors, on implementation of regulations and standards on control, minimization and removal of IAS from ballast water; and on procedures for regulating the entry of species for ornamental and aquaculture purposes to mitigate the introduction of Marine and freshwater IAS. Specifically, MTMAC will be supported on capacity building of personnel for sampling, handling and analysis of ballast water.</p> <p>2.4 Increased knowledge and awareness on IAS threats, impacts, management options and best practices for relevant industries, enterprises (aquaculture, transport, custom, tourism, etc.) media, security forces (gendarme), schools etc. through a comprehensive national communication, outreach program and delivery of community</p>	GEFTF	665,000	2,800,000

			trainings.			
3. Investment in sustainable management, prevention, eradication, and control of IAS and restoration of IAS-degraded habitat at key marine and coastal areas	In v	Enhanced IAS prevention surveillance and control strategies in place and targeted IAS eradication activities in four key biodiversity areas (İğneada, Yumurtalık, Hatay Samandıĝ coast, Ayvalık Adaları Nature Park, (covering 32,000 ha) to prevent new introductions, and reduce threats to key species, including Green Sea Turtle and <i>Posidonia Oceanica</i> (indicators to be developed for impact of management measures on key species)	3.1 Management plans for 4 areas designed and launched with site-specific measures for prevention, ensure eradication, control and management of IAS (see details in the text) 3.2 Four control units set up and equipped to detect, control spread of IAS at the target sites in collaboration with fishermen communities and manage targeted restoration of ecosystems degraded as a result of IAS. 3.3 Reintroduction of native species at selected sites (details in the text; subject to a feasibility study at PPG)	GEFTF		
					1,820,385	5,800,000
Subtotal					3,185,385	11,400,000
Project Management Cost (PMC)					GEFTF 159,269	600,000
Total Project Cost					3,344,654	12,000,000

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
Recipient Government	Ministry of Forestry and Water Affairs	Grant	11,800,00
Implementing Agency	UNDP	Grant	200,000
Total Co-financing			12,000,000

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS ^{a)}

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b) ^{b)}	Total (c)=a+b
UNDP	GEFTF	Turkey	Biodiversity		3,344,654	317,742	3,662,396
Total GEF Resources					3,344,654	317,742	3,662,396

E. PROJECT PREPARATION GRANT (PPG)

Is Project Preparation Grant requested? Yes No If no, skip item E.

PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

Project Preparation Grant amount requested: \$150,000					PPG Agency Fee: \$164,250		
GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee ³ (b)	Total c = a + b
UNDP	GEFTF	Turkey	Biodiversity		150,000	14,250	164,250
Total PPG Amount					150,000	14,250	164,250

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS

A. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS

^{b)} PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

* the recipient government co-funding figure covers associated projects budgets

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	32,000 ha
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	(Enter number of freshwater basins)
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	(Enter percent of fisheries, by volume)
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO _{2e} mitigated (include both direct and indirect)	
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	(Enter number of tons)
	Reduction of 1000 tons of Mercury	(Enter number of tons)
	Phase-out of 303.44 tons of ODP (HCFC)	(Enter number of tons)
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	(Enter number of countries)
	Functional environmental information systems are established to support decision-making in at least 10 countries	(Enter number of countries)

PART II: PROJECT JUSTIFICATION

1. Project Description

Turkey's location straddling three biogeographic regions, i.e., the Euro Siberian, Irano-Turanian and Mediterranean, is a key factor underlying its biodiversity importance. The country also supports three Global 200 Ecoregions – two terrestrial (Caucasus and Mediterranean) and one marine (Mediterranean) – which are considered by the Worldwide Fund for Nature (WWF) as among the most valuable and diverse ecoregions on earth. Marine biodiversity represents an important element of Turkey's biological wealth. The country's land area consists almost entirely of two Peninsulas – the Anatolian Peninsula and the Thrace Peninsula. As such, it has a relatively long coastline (8,592 kilometres, excluding islands) bordering four different seas – the Mediterranean, Aegean, Marmara and Black Seas. 22% of Turkish coastal area is under protection. Typical habitats found within the marine waters along this coast include extensive meadows of the endemic seagrass known as Neptune Grass (*Posidonia oceanica*) that grow in many areas along the Aegean and Mediterranean coasts. Some 3,000 plant and animal species have been identified in Turkey's marine waters.⁴ Among these are about 20 species of marine mammals, including two endangered species of sea turtle, the loggerhead (*Caretta caretta*) and the green turtles (*Chelonia mydas*). 21 beaches along the southern Aegean and the Mediterranean coast are important nesting grounds for these species.⁵ Turkey's Eastern Mediterranean coast is the most important breeding area for the critically endangered Mediterranean population of the green turtle. Beaches along Turkey's southern Aegean and western Mediterranean coast are, together with several beaches in Greece, among the most important breeding habitats of the loggerhead turtle.⁶ In addition to their important role in turtle conservation, many dunes also harbor endemic plants.⁷ Turkey also has the Mediterranean monk seal (*Monachus monachus*), one of Europe's most endangered species, of which fewer than 100

⁴ Ministry of Environment, Republic of Turkey. February 2001. "National Strategy and Action Plan for Biodiversity in Turkey." Draft.

As this figure is based on limited surveying, total species numbers are likely to be substantially higher.

⁵ Baran, I. and M. KaSEPArek. 1989. "Marine turtles of Turkey: Status survey 1988 and recommendations for conservation and management." WWF, Max Kasperek Verlag, Heidelberg.

