



## PROJECT FRAMEWORK DOCUMENT (PFD)

TYPE OF TRUST FUND: (GEF TF)

TYPE OF AGENCY: (PCA)

### PART I: PROGRAM IDENTIFICATION

Program Title:	GEF-Russian Federation Partnership on Sustainable Environmental Management in the Arctic under a Rapidly Changing Climate (Arctic Agenda 2020)		
Country(ies):	Russian Federation	GEF Program ID: <sup>1</sup>	4664
Lead GEF Agency:	UNEP	GEF Agency Program ID:	00792
Other GEF Agenc(ies):	EBRD, UNDP, WB	Submission Date: Resubmission Date:	06 September 2011 22 September 2011 23 September 2011 26 September 2011 06 September 2011
Other Executing Partner(s):	Ministry of Economic Development, Ministry of Natural Resources and the Environment	Project Duration (Months)	60
GEF Focal Area(s):	Climate Change Mitigation, Biodiversity, International Waters	Agency Fee (\$):	2,284,144

#### A. FOCAL AREA STRATEGY FRAMEWORK<sup>2</sup>:

<u>Focal Area</u>	<u>Expected FA Outcomes</u>	<u>Expected FA Outputs</u>	<u>Type of Trust</u>	<u>Indicative</u>	<u>Indicative</u>
<u>Objectives</u>			<u>Fund</u>	<u>Financing</u>	<u>Co-financing</u>
				<u>(\$)</u>	<u>(\$)</u>
(CCM-1)	1.1: Technologies leading to energy-efficient improvements and reduction of black carbon are selected, transferred and demonstrated in pilots	1.1: Number of technologies identified and demonstrated leading to higher combustion efficiency and reduced black carbon emissions for selected main black carbon source categories	GEF	320,550	1,400,000
	1.2: Enabling policy environment is proposed for selected municipalities in the domestic heating sector leading to black carbon reductions	1.2: Number of municipal strategies for the deployment and commercialization of innovative low-carbon technologies in the domestic heating sector		340,000	1,000,000
(CCM-2)	2.1: Energy efficiency policy, legal and regulatory frameworks are adopted and enforced at the federal and municipal levels	2.1: Number of specific energy efficiency policy and regulation acts in place for the Russian Arctic	GEF	3,000,233	61,000,500

<sup>1</sup> Project ID number will be assigned by GEFSEC.

<sup>2</sup> Refer to GEF-5 Template Reference Guide posted on the GEF website for description of the FA Results Framework when filling in Table A.

	2.2: Sustainable financing and delivery mechanisms established and operational at the federal and municipal levels	2.2: Additional investments mobilized (in \$US mln) from domestic and international sources		3,200,114	79,502,000
		2.3: Energy savings achieved (MWh/yr)		2,198,000	51,400,000
(CCM-3)	3.1: Favorable policy and regulatory environment created for strategic renewable energy investments at the federal and regional levels	3.1: Number of renewable energy policy and regulatory acts in place at the federal and regional levels	GEF	1,000,000	17,000,000
	3.2: New investment in renewable energy technologies increased	3.2: Renewable energy capacity installed (MW)		800,200	10,050,000
	GHG emissions avoided	Electricity and heat produced from renewable sources (kWh/year)		150,075	5,000,000
(CCM-5)	5.1.: Good management practices in LULUCF adopted both within the forest land and in the wider landscape	5.2.: Forests and non-forest lands under good management practices (ha restored)	GEF	133,000	1,706,000
	5.2: GHG emissions avoided and carbon sequestered			784,432	2,000,294
(BD-1)	1.1: Improved management effectiveness of existing and new protected areas	1.1: New protected areas (number) and coverage (hectares) of unprotected ecosystems	GEF	1,681,957	3,100,000
(BD-2)	2.2: Measures to conserve and sustainably use biodiversity incorporated in policy and regulatory frameworks	2.1: Policies and regulatory frameworks (number) for productive sectors mainstreaming biodiversity conservation	GEF	1,562,994	9,550,000
		2.2: Regional land-use plans (number) that incorporate biodiversity and ecosystem services valuation		3,177,067	6,300,000

(IW-2) (select)	2.1: Implementation of agreed Strategic Action Programmes (SAPs) incorporates ecosystem-based approaches to management of LMEs, ICM principles, and policy/legal/institutional reforms into national/local plans	2.1: National and local policy/legal/institutional reforms adopted	GEF	3,669,724	46,900,000
(IW-3) (select)	3.1: Political commitment, shared vision, and institutional capacity demonstrated for joint, ecosystem-based management of waterbodies and local ICM principles	3.1: National inter-ministry committees established; agreed Transboundary Diagnostic Analyses & Strategic Action Programmes; local ICM plans	GEF	150,000	1,716,206
	3.2: On the ground IWRM policies developed and modest activities conducted on improving water quality and quantity (including basins draining areas of melting ice)	3.2: Demo-scale actions are implemented in pilot Siberian river basins		917,431	4,875,000
	3.5: Political agreements on Arctic LMEs help contribute to prevention of further depletion/degradation.	3.5: Arctic LME (West Bering Sea) addressed with partners		2,293,569	7,800,000
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)	Others		(select)		
Subtotal:					
Program Coordination Budget ( will be submitted as a separate document ) <sup>3</sup> **					
<b>Total Program Costs</b>				<b>25,379,346</b>	<b>310,300,000</b>

\*\*\*) Program Coordination Budget which will be submitted as a separate document = USD 500,000 from GEF and USD 1,590,000 from co-financing.

<sup>3</sup> This is the cost associated with the unit executing the project on the ground and could be financed out of trust-fund or co-financing sources.

**B. PROGRAM RESULT FRAMEWORK**

**Project Goal:** to adopt and implement governance reforms for sustainable development of the Arctic in the Russian Federation. The programme will take an approach to achieve multiple global environmental benefits through such reforms and a series of demonstration projects, such as addressing resource issues associated with transboundary large marine ecosystems, energy efficiency improvement and renewable energy development, protected areas and introduction of integrated river basin management for water management and biodiversity conservation.

Program Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Financing (\$)	Indicative Co financing (\$)
1. Strengthened Governance for the Russian Arctic Environment (UNEP project#1, UNDP project #5)	TA	Strengthened institutional, legal and policy mechanisms for the Arctic Environment in order to achieve SAP-Arctic objectives and targets	<p>Policies, strategies and regulations developed and adopted to support implementation of SAP-Arctic, generating multiple global environmental benefits in support of the protection and development of transboundary marine and freshwater systems, biodiversity conservation and climate change mitigation including black carbon reduction (BD-1.1, BD-2.1 and 2.2, CCM-1.1 and 1.2, CC-2.1, 3.1, , IW-2.2)</p> <p>Strategic Action Programme developed and agreed on the West Bering Sea (IW-3.4)</p>	GEF	4,861,365	15,175,000

<p>2. Sharing information and lessons learnt (UNEP project # 1 components 4 and 5)</p>	<p>TA</p>	<p>Shared information and knowledge defining further intervention</p>	<p>Generated information on black carbon sources and impacts of the black carbon on the Arctic environment, leading to identification of policy options, investment activities and technology transfer (CCM-1.1 and 1.2)</p> <p>Operational mechanism for sharing the lessons learnt and experience from the Programme, which is linked with GEF knowledge sharing mechanisms (All project specific outputs)</p> <p>The programme implementation reported to the GPA, Arctic Council and other political foraa and catalytic impacts are demonstrated (all project specific outputs)</p>	<p>GEF</p>	<p>793,213</p>	<p>4,625,000</p>
<p>3. Financial mechanisms for rehabilitation of the Russian Arctic Environment (World Bank, project #2)</p>	<p>Investment</p>	<p>Established and operationalised financial mechanisms for the Arctic Environment in order to achieve SAP-Arctic targets</p>	<p>Environmental Fund developed for the implementation of the actions identified in SAP (IW-2.2, CCM-2.2 and 2.3, CCM-3.2)</p> <p>Capacity support programmes developed, drawing on the Environmental Fund (IW-2.2, CCM-2.2 and 2.3, CCM-3.2)</p>	<p>GEF</p>	<p>5,504,587</p>	<p>190,650,000</p>

			Reduced green house gas emissions (CCM-1.1,CCM-2.3, CCM-3.2) and reduced contaminants in the identified hot spots ( IW-2.2)			
4. Demonstration of conservation and sustainable use of biodiversity, natural resources, and ecosystem services (UNEP projects # 3 and 4)	TA	Enhanced conservation and sustainable use of biodiversity and natural resources to maintain the flow of ecosystem services in productive and non-productive landscapes of the Russian Arctic; and maintained ecosystem services to store carbon.	Expansion and Strengthening of the Protected Areas network in the Russian Arctic with the full involvement and support of local community groups (BD-1.1);  Protection of critical ecosystems for BD conservation and with high carbon storage functions (BD-2.1 and 2.2); and Enhanced water resources/river basin management capacity for biodiversity and international waters benefits (BD-2.1, IW-3.2)	GEF	7,798,164	18,500,000
5. Capacity support for introducing energy efficiency measures and renewable energy (EBRD project #6)	TA/Investment	Strengthened capacity to increase energy efficiency and promote renewable energy	Demonstration activities to apply best available technologies and measures to increase energy efficiency and renewable energy (CCM-2.3 and CCM-3.2, 3.3)	GEF	6,422,017	81,350,000

			Reduced and avoided emission of green house gasses from the Russian Arctic in the demonstration areas (CCM-2.3 and CCM-3.2,3.3) Training activities to disseminate information on best available technologies and practical measures applicable to the Arctic Environment (CCM-2.1 and CCM-3.1)		
<b>Total Program Costs **</b>				<b>25,379,346</b>	<b>310,300,000</b>

**\*\*Program Coordination Budget which will be submitted as a separate document = USD 500,000 from GEF and USD1,590,000 from co-financing.**

**C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)**

<b>Sources of Cofinancing</b>	<b>Name of Co-financier (if known)</b>	<b>Type of Cofinancing</b>	<b>Amount (\$)</b>
(bilateral aid agency)	NOAA	in kind	6,200,000.00
(GEF agency)	UNEP	in kind	1,250,000.00
(GEF agency)	World Bank	Loan	100,000,000.00
(GEF agency)	UNDP	in kind	300,000.00
(GEF agency)	EBRD	In kind	500,000.00
(GEF agency)	EBRD	Unknown	500,000.00
(GEF agency)	EBRD	Hard loan	75,000,000.00
(local government, national government)	Government of Russia, regional administrations, municipalities	Equity financing, grant, in kind / unknown at this stage	79,300,000.00
(civil society organization)	WWF-Russia	In kind	TBD

(other multilateral organisations)	AMAP, Arctic-HYDRA IPY Program, Arctic Council's Working Group CAFF, EAAFP, AEW, WWF, BirdLife International, RSPB, WWT, US FWS, NEFCO, and others	In kind, grants, Loans and Equity financing (NEFCO) (unknown at this stage)	7,250,000.00
(private sector and others)		In kind, equity financing (unknown at this stage)	40,000,000.00
<b>Total Cofinancing</b>			<b>310,300,000.00</b>

<sup>1</sup> Discussions between the World Bank, Ministry of Economic Development, and Ministry of Finance on a possible World Bank loan are in progress. Project preparation is pending endorsement from the Ministry of Finance.

**D. GEF/LDCF/SSCF RESOURCES REQUESTED BY AGENCY, FOCAL AREA, AND COUNTRY<sup>1</sup>**

<b>GEF Agency</b>	<b>Type of Trust Fund</b>	<b>Focal Area</b>	<b>Country Name/Global</b>	<b>Program Amount (a)</b>	<b>Agency Fee (b)<sup>2</sup></b>	<b>Total c = a + b</b>
UNEP	GEF	(IW)	Russian Federation	1,834,862	165,138	2,000,000
UNEP	GEF	(CC)	Russian Federation	1,834,862	165,138	2,000,000
UNEP	GEF	(BD)	Russian Federation	6,422,018	577,982	7,000,000
UNDP	GEF	(IW)	Russian Federation	3,361,000	302,490	3,663,490
WB	GEF	(IW)	Russian Federation	1,834,862	165,138	2,000,000
WB	GEF	(CC)	Russian Federation	3,669,725	330,275	4,000,000
EBRD	GEF	(CC)	Russian Federation	6,422,017	577,983	7,000,000
<b>Total Grant Resources</b>				<b>25,379,346</b>	<b>2,284,144</b>	<b>27,663,490</b>

\*\*) Program Coordination Budget will be submitted as a separate document = USD 500,000 from GEF and USD 1,590,000 from co-financing.

<sup>1</sup> In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table

<sup>2</sup> Please indicate fees related to this project.

## **PART II: PROGRAMATIC JUSTIFICATION**

### **A. GOAL OF THE PROGRAM:**

The goal of the programme is to adopt and implement governance reforms for sustainable development of the Arctic in the Russian Federation. This programme goal emanates from the targets set in the Strategic Action Programme for the Protection of the Russian Arctic Environment, developed through the GEF support and adopted by the Government of the Russian Federation. In order to achieve the overall programme goal, the programme will take an approach to achieve multiple global environmental benefits through such reforms, supported by a series of demonstration projects, such as addressing needs to establish firmer institutional arrangements for shared resources and environment associated with transboundary Large Marine Ecosystems, energy efficiency improvement and renewable energy development, developing a network of protected areas and introduction of integrated river basin management for water management and biodiversity conservation. The programme will catalyze further dialogue with the other Arctic countries on the transboundary issues of concern, and to develop a mechanism that prompt further investment in order to meet the agreed targets.

### **B. DESCRIPTION OF THE CONSISTENCY OF THE PROGRAM WITH:**

#### **B.1.1 The [GEF/LDCF/SCCF focal area strategies](#):**

The programme aims to achieve multiple global environmental benefits for the protection of the Russian Arctic Environment, as promulgated in the Government-approved Strategic Action Programme for Protection of the Russian Arctic Environment (SAP-Arctic), developed through the completed GEF project titles *Support to the National Action Plan for the Protection of the Arctic Marine Environment*. Specifically the programme aims to achieve the following global environmental benefits consistent with the GEF 5 Focal Area Strategies:

- Conserve and sustainably use biodiversity, ecosystems and natural resources, taking into full account the impacts of climate change and variability on them;
- Reduce or avoid emission or release of green house gases from the Russian Arctic and neighbouring areas; and
- Implement measures and policy reforms aimed at addressing water issues of transboundary implications, based on the strategic document adopted.

More specifically, the Programme will contribute to the implementation of the following Focal Area Strategies and Strategic Objectives for GEF-5:

International Waters (IW) focal area:

Strategic Objective IW- 2: “Catalyze Multi-State Cooperation to rebuild marine fisheries and reduce pollution of coasts and large marine ecosystems (LMEs) while considering climate variability and change” through the development of the governance mechanism for the Russian Arctic as agreed in the SAP-Arctic and the implementation of the agreed actions in the SAP-Arctic, both of which have transboundary implications as evidenced by the Diagnostic Analysis of the Environmental Status of the Russian Arctic. These policy reforms and implementation of agreed actions will be supported and sustained through the Arctic Environment Fund.

Strategic Objective IW-3: “*Support foundational capacity building, portfolio learning, and targeted research needs for joint, ecosystem-based management of transboundary waters systems*”, through development of a strategic action programme for the West Bering Sea Large Marine Ecosystem. The implementation of the Programme, particularly IW activities, will be reported to the Arctic Council for any further dialogue and agreement for necessary action.

Climate Change focal area:

Strategic Objective CCM-1: Technology Transfer: Promote demonstration, deployment, and transfer of innovative low-carbon technologies

Strategic Objective CCM-2: Promote market transformation for energy efficiency in industry and the building sector, and

Strategic Objective CCM-3: Promote investment in renewable energy technologies, through mobilizing financial resources and establishing financial mechanisms for deployment of technologies for energy efficiency in selected industrial sectors and for renewable energy development.

Strategic Objective CCM-5: Promote conservation and enhancement of carbon stocks through sustainable management of land use, land-use change and forestry, through the establishment of protected areas for peatlands and other high carbon storage areas in the Arctic.

Biodiversity focal area:

Strategic Objective BD-1: Improve Sustainability of Protected Area Systems, through the establishment of a network of protected areas in the Russian Arctic

Strategic Objective BD-2: Mainstream biodiversity conservation and sustainable use into productive landscapes/seascapes and sectors, through mainstreaming the biodiversity conservation, particularly biodiversity significant areas, such as Siberian river deltas, into water sector strategy and water resources management schemes.

The Arctic program will promote synergies among the above-noted focal areas and their strategies, *inter alia*, through the development and implementation of the governance reforms for sustainable development of the Russian Arctic, cutting across international waters, biodiversity and climate change mitigation. In adopting such an approach, integration of the focal area relevant interests will be integrated into a package of governance reform programme.

B.1.2. For programs funded from LDCF/SCCF: the LDCF/SCCF [eligibility criteria and priorities](#):

N/A

B.2. National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NIPs, PRSPs, NPFE, etc.:

The Government of the Russian Federation approved, at its Maritime Board, the Strategic Action Programme for Protection of the Russian Arctic Environment, in May 2009, as the main results of the GEF International Waters project titled *Russian Federation: Support to the National Plan of Action for the Protection of the Arctic Marine Environment*.

The Maritime Board of the Government of the Russian Federation is the highest-level body of the government, and is in charge of coordinated efforts of federal enforcement authorities in the

field of maritime activities, investigation and exploration of the World Ocean, Arctic and Antarctic.

The SAP-Arctic describes the goals, tasks, principal activities and targets for protecting the Russian Arctic environment for the period up to 2020 including the prevention and abatement of the environmental pollution through transboundary pollutant transfer, oil, chemical, and radioactivity contamination, preservation and improvement of the quality of environment and conditions for traditional nature use by indigenous people of the North, and the prevention and reduction of negative consequences of natural and human-caused disasters, including those caused by global climate change.

Key priorities and directions of SAP-Arctic were incorporated in the Basics of the State policy of the Russian Federation in the Arctic until 2020 and beyond, adopted by the Government of Russia, and into the Subprogram "Development and Use of the Arctic" of the Federal Targeted Program "World Ocean", approved by the Resolution of the Government of the Russian Federation on 30 September 2008 (no.731). In 2010 there were several decisions of the President of the Russian Federation, the Security Council of the Russian Federation and State Council of the Russian Federation, the Government of the Russian Federation intended to strengthen environmental protection in Arctic and reducing adverse impacts in the region.

The national legal framework to support the programme includes federal laws covering general ecological issues including, "On environmental protection" (1991, renewed in January 2002); "On Specially Protected Nature Areas" (1995); and "On Continental Shelf of the Russian Federation" (1995).

The law on "Baseline of the State regulation of social and economic development of Russian North" (1996) provides the basis for integration between environmental and socio-economic sectors. The Federal Law "On the territories of traditional nature use by indigenous peoples of the North, Siberia and the Far East of the Russian Federation", adopted in 2001, provides the evidence of the government's concerns about sustainable livelihood for indigenous peoples. More specific regulatory Acts include the "Concept of Sustainable Development of the Russian Federation" adopted by a presidential decree.

The SAP-Arctic was also shared with the Arctic Council. The Council is a high level intergovernmental forum to provide a means for promoting cooperation, coordination and interaction among the Arctic States and other Arctic interested states. It also, provides indigenous communities full and formal membership status on the Council, especially with regard to, but not exclusively on, issues of sustainable development and environmental protection in the Arctic.

Member States of the Arctic Council are Canada, Denmark (including Greenland and the Faroe Islands), Finland, Iceland, Norway, Russian Federation, Sweden, and the United States of America.

Working Groups of the Arctic Council and their supporting scientific and technical Expert Groups hold meetings at regular intervals throughout the year, ahead of the meetings of Senior Arctic Officials, who represent the five Arctic coastal states, and Arctic Council Ministers. Each Working Group has a different meeting schedule, which can be obtained by contacting the respective Secretariats of the Working Groups. There are six Working Groups of the Arctic Council: Arctic Contaminants Action Program (ACAP); Arctic Monitoring and Assessment Programme (AMAP); Conservation of Arctic Flora and Fauna (CAFF); Emergency Prevention, Preparedness and Response (EPPR); Protection of the Arctic Marine Environment (PAME); Sustainable Development Working Group (SDWG).

The programme will be aligned with the Arctic Council activities, particularly the CAFF, ACAP, AMAP, PAME and Short-term Climate Forcers Working Group. Some of the proposed activities are jointly developed and will be implemented with these Arctic Council activities. The proposed activities within the programme were presented and discussed with positive response at the Arctic Council's ACAP, PAME and SAO (Senior Arctic Officials) meetings at the end of 2010. In fact, SAOs welcomed establishment of SAP-Arctic and proposals for its implementation, and called on interested parties, including Arctic States, to participate in preparing and implementing the programme.

The Russian Government actively participates in Arctic Council activities, including the Council's Arctic Climate Impact Assessment (ACIA), and supports the recommendations in the ACIA Policy document and efforts to implement the recommendations on mitigation, adaptation, research, monitoring and outreach. The 2006 Ministerial Declaration of the Arctic Council urged the working groups to continue supporting, analyzing and synthesizing Arctic climate research, including the gathering and compilation of indigenous and local knowledge of the effects of climate change.

The Russian Government in May 2011 made the decision to pledge 10 million euros to the Project Support Instrument (PSI). The PSI is a mechanism for financing specific priority projects already approved by the Arctic Council. NEFCO, an international financial institution established by the five Nordic countries, was appointed as the Fund Manager. NEFCO finances investments and projects primarily in Russia, Ukraine, Estonia, Latvia, Lithuania and Belarus, in order to generate positive environmental effects of interest to the Nordic region.

The Diagnostic Analysis of the Environmental Status of the Russian Arctic was developed as a technical basis for the development of the SAP-Arctic, clearly highlighting the significant environmental issues and hot spots and linking these with the Convention on Biological Diversity and United Nations Framework Convention on Climate Change.