⁶ Ozhan, 2005.

⁷ Ministry of Environment, 2002; EPASA. 1998. Patara SEPA Management Plan. Examples of endemic dune species include *Cakile maritime*, *Pancratium maritimum* and *Euphorbia paralias*.

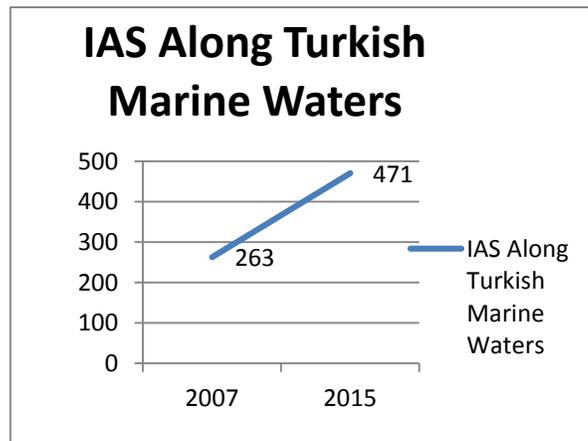
individuals still survive along Turkish coasts. Some 472 species of marine fish have been identified in Turkish waters, of which 50% are believed to be at risk of decline due to a combination of threats.⁸ Avian fauna dependent on Turkey's marine environment include Audouin's gull (*Larus audouinii*), as well as the migratory summer visitor Eleonora's falcon (*Falco eleonora*).⁹

While the Mediterranean coast of Turkey has more extensive biological diversity, the Black Sea has historically supported a substantially more productive fishery. The Black Sea has a lower salinity level, and the number of species living in it is only 20% of the number that live in the Mediterranean. The difference in diversity is due partly to the fact that the continental shelf of the Black Sea is very narrow, which limits the abundance and species variability of benthos.¹⁰ The Aegean Sea and its islands contain abundant microhabitats – including those dominated by *Posidonia oceanica*¹¹ and *Cystoseira* species – which play an important role in the sustainability of the ecosystem. Many migratory species use islands during their journeys. For example, Audouin's gull (*Larus audouinii*), a globally threatened bird species, lives and breeds on Aegean Islands.¹² The Mediterranean monk seal (*Monachus monachus*) is one of the most highly threatened mammal species in the world. According to recent estimates, there are about 300 monk seals in the Mediterranean,¹³ almost all occurring in the eastern part.

Seagrass meadows (*Posidonia oceanica* and *Zostera marina*) are important ecosystem along Turkish marine waters, as they stabilise the sediment and act as a sink for nutrients and carbon, weaken the hydrodynamic force of wave action and thus help protect the beaches and serve as spawning area and a nursery for many species, among them fishes of economic importance.

Invasive Alien Species (IAS) have been identified by Ministry of Forestry and Water Affairs, General Directorate of Nature Conservation and National Parks, as one of the principal threats to Turkey's biodiversity and coastal development, and are considered to be one of the principal causes for marine and coastal biodiversity loss in the country. This vulnerability is mainly due to the fact that Turkey is surrounded by 3 different marine ecosystems, with high endemism but at the same time high risk of entry of IAS. Currently, 450 IAS are found along the Turkish Mediterranean coast and 21 species in the Turkish Black Sea¹⁴. This number continues to grow (evidence by scientific research). 66% of the 450 species are coming via the Suez Canal to the Mediterranean Sea. About 80% of IAS coming via ballast water to the Black Sea. In the case of the Black Sea, pollution loads transported by the Danube River facilitated the spread of an alien invasive

specie ('*Mnemiopsis leidyi*', a comb jelly) and thereby contributed to massive ecosystem changes. Several IAS carried to the Black Sea from other seas with ships have by now become dominant in the ecosystem and changed the biological structures. Of those species, *Mnemiopsis leidyi* and *Rapana venosa* have the biggest adverse impact on anchovy stocks, mussel stocks, and other elements of marine ecosystems respectively. As per the Global Invasive Species database of the IUCN Invasive Specialist Groups, the 4 most dangerous marine IAS in the world are found in Turkey: the Comb Jellyfish (*Mnemiopsis leidyi*), Asian Rapana Whelk (*Rapana venosa*) Killer Alga (*Caulerpa taxifolia*), Rainbow Trout (*Oncorhynchus mykiss*). Several poisonous invasive alien fish species originating from the Indian Ocean are also present in Turkey: Elongated puffer (*Lagocephalus sceleratus*), Stonefish (*Synanceia verrucosa*), lionfish or devil firefish (*Pterois*



miles), and Nomad jellyfish (*Rhopilema nomadica*).

IAS impacts are expressed through direct predation of native species, competition for resources, uncontrolled hybridization with native species, interference with ecosystem services (i.e. carbon sequestration and climate regulation of the *Posidonia meadows*, purification of water and air, pest and disease control, provisioning of food, negative impact on human health, especially during the high tourism seasons). The economic sectors/services that suffer losses because of the IAS (through the displacement of native species by IAS and their colonization of ecosystems) include aquaculture, fisheries, water quality, tourism and trade. The IAS are particularly affecting the ecological integrity of coral reefs, sea grass beds, and

⁸ Ozhan, Erdal. 2005. *Coastal Area Management in Turkey*. Split: Priority Actions Programme Regional Activity Centre.

⁹ Savas, Yalcin and Cem Orkun Kirac. 2002. "Endgame: The Fight for Marine Protected Areas in Turkey." See <http://www.monachus-guardian.org/mguard09/09covsto.htm>

¹⁰ Ozhan, 2005.

¹¹ *Posidonia* is one of four families of seagrasses. *Posidonia* beds, or meadows, are highly diverse and productive ecosystems. See L. Watson and M.J. Dallwitz. "The Families of Flowering Plants," at <http://delta-intkey.com/angio/www/Posidoni.htm>

¹² Ministry of Environment, 2002

¹³ There are also colonies in Madeiras, Azores and Mauritania. The global population is around 550.

¹⁴ "Türkiye'deki En Tehlikeli İstilacı Yabancı Türler, İ.UYSAL, B.BOZ. Orman Su İşleri Bakanlığı, Ankara-Turkey, 2015"

coastal wetland. Because of the climate change, the Mediterranean seawater temperature increased; therefore the IAS coming from the Red Sea, Indian and Pacific Oceans are able to adapt and quickly proliferate in the Eastern Mediterranean Sea.

Incomplete regulatory basis: Although a policy and regulatory framework for the conservation of biological diversity exists, the regulation and authorization processes for the introduction and control of IAS are unclear and largely unenforced. In particular, they present inadequate safeguards and measures to control entry, manage invasions once established, penalize against illegal introduction, or comply with global standards and best practices. Due to underdeveloped regulatory basis, even when Turkey participates in regional initiatives (e.g. Globallast), it could implement only a part of the guidelines. There has been a section on IAS developed under the National Biodiversity Strategy and Action Plan, but there has been no integration of IAS detection and management mechanisms into sectoral and cross-sectoral policies. Marine IAS are not integrated into the decision support and monitoring systems, therefore no financial resources are allocated for Marine IAS management and no incentives against the introduction of IAS by economic sectors.

Improper information systems and monitoring: Turkey started to track entry of IAS only few years ago, on ad hoc basis. Before 2010 there was no tracking of IAS entries. At present, there is no List of IAS, no inventory of areas most affected and importantly no real time monitoring and detection system in place for IAS in Turkey. Monitoring has been set up only for *Caulerpa* sp., an exotic alga species, but even this monitoring takes place only at a few sites in Izmir Province. There is no system for monitoring of alien species entry into Turkey. There is a need to update the available data on IAS due to the continuous introduction of new IAS into the national marine and coastal habitats. Some knowledge is available on IAS ecology and biology, broader impacts, and the trajectory of their spread. Such information as is available remains inaccessible to many of the stakeholders whose actions impact on IAS, or is not disseminated in a practical and policy relevant form that can be used to support planning and management action. A comprehensive information system on IAS, coupled with climate proofed financial and socio - economic data on the most significant Invasives, is important for better management of seascapes. While the Turkey Biological diversity Information System Project, TUBIOS, was initiated in 2003 to improve the system in such a way as to fully cover biological diversity with all aspects, the key barriers to implement the above mention system, is the difficulty related to standardisation and systematization of data collection and management; in the area of IAS the system has not been effectively rolled out yet. Lack of accessibility to a coordinated data pool, provides a major barrier for scientific analysis, decision making and the establishment of an effective early warning and monitoring systems for Marine IAS management.

Inadequate capacities. Common understanding across the economic sectors with respect to their value and threats stemming from IAS is key to ensure resilience of marine and coastal ecosystems. While many different sectors and institutions are mandated to deal with specific aspects of IAS (including for example environment, agriculture, trade, customs), there is little policy, budgetary or management priority accorded to IAS by any of these organizations coordination between them is limited. Collaboration between stakeholders in the prevention, control, and management of IAS needs to be improved and effective mechanisms to be developed and in place. Moreover, differing interests between the environmental, scientific community, and other sectors will be a challenge for the coordination of IAS efforts. There is a need to build capacity on risk assessment, scientific knowledge, awareness among the key stakeholders, especially among the policy makers and local communities. At present, there is limited capacity to measure the threats and impacts of IAS, identify pathways, commodities and organisms that present an IAS risk, develop and evaluate the effectiveness of management systems, and effectively capture and adapt practices to ensure effective prevention, control and eradication measures. The Ministry of Transport, Maritime Affairs and Communications requires additional capacity building for its personnel to sample and handle ballast water.

There is a lack of understanding among the public, key sectors, importers and shipping agents of the harmful impacts of IAS, how IAS enter Turkey and spread among the marine and coastal ecosystems, and of what measures are needed to prevent this is an important barrier to more effective Marine IAS early detection, prevention and control. There has been no assessment of the economic consequences with respect to food security, livelihoods, health, which explains lack of cost effective measures to prevent IAS entering the country and control them.