The program is responding in an integrated way for the Arctic region to the analysis and recommendations of the Third National Communication of the Russian Federation to the UNFCCC. In 2008 the Russian President, Dmitry Medvedev, signed a decree proposing actions to reduce energy intensity of Russia's economy by 40% by 2020. This was later supported by the President commitment at the Copenhagen Climate Conference of the Parties to the UNFCCC committing to cut GHG emissions by 15 to 25% by the year 2020, as compared to 1990. There were several federal and regional doctrines and laws passed since then. To name a few this programmatic approach responds to are Concept of the Long-Term Socio-Economic Development of Russia until 2020, outlining state policy measures needed to achieve this target, a federal law "On Energy Efficiency Improvement and Energy Saving", new federal targeted program federal target program, "Energy efficient economy for the period until 2015", and State Program of Energy Saving and Energy Efficiency Improvement until 2020. The highest level Action Plan on EE and Energy Saving "Energy Strategy 2030" specifies the long-term development policy for Russian energy and fuel sector. These efforts culminated in the establishment in Russia of the first ever Russian Energy Agency (REA) in charge of implementing energy efficiency and RE agenda. Specific information on how particular project in the program is responding to federal and regional laws and targets will be presented in individual PIFs. The programme is consistent with the Russian Federation NBSAP (2001) and

fits within the National Action Plan to support CBD. These national plans propose that polar deserts, tundra, and forest-tundra regions in the Arctic parts of the Russian Federation adopt integrated approaches to nature management, with the full involvement of indigenous peoples. The NBSAP in particular highlights the importance of adopting an ecosystem management approach, including implementation of regional models of biodiversity conservation and integrated land-use planning.

In regard to climate change mitigation, the Russian Federation has developed policy interventions aimed at supporting climate change adaptation measures. Major policy documents include:

- In 2001-2005, Russian Federation implemented the Federal Targeted Programs “Prevention of Dangerous Climate Change and Negative Consequences”. The Federal Targeted Program “Ecology and Natural Resources of Russia” (2002-2010) has resources allocated for assessing climate change impacts on the Arctic environment; and
- There are several sectoral programs targeting climate change mitigation and adaptation research in the Arctic, including programs of Roshydromet (monitoring and assessment programs) and the Russian Academy of Sciences (Fundamental Research Program of the Presidium of Russian Academy of Sciences “Environmental and climate change: natural disasters”, “Natural processes in polar regions and their development during the next decades”);

### C. Rationale of the programme and description of strategic approach (including description of current barriers to achieve the stated objectives):

#### The Arctic and its significance:

The Russian territory of the Arctic Zone extends over more than 6 million km<sup>2</sup> in total. It comprises the Arctic marine expanses within the territorial sea and exclusive economic zone of the Russian Federation, which is more than 3 million km<sup>2</sup>. The **land area** of the Russian Arctic is about 18 percent of the entire territory of Russia or 44% of the circumpolar arc. More than a million people live and work in the Arctic Zone of the Russian Federation (AZRF), including 136,000 members of 16 indigenous small nationalities of the North. The **marine portion** of the Russian Arctic covers (in full or partly) seven (Barents, White, Kara, Laptev, East Siberian, Chukchi, and Bering) seas or seven Large Marine Ecosystems (LMEs) and the largest portion of the central basin of the Arctic Ocean.

In Russia, hydrocarbons and minerals are found in quantities that are of strategic importance on a planetary scale<sup>4</sup> as well as fisheries resources<sup>5</sup> and large areas for raising domestic reindeer<sup>6</sup>. The status of the environment in the Russian Arctic has a fundamental if not the most important impact on the environmental state of the whole circumpolar Arctic.

Northern Russia is a major producer of oil and natural gas, supplying both the Russian Federation and the global market. Economic activity in Northern Russia represents two-thirds of all circumpolar economic activity. The regional differences in the distribution of economic activities among its Arctic regions make Russia the country with the most contrasting regional

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<sup>4</sup> Russian Arctic holds about 20% of the world’s carbon based energy resources including about 30% of the world’s undiscovered gas resources.

<sup>5</sup> Arctic and sub-Arctic waters hold more than 400 known species of fish, including 115 freshwater species. Catch potential for marine fish and invertebrates is projected to increase by an average of 30 to 70% from 2005 to 2055 making Russian Arctic among the 20 most important fishing EEZ (Cheung et al., 2009).

<sup>6</sup> Two major factors generally result in declining reindeer populations in the Russian Arctic: climate change and industrial expansion (Kokorin et al., WWF 2009).

differences among all circumpolar countries.

On average, the continuing intensification of natural resources-based economies puts ever increasing pressure on fragile Arctic ecosystems through steady or increasing levels of air emissions, especially in urban areas. Chemical contamination of water and soil, degradation of ecosystems, decline in reindeer husbandry, and deterioration in other environmental parameters are leading to poor human health and declining life expectancy in the Russian Arctic<sup>7</sup>.

The increased production and growth of the gross regional product in almost all the constituent subjects in the Arctic Zone, as observed since 2000 and projected into the future, will undoubtedly lead to an increased burden on the region's environment. As explained above, this burden might be the largest contributing factor to decline in environmental quality of the entire circumpolar marine and terrestrial ecosystems. This decline requires urgent actions both to eliminate existing environmental damage and to avert rising environmental threats.

Improving environmental quality in the Arctic Zone means the necessity of developing environmental regulations and stimulating energy-saving and environmental rehabilitation of 'hot spots'. The creation of incentives that would lead to improved environmental quality should be given greater attention. Because of its exceptional geopolitical, resource, environmental, scientific, and cultural importance, the Arctic Zone should be made a strategic element in the regional development of the Russian Federation as well as priority area for environmental cooperation in the North.

The most profound environment change driver in the Arctic is **climate change**. Since the 1960's average temperatures over the Russian Arctic increased by 0.2-2.5°C, approximately twice the global average.

Sea ice reduction was about 3% per decade since 1979. By 2050, ice extent in the Arctic may decrease by about 30% that is equivalent to 3.5 million km<sup>2</sup> and the entire Russian coast will be ice-free in late summer, allowing navigation through the Barents, Kara, Laptev and East Siberian seas along the entire Northern Sea Route (NSR).

The highest impacts to the terrestrial part of the Arctic will result from changes in permafrost structure and extent due to melting. The permafrost will become warmer and its active layer with seasonal freeze-thaw cycle will become thicker by 15-25% (in some coastal areas and in the Western Siberia – by 50%). Impacts of sea ice and permafrost melting in the Russian Arctic are multiple and have local/regional, global and transboundary impacts including (i) changes to Arctic marine transportation, (ii) higher coastal erosion due to more frequent storms and ice-induced erosion, (iii) effects on globally important biodiversity, migratory species and some key polar species, (iv) enhanced resource extraction potential including prospects of expanding offshore oil and gas exploration as well as higher accessibility of mineral resources, (v) higher risks of infrastructure and construction sector emergencies, (vi) release of significant amount of carbon stored in peatlands and permafrost, and (vi) negative impacts on traditional ways of life of indigenous people.

A World Bank Report (2009)<sup>8</sup> unequivocally argues that in the next decade countries like Russia will have a unique window of opportunity to make their development more resilient to climate change while providing numerous co-benefits. The focus of resilience measures should be on “no-regrets” measures improving *present* environmental management frameworks, institutions and practices. Failure to do so now will have unbearable impacts on Russia's competitiveness and well-being of its future generations. And in the Russian Arctic and Subarctic, the backbone

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<sup>7</sup> V. Votrin (2006). Measuring Sustainability in the Russian Arctic: An Interdisciplinary Study. PhD thesis. Free University of Brussels.

<sup>8</sup> Adapting to climate change in Europe and Central Asia (2009). The World Bank, 117 pp.

region of the Russian economy, failure to institute environmentally sustainable frameworks will be felt particularly hard.

Changes in world **energy** markets and technology during the last two decades have led to rapid expansion of extractive industries in the Russian Arctic, particularly oil and gas industries. According to the USGA Fact Sheet from July 2008,<sup>9</sup> the US Geological Survey (USGS) estimated that more than one fifth of the world's undiscovered but technically recoverable reserves of hydrocarbons are located north of the Arctic Circle. The USGS data shows that the region accounts for about 13 percent of the world's undiscovered oil and 30 percent of the undiscovered natural gas; about 84 percent of the resources occur offshore are trapped below the icy waters. Based on a summary of results of the Circum-Arctic Resource Appraisal, most of the oil and oil-equivalent natural gas has been found in the Russian Arctic.

The Russian Arctic is one of Russia's most vulnerable regions to **environmental pollution**. Many environmental pollutants that are released in lower latitudes tend to accumulate in the Arctic effectively making it a sink for global contaminants.

The most important environmental problems in the Arctic Zone are associated primarily with the presence of "hot spots" in areas of intensive economic activity and often located either along the coasts or connected to the marine environment, above all by resource-extractive industries. Often these hot-spots are also areas of significant GHG emissions and climate mitigation opportunities. At present, more than 100 hot spots have been identified as part of the UNEP/GEF NAP-Arctic project throughout the Arctic Zone, among them 30 with the most severe environmental problems.

The most dangerous types of pollution in the region are contamination by petroleum and petroleum products, chemical contamination by heavy metals, persistent organic pollutants (POPs), solid and hazardous waste, and radiation.

Significant local and regional sources of persistent organic pollutants (POPs) have serious implications for the health of indigenous communities depending on animal fat-rich natural food products. Sources of radioactive contamination are concentrated in the western Arctic and have local and transboundary sources. The Russian Arctic suffers tremendously from past environmental pollution caused by industrialization of the Arctic in the middle of the last century. If left unabated, the situation will further deteriorate with warming climate and serious implications for environmental health of ecosystems in the circumpolar Arctic and beyond.

The Arctic is closely linked with other parts of the world, and pollutants are found from sources located far from the Arctic region (through long-distance pollution transport by air, sea and rivers). The key sources of pollution transport to the Arctic sea areas are subdivided into three types:

- exogenous (river runoff, eolian destruction, wave abrasion, glacial, ice and iceberg quarries);
- endogenous (substances moved from the interior, e.g. oil hydrocarbons and methane discharge from sedimentation mass, gas hydrate discharges, etc.); and
- aquatic polyanthropogenic (waste dumping, oil and toxic substances transportation, offshore fields development, pollutants transported by the global ocean current system).

The most important exogenous source of sediments, including pollutants, is river runoff. Rivers collect their waters with diluted and weighted load from a wide catchment basin (approximately

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<sup>9</sup> <http://geology.com/usgs/arctic-oil-and-gas-report.shtml>

13,000,000 sq. km) located in different climatic zones. Total runoff of solid substances to the Arctic is 103,000,000 tons annually. Rivers discharge 19,400,000 tons of diluted and 3,800,000 tons of weighted organic carbon to the Arctic.

The most important multi-anthropogenic source of pollutants is oil and oil products transported by sea. Operational waste amounts to up to 50% of the total oil ingress into the marine environment. The increasing rate of oil field development may materially increase the amount of oil hydrocarbon discharges into the sea.

There is vast potential for **energy efficient improvements and GHG reductions** in Russia generally and in the Russian Arctic specifically.

Many identified pollution hot-spots are also significant contributors for GHG emissions. Often energy efficiency improvements in the industrial sector are also beneficial for other pollution sources and should be developed taking into account best available techniques/best environmental practices.

A specific feature of the Russian Arctic is the presence of globally important sources of gas flaring. Reducing flaring and venting of the associated gas, possibly the largest in the world (by some estimates to be 15-25 bln cubic meters annually), represents particularly attractive GHG and black carbon mitigation opportunity specific for the Russian Arctic.

In 2001 renewable energy sources accounted for only 3.5% of the national energy balance of which 2/3 was hydro- and 1/3 represented by other forms. A whole range of initiatives promoting renewable energy in Russia are ongoing, but little focus has been placed on the Arctic region, where there is enormous renewable energy potential, particularly for wind, small hydro-, and geothermal.

Mitigation opportunities in the LULUCF sector are also significant in the Arctic region, but are likely to be the subject of other GEF projects under preparation.

**Biodiversity change, and reduced populations and habitat loss of rare Arctic species** is a phenomenon of recent decades, as climate change and large-scale economic development have made the remote regions of the Arctic Zone more accessible and as pressures on biological resources have grown as the local population has become poorer and supplies to northern communities have been curtailed. Of special concern is the status of rare Arctic species, including red-listed species such as polar bear, Atlantic walrus, whales and other cetaceans, snow sheep, certain species and subspecies of whitefish and salmon, and of migratory species of waterfowl and shorebirds such as geese, brant, and waders. Inadequate geographic coverage and ineffective biodiversity protection is characteristic of the specially protected natural territories of the Arctic Zone.

The role of marine and coastal protected areas (MCPAs) becomes increasingly important in the changing Arctic. The presence of MCPAs potentially facilitate the adaptation of natural ecosystems to climate changes by mitigating direct anthropogenic threats, balance various kinds of space and resources use and alert society to changes taking place in the marine and coastal ecosystems.

Eight strictly protected nature reserves or zapovedniks, one national park and three federal natural reserves, or zakazniks, and one nature monument encompass marine compartments or have marine buffer zones. They cover a number of essential biodiversity features; some marine areas within MCPAs may be considered as integral marine ecosystems and/or include sites of primary importance for ecosystem monitoring due to the existence of long-term observations datasets.

Total marine surface area under protection totals to nearly 96 thousand km<sup>2</sup> or about 2% of the areas of the Arctic seas under Russia's jurisdiction (the Bering Sea excluded). Management of the Arctic MCPAs is a very complex task, and thus it is not surprising that management effectiveness of the federal Arctic MCPAs in Russia is scored to be relatively low.

Addressing existing and potential threats and future challenges to protection of Arctic marine biodiversity and MCPAs will require strengthening of the MCPAs network. As it is difficult to expect that the number of MPAs in the Russian Arctic can be significantly increased in the next decade, efforts of conservation organizations should be balanced between advocating for creation of new reserves and strengthening capacity of the existing MCPAs.

Remoteness and limited access to most Arctic MCPAs call for development of remote sensing and other distant methods for monitoring and surveillance. The challenges for the MCPA network in the Arctic are difficult to be met relying solely on the zapovedniks and national parks capacity, and the existing levels of governmental support. Thus establishment of horizontal cooperation and partnerships with science, NGOs, business and local communities is the only way for protected natural areas to perform their important mission in the changing Arctic.

Less than 50 percent of Russian Arctic landscape diversity can be found in protected territories, and only 60-65 percent of terrestrial biodiversity (20-30 percent for plants, especially rare species, and 70-75 percent for fauna) are represented. Particular challenges remain with regards to the development of protected areas under changing climate. Biological pollution, invasive species, and the introduction of exotic species are and will continue to be a high priority because of expanded economic activity and climate warming in the Arctic. Some identified pollution hot-spots are also located close to ecologically important and sensitive areas.

**Commercial fishing** in the Russian Arctic is concentrated in the Barents and Bering Seas. Marine and coastal fisheries are traditional source of income for indigenous communities, as well as an increasing source of revenues for local populations generally. In the second half of the 20<sup>th</sup> century a dramatic decline in the abundance of the most important commercial fish stocks, cod and capelin, was observed.

The Barents Sea cod fishery and the Russian Far Eastern Alaska pollock fishery alone account for between 20 and 25% of the global catch of whitefish.

In recent years, significant progress has been achieved in reducing Illegal, Unreported and Unregulated (IUU) fishing in the Barents Sea. However, unsustainable fishing practices remain a major concern in the western Bering Sea and the Sea of Okhotsk in the Russian Far East. Climate change impacts, including an increased flow of contaminants and potential development of offshore oil and gas production have increasingly become a serious challenge to fisheries in the Russian Arctic.

However, for Arctic waters as a whole, addressing fisheries problems is considered to be a medium- to long-term priority and will increase in importance with the ice-free Arctic Ocean.

**Disruption of traditional nature use of the indigenous peoples**, as an environmental problem, stems from the taking of their lands for industrial uses. It also subverts the natural resource potential of the traditional economy of the indigenous peoples.

For example, many northern rivers, a traditional source of fish for indigenous communities, have lost their significance as fisheries because of pollution, the destruction of spawning areas, and poaching, and the hunting grounds of native peoples have been made accessible to newcomers by the development of transportation facilities and are taken for mining and industrial development.

There are no effective government mechanisms to support the small businesses of the

indigenous small nationalities.

The legislative basis that governs the territories of traditional nature with limited economic activity is not sufficiently developed. The UNEP/GEF/AMAP Project titled *Persistent Toxic Substances, Food Security, and Indigenous Peoples of the Russian North* clearly identified the significant impacts of pollution on the lifestyle of the indigenous peoples, due to the high level of contaminants in their traditional diet.

Most of the above environmental challenges have transboundary and globally significant causes and effects that justify GEF and other interventions. The marine and terrestrial ecosystems of the Russian Arctic are among the world's last wilderness areas, but these ecosystems are undergoing rapid transformation due to climatic change and accelerating development, stressing ecosystems and affecting the well-being of its residents. The Arctic is of vital importance to the overall planetary health and environmental changes in this region are of global significance.

The Arctic is one of the most important strategic regions in the Russian Federation in terms of security, sustainable development and natural resources. Therefore, in recent years a number of high-level strategies have been adopted by the Russian Federation, taking into account issues related to the Arctic region. These documents acknowledge the importance of environmental protection and role in international co-operation in improving environmental status of the Russian Arctic, and include the *Marine Doctrine of the Russian Federation*; *Environmental Doctrine of the Russian Federation*; *Concept of the National Security of the Russian Federation*; *Concept of Transition of the Russian Federation to Sustainable Development*; *Guidelines of the Long-term Socioeconomic Development of the Russian Federation*, and the 2008 *Framework State Policy of the Russian Federation in the Arctic up to 2020 and beyond*.

As previously described, international cooperation and governance under the Arctic Council is very important and critical due to the unique character of the Arctic Ocean and its LMEs. No effort in improving Arctic environmental governance will succeed without regional co-operation. Outputs and experiences gained from the Arctic Programme will have longer-term positive consequences for environmental protection in all the riparian countries, and will contribute to the strengthening of cooperation in the Arctic region and beyond. In a sense, any development in the Russian Arctic is reviewed by national authorities not only in terms of national benefits, but always as a step towards peaceful and sustainable development of the circumpolar Arctic as such<sup>10</sup>.

SAP-Arctic identified the following priority environmental issues were identified in the Russian Arctic (listed in a priority order, points reflect final assigned values based on the Arctic Diagnostic Analysis, i.e. the higher the value it has, the more pressing the challenge):

- Environmental pollution (transboundary transport of pollutants by water and air, and oil, chemical, and radiation contamination) and deterioration of the quality of surface and ground waters in the coastal areas of the Russian Arctic (105 points);
- Changes in biodiversity and depletion of biological resources (103 points);
- Deterioration of the living conditions and environment of the indigenous population of the Russian Arctic and disruptions of their traditional use of natural resources (66

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<sup>10</sup> Speaking at the International Conference "The Arctic – Territory of Dialogue" held in Moscow in September 2010, Russian Prime Minister Vladimir Putin laid down key priorities for development in the Russian Arctic highlighting the importance of cooperation and environmentally-friendly developments in the region. "First of all, we are talking about creating good quality comfortable living conditions. Secondly, new economic growth zones must be supported and major domestic and foreign investments attracted. Thirdly, "serious sums" must be invested in science and environmentally-friendly infrastructure." Prime Minister underlined that he was confident that the Arctic region is bound to serve as a region of united efforts and true partnership in economy, security, science, education and in the protection of the region's cultural heritage.

points);

- Negative consequences and threats to ecosystems and social-economic systems from the ongoing climate change (52 points);
- Land degradation and irresponsible use of land (34 points).

These issues were identified based on a number of evidence-based criteria taking into account past, current and future threats ranked according to environmental, economic, social and transboundary impacts.

#### Programme rationale and approach:

Climate resilient sustainable development of the Arctic region represents a particular challenge and opportunity not only for Russia, but on a global scale because the lessons learned can be used in other world regions facing rapid environmental changes (SIDS, mountainous areas, low lying coastal zones, land-locked countries, countries with economies relied on the extraction of fossil fuels and etc.).

There are certain factors prevailing in the Russian Arctic that distinguish this area from other regions and suggest a cross-sectoral and systemic approach as the only effective management strategy. Such an approach can generate multiple global and local environmental and economic benefits. While investments aimed at providing an improved environmental pillar of sustainability at the national level might be beneficial for this region as well, without a targeted approach that takes into account region's specific characteristics, these investments proved to be less effective<sup>11</sup>. Factors taken into account in the Arctic program include:

- low temperatures throughout the year, a long polar night and polar day, frequent magnetic storms, fogs, the monotonous topography of polar desert and Arctic tundra, perennially frozen ground, an ice regime that lasts more than six months of the year, terrestrial glaciers on several islands, and other extreme natural features;
- unstable and fragile ecosystems, which are easily impaired by human-caused impacts and take many years to recover;
- pollution of the Arctic zone as a whole, principally by transboundary atmospheric transport as well as by large rivers (Northern Dvina, Pechora, Ob, Yenisei, Lena, Indigirka, Yana, and Kolyma rivers), which drain the greater part of Eurasia, including areas with developed industrial and agricultural infrastructure;
- global climate change, which since the turn of the last century is manifesting itself with a great force and on a continental scale;
- low population density and on average, widely dispersed human settlements;
- uneven economic development, in which much of the mainland Arctic Zone is characterized by traditional settlements of the indigenous small nationalities together with scattered centers of intensive industrial development;
- living and economic conditions that are dependent on supplies of fuel, produce, and other goods imported along complex transportation networks using airways, water transport (including the Northern Sea Route) and rivers;
- a monotypic, resource-based economy in the Arctic subjects of the Russian Federation, with high costs for supporting economic activity and maintaining the well-being of the people;

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<sup>11</sup> T. Koivurova (2005). Environmental Protection in the Arctic and Antarctic: Can the Polar Regimes Learn From Each Other? International Journal of Legal Information the Official Journal of the International Association of Law Libraries, V.33(2): article 5.

and

- inadequate environmental investments by the government and relatively low environmental investments (taking into consideration the level of environmental impacts of the business) by private sectors.

Based on the Diagnostic Analysis of State of the Environment in the Arctic zone of the Russian Federation under the UNEP/GEF Russian NPA Arctic Project, as described earlier, the root causes of developmental and environmental problems in the Russian Arctic, their transboundary implications, as well as underlying barriers for effectively addressing the development and environmental problems and their root causes were analyzed. The proposed programme will address the following key underlying barriers:

Governance barriers:

1. While there is an approved national Arctic policy, there is no state program on AZRF development and relevant regional policies, territorial planning schemes, and development programs of the Arctic regions;
2. Lack of strategic policies for sustainable development of the indigenous communities of the Russian North;
3. Deficiencies in the Russian environmental management system and lack of compliance of economic activities with existing environmental legislation and rules;
4. Underdeveloped environmental legislation for the Russian Arctic and lack of specific guidelines and requirements for undertaking industrial and other sectoral activities, including those taking place on the arctic shelf (including legislation dealing with past environmental damages);
5. Lack of effective inter-disciplinary institutional coordination mechanisms at the national and regional levels.