Missing on-the-ground experience for detection and prevention of IAS at key sites: Turkey has no practical experience in on-the-ground systems to prevent entry, control and manage IAS. This is especially evident at some of the most precious marine areas which on the one hand host important biodiversity and present potential for economic development (through tourism, aquaculture and fisheries), yet on the other hand continue to suffer from degradation. **Four** areas are in most urgent need of action. The first area, area called İğneada (around 3,000 ha of seascape and coastal landscape) located in Western Black Sea, hosts *Zostera* Meadows with *Zostera (Zosterella) noltei* ve *Z. marina* (eelgrass), infralittoral rock habitats with *Cystoseira barbata*, *C. crinite*. Coastal marine biodiversity here is rich in terms of endemism (i.e. knout goby *Mesogobius batrachocephalus*) and rare species, such as the horse pipefish *Syngnathus tenuirostris* (Keskin 2010; 2012). The İğneada area also serves as a spawning and feeding ground of turbot *S. maeutica*. There is unabated degradation of the ecosystems

here caused by IAS and no efforts on conservation of this habitat (which otherwise would be candidate transboundary marine park with Bulgaria). The second area, Ayvalik Adalari (20,000 ha) hosts globally important (*Posidonia oceanica*, *Cymodocea nodosa*, *Aplysina aerophoba*, *Aplysina cavernicola*, *Axinella cannabina*, *Axinella polypoides*, *Spongia* (*Spongia*) *officinalis* *Tethya aurantium*, *Tethya citrina*, *Balanophyllia europaea*, *Palinurus elephas*, *Pinna nobilis*, *Echinaster* (*Echinaster*) *sepositus*, *Paracentrotus lividus*, *Centrostephanus longispinus*, *Hippocampus guttulatus* and *Pagrus pagrus*) all of which are continuously threatened by IAS (such as *Amphistegina lobifera* Larsen (IAS), *Caulerpa racemosa*). The third area, Yumurtalık Lagoons within Çukurova Basin (19,853 ha) is the biggest delta system of Turkey. It is one of the 21 important nesting beaches of Turkey, inhabiting two globally threatened sea turtle species- *Caretta caretta* and *Chelonia mydas*. At the same time, the ecosystem is suffering from several IAS, one of them is Eastern American Mosquito Fish (*Gambusia holbrooki*) which is on the IUCN “The Worst 100 IAS World List”. The fourth area, Hatay Samandağ Sea Turtle Nesting Beach and surrounding seascape and landscape (overall coast length is 16 km) is home to Monk seal (*Monachus monachus*), Sea turtle (*Caretta caretta*, *Chelonia mydas*). One of the worst IAS, Water hyacinth (*Eichornia crassipes*) coming from Syria via Asi river is clearly effecting the sea turtle nesting productivity (Uysal, I. And Boz, B. 2015): while 1,172 *Chelonia mydas* nests and 4 *Caretta caretta* nests were found in 2013, only 712 *Chelonia mydas* nests and no *Caretta caretta* nests found in 2014 (www.milliparklar.gov.tr).

Baseline programs and projects and possible co-financing from baseline

Turkey set the basis for monitoring of all aspects of biodiversity through its *National Biodiversity Inventory Monitoring Project* (2013 – 2018, implemented under MoFWA, funding US\$ 8 mln). The protected area (6%) are monitored at the ecosystem level. The regular monitoring of the species listed in the Hunting and Fisheries Laws is in place at the species level. A national monitoring unit has been established in the MoFWA to perform monitoring at both the species and ecosystem levels, and it is currently gaining effect. MEU carries out monitoring under the Regulation on the Environmental Impact Assessment and monitors any activities that may have adverse impacts on the environment and takes measures to remove the impacts to the greatest extent possible. Also, any activities that may have adverse impacts on the monk seals and sea turtles (sand hauling from the sea, fishing, industrial wastes, etc.) are followed up under the monitoring programmes implemented for the two species, which are endangered. The program, however is focusing primarily on the terrestrial biodiversity flora and fauna. Since it does not include IAS system, the proposed GEF project will be of outstanding importance as an increment to this baseline program of the Government.

The *Protection of Threatened Species* program aims to develop the conservation strategy and action plans for threatened species. The project is implemented between 2015 – 2019 with a 3.3 mill USD. The Implementation of Conservation Action Plans for Threatened Species project aiming to implement the prepared action plans on the field and also establishing the monitoring system for selected threatened species. The program, however, is limited only to action plan preparation and does not have resource for capacity building, and investment.

The *Enhancing the management and control on Protected Areas Project* of the Government is aiming to enhance the management and control mechanisms of the protected areas. The project will be implemented between 2015 – 2016 with a budget of 4 mill USD and will conduct trainings for protected areas on improved management effectiveness. This program is important as it acts as a basis for practical action envisaged in this GEF Project at the four marine sites. The GEF Project will also build on the ongoing processes of wetland inventory (The *Wetlands Inventory and Management Plan* project will with a budget of US\$1.5 ml, 2011 – 2017). In addition, as part of cofinancing of the GEF Project, the Government is going to allocate about US\$ 0.5 for habitat restoration activities in the Yeşilirmak delta.

Project components

The objective of the project is to ensure resilience of marine and coastal ecosystems through strengthened capacities and investment in prevention, detection, control and management of Invasive Alien Species. The following three components have been designed to achieve this aim, tackle the threats and overcome the barriers listed earlier.

Component 1: Effective national policy framework on Invasive Alien Species

This component is critical to set the legal, regulatory and methodological framework for handling the threats of IAS in the long term. It will address the key regulatory and policy gaps and pave the way for replicating the practices and enhancing the institutional capacities that will be built by the project. This component will develop the regulation and policies for early detection and management of Marine and freshwater IAS. Protocols and quarantine mechanisms that are proven efficient and consistent with bio-security requirements and international standards for Marine IAS risk analysis, early warning response and monitoring will be developed and put in place for practical enforcement. To build the business case for increasing resources flows, valuation will be undertaken on the economic impacts of IAS, including on food security,