Financial barriers:

6. Lack of investment and use of market-based mechanisms in environmental protection of the Arctic;
7. Under-developed targeted financial mechanisms for environmental rehabilitation of “hot spots” and application of the Public-Private Partnership models.

Knowledge and capacity barriers:

8. Non-supportive political environment and lack of capacity for the adoption and use of environmentally friendly technologies and innovation.
9. Absence of integrated circumpolar monitoring system of land, atmosphere, fresh and marine waters including physical parameters, pollutants, biodiversity and overall environmental health;
10. Lack of research and assessments of the status of the Arctic environment and its components including climate change impacts.

The agreed upon SAP-Arctic outlined actions needed to address wide ranging environmental issues and concerns, and it addressed land-based and sea-based sources of pollution, climate change and biodiversity. It includes necessary actions in the areas of biodiversity, climate change mitigation and adaptation, international waters and chemicals management. In a transition to SAP implementation, the Russian Federation is committed to carrying out a needed transformation of environmental governance in the Arctic Zone of the Russian Federation, as well as attracting investments in environmental technologies and innovations.

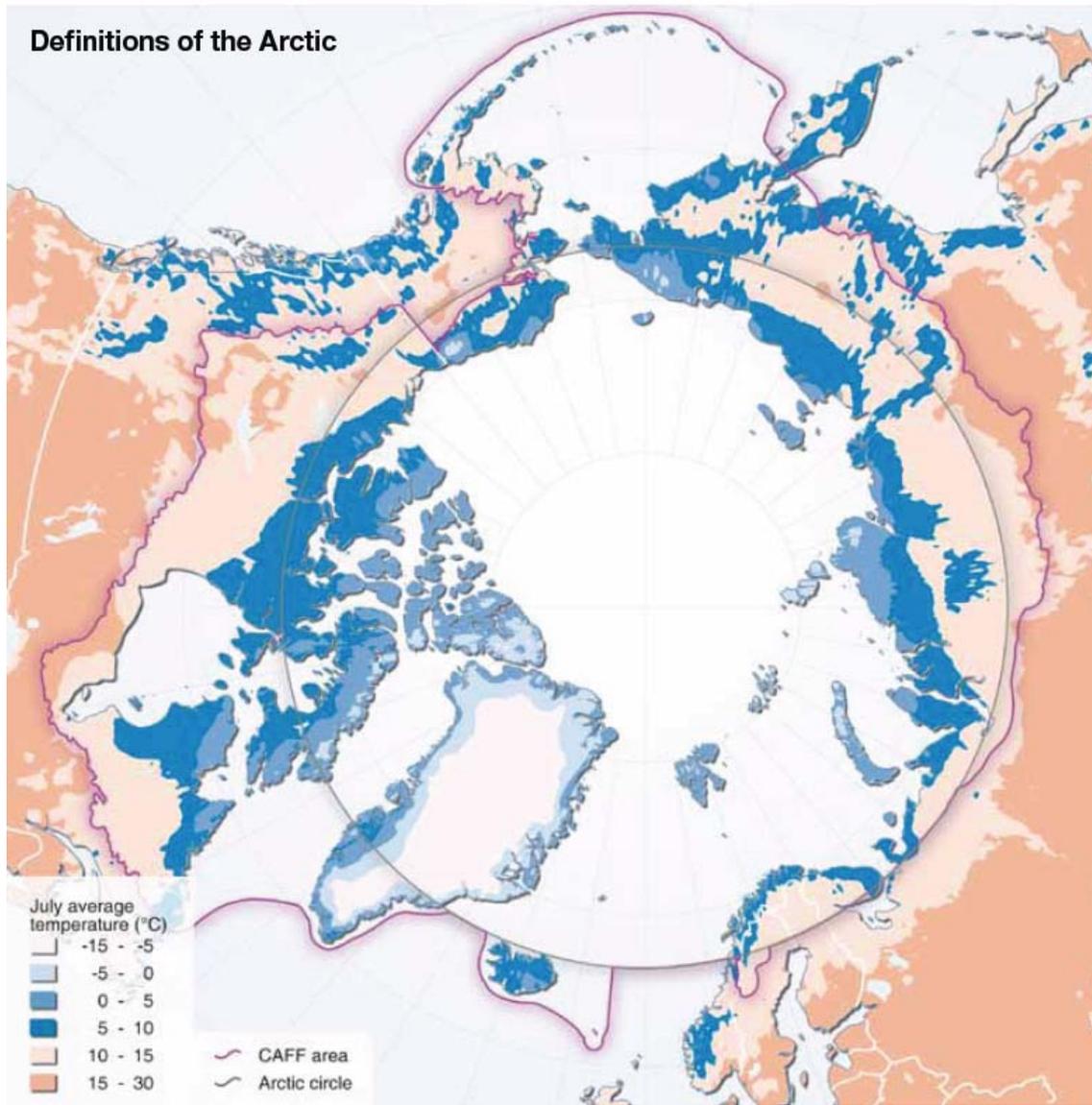
These commitments will require an effective governance reform targeting the Russian Arctic, taking an approach that encompasses a range of global environmental issues and integrates climate change, biodiversity, and international waters actions. Governance reforms should include creation of a mechanism for acquiring and utilising international and national knowledge, information, experience, best organizational and technological solutions and practices, as well as leveraging funds from various sources to complement existing national public and private partnerships.

The programme is envisaged as a set of targeted projects aimed to deliver local, regional, and global environmental benefits in an integrated way through national government agencies, UN agencies and international/regional financial institutions.

The programme is designed around key sectors with a significant potential for transformation, while maintaining programme integrity through inter-linked interventions, avoiding duplication and promoting complementarity with other initiatives at the national level and with the ongoing work of Arctic Council working groups. International cooperation and governance under the Arctic Council is very important and critical because of the unique character of the Arctic Ocean and its LMEs.

No effort in improving Arctic environmental governance will succeed without regional co-operation. Of all the Arctic regional states, Russia is the only GEF recipient Arctic country and GEF funding will be instrumental in securing an adequate level of regional cooperation, technology and knowledge transfer as well as regional policy development.

The programme is built on partnerships with international (Arctic Council and its working groups, NEFCO), federal (several line ministries), regional (several republics, oblasts and okrug administrations), and municipal (Murmansk, Arkhangelsk, Naryan-Mar, Yakutsk, Anadyr) authorities established during implementation of the UNEP/GEF NPA-Arctic project. The innovative feature of the programme is its reliance on the public-private partnerships with the largest Russian industrial and energy companies such as Gazprom, Rosneft, Lukoil, Norilsk Nickel as well as Russian financial institutions (Vnesheconombank, Sberbank, others) in protecting the Arctic environment. The proposed strategic approach envisages mobilization of financial resources and expertise of the World Bank, EBRD, UNEP, UNDP, NIB and the Nordic Environmental Finance Corporation (NEFCO) as main international partners.



The Programme has five components under three GEF thematic focal areas (Climate Change, Biodiversity, International Waters). Since recent ratification of the Stockholm Convention, the Russian Federation became eligible for GEF POPs and chemicals funding. It is expected that relevant Russian institutions with the support of international organizations will prepare GEF project to support elimination of POPs in Russia, which could have a significant impact on improving the Arctic environment. This potential project could be implemented in close cooperation with the AA2020 program.

In taking the above noted approach, the programme will be comprised of six projects that are interrelated to each other. These interrelated projects will respectively contribute to the achievement of sub-programme component as described in Part I B, Programme Result Framework. Annex B provides each project summary.

Each project proposed under the umbrella programme, when applied to a particular issue/sector, will address certain elements of governance and financial and capacity building barriers. The

main goal of the “backbone” or coordinating project is *Improvement of environmental governance and coordination of SAP-Arctic Implementation*. It is designed to assist the Russian Federation in developing a legal, administrative and institutional framework of environmental governance when applied for the Russian Arctic that is in-line with the current best practices of the other circumpolar countries. This goal is seen as essential for effective implementation of the SAP-Arctic.

This first project builds on the success of the UNEP/GEF RF NPA-Arctic project, aimed to catalyze actions leading to a transformational impact to improve environmental status of Arctic coastal and marine ecosystems in accordance with priorities identified in the SAP-Arctic and endorsed by the Maritime Board at the Government of the Russian Federation in June 2009.

Among expected outcomes of the project is adoption of legal, administrative and institutional frameworks at the federal and regional levels, and improved sustainability of the governance regime in the Russian Arctic.

The second project will create the Arctic Environment Fund (AEF) as the main instrument for financing SAP-Arctic implementation.

AEF’s main goal will be to provide sustainable financing to priority environmental and climate change projects from various internal and external sources. An additional objective is to increase the effectiveness of international cooperation through the combined use of specific international environmental finance instruments (soft loans from International Financial Institutions, GEF grants, tradable certificates for greenhouse gas emissions) with traditional domestic financing from the budgets of different levels, as well as funds attracted by Russian companies and banks.

The biodiversity project under the umbrella program will satisfy two major objectives of the GEF biodiversity strategy: it will enhance the effectiveness of the existing protected areas network; and mainstream biodiversity conservation into decision-making process with a particular emphasis on traditional knowledge of northern indigenous communities. In this regard in preparing the project, special consideration will be given to the increased focus of the GEF on capacity building on access to genetic resources and benefit sharing.

Project outcomes will include expansion of the protected area network in the Russian Arctic; approved financial sustainability plans for protected areas and beyond them; and contributions to the development of national ABS framework with targeted activities in the Arctic.

The project on integrated water resources management in basins of large Arctic rivers under climate change will build national and regional capacity to mitigate negative impacts of climate change on Arctic economies, societies and the global environment. Arctic rivers are expected to be significantly modified with climate change. The effects will include extreme flooding, coastal erosion, changes to river and catchment ecosystems and increased flux of freshwater and contaminants into the Arctic Ocean. Further melting and degradation of the catchment permafrost lead to modified hydrological cycle and increased release of stored carbon under the permafrost.

While predicting climate change impacts is highly complex, experts agree that in combination these factors will cause dramatic changes to Arctic Ocean circulation and regional climate, flux of pollutants, increased emission of green house gasses, and impacts on Arctic river and catchment ecology and hydrology. River and catchment impacts will affect the quality of freshwater productivity, biodiversity and habitat, growth, and survival of freshwater aquatic species that are currently used for food by Arctic residents.

Project implementation will include co-operation with other Arctic States on Integrated River Basin Management approaches (Yukon and Mackenzie) as well as potential links for knowledge

exchanges with other GEF IWRM projects (eg., Amazon Basin). The choice of the water sector in the umbrella program is explained by the fact that Siberian Rivers serve as key transport arteries in current and future Arctic development, including in the coastal zone. The sustainable management of rivers and their catchment basins is of utmost importance in the framework of environmental governance of the Russian Arctic.

The project on the West Bering LME will work towards integrated, adaptive ecosystem management framework aiming to reduce the unsustainable fisheries practices, reduce risks to future degradation of marine and coastal environment, and support several targeted demonstration projects including e.g., a pilot marine electronic highway programme for the Bering Sea and Bering Strait.

Finally, one of the proposed projects aims at supporting targeted investments in climate mitigation in the Russian Arctic through establishment of a special investment vehicle for support to small and medium size EE municipal infrastructure projects and market development for off-grid renewable energy and local energy resources. Expected outcomes/outputs will include measurable, reportable and verifiable (MRV) GHG reductions; demonstrations of innovative environmentally sound technologies; improved energy efficiency policies and regulations; and installed renewable energy capacity. The key differences between the second and sixth projects are in their implementation scales (project #2 activities focus largely at the federal level and project #6 - at the municipal level) and much broader and longer-term scope of the second project building financial facility to improve environmental status of the Russian Arctic as well as promote RE technologies in addition to EE. Strategic priorities for the Arctic Fund will be defined during project preparation. Having two projects addressing issues of energy efficiency and renewable energy in the Russian Arctic at two main governance levels (federal and regional/municipal) will assure that proposed reforms and technology transfer activities remain not only designed but implemented and sustainable in the longer-term and over the large territory of the Arctic with potentially significant learning, catalytic and replication impacts.

D. Discuss the added value of the program vis-à-vis a project approach (including [cost effectiveness](#)):

The current proposed programme is a unique international programme, piloting an integrated, inter-sectoral approach through a set of targeted projects aimed to deliver local, regional, and global environmental benefits. Based on findings of the Diagnostic Analysis and the targets and necessary actions described in the SAP-Arctic, the programme is designed around key sectors with a significant potential for transformation. The programme, and projects within the programme will yield inter-linked interventions, avoiding duplication and promoting complementarity with other initiatives at the national level and with the ongoing work of Arctic Council working groups. The following areas of value-added of taking a programme approach are identified:

1. The programme, through sharp focus and targeted governance reform, will establish a governance framework aimed at sustainable development of the Russian Arctic, effectively engage sectoral interests, and integrate key sectoral issues and policies.
2. The programme is taking a partnership approach, involving a range of international (Arctic Council and its working groups, international financial institutions, NEFCO, UN agencies), federal (several line ministries), regional (several republics, oblasts and okrug administrations),

and municipal (Murmansk, Arkhangelsk, Naryan-Mar, Yakutsk, Anadyr) authorities, having interests and stakes in the Arctic sustainable development. For those partners that are mobilised, partnership arrangements would be more facilitated under a larger programme umbrella rather than them participating in a number of un-coordinated projects. The programme umbrella will allow partners to undertake coordinated activities based on comparative advantage. An innovative feature of the programme, with the objective of promoting Arctic sustainable development, is formation of public-private partnerships with the largest Russian industrial and energy companies, as well as with Russian financial interests.

3. The programme approach yields a higher level of baseline activities and broad partnership to achieve the higher level objective of Russian Arctic sustainable development. This in turn creates opportunity to attract more investment from the national sources and international sources. Financial and programme planning within the Russian Federation can be made targeting a longer period of time, stimulating an enhanced level of political commitment.

4. In the Arctic zone, the focal area issues are inter-related and measure to achieve GEF focal area strategies have implications on the other focal area activities. A typical example is the climate change impacts on biodiversity and biodiversity conservation in avoiding carbon release from the carbon and biodiversity rich ecosystems. A multi-focal area programme will enable effective cross-focal area interventions while avoiding any duplication and overlap among the focal area based interventions in the Arctic zone.

International cooperation and governance under the Arctic Council is very important and critical because of the unique character of the Arctic Ocean and its LMEs surrounded by the seven countries. The well-coordinated programmatic approach will enable the Russian Federation to effectively coordinate its activities for the Arctic with the other Arctic countries through the communication between the programme and the Arctic Council working groups and senior officials meetings.

#### E. Describe the baseline program and the problem that it seeks to address:

As described above, the policy basis for the development and implementation of the current programme is the SAP-Arctic, which was developed through the UNEP/GEF project “Russian Federation: Support to the National Plan of Action for the Protection of the Arctic Marine Environment” (NPA-Arctic). The NPA-Arctic project achieved the following outcomes:

- A Strategic Action Programme (SAP) that creates the enabling conditions, set environmental targets, and identifies necessary actions required to improve the environmental situation in the Russian Arctic;
- A set of completed Pre-investment Studies (PINs), addressing serious environmental threats posed to the Russian Arctic environment from previous and current human activities, and resulting in an optimal number of investment proposals for resource mobilization and implementation;
- Preliminary impetus for development of an Environmental Protection System (EPS) for the Russian Arctic. This will be achieved through the process of analyzing and identifying gap-filling measures for improving levels of institutional, technical, administrative and legal efficiency designed to ensure SAP implementation; and
- Through pilot activities, the removal or reduction of contaminant levels in selected pilot sites and removed/reduced levels of threats to functioning of Arctic ecosystem functioning and services. Further demonstrated approaches will include co-management with indigenous people communities and partnership with military and industry.

Although the NPA-Arctic project itself was only completed in May 2011, the Government of the Russian Federation has already taken its initiative to start implementing SAP-Arctic. Rapid and continuing implementation of SAP-Arctic is the most important baseline programme of the Russian Federation. An estimated US\$79.3 million is calculated for baseline activities associated with SAP-Arctic implementation at the federal, regional and local levels, although the full SAP-Arctic implementation is based on a wider financial basis.

Adopted in 2003, UNEP's Arctic Agenda, a program of action on sustainable development in the Arctic, defined the following priorities in polar regions that would: (i) promote cooperation between UNEP and polar stakeholders to address environmental and sustainable development issues; (ii) implement integrated ecosystem management projects to protect biological and cultural diversity in the Arctic; (iii) undertake overview assessments on emerging polar issues; (iv) develop and implement capacity building projects in cooperation with Arctic indigenous peoples and organizations; and (v) conduct outreach and education activities. Under this UNEP baseline programme, coordinated by the UNEP Polar Task Team, a number of Arctic activities are included in UNEP's Programme of Work for 2012-13.

The World Bank is developing a project that would finance initial capital to the Arctic Environment Fund (AEF), which will provide much-needed financing to eligible borrowers for environmental investments and technical assistance ensuring that these clean-up and rehabilitation activities also provide low-carbon technological solutions. AEF will mobilize expertise and financial resources for environmental clean-up and other environmental activities in AZRF, create fiscal discipline and financial accountability, and enhance transparency in priority setting and other decision making related to environmental investments in AZRF.

The proposed project would also support various capacity building efforts to improve environmental management and reduce GHGs emissions and other environmental risks in AZRF. These will likely include: (1) capacity strengthening for public agencies (relevant government ministries, and regional and municipal authorities) and other stakeholders to prepare, implement, and monitor environmental projects in AZRF; and (2) any technical assistance required for establishment and operationalization of a new financial intermediary arrangement (AEF). Discussions between the World Bank, Ministry of Economic Development, and Ministry of Finance on a possible World Bank loan to support this project are in progress.

The European Bank for Reconstruction and Development is also developing a programme to test pilot innovative measures and approaches associated with energy efficiency and renewable energy.

EBRD financing is to be channeled into projects in municipalities in a number of Arctic regions. Financing to be provided by the EBRD under the project will be combined with GEF-funded technical assistance for energy efficiency and renewable energy project development (including energy audits, specific feasibility studies, etc.). A portion of GEF funds will also be used as a non-grant instrument for pilot projects, either in direct EBRD loans, or as part of investment portfolios of smaller bundled projects under a framework agreement with local banks. This support is intended to cover first-mover and pilot costs, and demonstrate market potential and best practice to local financial institutions. Financing options will be considered during project preparation, and the most cost effective proposed. This combination of financing and sustained technical advisory services will help address investment and knowledge / capacity barriers impeding sustainable energy investments in the Russian Arctic Region. The total financial package for this baseline programme is US\$ 81.35 million, including US\$ 75 million from EBRD.

The UNDP, based on its Strategic Plan 2011-2015, is assisting the countries bordering the LMEs to protect and sustainably manage their joint resources through the implementation of several GEF LME projects. UNDP has embedded the results of the LME related work in its regular Water Strategy, which is coordinated by a full time staff member.

F. *Incremental/Additional cost reasoning*: describe the incremental (GEF Trust Fund) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF financing and the associated *global environmental benefits* (GEF Trust Fund) or *associated adaptation benefits (LDCF/SCCF)* to be delivered by the project:

The programme will seek funding from the GEF Trust Fund in the three focal areas: international waters, biodiversity and climate change mitigation. While the biodiversity and climate change mitigation funding from the GEF will reduce green house gas emission and protect unique and fragile Arctic biodiversity and ecosystems, international waters funding is justified consistent with actions identified in the SAP-Arctic, which were selected and priorities taken into consideration transboundary implications.

The programme will seek both technical assistance financing and investments. The former is necessary to provide support on policy and institutional reforms. The same type of financing will be used for knowledge and information sharing. The investments will be necessary to mobilize financial resources for the implementation of the agreed actions in the SAP-Arctic and upscaling the demonstrated effective practices and policy measures.

The proposed GEF programme is using the baseline programmes outline in section E above. Following the business as usual scenario, the baseline programme centering around the Government of Russian Federation effort to implement the SAP would be concentrated in the implementation of the agreed activities focusing on the domestic and local benefits since funding for implementation of agreed activities would be assumed by national and local funding sources.

Although SAP-Arctic was designed to achieve both global environmental and local socio-economic and environmental benefits, the global environmental benefits associated with the transboundary marine environment, biodiversity and climate change mitigation would not be fully achieved in the business as usual scenario.

The proposed GEF programme is designed to contribute to a more consolidated and continued GEF intervention for the Russian Arctic following and based on the successfully concluded GEF interventions over the past years. Building a consolidated GEF programme will require scaled up funding to fully realize global environmental benefits that the SAP-Arctic is intended to achieve. The incremental benefits the GEF programme will bring about an escalated level of implementation of SAP-Arctic. Incremental benefits will include full governance reform integrating sectoral and GEF focal area specific actions, addressing hot spots of pollutants of global and Arctic-wide significance (such as black carbon) and carbon sources in and near Arctic, as well as actions to address biodiversity hotspots.

The expected results of the programme will have longer-term consequences for environmental protection in the country beyond the Arctic region.

Alternative scenario without the proposed GEF increment and GEF's catalytic role will have the following "detrimental" impacts on the state of the Russian Arctic environment and overall multiple global environmental benefits delivered by this region:

- Experiences gained in the implementation of past projects will be lost and the ongoing initiatives by the Government and by other national, regional and international stakeholders in the Arctic will remain fragmented. Envisaged in the program “leapfrog” effect of the integrated portfolio of projects supporting technical assistance, investment and human and institutional capacity building will not be achieved. As a result the entire patchwork of multiple activities dealing with the Russian Arctic environmental protection will be left uncoordinated and ineffective. The risk of this direction will be compounded by the increasing impacts of climate change. All the above factors leading to reduced delivery of multiple global benefits across the GEF portfolio as well as negatively impact circumpolar co-operation in the Arctic;
- Significant efforts supported by the GEF in other parts of the country and lessons learned will not be fully utilized for the Arctic region;
- Transboundary co-operation between circumpolar countries will remain focused on specific regions and severely under-funded;
- The key to sustainable development in the region through support of public-private partnerships and strong engagement of business community into environmental protection will also not be realized;
- Without GEF support, the number of protected areas including marine PAs in the Russian Arctic will remain low and the processes of integrating traditional knowledge of indigenous communities into conservation decision making will not be institutionalized;
- No arctic flagship species conservation strategies taking into account global climate change will be developed taking into account best international experience;
- Wildlife management practices will continue on unsustainable path;
- Economy of Arctic regions will continue to be heavily oil- and gas-based with low penetration rate of energy efficiency and renewable energy technologies (having significant potential in the Russian Arctic) leading to continued if not increased GHG emissions;
- Opportunities for badly needed infrastructure improvements will not be utilized having significant negative impacts on the environment;
- Sources and mitigation strategies for reducing black carbon emissions as the most potent source of Arctic warming in the short-term will not be identified and technologies for reduction tested;
- Modern internationally recognized tools and methods of ICM and integrated water resources management will not be adopted for the Arctic region with important negative consequences for the local and global environment.

Additional information on alternative scenarios will be presented in each individual PIF submitted under PFD.

The programme is aimed at a reform of Russian Arctic governance to produce multiple global environmental benefits in an integrated manner. More concretely, the programme will establish a sustainable Russian Arctic policy, legislation, institutional and financial mechanisms to reduce and avoid emission of greenhouse gases, protect unique biodiversity and sustainably use ecosystem services, and build foundational capacity to address transboundary water issues.

G. Describe the socioeconomic benefits to be delivered by the Program at the national and local levels, including [consideration of gender dimensions](#), and how these will support the

achievement of global environment benefits(GEF Trust Fund) or adaptation benefits (LDCF/SCCF).

The programme will be linked directly with the Russian Arctic regional benefits, particularly through transfer of knowledge, skill development, application and replication of best practices, enhancement and protection of ecosystem services for economic well-being of Arctic peoples, and addressing threats to environmental and human health.

The proposed programme will directly and indirectly contribute to the achievement of regional and local environment benefits. It will organize partnerships of stakeholders, particularly the private sector, for promotion and facilitation of investments to rehabilitate or address environmental “hot spots” and introduce good practices and technologies for energy efficiency and renewable energy. As a result of the programme, investment will be injected to the Russian Arctic region, possible facilitating the transition to green economy in the Russian Arctic and creating green employment and business in the region.

The proposed programme will specifically pay attention to socio-economic development of indigenous peoples in the Russian North. Social structure, lifestyle and cultural diversity of the indigenous peoples in the region are closely linked with and relying on the environmental conditions. Indigenous peoples and their organizations will actively participate in the programme implementation. It is expected that the local communities, particularly indigenous communities, will be key stakeholders in governance reform, and the programme will equip these stakeholders with information, tools, policy and institutional options to assure consideration of their environmental and socio-economic concerns into governance reform decisions. Indigenous community knowledge on ecosystem management will be collected and shared for wider dissemination. In summary, a co-management approach including indigenous communities will be emphasized in this programme.

While the programme will encourage participation of both men and women in programme activities, some of the projects under the programme will target women as the main beneficiaries of local environmental and socio-economic benefits generated by the projects, through direct engagement of women in the environmental management activities proposed in this programme.

H. Justify the type of financing support provided with the GEF/LDCF/SCCF resources:

The programme will seek funding from the GEF Trust Fund in the three focal areas: international waters, biodiversity and climate change mitigation. While the biodiversity and climate change mitigation funding from the GEF will reduce green house gas emission and protect unique and fragile Arctic biodiversity and ecosystems, international waters funding will be mainly justified because of the implementation of the actions in the SAP-Arctic, which were selected and priorities taken into consideration transboundary implications.

The programme will seek both technical assistance financing and investments. The former is necessary to provide support on policy and institutional reforms. The same type of financing will be used for knowledge and information sharing. The investments will be necessary to mobilize financial resources for the implementation of the agreed actions in the SAP-Arctic and upscaling the demonstrated effective practices and policy measures.

I. Indicate risks, including climate change risks that might prevent the program objectives from being achieved, and if possible, propose measures that address these risks to be further developed during the program design:

<b>Identified Risk</b>	<b>Likelihood/Severity</b>	<b>Proposed risk management measures</b>
Lack of, or limited flow of scientific information on the changing environment in the Arctic	L	More scientific information will be gathered in all the programme components. The specific component on knowledge/information will serve an integrative function for public and policy purposes, and designed to ensure the dissemination of knowledge/information to affected stakeholders.
Weak understanding and recognition among decision-makers of socio-economic impacts of the rapidly changing Arctic environment	L	Special information dissemination through Internet and media on risks and damages will be provided as a part of all project components. Maintaining the web-portal and regular e-bulletin to facilitate information exchange will be part of the information/knowledge sharing activity.
Limited private sector involvement	L	The programme will work closely with the industrial and energy sectors. Although some of the key industrial sector participants are identified, a wider private sector involvement will be realized through the Arctic Environment Fund and energy efficiency and renewable energy related activities.
Continuation of economic crisis, which may result in the decrease in cofinancing on the part of the Russian Federation.	M	The project relies on diverse sources of cofinancing, including investments of private sector supported by international and domestic banks. Concerning national financing, the SAP-Arctic priorities were incorporated into the FTOP "World Ocean" which secured financial support by the Russian Government for the period till 2012 and beyond. As above, firmer partnership with private sector will be established through the investment related activities of the programme.
Staff and structural changes in federal bodies and regional administrations can affect project implementation	M	Inter-Agency Working Group created at the time of the NPA-Arctic will be used for the programme coordination. Based on the experiences of the GEF/UNEP NPA-Arctic project, this group will be reinforced and expanded to include representatives of all major stakeholders. This mechanism will increase programme a higher stability despite the risk of staff/structural changes that may occur.

**J. Outline the institutional structure of the program including coordination and monitoring & evaluation:**

The programme will be implemented by four GEF agencies: UNEP, UNDP, World Bank and EBRD. Each of the GEF Agencies will take on a GEF implementing agency role for the components described in Table A, Part I above. For each of the proposed projects, a national focal point is identified (either Ministry of Economic Development or Ministry of Natural Resources and Ecology) for coordination among the Russian stakeholders for each of the projects and for working closely with the designated executing agency(ies).

The UNEP/GEF project, “Russian Federation: Support to the National Plan of Action for the Protection of the Arctic Marine Environment (NPA-Arctic)”, established an institutional coordination mechanism comprised of the Project Steering Committee, Supervisory Council and Inter-Agency Working Group for the purpose of overseeing the project implementation as well as enhancing Russian inter-ministry coordination. The Inter-Agency Working Group (IAWG), composed of representatives of Russian federal and regional ministries, administrations and institutions, as well as indigenous people association, research institutes and key companies operating in the Arctic was considered to be a successful mechanism to drive agreement on the strategic action programme. IAWG was comprised of key relevant ministries and regions belonging to the Russian Arctic, and functioned as inter-ministry coordination for the implementation of the NPA-Arctic project.

For the current Programme, UNEP is designated as the GEF Programme Coordination Agency for purposes of coordinating GEF agencies with the national counterparts. UNEP will carry out the tasks of the GEF Programme Coordination Agency as defined in GEF/C.38/5/Rev.1. Within Russia, the Ministry of Economic Development (MED) in cooperation with the Ministry of Natural Resources and Ecology (MNBRE) will coordinate activities of Russian institutions participating in the programme and delivery of expected outputs. The MED will be tasked to convene and chair the Inter-Agency Working Group (see below) to be supported by the Programme Coordination Agency for the successful delivery of all programme components and achievement of the programme goal.

The GEF programme is established as the programme to implement the SAP-Arctic, which has been adopted by the Russia Maritime Board and noted by the Arctic Council. For monitoring the implementation of the programme, the following mechanism will be established, building upon the existing successful institutional and management framework of the NPA-Arctic Project:

- The GEF Arctic Program Strategic Council will be higher lever strategic programme coordination body to ensure coherence of this quite complex programmatic approach. The Council could be established right after the PFD approval by the GEF Council in order to coordinate the preparation of individual projects, to oversee the overall programme implementation progress and to provide strategic directions to the programme and to assure coordination among all programme partners. GEF agencies, MED, MNRE, GEF Secretariat and key programme co-financiers will constitute such strategic programme coordination group, chaired by the PCA;
- The Inter-Agency Working Group of the NPA-Arctic project will be reformed into the Inter-Agency Working Group (IAWG) for the Russian inter-ministry and inter-sectoral coordination of the implementation of the AA2020 and all the component projects under the programme, and for monitoring the implementation of the SAP-Arctic. The membership of the Working Group will be reviewed and will be expanded to include Russian institutions that will play a key role in the implementation of the SAP-Arctic and the GEF programme; and
- A Programme Implementation Monitoring Group (PIMG) will be established, comprising of the GEF Agencies and main international and Russian executing agencies for the component projects under the programme. PIMG will be co- convened and co-chaired by the GEF Programme Coordination Agency and MED. The PIMG will meet in conjunction with the project steering mechanism for the improvement of

environmental governance and coordination of SAP-Arctic Implementation project and in line with the GEF Annual Monitoring System. This mechanism solicits and consolidates the information on the progress in component project implementation and prepares Annual Programme Performance Reports for submission to the GEF.

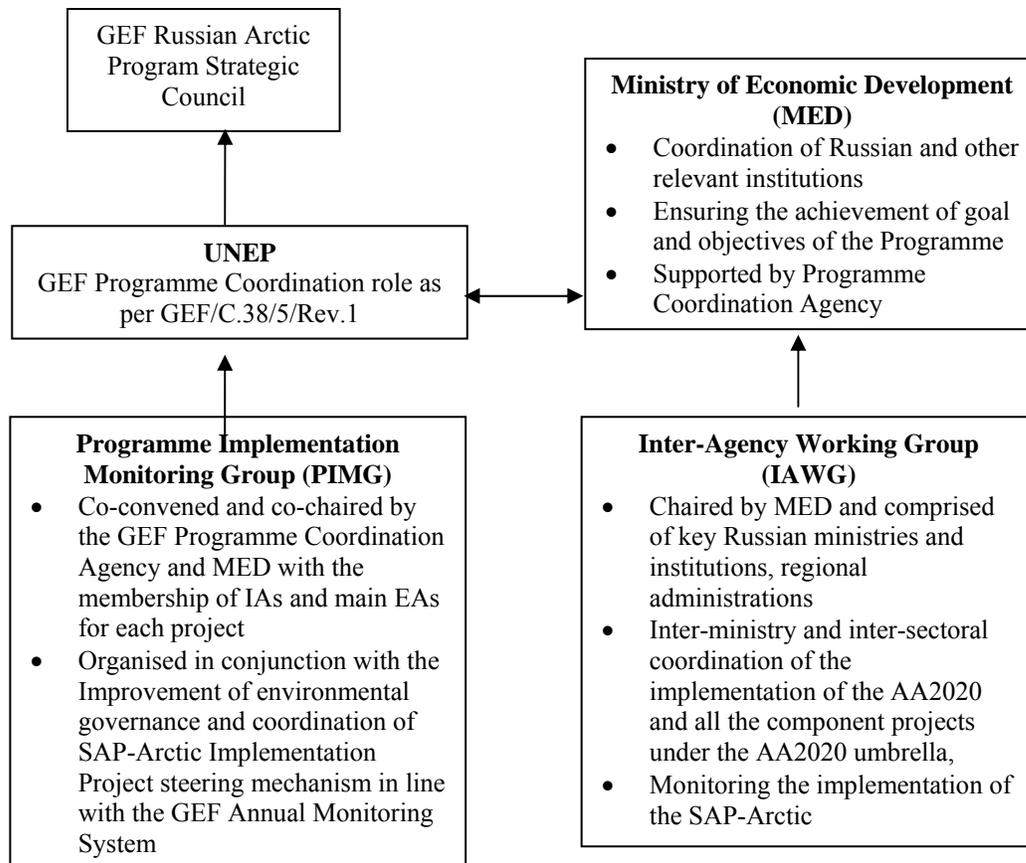


Figure 1: proposed institutional coordination mechanism for AA2020

K. Identify key stakeholders involved in the program including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:

The key stakeholders involved in the programmes are identified as follows:

- Arctic level: Arctic Council and its working groups (CAFF, ACAP, PAME and AMAP), the other Arctic Council member countries than the Russian Federation – Progress in the implementation of the programme will be reported to the Arctic Council through the Russian Federation representative. Arctic Council working groups will be directly involved in execution of the programme components.
- National government: Ministry of Economic Development, Ministry of Natural Resources and Ecology, Ministry of Regional Development, Roshydromet - The Ministry of Economic Development (MED). The Ministry of Natural Resources and Ecology (MNRE) will be the principal national counterparts of the project. The MED

will coordinate programme implementation, and will also be responsible for establishment of the Arctic Environmental Fund and for elaboration of methodological and regulatory provisions of the public-private partnerships development for investments. MNRE will be responsible for the introduction of harmonized environmental legislation and institutional and management mechanisms/structures.

- National research institutes: Institutes under the Russian Academy of Sciences (Institute of Oceanography, Institute of Geography, etc.), All-Russia Scientific Research Institute for Nature Conservation – These research institutes have developed their scientific information bases that will be used for the programme implementation. They will execute relevant component activities, based on their technical capacity.
- Regional administrations: Oblasts and other regional administrative units, of which geographic coverage are wholly or partly included in the Arctic Zone of the Russian Federation. They will be involved in the policy, legal and institutional reforms.
- Non-Governmental Organisations and Indigenous Peoples' Organizations: RAIPON, Northern Forum. RAIPON and other indigenous people's organizations will continue playing the active role in the implementation of the component activities that are relevant to indigenous people. WWF Russia will play an active role in the implementation of the components activities related to biodiversity conservation and mobilizing expert and public support to the programme implementation.
- International/UN organisations: United Nations Environment Programme, United Nations Development Programme
- Financial institutions: World Bank, European Bank for Reconstruction and Development, Nordic Environment Financing Corporation, Vnesheconombank (the Russian Development Bank) will act as a catalyst for private investments in priority environmental projects associated with the Arctic Environment Fund.
- Private sector: Gazprom, Rosneft, Norilsk Nickel, and other Russian companies - Rosneft will cofinance activities relevant to oil related environmental pollution, and Gazprom will cofinance studies on strategic environmental assessments and co-management projects with indigenous people.

L. Indicate the co-financing amount the GEF agency is bringing to the project:

This programme is based on the baseline programmes of multiple GEF Agencies. Each of the GEF Agency co-financing is indicated below:

UNEP: UNEP's Arctic programme is included in its Programme of Work and coordinated by its Polar Team. The in-kind co-financing from UNEP is US\$950,000 for the programme duration.

UNDP: UNDP's co-financing is associated with the implementation of its Water Strategy, and thus calculated at US\$300,000 for the duration of the West Bering Sea related activities.

World Bank: Discussions are ongoing between the World Bank, Ministry of Economic Development and Ministry of Finance regarding possible IBRD loan co-financing for this project. A loan amount of approximately US\$100 million has initially been discussed.

EBRD: EBRD co-financing is its lending resources with US\$75 million.

M. How does the program fit into the GEF Agency's program (reflected in documents such as UNDAF, CAS, etc.) and the Agency staff capacity in the country to follow up program implementation:

UNEP is the only GEF Implementing Agency whose core business focuses on the environment.

Its role is centered on catalyzing the development of scientific and technical analysis and in advancing environmental management in GEF-financed activities. UNEP provides guidance in relation to GEF-financed activities for global, regional and national environmental assessments, policy frameworks and plans, and to international environmental agreements.

UNEP also hosts the coordination office of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), the global intergovernmental programme that addresses the connectivity between freshwater and the coastal environment. The GPA provides leading advice to countries to help them address land based sources of marine pollution such as nutrients, including through National Programmes of Action (NPAs) that implement the GPA at the national level. Under the leadership of UNEP and GPA, this project will capitalize on the experience and existing networks of UNEP Divisions, Regional Seas Programmes and GPA Action Plans around the world as well as the expertise from other UN Agencies and initiatives such as those of UNESCO, FAO, UNIDO, UNDP, UN Task Force on the International Year of Sanitation, GPA Review Meeting, UN-Water and UN-Oceans.

In a decision adopted by the X<sup>th</sup> Special Session of the UNEP GC/GMEF on sustainable development of the Arctic Region, UNEP is encouraged to co-operate with the Arctic Council, MEA, and other bodies as well as through cooperation with other institutions to seek means for sustaining and enhancing Arctic observing networks. The UNEP mandate for the Arctic in general and Russian Arctic particularly is described in this Resolution and reflects upon UNEP's MTS for the period 2010-2013, programs of work for several thematic divisions and other UNEP strategic documents such as Climate Change Strategy, its Ecosystem Management Programme and other UNEP's strategic documents.

Adopted in 2003 UNEP's Arctic Agenda describes a program of action on sustainable development in the Arctic and contains the following priorities in polar regions: (i) promotion of cooperation between UNEP and polar stakeholders to address environmental and sustainable development issues; (ii) implementation of an integrated ecosystem management projects to protect biological and cultural diversity in the Arctic; (iii) undertaking overview assessments on emerging polar issues; (iv) developing and implementing capacity building projects in cooperation with Arctic indigenous peoples and organizations; and (v) conducting outreach and education activities.

UNEP has presence in the Russian Federation through its Moscow office with dedicated technical staff who assures appropriate supervision of programme coordination.

The United Nations Development Programme (UNDP) addresses poorly managed and uncoordinated human activities across sectors that are threatening shared international water resources and the livelihoods of people who depend on them. UNDP has established itself as one of the leading international organizations supporting the improved governance of both freshwater and marine transboundary water bodies.

UNDP-GEF projects in the IW focal area aim to achieve a comprehensive, ecosystem-based approach to the sustainable management of international waters and to address both development and ecological needs. UNDP has supported catalytic and foundational activities for a number of successful LME and ICM projects. It has also been the implementing agency for IW:Learn since its inception in 1998, and now oversees the new IW:Learn3 project "Strengthening IW Portfolio Delivery and Impact", which will support the establishment of both the ground- and surface water CoP and the further development of new knowledge management activities including the preparation of a TDA/SAP training course, and a new GEF-IW manual. UNDP will leverage their aforementioned expertise and build upon its programmatic strengths in support of the proposed project and in coordinating the activities.

UNDP's overall mission is to promote sustainable development, and the proposed project fits with UNDP's Strategic Plan 2011-2015, and the four development focus areas: (i) Poverty

reduction and the MDGs; (ii) Democratic Governance; (iii) Crisis Prevention and Recovery and (iv) Environment and sustainable development. UNDP became a recognized global leader assisting the countries bordering the LMEs to protect and sustainably manage their joint resources through the implementation of several GEF LME projects. Recently UNDP is embedding the results of this work in its regular Water Strategy, and is recruiting a full time staff in HQ to deal with LME and knowledge management issues within UNDP.

UNDP also operates the Project Support Office in the Russian Federation.

The World Bank involvement in project preparation and implementation will enable to attract additional financial resources (the loan), as well as global knowledge on the improvement of environmental management systems, development of strategies and national programs of adaptation to climate change, promotion of public-private partnership (PPP) mechanisms.

The Bank has extensive experience in the implementation of environmental management projects in transition economies and developing countries: Poland, India, Mexico, etc. Implementation of the Program of Environmental Rehabilitation in the AZRF with the assistance of the Bank loan will enable to improve the efficiency of addressing major Program objectives using the Bank experience gained in the implementation of similar projects in other countries. Of great importance is the opportunity to use the unique Bank experience in the application of carbon financing instruments, as well as in the development and implementation of innovative financing mechanisms assuming complementary use of GEF grants, World Bank lending, allocations from the federal and regional budgets, as well as own and borrowed funds of companies.

In addition, the use of the World Bank loan will provide a number of other advantages:

- Long-term stable financing in guaranteed volumes throughout the whole project period irrespective of the internal and external economic situation, which is extremely important for the success of a project aimed at improving the regional environmental management system in the AZRF that needs large-scale investments and traditionally suffers from the lack of financial resources;
- Independent supervision and monitoring of the project implementation progress by the Bank, including the achievement of specific outcomes and meeting the agreed targets;
- Use of the implementation experience of the Framework Environmental Management Program (1995-2011) financed from the World Bank loan, GEF grants and other outside donor assistance.

As of end August 2011 the World Bank indicated preliminary agreement to act as the GEF Implementing Agency for the project 2 “Financial mechanisms for rehabilitation of the Russian Arctic Environment” subject to a request from the Government of the Russian Federation for preparation of a lending operation to support the project. Discussions between the World Bank, the Ministry of Economic Development and the Ministry of Finance on possible IBRD financing are in progress.

The EBRD is committed to supporting energy efficiency and renewable energy in Russia by providing debt and equity financing, donor-funded technical support to clients for project development, as well as policy support to government aimed at establishing effective regulatory framework for energy efficiency and renewable energy investments. In 2009 the Bank signed a Memorandum of Understanding with the Ministry of Economy of the Russian Federation regarding the implementation of a Sustainable Energy Action Plan for Russia, thereby pledging to scale up support in the area of energy efficiency.

Since the launch of its Sustainable Energy Initiative in 2006, EBRD has provided over € 1.6

billion of its own financing for energy efficiency projects in Russia for a total project size of over Euro 8.4 bln. These projects cover all sectors of the Russian economy, including private industry, small and medium sized companies, power and natural resource sectors, municipal infrastructure. Municipal infrastructure is one of the key sectors for EBRD and the Bank has already provided over EUR 800 million to support 43 municipal infrastructure projects in Russia for a total project size of EUR 3,56 billion.

The EBRD is actively working in the region covered by the GEF Russian Arctic Program – financing energy efficiency in municipal infrastructure, gas flaring reduction and industrial energy efficiency projects. For example, over the past 10 years the Bank has financed 7 projects in the Khanti-Mansi region alone, for a total investment amount of over RUR 6,5 bln. (EUR 162,5 mln.). The projects related to retrofit and energy efficient upgrade of municipal infrastructure. Past projects in the region covered by the Arctic Program also include financing municipal water services development in Archangelsk (in Roubles, for a total amount equivalent to EUR 8,6 million), whereby part of the project has been co-financed with an Northern Dimension Environmental Partnership (NDEP) grant., as well as RUB 1.5 bln. loan provided for modernisation of district heating system in Sakha Republic (Yakutia).

EBRD is also active in promoting gas flaring reduction projects in the region. In 2010 EBRD has provided a \$87 million loan to an independent Russian company Monolit to finance the construction of a gas processing plant and begin commercial utilisation of the Associated Petroleum Gas (APG) from the Zapadno-Salymskoe oil & gas field in the Khanty-Mansi region, jointly controlled by two oil and gas companies.