livelihoods, health, biodiversity and production sectors, and the costs/benefits of these impacts compared with improved biosecurity to clearly demonstrate the advantages of improved biosecurity versus current (or even reduced) capacity in biosecurity. This information will be used by MoFWA to broker public and donor resources for increased funding towards biosecurity. The project will develop fiscal incentives in the fishing sector to encourage selective fishing and remove IAS from the ecosystems, which will be designed and supervised jointly by MoFWA and MFAL jointly for the time of the project within the 4 sites. Potential source of financing for these incentives and their technical and political feasibility will be explored during the PPG phase, including exploring the potential economic uses for IAS in the pilot areas, which could be an incentive to harvest on an ongoing basis and as a result help control the abundance of the species. For example, as *Rapana* has an economic value for Turkey through export, it is foreseen to establish protocols with water products cooperatives and also collaboration will be established with Ministry of Livestock and Agriculture. Regulations and standards on the ballast water handling will be designed jointly with Ministry of Transport, Maritime Affairs and Communications, and set for enforcement. The National Marine and Freshwater IAS strategy and Action plan will be developed which will identify priority ecosystems under IAS threats and IAS control measures.

Component 2: Capacity building, knowledge and information sharing systems to address the IAS threats

An Inter-sectoral, multi-stakeholder advisory board will be established, chaired by Ministry of Forestry and Water Affairs (MoFWA) staffed to coordinate and operationalize IAS prevention, early detection, rapid response, management and eradication efforts and disseminate information nationally and internationally. The project will help to develop an Official List of IAS, as the first element of a comprehensive information system on IAS. The IAS information, monitoring and evaluation system will enable technical staff (police, environmental inspection, border guards) to detect IAS. An IAS inventory will be completed, with the option of real time update, identifying and describing IAS, state of habitats and species they impact on, levels of restriction based on risk analysis. Risk assessment and restriction measures on IAS will take into account the climate change effects, and thus be of the information system. Technical capacities of staff and tools will be developed for control of entry, operation of the early warning system. A national Marine IAS watch program will be initiated. Under it, the institutional and stakeholders knowledge and capacities will be increased on: scientific information management, approaches for marine IAS control, and legal tools. Institutional capacities of economic sectors will be strengthened to effectively prevent and control the introduction and spread of IAS guided by relevant, practical and timely information on IAS status and threats. Public awareness will be strengthened through a dedicated set of public media activities, through introduction of IAS modules to educational curriculum and community trainings. Technical and enforcement capacity of relevant industries, enterprises (aquaculture, transport, custom, tourism, etc.) media, security forces (gendarme) will be strengthened. Engagement with private sector role-players in the shipping industry will be prioritized, as well as the transport and customs sectors of government, on implementation of regulations and standards on control, minimization and removal of IAS from ballast water; and on procedures for regulating the entry of species for ornamental and aquaculture purposes to mitigate the introduction of Marine and freshwater IAS. Capacities will be strengthened through specialized trainings and awareness campaigns. Specifically, the MTMAC will be supported on capacity building of personnel for sampling, handling and analysis of ballast water.

Component 3: Investment in sustainable management, prevention, eradication, and control of IAS and restoration of IAS-degraded habitat at key marine and coastal areas

This component is the most innovative yet most important as it is setting the precedents for on-the-ground control of IAS and restoring habitat that suffered from the impacts of IAS. This component will focus on sustainable management, prevention, eradication and control of IAS, and restoration/rehabilitation of IAS-degraded habitat at key marine and coastal areas covering approx. 32,000 ha. Management plans in line with the National Marine and Freshwater IAS Strategy and Action Plan (under component 1) will be prepared for the four selected sites. In cases where the area has a protected area status the IAS activities will be incorporated into the protected area management plans. In order to implement the IAS management plans, MoFWA will coordinate and implement the actions within management plans in each of the four key marine biodiversity important areas (İğneada, Hatay - Samandağ coast, Ayvalık Adaları, Yumurtalık). At each site, MoFWA and MFAL jointly will organize local groups that will plan and coordinate activities, working with fishing communities on removal of IAS from marine ecosystems, primarily the invasive fish (e.g. puffer fish) and mollusk species (e.g. *Rapana*). Premiums will be paid for certain amount of IAS to fishermen/fisheries cooperatives (thus testing the fiscal tools envisaged in Component 1. Selective fishing method, fishing gear (e.g. fishing nets with proper mesh size) will be selected to catch unwanted IAS and remove from ecosystem.

Further, at areas of importance for sea turtle breeding, collection removal of water hyacinth will be organized (e.g. Hatay Samandag coast). At the Samandag coasts (approx. 3,000 ha) the accumulation of the remains of the IAS water hyacinth *Eichornia crassipes* (which prevents sea turtle hatchlings to reach the sea) will be cleaned-up, and the source of these,

originated from Hatay wetlands by way of Asi river, will be eradicated. Besides the restoration and rehabilitation activities, a pilot study will be initiated at the PPG to identify options for re-introduction of native species and if feasible a plan will be developed on how best to introduce the selected species into its habitat. This is relevant, for instance, for the sea benthic *Posidonia* habitats which are degraded because of the IAS *Caulerpa racemosa* in Ayvalik Adalari Nature Park. Thus, the PPG will invest in feasibility of cleaned the area and supporting the reintroduction of *Posidonia*.

At the PPG stage, the four areas will be confirmed, described and measures for restoration described in further detail as a result of a thorough feasibility analysis. An iterative process will be further refined during project implementation, building on what emerges from the National Strategy and Action Plan on IAS, and on learning from pilot sites for further engagement in other sites. After the restoration and reintroduction activities are completed, they will be documented and workshops will be organized to ensure the uptake of the practices across other coastal and marine areas. The restoration activities will be carefully monitored.