Finally, EBRD is active in supporting industrial energy efficiency projects in the region. In 2009 the EBRD has raised \$250 million in long-term funding for Integra oil service company, which operates several manufacturing facilities in Russia producing drilling equipment. As part of this transaction EBRD arranged an energy audit of Integra’s production facilities in Tyumen (Khanti-Mansi region), which helped identify profitable energy saving opportunities leading to 29% energy savings (typical projects related to the upgrade of compressors, boilers, heat treatment units, etc.). Some of these investments have been included in the EBRD financing package.

All these projects rely on extensive donor-funded support provided to clients for technical feasibility studies, project preparation and implementation.

**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINTS (S) AND GEF AGENCY(IES).**

**A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT (S):** (Please attach the Operational Focal Point endorsement letter (for Qualifying GEF Agency) and Operational Focal Point endorsement letter (for Program Coordination Agency) with this template.

<b>NAME</b>	<b>POSITION</b>	<b>MINISTRY</b>	<b>DATE</b> <i>(MM/dd/yyyy)</i>
Mr. Rinat Gizatulin	Deputy Minister	MINISTRY OF NATURAL RESOURCES AND THE ENVIRONMENT OF THE RUSSIAN	07/29/2011

		FEDERATION	

**A. GEF AGENCY (IES) CERTIFICATION**

This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF LDCF/SCCF criteria for project identification and preparation. Following the new project cycle (Enter Agency (ies) name) will submit all PIFs under the program within 6 months after Council approval of the PFD.

<b>Agency Coordinator, Agency name</b>	<b>Signature</b>	<b>DATE (MM/dd/yyyy)</b>	<b>Project Contact Person</b>	<b>Telephone</b>	<b>Email Address</b>
Maryam Niamir-Fuller, UNEP		09/06/2011	Takehiro Nakamura		takehiro.nakamura@unep.org
Yannick Glemarec, UNDP		09/06/2011	Vladimir Mamaev		Vladimir.mamaev@undp.org
Karin Shepardson, World Bank		09/06/2011	Angela Armstrong		aarmstrong@worldbank.org
Marta Simonetti-Whitford EBRD		09/06/2011	Peter Hobson		phobson@ebrd.com



## LIST OF PROJECTS UNDER THE PROGRAM FRAMEWORK

Projects Submitted for Council approval in this work program + Future submissions (inclusive of PPG):							
Project Title	GEF Amount (\$)			Total GEF Amount (\$)	Agency Fee (\$)	Total (\$)	Expected Submission Date
	IW	CCM	BD				
	Project	Project	Project				
FSP Submitted with PFD in the work program							
6. Targeted support for energy-efficiency and renewable energy in the Russian Arctic		6,422,017	0	6,422,017	577,983	7,000,000	Same as Framework Document
5. Integrated adaptive management of the West Bering Sea Large Marine Ecosystem in a Changing Climate	3,361,000	0	0	3,361,000	302,490	3,663,490	
3. Conserving Biodiversity in a Changing Arctic	0	917,431	5,045,871	5,963,302	536,698	6,500,000	
<b>Total</b>	<b>3,361,000</b>	<b>7,339,448</b>	<b>5,045,871</b>	<b>15,746,319</b>	<b>1,417,171</b>	<b>17,163,490</b>	

<b>MSPs Submitted for CEO approval</b>							
<b>Total</b>							
<b>FSP Projects to be submitted in future work programs:</b>							
1. Improvement of environmental governance and knowledge management of SAP-Arctic Implementation	917,431	917,431	458,716	2,293,578	206,422	2,500,000	Intersessional Work Programme March 2012
2. Financial mechanisms of environmental rehabilitation in the Russian Arctic	1,834,862	3,669,725	0	5,504,587	495,413	6,000,000	Intersessional Work Program March 2012
4. Integrated River Basin Management for major Arctic rivers to achieve comprehensive benefits	917,431	0	917,431	1,834,862	165,138	2,000,000	Intersessional Work Program March 2012

<b>Total FSPs</b>	<b>3,669,724</b>	<b>4,587,156</b>	<b>1,376,147</b>	<b>9,633,027</b>	<b>866,973</b>	<b>10,500,000</b>	Intersessional Work Program March 2012
<b>MSP Projects to be submitted for CEO approval</b>							
1			0			0	
2			0			0	
3			0			0	
4			0			0	
<b>Grand Total</b>	<b>7,030,724</b>	<b>11,926,604</b>	<b>6,422,018</b>	<b>25,379,346</b>	<b>2,284,144</b>	<b>27,663,490</b>	

Note: Qualifying GEF Agencies submitting the PFD do not need to fill this table. For all other GEF Agencies, fill in the focal area split, if any. If more than two focal areas involved, add columns as necessary.

**Program Coordination Budget will be submitted as a separate and additional document = USD 500,000 from GEF and USD1,590,000 from co-financing.**



**PROGRAMME FRAMEWORK DOCUMENT**

GEF-Russian Federation Partnership on Sustainable Environmental Management in the Arctic under a Rapidly Changing Climate (“Arctic Agenda 2020”)

Preliminary Project Summaries

**Project 1      **Improvement of environmental governance and knowledge management for SAP-Arctic Implementation****

**Justification of the problem:**

The Strategic Action Program for Protection of Environment in the Arctic Zone of the Russian Federation (SAP-Arctic) sets the goals, tasks, principal activities and targets in the area of protecting Arctic environment for the period up to 2020. The SAP-Arctic takes into consideration the growing importance of the Russian Arctic environment in national, regional and global contexts as well as economic development impacts on, and consequences of changes in, the Arctic climate and ecosystems.

The SAP-Arctic describes five (5) priority issues relating to sustainable environmental and natural resource conservation, use and management that are of national and global concern. These include: deterioration of the Russian Arctic environment by natural and anthropogenic sources of pollution; land degradation and problems of land use; rapid changes in biodiversity and depletion of biodiversity resources; adverse effects of environmental deterioration on indigenous populations of the Russian Arctic; and negative impacts of climate change on the Arctic environment.

To effectively cope with the priority environmental problems in the Russian Arctic, the SAP-Arctic sets specific objectives for national implementation and Arctic regional cooperation. These objectives include prevention and abatement of environmental pollution caused by transboundary pollutant transfer; oil, chemical, and radioactivity contamination; mitigation and avoidance of green house gases; preservation and improvement of the quality of environment and conditions for traditional nature use by indigenous people of the North; and the prevention and reduction of negative consequences of natural and human-caused disasters, including those associated with global climate change.

**Project objectives:**

The proposed SAP-Arctic Implementation project supports the underlying goal of the Arctic Agenda 2020 Programme in catalyzing multi-state cooperation and mobilizing domestic and international financial resources. The project aims to assist the Russian Federation in promoting sustainable and integrated environmental management as well as mainstreaming climate change challenges into the federal and regional programmes of the Russian Arctic.

The specific objectives of the proposed project are four-fold: 1) strengthen and improve national governance systems to provide a means for joint management of transboundary problems in the Arctic LME; 2) improve biodiversity conservation legislation both at the federal and regional level; 3) address climate change mitigation in the Russian Arctic through developing capacity to harness climate benefits of black carbon and other Short-Lived Climate Forcers (SLCF) mitigation strategies; and, 4) develop knowledge management capacity in the Russian Arctic to improve performance, innovation, the sharing of lessons learned, integration and continuous

promotion of sustainable and integrated environmental management while mainstreaming climate variability and change into national and regional development.

**Project consistency with the GEF focal area strategies:**

This project will contribute to the implementation of Focal Area Strategies and Strategic Objectives for GEF-5, promoting synergetic effects between GEF international water, biodiversity conservation and climate change mitigation strategies through innovative measures toward low-carbon environmentally-sound development path as well as conservation and rehabilitation of ecosystem services in river basins, coastal and marine environment of the Russian Arctic. In particular, under International Waters Focal Area Strategic Objective IW- 2, the project will carry out “Implementation of agreed Strategic Action Programmes (SAPs) incorporates ecosystem-based approaches to management of LMEs, ICM principles, and policy/legal/ institutional reforms into national/local plans.” The project is also consistent with the Climate Change Focal Area Strategic Objective CCM -1: Promote the demonstration, deployment, and transfer of innovative low-carbon technologies; as well as the Biodiversity Focal Area Strategic Objective BD-2: Mainstream Biodiversity Conservation and Sustainable Use into Production Landscapes, Seascapes and Sectors.

**Project consistency with national strategies and international activities:**

The proposed project builds on the success of the UNEP/GEF RF NPA-Arctic project, aimed to catalyze actions leading to transformation impact to improve environmental status of Arctic coastal and marine ecosystems in accordance with priorities identified in the SAP-Arctic and endorsed by the Maritime Board at the Government of the Russian Federation in June 2009. The SAP-Arctic covers seven large marine ecosystems (Parents, Kara, Laptev, East Siberian, Chukchi, West Bering and Arctic Sea LMEs). The current project will support key outcomes of the Arctic Programme AA2020 by i) implementing the agreed SAP–Arctic and incorporating an ecosystem-based approach into national, regional and local development strategies and plans; ii) introducing harmonized environmental mechanisms and/or structures including adoption of sustainable legislation, policy and institution; iii) incorporating and updating SAP-Arctic to reflect climatic variability and change in Russian Arctic especially at coasts and in LMEs; and iv) coordination of the implementation of the SAP-Arctic and AA2020.

The project will support implementation of the Framework State Policy of the Russian Federation in the Arctic up to 2020 and beyond; the Marine Doctrine; the Environmental Doctrine and the Concept of the long-term socioeconomic development of the Russian Federation as well as the Federal Targeted Program “World Ocean”. The project is responding to the analysis and recommendations of the Third National Communication of the Russian Federation to the UNFCCC and a number of strategic plans and laws at federal and regional levels on energy efficiency and renewable energy. Russian Arctic remains very high carbon intensive economy with significant contributions to the overall GHG emissions of the country. Climate change induced intensification of economic activities might exacerbate this situation further. The proposed project will also contribute substantively to compliance with the relevant multilateral environmental agreements and programmes (CBD, UNFCCC, GPA, Ramsar) and input into international cooperation through the Arctic Council and its working groups (ACAP, PAME, AMAP, SDWG), and Arctic Marine Strategic Plan.

In 2009, the Tromsø Declaration of the Arctic Council noted the role that short-lived forcers such as black carbon, methane, and tropospheric ozone may play in Arctic climate change, and recognized that reductions of emissions of these compounds and their precursors have the

potential to slow the rate of Arctic snow, sea ice, and sheet ice melting in the near term. The Arctic Council further established the Task Force on Short-Lived Climate Forcers (SLCF) to identify existing and new measures to reduce emissions of these forcers and to recommend further immediate actions that can be taken, and to report on progress at the 2011 Ministerial meeting.

In the Russian Arctic, research institutes have randomly studied some aspects of black carbon emissions, their deposition on the snow and ice cover and the associated warming effects since the late 1980s. However, no inventory on sources of black carbon emissions in Russia has been created, and no consolidated overview of scientific data on the problem exists.

### **Project overview:**

The project will provide foundational support for facilitating Arctic regional multi-state governance and cooperation towards achieving the overall objective of the Arctic Programme (AA2020). Main areas of project activities (Components) include: 1) introduction of harmonized environmental legislation and institutional and management mechanisms/structures in AZRF; 2) introduction of mechanisms for participation of indigenous peoples in environmental rehabilitation and mainstreaming climate change and variables into traditional economic activities of indigenous peoples in AZRF and improving the efficiency of traditional nature use; 3) improvement of legislation in order to prevent negative environmental impacts from mining oil and gas resources on the shelf; 4) Arctic Black Carbon (BC) and other SLCFs mitigation strategies; and, 5) identification, creation, distribution, and enabling adoption of insights and experiences of SAP-Arctic and AA2020 implementation.

GEF Climate Change Mitigation, Biodiversity, and International Waters funding will be respectively sought in combination with substantial amount of co-financing. For the time being, pollution related activities will be funded through co-finance.

### **Component 1. Introduction of harmonized environmental legislation and institutional and management mechanisms/structures in AZRF.**

Activities of Component 1 will involve implementation of multilateral environmental agreements to which the Russian Federation is signatory. Environmental governance in AZRF will be improved and/or strengthened at international, federal, sub-national and corporate level. Improvements and/or strengthening will be achieved through the establishment of new institutional mechanisms of environmental governance incorporating ecosystem-based approaches to management of the Russian Arctic ecosystems, and the involvement of representation of multiple stakeholders (i.e., the Arctic Forum) and use of the SAP-Arctic to target regional environmental priorities.

Interventions will also support mainstreaming of the integrated environmental management concept into socioeconomic development strategies for the Arctic Zone of the Russian Federation as well as introduction of Strategic Environmental Assessment procedures in territorial planning and development programs. It is expected that this component will develop, present to and discuss with the key stakeholders, finalize and present for the Russian Federal government approval an Integrated Management Plan (Plan) for the Russian portion of the Barents Sea, using national documents, assessments, experience and data, as well as best practices in the world (notably, Norwegian Barents management plan, as well as other successful examples). The Plan will be developed with stakeholder input and submitted to the Russian Federal Government for its approval.

The first preparatory stages for development of the Plan were conducted by WWF Russia. Activities include mapping of sensitivity and vulnerability to oil spills (in cooperation with

Murmansk Marine Biological Institute), presenting and discussing the planning concept to key stakeholders (including federal and regional legislative and executive authorities, academia, key industries, public), creation of experts pool for further development of the Plan, and establishment of cooperative links to international experts.

**Component 2. Introduction of mechanisms for participation of indigenous peoples in high-level decision making processes on nature protection and environmental rehabilitation and improving the efficiency of traditional nature use in the Arctic region.**

Innovative national-and regional-level mechanisms for participation of and interaction between indigenous people, industrial companies, and national and regional governments in decision making concerning the Russian Arctic environment will be developed and introduced in coordination with the parallel field-based activities under the AA2020 project #3 (Biodiversity Conservation). The most important expected outputs of this component:

- Program to support the national-level dissemination of lessons and experiences from the field-based tests implemented under project #3 (Biodiversity Conservation) on renewable energy sources use by indigenous people;
- Biodiversity conservation priorities (as emerging from the experience of the AA2020 Biodiversity Conservation project #3) mainstreamed into high-level policy and decision making processes at the national level;
- Mechanisms for indigenous peoples engagement in high-level policy formulation and decision making processes with regards to the sustainable utilisation patterns of wildlife resources under a changing climate and environmental conditions (in coordination with AA2020 project #3 on Biodiversity Conservation).

**Component 3. Improvement of legislation in order to prevent negative environmental impacts from mining oil and gas resources on the shelf.**

Under this component the following activities will be implemented:

- Analysis and improvement of legislation and normative documents regulating environmental requirements related to exploration of hydrocarbon deposits on the continental shelf of the Russian Federation, and harmonization with the legislation and normative-legal regulation of countries leading marine development of hydrocarbon fields;
- Assist in the development of normative documents on risk analysis in the operation of hazardous production facilities and in elaborating a regulatory framework for liability insurance for injury from the conduct of operations during exploration, prospecting and development of hydrocarbons on the continental shelf of the Russian Federation;
- Development of regulations for innovative biotechnology remediation of oil-polluted areas; and,
- Development of an emergency response system to oil spills to ensure protection of especially sensitive coastal areas in the Barents sea and the White sea

**Component 4. Arctic Black Carbon (BC) and other SLCFs mitigation strategies:**

**This Component** will focus on pilot technology transfer activities supported by assessment of specific technologies. The latter will be informed by the first ever inventory of black carbon in the Russian Arctic,

Recently released by the Arctic Council AMAP WG “Black carbon assessment provides the first cumulative data about black carbon emissions in the circumpolar Arctic. Data from the Russian Federation are absent and all estimates are based on models. This is the reason why the GEF

project is critical to collect necessary data in the Russian Arctic on black carbon emissions in order to design respective policies and transfer technologies. Many technologies reducing black carbon when implemented will have double benefits for reduction of GHG emissions and black carbon. These technologies will be considered on a pilot basis, particularly those in the domestic heating sector. Interventions in this sector are also complementary to other projects in the program, specifically WB and EBRD projects.

The project aims to collect so much needed estimates of different source categories of black carbon in the Russian Arctic, raise awareness about short-term climate forces among different stakeholders and start helping carefully selected municipalities in adopting selected technologies.

Following up to the assessment of the main black carbon source categories in Russian Arctic, carefully designed technology transfer activities will be implemented in the selected municipalities utilizing experience of neighboring Arctic countries. While all key sources categories will be considered for limited technology transfer pilots (on- and off-road transportation, domestic heating, open biomass burning, marine shipping, and gas flaring), technologies providing double benefits (improved energy efficiency and reduced GHG and black carbon emissions) will be considered first. In this context and taking into account complementarity with other projects in the program, domestic heating sector and potentially gas flaring will be prioritized. This component will seek to learn from experiences to bring sufficient evidence base on the impacts of black carbon on Arctic climate and associated environmental benefits to the federal level. No single Arctic country currently controls emissions of black carbon per se, while controlling PM emissions in the first place. Similar, Russia has a number of policies and regulations controlling PM emissions. Black carbon-specific recommendations for amendments to the existing PM regulations are envisaged as outcome to this component in addition to clearing house mechanisms and pilot demonstrations at the municipal level.

As one of the project outcomes the National Clearing-House Mechanism on BC and SLCFs, whose responsibilities would include: capacity development in monitoring and estimating emissions and transport of BC and SLCFs from different sources of emissions to snow and ice-covered areas; creation of a learning and knowledge management system on BC and SLCFs and awareness raising and information dissemination among local citizens, NGOs, expert communities and policymakers at the national, regional and local levels on the danger and harm of black carbon – will be established. A clearing-house mechanism will facilitate the exchange of information on Russian Arctic BC and SLCFs and assist the Russian Federation to better cope with issues relating to short-lived climate forcers. The mechanism will also serve as a means to mobilize experience and expertise, including facilitation of effective scientific, technical and financial cooperation, as well as capacity-building. Global access to a variety of scientific, technical, environmental, legal and capacity building information will be provided through various communication channels in, at a minimum, Russian and English languages.

Funding for this component comes primarily from CCM-1 objective and will be used to support technology assessment and pilot demonstrations and deployment of technologies. Establishment of clearing house mechanism and other associated activities will primarily be supported by co-financing sources and at limited extent integrated into mainstream activities of other components in project #1.

#### **Component 5: Identification, creation, distribution, and enabling adoption of knowledge and experiences of SAP-Arctic and AA2020 implementation**

This component will establish institutional coordination mechanisms as well as monitoring and evaluation frameworks for the implementation of the SAP-Arctic by removing critical knowledge barriers and developing requisite institutional capacities for knowledge management and dissemination of good practices among Arctic stakeholders. The knowledge management

component will also incorporate capacity building and knowledge generation to address climatic variability and change in the Russian Arctic.

Key efforts will involve setting up of a venue through which knowledge and information are continuously and systematically shared among projects and initiatives under the implementation of SAP-Arctic and AA2020 as well as among the GEF-related agencies and partners. This will include a joint web portal; monthly e-bulletin; and a knowledge management series on good practices, experiences, and lessons learned in implementation, monitoring, evaluation and institutional coordination in achieving the underlying goal of the Arctic Agenda 2020 Programme. Innovative considerations driving knowledge management efforts (such as facilitating and managing innovation and organizational learning, leveraging the expertise of people across the Arctic, and increasing network connectivity between individuals and organizations) will be explored and implemented throughout the project period.

### Key participants and partners

UNEP is the GEF implementing Agency for the project.

The Ministry of Economic Development RF, the Ministry of Natural Resources and Ecology RF, and regional administrations will be key Russian participants of the project.

Gasprom, Rosneft, Norilsk Nickel, other companies, municipalities, research institutes and universities, WWF Russia and other environmental NGOs will participate in the project as partners.

The Arctic Council's ACAP Working Group, Arctic Council's Project Steering Group on SLCF, Swedish EPA, UNECE, U.S. EPA, Department of Agriculture and NOAA governmental and non-governmental organizations from other countries are key international participants and partners.

### Financing and co-financing (inclusive of PPG)

Sources of financing	Name of financier	Type of financing	Amount (\$)
GEF TF (CC, BD, and IW)		Grant	2,500,000
UNEP		In kind	250,000
Bilateral Agencies	Swedish EPA, USDA, EPA, NOAA	In kind, grants,	500,000
Multilateral Agencies	Arctic Council's ACAP Working Group, Arctic Council's Project Steering Group on SLCF, NEFCO, NVV	Grants, soft loans (NEFCO)	1,250,000

Government of Russia, regional, administrations,		Grants, in kind	5,800,000
Private sector	Gasprom, Rosneft, Norilsk Nickel, other companies	Equity, in kind	2,000,000
CBO	WWF Russia and other environmental NGOs	In kind	200,000
<b>Total financing</b>			<b>12,500,000</b>

## **Project 2: Financial mechanisms of environmental rehabilitation in the Russian Arctic**

### **Justification:**

As described for Project 1 above, the SAP-Arctic sets the goals, tasks, principal activities and targets in the area of protecting Arctic environment for the period up to 2020. The SAP-Arctic takes into consideration the growing importance of the Russian Arctic environment in national, regional and global contexts, as well as economic development impacts on, and consequences of changes in, Arctic climate and ecosystems. To achieve the set objectives and implement the actions described in the SAP-Arctic, financial resources will need to be mobilized through a partnership among the financial institutions, the private sector and public institutions.

### **Project objectives:**

Project 2 is also directly devoted to the SAP-Arctic Implementation and supports the underlying goal of the Arctic Agenda 2020 Programme in mobilizing domestic and international financial resources. The project aims to assist the Russian Federation in promoting sustainable and integrated environmental management as well as mainstreaming low-carbon solutions into federal and regional environmental programmes, and financing programmes of environmental rehabilitation in the Russian Arctic. There are two specific objectives: (i) strengthening and improving national financial systems to provide a means to address management of transboundary problems in the Arctic LME and to address climate change mitigation in the Russian Arctic; and (ii) establishment of financial mechanisms and public-private partnership schemes to promote low-carbon, environmentally-sound development practices and to demonstrate and evaluate technological and non-technological mitigation options.

### **Project consistency with the GEF focal area strategies:**

This project will contribute to the implementation of the Focal Area Strategies and Strategic Objectives for GEF-5, particularly Climate Change focal area Strategic Objectives CCM -2: Energy Efficiency: Promote market transformation for energy efficiency in industry and the

building sector and CCM-3 Renewable Energy: promote investment in renewable energy technologies.

The project is also consistent with Strategic Objectives for International Waters IW- 2: “Implementation of agreed Strategic Action Programmes (SAPs) incorporates ecosystem-based approaches to management of LMEs, ICM principles, and policy/legal/ institutional reforms into national/local plans”.

The proposed project will support overall project key outcomes by i) helping implement the agreed SAP–Arctic; and ii) introducing harmonized environmental mechanisms and/or structures including innovative financial solutions (i.e., Arctic Environmental Fund) for pollution reduction, climate change mitigation.

**Project consistency with national strategies and international activities:**

The proposed project will catalyze actions and financial resources leading to transformational impact to improve environmental status of Arctic coastal and marine ecosystems in accordance with priorities identified in the SAP-Arctic and endorsed in June 2009 by the Maritime Board of the Government of the Russian Federation.

The project will support implementation of the Framework State Policy of the Russian Federation in the Arctic up to 2020 and beyond, the Marine Doctrine; the Environmental Doctrine and the Concept of the long-term socioeconomic development of the Russian Federation and the Federal Targeted Program “World Ocean”.

**Project overview:**

The proposed project will mainly consist of two major components: Capacity Building and Financial Intermediary. The initial concept of these components is as follows:

**Capacity Building:** The proposed project would support various capacity building efforts to improve environmental management, introduce low-carbon development approaches and reduce environmental risks in AZRF. These will likely include: (1) formulating a new legal framework specifically catered towards addressing priority environmental issues in the Arctic as a platform for mitigating environmental risks; (2) preparing new rules, regulations, guidelines and standards for environmental and infrastructure investments to increase resiliency against climate change; (3) capacity strengthening for public agencies (relevant government ministries, and regional and municipal authorities) and other stakeholders to prepare, implement, and monitor environmental projects in AZRF; (4) any technical assistance required for establishment and operationalization of a new financial intermediary arrangement (AEF).

**Financial Intermediary:** The proposed project would also finance an initial capital to the Arctic Environment Fund (AEF), which will provide much-needed financing to eligible borrowers for environmental investments and technical assistance ensuring that these activities also based on modest low-carbon technological solutions (EE and RE). AEF will mobilize financial resources for environmental clean-up and other environmental activities in AZRF, create fiscal discipline and financial accountability, and enhance transparency in priority setting and other decision making related to environmental investments in AZRF.

AEF could also act as a catalyst to form a partnership between private sector and regional/municipal authorities in Arctic Zone.. The AF will operate as a Government funded program and therefore the design efforts will focus on AF sustainability, accountability, transparency and financing principles to ensure financing for projects that generate significant public good and measurable environmental improvements.

While details of the Fund's operations such as lending terms, eligibility criteria and business procedures will be determined after further analyses during project preparation, the key to its success will be sustainability of the Fund beyond the life of the project. In this context, the Fund will be a revolving fund, and it is also expected to incorporate private resources [in terms of environmental fees and charges]. This may require further analysis of the current levels of environmental fees and fines and the system of environment related public expenditure.

AEF will likely be supervised by a Board consisting of representatives from relevant GORF ministries and other stakeholders. Its operation will be supported by professional staff responsible for screening, analysis, appraisal, and monitoring of sub-projects. Also, AEF management will have to be responsible for ensuring environmental and social issues are properly managed under the sub-projects it finances. Details of AEF's organizational structure and its staffing, decision making process, and other institutional arrangements will be determined after further analyses during project preparation.

According to GORF, 16 priority environmental sub-projects had already been identified in the Arctic Zone and pre-investment studies were conducted. Some of these sub-projects will likely constitute an initial pipeline of AEF financing, and they include construction of wastewater treatment plants, modernization of waste management facilities and clean-up activities for contaminated mining sites with the total cost estimate of about US\$ 135 million. During project preparation, these pre-investment studies will be further reviewed and screened, and engineering designs will be prepared.

**GEF Co-financing:** GORF seeks a GEF grant of US\$ 6 million to co-finance the proposed IBRD-financed Arctic Environment Project. Further analysis will be required to justify the GEF investments based on their incrementality and baseline financing supporting these activities. It is expected that this financing will be fully blended in the project financing envelope and will also go into AEF. It is proposed that GEF financing will fall in the following focal areas: international waters and climate change mitigation to generate global benefits.

The project is expected to complement the ongoing energy efficiency (EE) projects under the GEF umbrella "Russia Energy Efficiency Programme" – a partnership of UNDP, EBRD and UNIDO involving key Russian federal sectoral agencies and regional authorities. The projects under this program aimed to improve energy efficiency in GHG-intensive industries; introduce EE standards and labeling, transform markets for energy efficiency lighting; and improve energy efficiency in municipal buildings and urban housing.

The project will also be coordinated with the Russia Energy Efficiency Financing (REEF) Project that is under preparation by the World Bank, Ministry of Energy, Russian Energy Agency, and Gazprombank. REEF project aims to unlock the financing potential of large, commercial banks with regards to financially attractive energy efficiency investments primarily in industrial sector, while AEF will address low-carbon solutions in environmental rehabilitation and clean-up projects in Arctic through creating targeted legal and economic conditions for PPP and financial structuring of priority environmental programs.

### **Key participants and partners**

The World Bank is expected to be the GEF implementing Agency for the project<sup>12</sup>.

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<sup>12</sup> Discussions between the World Bank, Ministry of Economic Development, and Ministry of Finance on a possible World Bank loan are in progress. Project preparation is pending endorsement from the Ministry of Finance

The Ministry of Economic Development RF, Ministry of Natural Resources and Ecology RF, regional administrations municipalities, the private sector, research institutes, environmental NGOs, among others would be key Russian partners and participants in the project.

NEFCO, Nordic Investment Bank, Arctic Council's ACAP Working Group, governmental and non-governmental organizations from other countries would be key international participants and partners.

### **Project 3. Conserving Biodiversity in a Changing Arctic**

#### **Justification:**

Russia covers nearly half of the total terrestrial Arctic and hosts a significant portion of the total remaining natural habitat for Arctic Fauna and Flora. In addition to its endemic biodiversity of global importance, the Russian Arctic provides critical feeding and breeding grounds for a large number of species and populations of migratory birds and mammals that periodically gather there in large numbers (e.g. over 100 million birds gather in the arctic during the summer season).

These species are in fact a shared resource with many other countries from all the continents of the world. For example, almost all birds found in the Arctic region are migratory, undertaking long annual migrations that connect the Russian Arctic with the rest of the world, with the sole exception of Inner Antarctic Ice shield.

Over 280 bird species breed in the Russian Arctic including migratory waterbirds that depend on Arctic tundra habitats, such as waders, geese and swans, eiders, gulls, divers and cliff nesting seabirds. Many species are unique to the Russian Arctic. Seven species are globally threatened, three of them 'critically endangered' and twenty are included to the Russia Red Data Book. For several of them, such as critically endangered Spoon-billed Sandpiper and Kittlitz Murrelet, endangered Red-breasted Goose and Lesser White-fronted Goose, there are still no national conservation strategies and plans and conservation measures are far below the necessary levels. Forty Arctic bird and mammal species and subspecies have been identified as rare, vulnerable or endangered.

Sixty-two mammal species, mainly marine mammals, are partially or totally dependent on Arctic ecosystems and habitats. Terrestrial mammals, particularly ungulates, need large expanses of undisturbed habitat for feeding, breeding, and seasonal migrations. Large areas are also required to compensate for the relatively low nutrient levels in the vegetation at high latitudes. Russia shares many populations of these mammals with other Arctic countries.

Many species of both flora and fauna are declining for reasons including habitat change, over-harvesting, illegal harvesting and rapid changes in land use that are linked with the increasing accessibility of the Arctic due to climate change.

Arctic tundra habitats and wetlands are also very rich in organic soils that, in undisturbed conditions, will continue to serve as one of the world's most important natural carbon storage systems. Conservation of these vast habitats will therefore not only contribute to the conservation of globally important biodiversity that is shared by Russia and many other countries, but also to climate change mitigation.

Russia has established along its territory a Protected Area System consisting of more than 12,000 Protected Areas in a number of different categories. About 20 federal nature protected areas are situated within the CAFF boundary. Therefore the Russian Arctic has currently a large system of protected areas with satisfactory coverage, although the management effectiveness of this PA network remains weak and requires significant improvement.

Outside the Protected Areas System, the national system of wildlife management in the Russian Arctic has been degrading gradually since the collapse of the Soviet Union. In particular, the lack of resources for the monitoring of wildlife population trends is not allowing a proper evaluation of the levels of sustainability of existing wildlife use practises. There is an ongoing and massive level of poaching and lack of controls and law enforcement over huge territories. This situation has already caused the severe degradation of a number of harvested wildlife populations of e.g. reindeer and numerous species of game birds.

Serious pressure of subsistence hunting was reported for a number of threatened species' populations, including Stellers and Spectacled Eiders, Emperor and Lesser-white fronted geese etc. Another example, the Illegal catch at large scale of Gyrfalcons, that are then illegally traded in and outside Russia, continues to take place particularly in the Chukotka and Kamchatka. Polar Bears and Walrus are regularly killed illegally for skin and tusks trade.

Various human activities have already affected the Russian Arctic considerably: habitat fragmentation by roads; off-road tracks; surface pipelines, mining activities, and logging; unsustainable reindeer herding and grazing, with up to 20% of the tundra zone severely affected and severe damage observed in the forest tundra zones; die-off of forest and other vegetation types; and local pollution connected with prospecting, extraction, processing, and transportation of oil, gas, and mineral resources.

Thawing of the permafrost, which underlies the thin biologically active layer in the Arctic regions, augments disturbances and makes restoration efforts extremely difficult. Arctic tundra and peatland ecosystems, permafrost soils and Arctic coastal wetlands are significant depositories of organic carbon at the global scale. While, scientific evidence is inconclusive about the direction of climate change on carbon sinks or sources, currently Russian Arctic serves as significant sink of carbon and source of methane to the atmosphere. Planning for protected areas in the Arctic nowadays does not consider significant carbon sequestration services provided by different PA categories of land in the Russian Arctic that may be substantial. This project is very innovative in this respect by trying to quantify BD conservation and ecosystem services values provided within and around existing PAs. The project therefore requests CCM-5 funds to assess carbon sequestration potential of PAs in the Arctic and use this information for improving land management practices.

The proximate and root causes of these threats are the results of changes of political and administrative systems over the last two decades, which have severely undermined the socio-economic infrastructure in rural areas, weak institutional and enforcement mechanisms; and poorly controlled local economic development activities including use of wildlife resources.

National and global market demands have intensified the pressure on Arctic natural resources such as oil, gas, minerals and timber. In addition, processes resulting from climate change cause flooding, draining, and cryogenic transformation of land.

Subsistence harvesting of wildlife resources plays an important role in supporting the survival of local communities and is an important component of the traditional way of life for 16 small nations of indigenous peoples of the Russian Arctic.

Existing legal regulations and practises aiming to support the livelihoods of indigenous peoples and biodiversity conservation are often in contradictory and need to be harmonised. There is an urgent need to develop mechanisms for increased dialogue at all levels of society on the subject of conservation and sustainable use of wildlife resource. This increased dialogue should help to inform the improvement of legislation and implementation of new regulations aimed at ensuring the sustainability of wildlife resource use in the Russian Arctic. The proposed project will play a

pioneering role in protecting critical Arctic biodiversity and sustaining the traditional livelihoods of the people living in the Arctic.

**Project objective:**

The project objective is to enhance biodiversity conservation and carbon sequestration under changing climate conditions and other environmental pressures across the Russian Arctic. This would be achieved through sustainable wildlife resource management and mainstreaming biodiversity conservation priorities in decision making processes at federal, regional, local and indigenous communities levels, supported by increase of efficiency of protected areas system, a modern integrated knowledge-base and wildlife monitoring programme, and the implementation of National Species Conservation Strategies within and outside protected areas.

**Project consistency with the GEF focal area strategies:**

The project is consistent with the Biodiversity focal area Strategic Objectives BD1 and BD 2 as well as CCM-5.

The implementation of Strategic Objective BD-1: “Improved Sustainability of Protected Area Systems” will be supported by improving management effectiveness of existing PAs, development of a plan for an improved and climate-resilient PA Network in selected Arctic regions, and integration of PAs into regional conservation and land-use plans, involving the local and indigenous people and other key stakeholders at all stages. The project will build professional capacity and develop essential planning tools and consultation mechanisms to support the conservation and sustainable use of globally important biodiversity in both protected and non-protected areas. In addition, the project will also contribute to improving the climate resilience of the protected areas system of the Russian Arctic by, among other things, developing recommendations for a review of the boundaries of PAs in the face of a changing climate to ensure the continued protection of important habitats and species.

Strategic Objective BD-2: “Mainstream biodiversity conservation and sustainable use into production landscapes, seascapes and sectors”, will be supported through the following project elements: (i) implementation of National Species Conservation Strategies for species of major concern at national and global level. The Flagship Species conservation approach will be used to ensure benefits to ecosystem conservation on a wider scale; (ii) support for the mainstreaming of biodiversity conservation priorities in policy and decision making processes at all levels; (iii) engagement with key stakeholders such as local communities, indigenous peoples and extractive industries in evaluating and adjusting the utilisation patterns of wildlife resources to sustainable levels under a changing climate and environmental conditions.

In addition to the above, the project will also contribute to climate change mitigation Strategic Objective CCM-5: “Promote conservation and enhancement of carbon stocks through sustainable management of land use, land-use change, and forestry” and in particular outcome 5.2: “Restoration and enhancement of carbon stocks in forests and non-forest lands, including Peatland”, by supporting the conservation of extensive areas of arctic Peatland and Permafrost ecosystems that represent a well-documented source of critical ecosystem services, functioning as a major and globally significant “storage” of potent green-house gases such as CO<sub>2</sub> and methane.

**Project consistency with national strategies and international activities:**

The project will contribute to meeting of international commitments of the Russian Federation under the Convention on Biodiversity Conservation, Ramsar Convention, East Asian-Australasian Flyway Partnership, bilateral agreements on migratory birds with Japan, USA and Korea and other relevant MEAs.

Russia actively participated in the work of Arctic Council's working group Conservation Arctic Flora and Fauna (CAFF) and "Arctic Climate Impact Assessment" and supports the recommendations made in the ACIA Policy document. This project will propose and test a number of approaches and methods, including trend assessment based on CAFF criteria and the Circumpolar Biodiversity Monitoring Program (CBMP) indicators.

The project builds on substantial experience of the GEF in supporting biodiversity conservation projects in the Russian Federation.

**Project overview:**

**Component 1. Improving the design and management effectiveness of the Protected Areas Network in selected model regions of the Russian Arctic, responding to changing climate conditions**

This component will:

1.1.1 Support the management of selected existing PAs and the designation of the "Beringia" international park as a keystone and model PA to showcase optimal strategies for sustainable wildlife resources management, integrating traditional approaches by indigenous communities.

1.1.2 yield measurable improvement in the capacity of PA managers to evaluate and predict the impact of climate change on biodiversity conservation and to include CC implications in PA management and in the conservation and sustainable use of wildlife resources.

1.2.1 Result in a comprehensive proposal for the revision of the design of the regional PA network (e.g. structure, type, size, shape and distribution) in selected model regions (Taimyr and Chukotka), underpinned by an analysis of existing information and incorporating best practices from Alaska.

1.3.1 Result in development of standard methods of collecting, analysing and presenting local knowledge to decision makers and PA managers.

1.3.2 Measurably increase recognition and inclusion of local knowledge as a source of information and basis for decision making for PA managers and governmental agencies.

**Component 2. Improving Biodiversity conservation and sustainable uses of wildlife in the Russian Arctic**

This Component will result in:

2.1.1 Development and initial implementation of National Species Conservation Strategies for flagship species of major concern nationally and globally (e.g. Polar Bear, Atlantic Walrus, Spoon-billed Sandpiper, Red-breasted Goose, Lesser White-fronted Goose, Kittlitz Murrelet and Gyrfalcon), with possible case studies in Chukotka, Kamchatka, Taimyr, Nenets District and Murmansk regions

2.1.2 Assessment of sustainable harvest levels for selected arctic wildlife species, e.g. using "wild commodity indices" and developing strategies to monitor and periodically adjust the current uncontrolled harvest pattern to sustainable levels (model groups may include: migratory waterbirds, reindeer, walrus and seals – mainly in the Russian Arctic Far East). This will include an analysis and incorporation of best practices of US and Canadian Fish and Wildlife Services as well as Nordic countries experience

2.1.3 Development of innovative models of interaction between state authorities and local governments, industrial companies and public organizations of indigenous people in the field of environmental protection, as well as financial mechanisms for joint environmental co-management, including i.e.:

- Legal and normative documents and feasibility studies for the establishment of the territories of traditional nature use by indigenous people;
- Promotion of environmentally-friendly and more energy-efficient technologies, based on traditional and renewable energy sources (already being tested in Alaska) in the Arctic Zone of the Russian Federation (AZRF);
- Pilot projects on the improvement of traditional economic activities related to sustainable uses of biodiversity by indigenous people in AZRF in response to climate and other land-use changes;
- Program for the development of environmentally friendly forms of tourism (based i.e. on traditional knowledge on biodiversity or birdwatching), in areas where indigenous cultural heritage and languages, folk arts and crafts are developed; and,
- Outreach, training and education programmes for indigenous people and other stakeholders focusing on (a) best practices for local people in sustainable use of wildlife resources focused on optimization of practices of hunting of waterbirds, walrus and polar bear and reindeer husbandry, (b) general education programs focused on values of biodiversity, ecosystem services and need of cooperation of shared populations of migratory animals. Model areas for implementation could possibly include i.e. Chukotka and Taimyr and cooperation with Nordic countries and US/Canadian experience is envisaged.
- engaging of and support to Russian indigenous communities in critical science-based spatial planning processes for the Arctic and thereby building their capacity to engage in processes to improve governance of the Arctic
- Improvement of biodiversity conservation legislation (including Hunting Laws), both at the federal and regional level to balance the rights of indigenous people, wildlife conservation priorities and Russia's commitments under relevant international conventions.

2.2.1 Assessment of the influence of key factors that are negatively impacting selected endemic and endangered migratory species whose habitat lies within and outside the Arctic region, and identification of most urgent conservation measures to address them.

2.2.2 Identification of trends in changes of climate seasonally and regionally, developing illustrative case studies and providing recommendations for improvement of conservation measures for selected threatened species, and other species that can be sustainably harvested by local people including indigenous communities.

2.2.3 Development and initial implementation of monitoring programmes for selected species, focusing on migratory birds and marine mammals and in coordination with CBMP- CAFF, integrating the monitoring networks of Protected Areas, Polar Stations and biological stations into an enhanced GIS database with CC modeling capability.

2.2.4 Strengthened capacity of the Arctic Research Centre within ARRINC of the Russian Ministry of Natural Resources, with the mandate to track and analyse the observed and measured changes in the Russian Arctic and setting them in the circum-arctic context.

2.2.5 A suite of Biodiversity and Ecosystem Services indicators identified, allowing the tracking of changes in a rapidly changing environment, and regularly assesses the sustainability of controlled wildlife resource use practices and wildlife management in the context of the entire population for a given species.

**Component 3. Mainstreaming biodiversity conservation priorities in policy and decision making processes at all levels of society**

This Component will result in:

3.1.1 Establishment of collaborative partnerships among extractive industries, local population, indigenous communities and PAs Management structures (Possible case studies may include the following areas nearby to: Putoranskiy, Taimyrskiy, Nenetskiy, Koryakskiy Zapovedniks and in Chukotka – specific areas to be selected PPG implementation stages).

3.1.2 Documented and demonstrated "ecosystem services" and "natural capital" values, including climate change mitigation functions played by the Arctic system of protected areas and the Arctic ecosystems that are a major and globally significant “storage” of potent green-house gases.

3.2.1 ES values of peatland and permafrost assessed and incorporated into planning and accounting processes at local and regional level, thus providing a pilot case for inclusion in the national budgeting processes.

3.2.2 The area of well-managed or protected peatland and permafrost measurably increased, and regional-level peatland conservation plans are developed, involving all key players.

**Key participants and partners:**

UNEP is the GEF implementing Agency for the project.

The Ministry of Natural Resources and Ecology and network of regional branches and protected areas as well as regional administrations will be key Russian participants of the project.

The All-Russian Research Institute for Nature Conservation, other research institutes and universities, WWF-Russia and other environmental NGOs, and selected companies will participate in the project as partners.

Arctic Council's Working Group CAFF, UNEP-WCMC, GRID-Arendal, RSPB, BirdLife International, WWT, US FWS, AEW, EAAFP, governmental and non-governmental organizations from USA, Canada, Denmark, Sweden, Norway, Finland, UK, Germany and other countries are key international participants and partners.

**Financing and co-financing (inclusive of PPG)**

Sources of financing	Name of financier	Type of financing	Amount (\$)
GEF TF		Grant	6,500,000.00

International CSOs, conservation NGOs & conservation partners	Arctic Council's Working Group CAFF, EAAFP, AEWA, WWF, BirdLife International, RSPB, WWT, US FWS, and other governmental and non-governmental organizations from USA, Canada, Denmark, Sweden, Norway, Finland, UK and Germany	In-kind and grants	4,200,000
GEF Agency	UNEP & UN partner organisations: WCMC, GRID A	In-kind	800,000
National Government	Government of Russia, regional administrations, companies	Grants, equity financing, in kind	5,300,000.00
private sector	Unknown at this stage	unknown	2,200,000.00
<b>Total financing</b>			<b>19,000,000.00</b>

## **Project 4 Integrated River Basin Management (IRBM) for major Arctic rivers to achieve comprehensive benefits**

### **Justification:**

Among the major drainage basins of the principal oceans and seas of the World, the Siberian Arctic covers almost 10 per cent of Earth's land surface (14,894,000 km<sup>2</sup>). The Arctic Ocean receives about 11 per cent (about 4,300 km<sup>3</sup>) of the world's total river runoff. The largest flows come from Siberia's major rivers including Lena, Yenisei, Ob', Mackenzie, and Northern Dvina. The first three are among the world's ten largest rivers.

Possible scenarios of climate change in the 21st century obtained through model calculations and analyzed in the Arctic Climate Impact Assessment Report projected the total increase in Arctic river runoff of 10 to 20% or 300-400 km<sup>3</sup> and the winter runoff by 40-50% a year by 2050.