Summary comparison of baseline and alternative scenarios and global environmental and development benefits

Baseline scenario	Alternative scenario	Selected environmental and development benefits
<ul style="list-style-type: none"> - Lack of comprehensive national framework and coordinating mechanism results in inefficient and ad hoc approaches to IAS, without clearly defined priorities to guide actions. - Inadequate capacity of environmental inspectors, border-guard police and economic actors for surveillance and prevention of IAS. - No system for early detection and rapid response results in IAS populations growing to the point where they are very difficult to address. - Inadequate information on risks of IAS to biodiversity, food security, livelihoods, health and trade, and the pathways result in growth of number of IAS. - Lack of investment in measures to detect, avoid and control IAS at key sites threatening remaining populations of globally significant biodiversity as well as food security, livelihoods, health and trade. 	<ul style="list-style-type: none"> - Comprehensive national framework and coordinating mechanism results in more efficient and effective actions to address IAS with clearly defined priorities. - IAS related risks for biodiversity, food security, livelihoods, health and trade clearly identified, economic and biodiversity damage assessed - Economic studies document cost-effectiveness of a pro-active biosecurity approach and used to make the case to decision makers for increased investment in biosecurity. - Official IAS Blacklist facilitates prohibition of high risk imports (goods that seek to enter will be subject to inspection based on the official black list and other screening mechanisms). - Improved institutional capacity to prevent and address IAS associated risks - Monitoring system to track movements of high risk IAS inside the country. - Enforcement capacities of environmental inspectors and police in place for enhanced prevention, surveillance, management and control reduces movement and spread of high risk IAS. 	<ul style="list-style-type: none"> - IAS of high risk to biodiversity, food security, livelihoods, health and trade prevented from entering Turkey: the total number of IAS in Turkey is not more than baseline (471 species) - Improved breeding success of globally important IAS-threatened sea turtles, Monk Seal at the target sites (baseline and target breeding success values to be identified at PPG) - 10% increase in funding towards marine and coastal biosecurity and ecosystem resilience support measures in Turkey (baseline to be established during PPG). - Projective coverage of <i>Posidonia</i> meadows at the 4 target sites (area of 32,000) not less than baseline - Improved food security of fishing communities (baseline and indicators to be established during PPG).

Innovation, sustainability and potential for scaling up

Innovation: The Information System (the National IAS Watch information Platform) which aims to have modules accessible directly for economic actors as well as environmental police is a new approach for Turkey, which is currently lacking. The decision making tools, including economic assessments of IAS impacts, developed through this investment will be new to Turkey. The project will enable for the first time a full assessment of risks associated with IAS, and importantly consider the climate change impact on the behavior of IAS and their proliferations. The economic incentives for fishermen to remove IAS will also be an innovation as currently Turkey lacks financial mechanisms to tackle the IAS threats. Reintroduction of IAS-disturbed native species and restoration/rehabilitation of IAS-degraded habitats will also be done in Turkey for the first time.

Sustainability: The project is building on a strong commitment from the Government of Turkey to improve biosecurity, as evidenced by its cofinancing commitments and the commitment to develop and adopt the National Strategy and Action Plan on IAS, which will allocate resources for follow up activities learning from the lessons of this project. The GEF funding will kick-start the development of a comprehensive national framework and increase awareness among governmental institutions, decision makers, and other stakeholders, as well as help develop a full picture on the IAS threats and set up mechanisms for detection, prevention of entry and control of the spread of IASs. An understanding of the linkage between these threats and an evidence

base provided through the decision making tools developed through the project, including economic assessments to demonstrate the costs of impacts, will broaden the decision-making process beyond short-term benefits to take account of long-term, costly and potentially irreversible impacts to the environment, economy and human health, and thereby ensure increased long-term funding for IAS management. In addition the main pathways and vectors of Marine IAS will be identified and precautions to halt the passing of Marine IAS from the main pathways will be taken ensuring long-term protection against IAS.

Potential for scaling up: The early warning and detection mechanisms developed and tested at selected areas through this investment to prevent the establishment and impacts of IAS, will have high potential for replication at scale in other critical areas of Turkey’s marine ecosystems. The MOFWA will integrate the lessons learned from demonstrating the early warning and detection system and IAS management into its information management systems and share the results nationally to promote replication at other sites during and after the project. Project experience will also be shared with other countries. In addition, the project will specifically address measures to reduce or eliminate harmful practices in the key pathway sectors; and will develop practical experience and knowledge on IAS management by implementing IAS strategic programs at selected sites encompassing high priority ecosystems. These will enable the Government of Turkey to determine cost effective IAS management practices over the long-term and provide a model for replication. The economic assessments developed under the project will provide an evidence base to demonstrate the cost-effectiveness of strengthening biosecurity, aiming to leverage increased investment for scaling up biosecurity and eradication best practices collated under the project.

2. Stakeholders.

Stakeholder	Role and Involvement in the Project
National Government	
Ministry of Forestry and Water Affairs (MFWA)	MFWA is the responsible body for conservation of biodiversity and nature within the country. Management of protected areas such as: national parks, nature parks, nature conservation areas, nature monuments, wildlife protection areas and wetlands. MFWA will support for the design, implementation, financing and mainstreaming of the IAS regulations, and policies as envisaged under Component I, but it will also oversee the implementation of the whole project. It will also ensure coordination among all project stakeholders, ensure impact and progress monitoring and information dissemination and national replication/scaling up of project lessons.
Ministry of Environment and Urbanizm (MEU)	MEU is responsible for protection of marine environment against pollution. MEU will support the design and implementation of the quarantine measures and IAS protocols. It will be one of the key Government partners for the implementation of Components 1 and 2.
Ministry of Food, Agriculture and Livestock (MFAL)	MFAL is responsible for organizing, coordinating and guiding of fishery and aquaculture. MFAL will be responsible for upscaling of project results nationwide within their jurisdiction. Collaboration with MFAL is crucial for Marine IAS management activities. It will be involved in component 1 and 2 directly and will provide support for the other componets at the technical level.
Ministry of Health (MoH)	MoH is responsible for coordinating human health support services. Specifically, MoH has the responsibility in first aid and cure patients injured or poisoned by Marine Invasive Alien Species. Education and awareness raising activities for staff of the MoH along Turkish coastline will be held on rapid treatment of IAS poisoned/injured people. They will be also involved to ensure that the voluntair ranger program (Component 3) is effectively and securely implemented.
Ministry of Transport, Maritime Affairs and Communications (MTMAC)	MTMAC is responsible for organizing, coordinating and guiding of shipping activities. Especially, MTMAC has the responsibility in managing the shipping routes and management of ballast water, hence the Ministry will be the key partner to identify the alternative solutions and strategy options for ballast water and IAS. The Ministry will provide technical support for components 1 and 2 and will be the beneficiary of the dedicated capacity building activities on handling ballast water.
Ministry of Culture and Tourism (MCT)	MCT is responsible for organizing, coordinating and guiding of tourism activities. MCT has the responsibility in managing the tourism activities such as diving, swimming, recreational etc. Information dissemination for tourists and also to minimize/manage the negative impacts of mass tourism to vulnerable ecosystems. The Ministry will be providing technical inputs and implementation support for the knowledge building and advocacy campaing as it is indicated in component 2.
Ministry of Development (MD)	Ministry of Development plans and guides Turkey’s development sustainable process and focuses on the coordination of policies and strategy development, will support the project to monitor the progress and disseminating the relevant information. The Ministry will be also providing the guidance to ensure that the developed strategies and action plans are in line with the national priorities. MD will be also part of the steering committee.
NGOs and local communities	
SAD-AFAG, TÜDAV, WWF-Türkiye	The main aim of these NGOS is create effective and conscious public opinion on environmental problems, specifically soil erosion, deforestation, desertification, climate change and biodiversity loss. These NGOs will support the implementation of the public awareness and training. One

	representative from the national NGOs will be a member of the Steering Committee. They will be involved in all of the components of the project.
Local communities at the four target sites	Inhabitants of the villages within the selected pilot project areas will be made aware of the issues and invited to take part in the decision making process. They will be represented in the local committees by village headmen and actively involved in the project activities. The village headmen will be the main counterparts in linking the project objectives and activities to the needs of the people in the project area. They will be involved mainly in component 3, but also be consulted on policies developed under Component 1.
Regional-Government Agencies	
Regional Directorate of Forestry and Water Affairs (RDoM) (MFWA)	RDoM is responsible for conservation of forest, range land, natural parks, nature parks, nature conservation areas and wildlife resources; water resources, streams, lakes, ponds, and wetlands in the forests in these provinces. The Regional Directorate will be a member of the project implementation unit and support monitoring of objective achievement and information sharing.
Turkish Coast Guard Command (TCGC)	TCGC is the responsible body to enforce national and international laws and to ensure the safety of life and property within its area of maritime jurisdiction. TCGC will enhance the implementation of the project via its ability and capacity to control illegal activities such as illegal fishing etc. It is the key recipient of many of the trainings and capacity building activities envisaged under the project.
Gendarma	Gendarma is the responsible body to enforce national and international laws and to ensure the safety of life and property within its jurisdiction. It also has nature conservation teams to protect biodiversity, and thus it is an important beneficiary of the capacity building activities and trainings under the project.
Private sector	
Fisheries and aquaculture companies	Under Component 3, the project will work with fishermen and fish producers in the region.
Tourism Agencies	The outreach activities of the project will seek cooperation with with tourism agencies in the region involved in diving, yachting, and sightseeing.

3. Gender Considerations.

UNDP systematically integrates gender equality and a social inclusion perspective in programme/project planning and implementation. Project preparation will ensure that those trained through the project and target communities for outreach include participation of both sexes. The project will apply the relevant GEF and UNDP policies to promote enhance roles and capacities for women in biosecurity and IAS management. For example, the fisheries socio-economic study of the GEF funded PIMS 3697 project revealed that there were significant number of fisherwomen at the selected project sites (MPAs) in need of capacity building and be actively involved in the management of the fisheries by the fishing cooperatives. With this information and by the active involvement of the fisherwomen, a small project was designed and applied by the financial support of the Satoyama COMDEX funds of the GEF-SGP Program. A total of 100 fisherwomen benefited from the capacity building activities with the active training sessions and commenced participating the GAs of the fishing cooperatives to raise their say. This practice will be logically taken up under the new project. **To increase the awareness of local communities; especially fisherwomen, on their critical role in solving the IAS problem, grant mechanisms will be introduced to compensate local communities for their participation in activities such as catching or harvesting IA fish species.** Institutional development will mainstream gender in the institutional system and decision making mechanisms and the coordination mechanism will mandate representation of both sexes Gender disaggregated target and baseline will also be established where appropriate as part of the project monitoring plan. Further, the project is expected to contribute positively to women and poor households by reducing the risks posed by IAS, many of which impact negatively on food security, livelihoods and health.