A large increase in freshwater runoff from rivers running into the Arctic Ocean may have substantial impact on its physicochemical characteristics such as decrease in water salinity, especially in coastal areas, and an increase in average water temperature and changes in sea currents. Taking into account that the Arctic Ocean plays an important role in formation of the global climate, changes in physicochemical properties of water will have a strong impact on climate in the other regions of the World, particularly in the Northern Europe. The change in physicochemical characteristics of the water masses of the Arctic Ocean, primarily the desalination of adjacent seas and the change in hydrological conditions of estuarine areas will significantly affect the biodiversity in marine and estuarine ecosystems.

Climate change caused by desalination of the Arctic Ocean surface waters will further impact global redistribution of precipitation and further change in the regime of Arctic rivers. This feedback loop is one of the important factors influencing global climate change. However, physical mechanisms of this feedback loop are not clearly known or understood.

An increase in the water volume of Arctic rivers will in turn change ice volumes, and thus could increase the frequency of catastrophic floods. Increased in Arctic river volumes will also directly influence the transport of pollutants by rivers, and the discharge of these pollutants into the Arctic Ocean.

Intensive development activities such as oil and gas production, navigation, fishery, mining operations, water and hydraulic engineering, industrial and civil construction, transport of freight by winter roads are conducted in the basins of Arctic rivers, estuarine, and coastal areas of Arctic countries. It is clear upon review of the Arctic strategies of northern countries that these activities will significantly increase in the near future. All above activities in one way or other are associated with river hydrology, ice conditions, and water pollution levels. The changes that have occurring for the last 20-25 years under climate changes will continue and may seriously disturb the functioning of the above noted industries.

Indigenous communities are located in the basins of Arctic rivers, and are considered to be, with respect to climate change, among the most vulnerable populations globally because their traditional way of life is so intricately connected with the environment. Changes in water regime of rivers, estuaries and adjacent seas will strongly impact their way of life and economic activity.

The basins of Arctic rivers cover important ecosystems that are unique, fragile and vulnerable to changes. These ecosystems include permafrost, Arctic tundra, taiga forests, and grassland. The deltas of large Arctic rivers have unique ecosystems, and are vulnerable to changes in the hydrological regimes, which can occur as a result of climate change. Incorporating biodiversity

conservation in river basin management, especially water resources management, has not been achieved in Russia.

Arctic river basins also include the permafrost where large amount of carbon is currently stored. Most permafrost was formed during cold glacial periods and has remained throughout warmer interglacial times, including over the past 10 000 years<sup>13</sup> (IPA 2010a). With global warming, however, the store of carbon held in permanently frozen organic matter buried in permafrost could gradually melt, emitting greenhouse gases, including potent methane, into the atmosphere and exacerbating climate change through a positive feedback loop. Climatic conditions and ground temperatures are the major factors affecting permafrost thickness and stability. On average, permafrost has warmed by up to 6°C during the 20<sup>th</sup> century<sup>14</sup>. Widespread loss of discontinuous permafrost will change hydrologic processes and trigger erosion or subsidence of these ice-rich landscapes, increasing the incidence of natural hazards for people, structures, roads, and communication links<sup>15</sup> (Rekacewicz 2000).

In addition, and very importantly, permafrost loss releases carbon dioxide (CO<sub>2</sub>) and methane to the atmosphere. Arctic permafrost contains 950 gigatonnes of organic carbon (C) within the first few surface metres of permafrost. By comparison, the atmosphere currently contains about 750 gigatonnes of organic carbon<sup>16</sup>. Increasing concentrations of CO<sub>2</sub> in the atmosphere between now and 2100 are expected to stimulate plant growth in the tropics, leading to a projected intake of ~160 Gt more carbon by photosynthesis.

This carbon sink figures in calculations of the global carbon balance, which is central to projecting climate change. However, research by Schaefer and others (2011), suggests that by 2100 the release of carbon from thawing permafrost (104 ± 37 Gt) is enough to cancel out much of that carbon sink. This increased CO<sub>2</sub> released by permafrost under PCF is not currently calculated into most climate projections. The river basins of the large Arctic rivers contain permafrost areas. The degradation of permafrost area is associated with change in hydrological schemes in these river basins. Introduction of improved river basin management schemes would lead to mitigation of the ongoing and potential emission of green house gasses from the permafrost.

In this project, the Lena River basin in Sakha Republic, the far north of eastern Siberia, is selected as a pilot basin to achieve improved river basin management schemes, addressing biodiversity conservation and climate change mitigation concerns as well as water resources related benefits. The Lena River (the longest undammed river in Asia) flows North through Siberia and Far Eastern Russia for about 4,300 km to the Arctic Ocean. At its mouth into the Laptev Sea in northern Siberia, the river forms a large delta that extends 100 km into the Laptev Sea and is about 400 km wide, which makes it the largest Arctic delta and the most extensive protected wilderness area in Russia (expanded in 1995 to cover a total area of 61,000km<sup>2</sup>). The delta is a

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<sup>13</sup> IPA. (2010a). International Permafrost Association. <http://ipa.arcticportal.org/resources/what-is-permafrost> (Last accessed on February 21, 2011).

<sup>14</sup> NSIDC. (2008). National Snow and Ice Data Center: State of the Cryosphere. 2008. <http://nsidc.org/sotc/permafrost.html> (Last accessed on February 24, 2011).

<sup>15</sup> Rekacewicz, P. (2000). "Change in permafrost temperature in Fairbanks (Alaska)." UNEP/GRID-Arendal Vital Climate Graphics. <http://maps.grida.no/go/graphic/change-in-permafrost-temperature-in-fairbanks-alaska> (Last accessed on February 24, 2011).

<sup>16</sup> Walter A., Grosse, G., Jones, B. (2009). "Positive and negative feedbacks to climate change associated with methane emissions from arctic permafrost systems." American Geophysical Union, Fall Meeting. The Smithsonian/NASA Astrophysics Data System, 2009. <http://adsabs.harvard.edu/abs/2009AGUFM.B43F..06W>. (Last accessed on February 24, 2011).

frozen tundra for about 7 months of the year, but in May transforms the region into a lush wetland for the next few months.

The Lena River and its delta host many nature reserves, including the Lena Pillars, Beloozersky, Belyanka, Muna, Ust-Viluisky, Lena Delta Nature Reserve, and Ust-Lensky nature reserve. There is also an International Biology Station - Lena-Nordenskiöld - on the Bykovskaya channel. The whole of the Lena Delta area has been nominated as a UNESCO World Heritage Site, whereas part of the area is protected as the Lena Delta Wildlife Reserve.

The Lena Delta Wildlife Reserve is a Zapovednik (“scientific nature reserve”) that has a total land area of 61,000 square kilometers, making it the largest protected area in Russia. The reserve area protects large concentrations of birds, including swans, geese and ducks, loons, shorebirds, raptors and gulls. It is also an important fish spawning site. The Lena's main outlets are the Trofimov (70 per cent), Bykov (with the city of Tiksi located on its channel) and Olenek.

The Lena Delta Reserves and their ecosystems have currently been threatened by runoff pollution, increasing human intrusion (particularly over-fishing of Cisco populations) and climate change. Outside of the reserve areas, mining, forestry, grazing, expanding agricultural activities, water diversion for irrigation, and pollution from fertilizers and pesticides that may threaten water quality and quantity that reaches the delta.

Arctic tundra wetlands are highly sensitive to climate variability and change. Since climate models predict outstanding changes in a warming Arctic, considerable impacts on these wetlands are expected.<sup>17</sup> Whereas landscape and seascape changes in the Lena River Basin and deltas by detailed assessment of land cover have been noted, the scale of consequences of climatic changes for the geography of terrestrial ecosystems is currently difficult to evaluate with good precision. The human factor is increasingly a decisive factor in overall biodiversity health.

The vastness of the Arctic Siberian region and low population density have been to date positive factors in environmental preservation, although many areas have suffered great environmental damage. A well-developed network of protected areas gives hope that natural landscapes will be preserved.

However, some recent trends in socioeconomic development cast doubt on the possibility of the preservation of the rich and unique biodiversity in many basin areas of the Siberian Arctic including the Lena River Basin and deltas. As an effective way to address-restore-protect the environmental quality of the river basin ecosystems, large-scale conservation of watersheds and ecosystems, or whole eco-regions, will eventually require the involvement of a broad range of stakeholders and integration of social, economic and environmental measures to cope with land- and seascape changes in the Siberian Arctic.

### **Project objective and methods:**

This proposed project aims to build capacity in the Russian Federation needed for effectively managing the transboundary issues and contribute to regional water ecosystem management efforts by other member countries of the Arctic Council (via the AMAP activities) through policy change and introduction of the integrated water and biodiversity resources management approaches to mitigate the negative impacts of climate change in the Arctic LME.

The main output of this project will include a strategy for integrated water and ecosystem management in the basins of large Siberian rivers in order to minimize negative impacts of

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<sup>17</sup> Grosse, G., Ulrich, M., Schirrmeister, L.(2006). Characterization of periglacial surfaces in the Arctic Lena Delta using satellite data and field spectrometry., Poster, 4th ESA CHRIS/Proba Workshop, 19-21 September, Frascati, Italy.

climate variability/change in the Siberian Arctic, reduce changes of biodiversity in estuarine and adjacent sea ecosystems, reduce accumulation of pollutants transported by river runoff in the Arctic River Basin and deltas, and maintain the quality of life of the people in coastal and drainage areas of the Siberian Arctic.

The project areas will cover the major river basins of the Siberian Arctic including the Lena, Ob' and Northern Dvina along with some implications on the basin of the Mackenzie River (Canada), rivers of North Norway and the Yukon River (USA). The effect of change in large Arctic river runoff on the biodiversity will be studied by the example of the above rivers' estuaries and LMEs of the Barents, Kara, Laptev and Beaufort Seas and for the central Arctic Basin. The Pasvik River will be considered as an example of transboundary cooperation in the management of waterworks facilities in three Arctic countries: Norway, Finland and Russia.

The assessment of current changes in freshwater runoff of the above rivers will be based on global scenarios developed with the fourth Intergovernmental Panel on Climate Change Report. In the preliminary assessment of the Arctic climate change trends the results of the project for the assessment of climate change in the Arctic ACIA will be used, as well as more recent SWIPA project results implemented within the Arctic Council.

In the course of the project implementation, the results will be used obtained during the implementation of the Arctic-HYCOS project and the IPY Arctic-HYDRA project.

**Project consistency with GEF focal area strategies:**

The project is consistent with GEF strategic objective IW-3 Capacity Building: “*Support foundational capacity building, portfolio learning, and targeted research needs for joint, ecosystem-based management of transboundary waters systems*” and provide input in its key outcomes: 3.1. Political commitment, shared vision, and institutional capacity demonstrated for joint, ecosystem-based management of waterbodies and local ICM principles; and 3.5: Political agreements on Arctic LMEs help contribute to prevention of further depletion/degradation.

The project is also consistent with GEF strategic objective BD-2: “Mainstream Biodiversity Conservation and Sustainable Use into Production Landscapes, Seascapes and Sectors” and provide inputs in its key outcome 2.1: Increase in sustainably managed landscapes and seascapes that integrate biodiversity conservation; and 2.2: Measures to conserve and sustainably use biodiversity incorporated in policy and regulatory frameworks.

**Project consistency with national strategies and international activities:**

Under the Federal Targeted Program “Ecology and Natural Resources of Russia” (2002-2010) a set of studies has been commissioned for assessment of climate change impact on Arctic water systems. There are several sectoral programs targeting climate change impact on water systems of the Arctic, including programs of Roshydromet (monitoring and assessment programs) and Russian Academy of Sciences (“Environmental and climate change: natural disasters,” “Natural processes in polar regions and their development during the next decades”).

The Russian Federation actively participated in the International Polar Year, which had as a priority implementation of the international cluster “ARCTIC-HYDRA.” It also developed capacity for modernization of the hydrological observation system in the Russian Arctic. Some activities aimed at the assessment of climate change impact on water resources and hydrological conditions of specific Arctic river basins.

In 2003-2005, the Russian Federation implemented one of the largest regional projects of the Global Dialog on Water and Climate (DWC) titled *Dialogue on Climate Change Adaptation Strategy in Water Management and Flood Preparedness at the Lena Basin*. This project identified some specific climate adaptation issues for water-related sectors of the Lena River

basin and made some valuable assessments of climate change impacts. The project, however, was lacking global perspective on the role of Arctic rivers on the formation of hydrological regime of the Arctic Ocean and regional climate patterns. Very few on-the-ground capacity building activities were initiated at that stage. A component of the proposed project builds upon experiences obtained by the DWC project and as such is strongly supported by the International Secretariat of the DWC.

During recent years, the Republic Sakha (Yakutia) has undertaken a number of measures directed at integrated water resources management of Lena River basin. The Republic has developed *Recommendations on Climate Change Adaptation Strategy in Water Management and Flood Preparedness at the Lena Basin*. Specific recommendations concerned changes in water conditions of basin rivers due to climate change, size of flooded zones during spring, list of impacted settlements and infrastructure as well as recommendations for changing facilities regulating river discharge and municipal and industrial water supply.

With adoption of the Climatic Doctrine in December 2009 Russia has started to develop policy interventions aimed at support of climate change adaptation measures, including adaptation in water-related sectors.

The Fourth and Fifth National Communications of the Russian Federation to the UNFCCC specifically defined climate change adaptation needs in the water sector of the Russian Arctic. For the Russian Arctic and Sub-Arctic this requires specific measures aimed at infrastructure changes, flood preparedness including monitoring and assessment, protective constructions against coastal erosion, etc.

Outcomes of the project will provide important input in the Arctic Council's project *Climate Change and the Cryosphere – Snow, Water, Ice and Permafrost in the Arctic (SWIPA), Module 3: Hydrology, Rivers and Lakes* and Module 4: *Ice caps and small glaciers (2008 -2011)*. Close linkages between this project and the Arctic Council project will be established. The project will contribute to GEF IW portfolio learning and lessons exchanges with other GEF initiatives on IWRM, particularly in countries where climate change impacts are significant.

### **Project overview:**

An innovative approach will be applied to introduce and test a number of approaches and methods that have a high potential for replication in other Arctic regions of the Russian Federation and other Arctic countries.

### **Component 1: Assessment of climate change impact on runoff, ice regime, and permafrost melt in basins of Arctic rivers and circulation of the Arctic Ocean and adjacent seas.**

Component 1 deals with the modeling of hydrological conditions of large Arctic rivers basins and calculation of water circulation of the Arctic Ocean and adjacent seas. The modeling will be based on a hydrometeorological database specially created for this purpose, and will take into account the results of global and regional atmospheric models. The implementation of this modelling will result in obtaining forecast values of the runoff of the Arctic rivers into the Arctic Ocean and changes in their ice characteristics as well as changes in the regimes of estuarine areas and adjacent Arctic seas for the medium (2020) and long (2050) terms. Also parameters will be evaluated for permafrost degradation and its role in the change in the hydrological cycle and increase of river runoff.

Within the framework of Component 1, the impacts of changing hydrological schemes on the ecosystem functioning and biodiversity will be assessed and forecast for such changes will be obtained for the above periods (biodiversity benefits). Further impacts of melting permafrost and

change in hydrological and geomorphologic dynamics in these river basins on the release of stored carbon will also be assessed (climate change mitigation benefits).

Last, the current and forecasted changes in transport and accumulation of persistent toxic substances to the Arctic basin, due to the change in hydrological conditions of large rivers and permafrost degradation, will be assessed.

**Component 2: Developing strategies of ecosystem-based river basin management, including planning and management of waterworks facilities located in the Arctic River Basins.**

This Component develops strategic measures of an economic, environmental and social nature to maintain functioning of water flow systems and minimize the impact of changes in the water regime on freshwater, estuarine and marine ecosystems and quality of life. Three major rivers of the Siberian Arctic in respective coastal areas for mid- and long-term prospects. A platform of river basin managers and practitioners in the Arctic countries will be established to share the experiences of assessment and management of Arctic river basins, especially the results obtained from transboundary management of the Mackenzie and Yukon Rivers and the rivers of Northern Norway.

An Arctic wide strategy for river basin management will also be developed through the platform. Based on the Arctic-wide river basin management strategy, the strategic measures for the three Siberian Arctic river basins will be developed using cost-benefit analysis based on importance (scale of possible losses if not implemented), economic expediency, availability of technical and material resources for their implementation, and social consequences. The recommendations will be useful in developing federal and regional programs and strategic plans dealing with water management in the Arctic.

**Component 3: Developing the recommendations and action plan on integrated river basin management (IRBM) for the Lena and Pasvik river basins.**

Higher incidences of catastrophic floods and permafrost degradation caused by global warming have serious impact on water management infrastructure and social conditions or livelihoods of indigenous peoples.

The Lena basin is selected as a pilot site due to the fact that, as previously described, Republic Sakha (Yakutia) has undertaken a number of measures aimed at integrated water resources management and integrated river basin management. Within the framework of the Global Dialogue on Water and Climate project implemented in 2003-2005, the Republic has developed preliminary recommendations on climate change adaptation strategy in water management and flood preparedness at the Lena basin. Specific recommendations were given for mitigating the risks of flooding and reducing the areas inundated in spring and upgrading the facilities regulating river runoff and possible other measures for effectively coping with the changing hydrological regimes.

In developing Lena and Pasvik Integrated River Basin Management plans, consideration is given to impacts of changing hydrological schemes on ecosystems, particularly downstream biodiversity, and on possible release of stored carbon, particularly in permafrost. By considering these aspects in the river basin management plans, the water management sector can mainstream biodiversity and climate change mitigation into their strategic approaches. The key elements of the plans will comprise vulnerable populations and infrastructure needs and the measures will be developed to ensure stable, environment-friendly operation of municipal and industrial water supply. The Lena river section is a pilot case of mainstreaming the biodiversity and climate change in water sector activities and thus is drawn on the GEF Biodiversity and Climate Change mitigation funding.

The Pasvik River basin is the only waterwork facility in the Arctic located in the territory of three Arctic countries, namely Norway, Finland and Russia. The development of an IWRM/IRBM action plan will pilot and facilitate transboundary cooperation in developing strategies for management of water resources facilities in the Arctic.

The IWRM plans will have separate sections addressed to mid (2020) and long terms (2050) activities under climate change and socio-economic development scenarios.

**Key participants and partners:**

UNEP is the GEF implementing Agency for the project. UNEP GPA Coordination office will provide technical support and inputs into the development of ecosystem-based river basin management, which is closely linked with the coastal zone and delta management.

The Ministry of Natural Resources and Ecology RF, Roshydromet, Government of Sakha Republic, Government of Yamalo-Nenets Autonomous District and the Russian Geographic Society will be key Russian participants of the project. Research institutes and universities, environmental NGOs and selected companies will also participate in the project as partners.

The project will be implemented in close cooperation with the scientists and specialists from USA, Canada, and Scandinavian countries working on similar issues and coordinated via the Arctic Monitoring and Assessment Program (AMAP) of the Arctic Council. It is proposed that the project be designated as an official AMAP project giving it international recognition, visibility, and assure further replication and use of its results in the circumpolar Arctic region.

**Financing and co-financing (inclusive of PPG)**

Sources of financing	Name of financier	Type of financing	Amount (\$)
GEF TF (BD and IWs)		Grant	2,000,000
UNEP		In kind	200,000
Other international organizations and Arctic countries (e.g., Polar Foundation)			600,000
Government of Russia, regional, administrations, companies		Grants, equity financing, in kind	4,800,000
AMAP Secretariat		Grant	150,000

Dialog on Water and Climate International Secretariat		Grant	150,000
Arctic-HYDRA IPY Program		In-kind	100,000
<b>Total financing</b>			<b>8,000,000</b>

**Project 5. Integrated adaptive management of the West Bering Sea Large Marine Ecosystem in a Changing Climate**

**Justification:**

The WBS LME is a highly productive and species-rich region situated off the northeast coast of the Russian Federation opposite Alaska (US territory), that encompasses the Russian Exclusive Economic Zone (EEZ) and the intensely exploited international waters of the deep Aleutian Basin (“Donut Hole”). The WBS LME supports 450 species of fish, crustaceans and molluscs, many of which are commercially important, 25 species of marine mammals (e.g. polar bears, whales, walrus and sea lions), including the endangered Stellar sea lion, and a variety of seabirds. The formation and extent of seasonal sea-ice is the key physical factor driving both the high levels of primary production and the life cycle of many marine species, and hence is the major factor determining the productivity of the entire LME.

The magnitude and nature of the WBS LME’s biological productivity has provided for both indigenous and non-indigenous communities living in the region’s coastal and inland settlements for over 200 years. However, this important ecosystem is now showing signs of stress, which include declines in fishery yields, marine mammals and seabird populations, increased levels of contaminants in the coastal waters, sediments and bio-accumulated in the food chain, and a reduction in the cover of seasonal sea ice. The observed changes in the ecosystem threaten the productivity and biodiversity of this ecosystem and hence the livelihoods, food security and health of the communities that have remained dependent upon these resources for generations.

The purpose of the proposed project is to achieve sustainable and integrated ecosystem-based management of the WBS LME while taking into account the increasing need for adaptation to climate change and variability. The project will aim to meet this through identifying priority concerns affecting the LME’s status as well as their underlying root causes, and by integrating these in a national ecosystem-based management framework founded on regional and bilateral coordination and cooperation.

A preliminary assessment of the main threats in the WBS LME<sup>18</sup>, using the modular LME approach (productivity, fish and fisheries, pollution and ecosystem health, socioeconomics, and governance), allowed for the identification of three major perceived problems and issues: (a) decline in commercial fish stocks and unsustainable harvesting of living marine resources; (b) degradation of the quality of marine and coastal environments from land-based and increasingly maritime sources; and (c) uncertainty regarding ecosystem status due to climate change and variability, with secondary effects on fisheries production, increased exposure to persistent toxic substances (PTS), and the socio-economic status of coastal communities.

**Project objective:**

Sustainable and integrated ecosystem-based management of the West Bering Sea Large Marine Ecosystem and demonstration and implementation of innovative measures through targeted pilot projects, promotion of cooperative resource management and safeguarding ecosystem productivity in the context of climate change and variability.

**Project consistency with the GEF focal area strategies:**

Under the GEF-5 Focal Area Strategies for International Waters, the Project is fully in line with GEF strategic objective IW-2: “*To Catalyze multi-state cooperation to rebuild marine fisheries and reduce pollution of coasts and Large Marine Ecosystems while considering climatic variability and change*”, resulting in bilateral political commitments in support of the sustainable integrated and ecosystem-based management of the WBS LME, with particular emphasis on ecosystem productivity, fisheries exploitation and adaptation to climate change and variability, and promoting innovative solutions towards cooperative resource management and reduced pollution.