4. Risks.

Risks	Rating	Preventive Measures
Conflict of interest with aquaculture, fisheries and tourism sectors could delay the implementation of the project.	Low	The project will improve the institutional capacities of the different stakeholders involved and will establish more efficient coordination mechanisms to deal with the management of IAS, seagrass and coastal wetlands across different sectors. Furthermore by improving the policy framework and by providing training, the project will contribute to increase the understanding on how to respond efficiently, manage and coordinate the risks of IAS in the key marine biodiversity important areas and the mitigation capacities of seagrasses and coastal wetlands.
Shift in national priorities and loss of the support from the government.	Medium	The project will implement cost effective control and eradication alternatives, and evaluate the negative impacts caused by invasive species on the local and national economy and on endemic species and fragile ecosystems. It will demonstrate the lasting

		benefits (environmental, economic, and therefore social) of an effective and efficient invasive species management system, and therefore establish this project as a stable national priority.
The high cost of IAS control and eradication actions might prevent their adoption and dissemination in the country.	Medium	The actions to prevent, control, manage, and remove IAS will be pragmatically analyzed, according to cost-effectiveness criteria, to ensure they are reasonable and replicable.
The high cost, limited technical capacity and seasonality to implement actions within the marine environment is challenging.	Medium	The data collection, monitoring, restoration and other related activities actions will be analyzed, according to the sustainable and scientific criteria, to ensure they are reasonable and replicable.

5. Coordination.

The proposed project adds value to a number of related initiatives as set out below:

- *Control and Management of Aquatic Organisms Carried via Ballast Water Project (2006-2008)*. The aim of the project was to strengthen the ballast water management within Turkish territorial waters and prepare a national ballast water strategy. An action plan on ballast water management was prepared in 2010. This new GEF project is a logical extension, in that it will, under Output 2.3. build capacities to minimize the uptake of IAS with ballast water and release ballast water in a way which allows confinement of IAS and avoiding their release into coastal waters.
- In 2013 Turkey completed a GEF project on *Expansion and support of the Marine Protected Areas*. The project created several new protected areas at critical sites and helped to develop a National MCPA Strategy. However, that project did not envisage tackling in detail the threats associated with IAS, hence this new GEF project will be a logical next stage investment supporting globally important marine and coastal biodiversity present in Turkey.

At the PPG stage, stocktaking of any other relevant initiatives dealing with IAS will be done. All related projects will be invited to participate in the inter-sectoral, multistakeholder coordination mechanism established through this IAS investment. Regular meetings will be held between the different projects to leverage synergies and ensure efficiency in implementing the projects. The studies conducted and the information gathered under the other projects will be integrated into project development and implementation.

6. Consistency with National Priorities and Aichi Targets

IAS are high on the agenda of Turkey's National Biodiversity Strategy and Action Plan (NBSAP). The project addresses the following actions of NBSAP: strategic action: 1.3.4. "Taking appropriate legal and institutional measures, including the improvement of human resources, for the identification of the alien species that are introduced or most probably will be introduced into Turkey, the prevention of the introduction of invasive alien species, the determination of any possible adverse impacts of them on biological diversity and the elimination and control of those impacts"; measure no 11: "The appropriate legal and institutional measures for the identification of the alien species that are entering or most probably will enter Turkey, the prevention of the invasive alien species from entering Turkey, the determination of any possible adverse impacts of them on biological diversity and the removal and control of those impacts are taken and implemented". This investment promotes closer cooperation among agencies, sectors and stakeholders on biosecurity; strengthens capacity; develops awareness and enforcement and raises public awareness of the threat caused by marine traffic in spread of IAS; and establishes a database of invasive species present in Turkey.

In addition, the project will contribute to achievement of the Aichi Targets, in particular under the strategic goal B: Reduce the direct pressures on biodiversity and promote sustainable use, Target 9: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent introduction and establishment; and under strategic goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity, Target 12: By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has improved and sustained.

7. Knowledge Management.

The second component of the project includes a heavy investment into building up an information system to develop the knowledge of the IAS, the threats and impacts they pose, pathways, ways they can be detected, prevented and controlled. Furthermore, the project is investing in capacity building (communications campaigns, training and developing education curricula) to strengthen awareness of IAS issues, the need for biosecurity and what stakeholders can do to support effective biosecurity. Concise summaries and user-friendly outreach materials, including posters, booklets and other products will be

developed to communicate key information to target audiences (including actions that these audiences can take to help biosecurity and why these are important). The project will establish a presence in social media and will use all interactions with stakeholders (workshops, trainings, community outreach) to actively engage them in this channel. Members of the national inter-sectoral coordination mechanism created under this project will be encouraged to take a lead in participating and sharing this information widely. A communications officer will be hired or capacitated within the executing agency for this purpose.

Part III: Approval/Endorsement by GEF Operational Focal Point(s) and GEF agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Prof. Dr. Ltif Akca	Undersecretary, GEF OFP	Ministry of Environment and Water	31 July 2015

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

Agency Coordinator, Agency name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email
Adriana Dinu Executive Coordinator UNDP – GEF		August 27, 2015	Maxim Vergeichik		Maxim.vergeichik@undp.org