The project is also in line with GEF strategic objective IW-3: “*Support foundational capacity building, portfolio learning, and targeted research needs for joint, ecosystem-based management of transboundary waters systems.*”

The project will meet the GEF IW-3 expected outcomes by (i) Agreeing on priority transboundary concerns of the WBS LME through a multi-country technical/scientific assessment (TDA equivalent) identifying priority issues, and their immediate and root causes; (ii) Identifying knowledge gaps and improving understanding of the state of the LME’s functioning and in the context of climate change, through predictive ecosystem modelling, long-term monitoring (e.g. RUSALCA) and knowledge sharing (e.g. geospatial database); (iii) Catalyzing national and bilateral cooperation and coordination for sustainable and adaptive LME and integrated coastal management through governance reform, the formulation of a multi-state West Bering Sea-specific SAP and the establishment of a national inter-ministerial committee; (iv) Demonstrating and implementing innovative measures through targeted pilot projects, promoting cooperative resource management and safeguarding ecosystem productivity in the context of climate change and variability; and (v) Contributing to the GEF IW portfolio through knowledge sharing with other LME projects through IW:LEARN-3, and participating and coordinating with IW:LEARN-3 activities and the LME/ICM COP.

**Project consistency with national strategies and international activities:**

The SAP–Arctic set the goals, tasks, principal activities and targets necessary to protect the Russian Arctic marine environment. It also identified measures to prevent and reduce negative

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<sup>18</sup> The evaluation was based on previous transboundary assessments, including the Russian-American Long-Term Census of the Arctic (RUSALCA), the Arctic Climate Impact Assessment (ACIA, 2004), and the Arctic Council initiatives AMAP, ACAP and PAME.

consequences of natural and human-caused disasters, including those caused by global climate change.

Through analyses and gap-filling exercises, the proposed project will identify key activities to be undertaken in the WBS LME and strengthen institutional capacity through joint regional interventions that are in line with those identified in the Diagnostic Analysis SAP-Arctic.

In December 2010 the Russian Government adopted the Strategy for development of maritime activities in the Russian Federation up to 2030. The Strategy includes as a key target improving the information necessary to ensure the security of maritime activities, the safety of navigation, and protection of the marine environment from ship based pollution through development of navigation and hydrographic support.

The Arctic Council PAME's Work Plan for 2009-11 consists the task on "review the assessment of Arctic marine shipping and, based on the findings, develop recommendations to the International Maritime Organization (IMO) and others, as appropriate, to guide the management of Arctic marine shipping". Another task of this Work Plan is to develop and implement pilot projects to operationalize the 5 module LME assessment and management approach to the West Bering Sea LME, described earlier.

The Russian-American Long-term Census of the Arctic (RUSALCA) was a collaborative effort between the Russian Federation and the USA towards joint long-term exploration and scientific research in the Arctic Sea regions, covering both the Bering and Chukchi Seas. The Programme commenced in 2004 and stemmed from the 2003 Memorandum of Understanding for World Ocean and Polar Regions Studies between NOAA and the Russian Academy of Science.

RUSALCA's principal aim was to monitor the biological, geological, chemical and oceanographic characteristics of the Bering and Chukchi Seas to establish benchmark information about the region's environmental parameters as well as the distribution and migration patterns of the region's biota in the light of future climate change and variability. Although the RUSALCA programme is now finished, there is a need for further long-term monitoring of ecosystem functioning in this part of the Arctic. The proposed project will therefore aim to continue the RUSALCA programme to monitor ecosystem status and change in order to inform on the adaptive approach in the sustainable, ecosystem-based management of the WBS LME.

The four-year Marine Electronic Highway (MEH) Programme was first demonstrated by the IMO and GEF in the Straits of Malacca and Singapore in 2006<sup>19</sup>. The main development objectives of the programme are to increase the efficiency of marine transport through the Straits, reduce its negative environmental impacts, and strengthen the conservation and management of neighbouring marine and coastal environments. In the WBS LME increasing trends in the reduction of sea-ice makes the Arctic region more accessible to a range of shipping activities, from cruise liners to commercial vessels. It is therefore proposed that the project will incorporate a MEH Pilot Programme, providing an innovative solution for the safety of navigation and prevention of environmental degradation from maritime transport in the Bering Sea and Bering Strait.

Through its Marine Programme, WWF Russia is involved with local communities and the fishery sector, including coastal fishing enterprises, regional fishery councils and large industries such as the Alaska Pollock Catchers Association and Kamchatka salmon coastal fisheries, to promote the introduction of responsible fishing practices and ecosystem-based fisheries management

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<sup>19</sup> The concept of a marine electronic highway (MEH) was initiated in Canada in the early 1990s with the application of digital technology to navigation, particularly in the development of electronic navigational charts and the Electronic Chart Display and Information System (ECDIS).

(including the reduction by-catch and improvement of operational practices) and to combat Illegal Unreported and Unregulated (IUU) fishing. WWF Russia's Marine Programme agenda is fully in line with the objectives of the fishery component of the WBS LME project. Synergies with WWF programme will be explored during the PPG.

UNDP now oversees the new IW: Learn3 project "Strengthening IW Portfolio Delivery and Impact", which will support the development of new knowledge management activities including the preparation of a TDA/SAP training course, and a new GEF-IW manual.

**Project overview:**

The proposed project will promote broad stakeholder participation at national and international level, and build upon and coordinate with existing initiatives to create an integrated, adaptive and ecosystem-based management framework aimed at reducing the unsustainable harvesting of fishery resources, reduce the risk of future degradation of the quality of the marine and coastal environment, and explore and help implement adaptive management measures to the anticipated changes in the global climate. The proposed project will address the above through four inter-related components:

**Component 1: State of the WBS LME within the framework of the 5 LME modules of productivity, fish and fisheries, pollution and ecosystem health, socioeconomics, and governance.**

Three major outcomes will be achieved under this Component. Priority transboundary issues of the WBS LME, and their immediate and root causes will be agreed upon through a multi-country technical/scientific assessment which is TDA equivalent. The project will thus aim to gain a better understanding of the functioning of the WBS LME and maintain this by creating a West Bering Sea specific geospatial database within the framework of the 5 LME modules and climatic data, as well as a strengthened joint long-term programme of monitoring changes in the WBS ecosystem. This will contribute to better understanding of the climate change impact on the LME's functionality, which will be supported by predictive ecosystem modeling of species composition and distribution in changing climatic conditions and by the development of climate change scenarios for the Arctic with predicted impacts on the marine living resources and coastal zone. A key outcome of this component will be the identification of any knowledge gaps which need to be addressed in order to create a sound basis for ecosystem-based and adaptive management of the WBS LME.

**Component 2: National and regional, sustainable and integrated ecosystem-based management of the WBS LME and its coastal zone in a changing climate.**

Based on the outcomes under Component 1, a multi-country regional Strategic Action Programme will be developed for the management of WBS LME resources and coastal zone. In combination with targeted joint regional interventions (in line with those identified under the Arctic NAP) and established stakeholder participation mechanisms, this will enable appropriate governance reforms, at policy, legal and institutional level, to address the priority transboundary issues identified under Component 1. By establishment of a functioning National Inter-Ministerial Committee, with national policies, regulations and standards incorporating ecosystem-based management approaches and ICM, and with the necessary sustainability mechanisms in place, the proposed project will aim for improved national inter-sectoral coordination allowing the sustainable use and management of WBS LME resources and its coastal zone. The outcomes of this component will thus lay the foundations for a regional, joint management framework protecting the shared resources of the LME (which is not included in the scope of this project).

### **Component 3: Targeted demonstration projects.**

In light of increasing climate change and variability, it will be crucial to develop innovative and adaptive solutions ensuring the continuous protection of WBS LME resources, while increasing awareness and enabling the sustained socio-economic development of the LME's indigenous populations and coastal communities. The proposed project will therefore include a number of demonstration and awareness projects at sub-regional and local level, addressing issues such as fisheries management, integrated coastal management and adaptation to climate change, and involving the key stakeholders including the indigenous people and coastal populations. An important aspect of this component will be the development of a Pilot Marine Electronic Highway programme for the Bering Sea and Bering Strait in cooperation with the IMO. This programme will provide an innovative solution for the safety of navigation and the prevention of environmental degradation from maritime transport in this region.

### **Component 4: Learning and Knowledge Management.**

The outcome of this Component is to contribute to the GEF International Waters portfolio on Large Marine Ecosystems. This will be achieved through the transfer of lessons learned, experiences and best practices with other LME projects through IW:LEARN-3. A functioning website will also be created, which is consistent with IW:Learn guidance and which will enable the project's participation in IW:LEARN-3 activities and the LME/ICM COP.

#### **Key participants and partners:**

UNDP is the GEF implementing Agency for the project.

Ministry of Natural resources and Environment (with its subordinate Roshydromet – climate studies, and Rosprirodnadzor – environmental controls), the Ministry of Economic Development, the Federal Fishery Agency, Ministries of transport, energy, foreign affairs, regional development, federal border service. At the sub-national level the project will work with the Governments of the Kamchatsky Kray and Chukotsky Autonomous Okrug. The private sector stakeholders will be engaged since the early phases including shelf oil & gas industries, transportation and fishery businesses and associations (e.g. Alaska Pollock Catchers Association). The primary NGO partners are: WWF (with their extensive activities in the Bering Sea region focusing on fisheries), Wild Salmon Centre (pacific salmon conservation programmes), RAIPON (Russian association of the indigenous peoples of the North and their partner associations in the U.S.). Finally the project will engage the Russian Academy of Science (climate change vulnerability studies) and sectoral research institutes (fisheries/VNIRO, etc.).

At the international level the project will engage with the Arctic Council and its keystone programmes – AMAP, ACAP, CAFF and PAME. The project will also work with USA-Russia bilateral bodies such as the Russian American Pacific Partnership (RAPP) and other foras established in the framework of the U.S.-Russia Bilateral Presidential Commission (BPC). RAPP is a bilateral forum engaging the private-sector and governments to identify and address barriers to business and commerce between the Russian East and the United States (the latest meeting held in July 2011 in Petropavlovsk-Kamchatsky, Russia). State and private sector stakeholders from Canada, Japan, China, Korea will also be outreached through the project.

### **Financing and co-financing (Inclusive of PPG)**

Sources of financing	Name of financier	Type of financing	Amount (\$)
GEF TF (including fee)		Grant	3,663,490
UNDP	UNDP	In kind, grants,	300,000
US	NOAA		6,200,000
Government of Russia, regional, administrations, companies		Grants, equity financing, in kind	3,500,000
Multilateral agency	IMO	In kind	TBD
NGO	WWF-Russia	In kind	TBD
<b>Total financing</b>			<b>13,663,490</b>

### **Project 6. Targeted support for energy-efficiency and renewable energy in the Russian Arctic**

#### **Justification:**

The Arctic Region has vast potential for improved energy efficiency and sustainable energy investments considering the region's harsh climate, outdated and inefficient energy supply in isolated areas (mostly relying on mazut-fired heat generation), ample opportunities for renewable energy generation such as wind, small-hydro, geothermal and biomass (wood waste), as well as potential for the utilization of associated petroleum gas in the oil-rich regions otherwise flared by local oil companies.

However, investments in municipal infrastructure projects in the Arctic Region are complicated due to the specific profile of municipalities in the region, which are characterized by a relatively small size of municipal companies and relatively weak financials of individual municipalities, many of which rely on federal budget transfers and support.

#### **Project objective:**

The project objective is to reduce greenhouse gas emissions in the Russian Federation through support and financing for targeted investments in energy efficiency and renewable energy in the municipal infrastructure sector of the Russian Arctic.

#### **Project consistency with the GEF focal area strategies:**

As this proposed project supports investment in industry-related energy efficiency and renewable energy technologies in the municipal infrastructure sector of the Russian Arctic, it has a clear fit with the GEF-5 Climate Change Focal Area Objectives 2 and 3.

#### **Project consistency with national strategies and international activities:**

Basics of State Policy of the Russian Federation in the Arctic among the main priorities include increasing the use of renewables and alternatives, including local energy sources, introduction of energy-saving materials and technologies.

The project is consistent with the main objectives of Russia's policies in energy efficiency, renewable energy, regional development and support for investments in the communal services sector.

Specifically, the proposed project is fully aligned with the 2008 Decree of the President of the Russian Federation No. 889 "On Some Measures on Improving the Energy and Environmental Efficiency of the Russian Economy," the 2009 Federal Law, No. 261-FZ "On Saving Energy and Increasing Energy Efficiency, and on Amendments to Certain Legislative Acts of the Russian Federation" (the "Law on Energy Efficiency"), the State Programme on Energy Saving and Improving Energy Efficiency up to 2020, and the Complex Programme of Modernisation and Reform of the Residential and Municipal Services Sector for the period 2010-2020.

EBRD has extensive experience in financing municipal environmental infrastructure in the Russian Federation. All these projects rely on extensive donor-funded support provided to clients for technical feasibility studies, project preparation and implementation.

It should also be noted that some of the regions covered by the Arctic Program (e.g. Murmansk, Arkhangelsk) also fall under the Northern Dimension Environmental Partnership (NDEP). NDEP provides investment grants to projects implemented in these regions, and it will be beneficial to consider providing similar investment grants under the GEF Arctic Program as this would provide for "equal opportunities" for all projects in the Russian Arctic (as NDEP only covers North-West of Russia). Such investment grants would also catalyse project development and make these projects more viable and bankable for EBRD and other lenders.

Finally, the project will also be coordinated with the Russia Energy Efficiency Financing (REEF) Project that is under preparation by the World Bank, Ministry of Energy, Russian Energy Agency, and Gazprombank.

### **Project overview:**

The proposed EBRD-GEF project will provide both technical assistance and investment funding. Financing to be provided by the EBRD under the project will be combined with GEF-funded technical assistance for energy efficiency project development (including energy audits, specific feasibility studies, etc.). A portion of GEF funds will also be used as a non-grant instrument for a small number of pilot projects, either in direct EBRD loans, or as part of investment portfolios of smaller bundled projects under a framework agreement with local banks. This support is intended to cover first-mover and pilot costs, and demonstrate market potential and best practice to local financial institutions. Financing options will be considered during project preparation, and the most cost effective proposed. This combination of financing and sustained technical advisory services will help address investment and knowledge / capacity barriers impeding sustainable energy investments in the Russian Arctic Region.

The project will involve three components:

1. Legislation, restructuring and governance support to municipalities and service companies to address legal and structural barriers to investments
2. Market and pipeline development to support investment identification and sound development, and activities to communicate lessons and experiences and so increase the chances of replication; and

3. Facilitation for financing of GHG-reduction projects in energy efficiency and renewable energy through pilot investments in the region.

It is intended that one or more contractors, funded in part through the GEF grant, will be procured by the EBRD and deployed as required on a call-off basis in the Russian Arctic to work with municipalities, regional energy efficiency centers and other stakeholders to prepare bankable energy efficiency and renewable energy projects. Should a framework agreement be established through one or more locally-based commercial banks, these banks would also monitor project implementation in accordance with EBRD guidelines. This would also allow for the transfer of essential technical and financial structuring skills to the region. Considering the remote location of the project sponsors, the role of the consultants would also be to supervise and support implementation of the projects.

### *Incremental Project Activities*

#### **Component 1: Legislation, restructuring and governance support to municipalities and service companies**

This component will address barriers in attracting investment for large infrastructure projects with support provided to review and development of legislation to ensure viable operating conditions for public-private partnerships at the local level, including guidance and recommendations on tariffs; corporate governance of municipalities and service companies.

#### *Key proposed outputs and activities*

*Output 1.1:* Municipal and regional legislation analyzed, including targeted energy efficiency programmes, and changes supported as needed

- 1.1.1 Analyze necessary changes in municipal and regional legislation and sub-laws that may currently limit commercial investments in municipalities
- 1.1.2 Propose and support the adoption of necessary changes
- 1.1.3 Support regional and municipal governments in the Arctic Region in developing financing mechanisms under the Targeted Energy Efficiency Programmes of the Russian Federation
- 1.1.4 Disseminate best practices to other Russian regions

*Output 1.2:* Support provided to selected municipalities and service companies for institutional governance

- 1.2.1 Identify promising candidates for participation in the municipal training and support programme
- 1.2.2 Train shortlisted candidates in introducing climate change issues into existing Comprehensive Development Plans and support shortlisted cities to identify investments that specifically address climate change mitigation
- 1.2.3 Estimate potential economic and resource savings, including associated emissions reductions
- 1.2.4 Train and provide guidance on restructuring for communal service companies in the Arctic region, including Public-Private Partnerships, project bundling, and means of debt structuring / restructuring to attract investment to the municipal infrastructure sector
- 1.2.5 Develop and implement plan to raise public awareness and participation in the city-based programs
- 1.2.6 Disseminate best practices to other Russian regions

## **Component 2: Market and pipeline development to support investment and replication**

This component will address barriers in identifying and preparing investments for infrastructure projects with support provided to develop pre-investment documentation, and investment cycles building on investments, training of banking sector (targeted towards replication), and public awareness and participation.

### *Key proposed outputs and activities*

*Output 2.1:* Pre-investment and investment cycle support for selected utilities and service companies from participating municipalities

- 2.1.1 Support for audits and project preparation
- 2.1.2 Support pre-investment and investment cycle (e.g., for restructuring, due diligence, establishment of PPPs, contracting, development of technical specifications, tendering, oversight), building on investments identified through other activities.

*Output 2.2* Training provided to the banking sector to promote replication

- 2.2.1 Identify commercial banks that would be strong candidates for lending to municipalities and municipal service companies in the area of sustainable energy
- 2.2.2 Provide training in project identification and pipeline development in the area of sustainable energy, with a particular emphasis on techniques such as energy performance contracting and project bundling.

*Output 2.3:* Information disseminated to all in-country stakeholders

- 2.3.1 Provide documentation on the facility to other financial institutions, regional administrations, district (okrug) administrations, and the federal government
- 2.3.2 Publish and disseminate documented resource savings and associated emission reductions

## **Component 3: Financing facilitation**

This component will address barriers in identifying and preparing investments for infrastructure projects.

Investments will be made in the region first through a number of carefully selected pilot projects, in which a portion of GEF funds will also be used as non-grant instruments, either in direct EBRD loans, or as part of investment portfolios of smaller bundled projects under framework agreements with local banks. Following these pilot investment efforts to finance further projects without the GEF support will be pursued.

The non-grant instrument is intended to cover first-mover and pilot costs, and demonstrate market potential and best practice to local financial institutions, thus overcoming market barriers to commercial project finance in the Russian Arctic.

A financing framework in the form of a credit line for small projects through commercial banks may also be considered. EBRD would also consider providing additional financing supported by regional and/or municipal guarantees. Guarantees would facilitate financing of projects implemented by municipalities or companies with viable investment plans for sustainable energy projects yet insufficient capacity to provide additional security to investors. It is also expected that the Ministry of Economic Development will launch a consultation process with regions to facilitate the development of a project pipeline for EBRD and other financial institutions.

The types of sustainable energy projects that will be developed and considered for financing could include:

- energy efficiency upgrades in municipal infrastructure (e.g., district heating generation and transmission networks upgrade, co-generation, energy efficiency improvements at water supply companies, municipal waste utilization);
- use of biomass in district heating networks (e.g. fuel switch – from mazut to woodwaste);
- biogas in water supply;
- utilization of wind/diesel hybrid power generation to replace diesel-only generation;
- gas flaring reduction (i.e. utilisation of processed liquefied petroleum gas for heat and power generation in remote areas); and,
- other sustainable energy technologies and projects tailored to specific characteristics of individual cities or regions.

The range of sectors and technologies targeted by the financing in Component 3 will depend on the amount of concessional funding made available.<sup>20</sup> It is anticipated that the focus will be on areas where its contribution in expanding the market for resource efficiency technologies can be maximized.

Co-financing would be leveraged both from EBRD and from investors, possibly including private utilities and utility customers among others. Resource savings and associated emission reductions from the pilot projects in this component would be measured and reported, and that information would be disseminated to all in-country stakeholders and would feed into the training and support provided in Components 1 and 2.

Finally, it is expected that a flexible approach will be applied when selecting the participating cities and sub-regions, as the borderline for the Arctic Region is not defined clearly. For example, while Komi Republic is partly covered by the Arctic Region, it is not clear whether a city like Syktyvkar (where EBRD already works) would be eligible.

#### *Key proposed outputs and activities*

*Output 3.1:* Pilot investments made in the Russian Arctic leveraging funds from other investors

- 3.1.1 Identify the most feasible and effective structures for financing
- 3.1.2 Establish cooperation with local banks and other stakeholders, as necessary to support sustainable energy investments in the Russian Arctic
- 3.1.3 Structure financing and obtain necessary guarantees
- 3.1.4 Disburse financing

*Output 3.2:* Resource savings and associated emission reductions from the pilot projects measured and reported

- 3.2.1 Develop a methodology to measure resource savings and associated emission reductions from projects funded
- 3.2.2 Measure and report on resource savings and associated emission reductions

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<sup>20</sup> It should be noted that some of the regions covered by the Arctic Program (e.g. Murmansk, Arkhangelsk) also fall under the Northern Dimension Environmental Partnership (NDEP). NDEP provides investment grants to projects implemented in these regions, and it will be beneficial to consider providing similar investment grants under the GEF Arctic Program as this would provide for “equal opportunities” for all projects in the Russian Arctic (as NDEP only covers North-West of Russia) and also as such investment grants would catalyse project development and make them more viable and bankable for EBRD and other lenders.

It is envisaged that although limited in geographical and time scope, this project will have a transformative and catalytic impact on the promotion of clean energy in the Russian Arctic without compromising its fragile environment.

**Key participants and partners.**

EBRD will be the GEF implementing Agencies for the project.

The Ministry of Economic Development RF, regional administrations and municipalities will be the key Russian participants of the project.

Other federal ministries, Vnesheconombank, companies and non-governmental organizations will participate in the project as partners.

It is expected that NEFCO, Nordic Investment Bank, and governmental organizations from other Arctic countries will participate in the project preparation and implementation.

**Financing and co-financing (inclusive of PPG)**

Sources of financing	Name of financier	Type of financing	Amount (\$)
GEF TF (including fee and PPG)		Grant	7,000,000.00
Government of Russia, regional and municipal administrations		Grants, equity financing, in kind	5,350,000.00
EBRD		In kind	1,000,000.00
EBRD		hard loan	75,000,000.00
<b>Total financing</b>			<b>88,350,000.00</b>